

Constraining factors on the family of resultative constructionsⁱ

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Abstract

Drawing on the assumptions made in Construction Grammar(s), the present proposal addresses the debate between formulating broad-scale generalizations of the type postulated by Goldberg (1995) or finer-grained analyses, heavily based on lexical-class identification, as those put forward by Boas (2010, 2011), who claims that Goldberg's account leads to the over-generation of ungrammatical examples. The position taken here is that, although Goldberg's theory has largely overlooked the role of verb meaning(s), generalizations in the form of constraints are still necessary to build a fully principled account of lexical-constructional fusion. Taking the family of resultative constructions as a case study, I employ the analytical tools (i.e. the apparatus of so-called internal and external constraints on constructional integration) developed by the Lexical Constructional Model in order to show that a fine-nuanced description can go hand in hand with the postulation of macro-generalizations.

Key Words: Constraints, Construction Grammar(s), Lexical Constructional Model, lexical-constructional fusion, resultative constructions, metaphor, metonymy.

1. Introduction

The last twenty years have witnessed a noteworthy proliferation of Construction Grammar (CxG) accounts (see González-García & Butler, 2006, and Dirven & Ruiz de Mendoza, 2010, for an overview).¹ Among the ones that figure more prominently, the following may be highlighted: *Embodied CxG* (Bergen & Chang, 2005), *Cognitive Grammar* (Langacker, 1987, 1991ab, 2003ab), *Radical CxG* (Croft, 2001, 2003, 2005), *Cognitive CxG* (Goldberg, 2006, 2009), and Boas's *frame-semantic* approach (Boas, 2003, 2010). Despite their differences, all these accounts qualify as members of what has been labeled the family of constructionist approaches (Goldberg, 2003, to appear; Goldberg & Suttle, 2010; González-García, 2012; Fried & Östman, 2004; Mairal & González-García, 2010).

Construction grammarians agree on a number of principles such as the inseparability of form and function (which is organized in terms of psychologically real networks of relations), but they differ in several respects. One point of discrepancy can be found in the emphasis that is placed on whether sentence meaning is mainly determined by the lexical-semantic information of the verb, or whether most of the weight should be attributed to the construction (see Goldwater & Markman, 2009, p. 679 for a similar remark). Such divergence translates into what has been referred to as the “lumper” vs. the “splitter” approaches (cf. González-García, 2008, pp. 350-351; Boas, 2010, p. 61). The former is illustrated by the Goldbergian formulation of CxG (Goldberg, 1995, 2005, 2006, 2010); the latter is the perspective taken by Boas (2003, 2005, 2008ab, 2010, 2011) in his lexico-syntactic postulates. On the one hand, Goldberg (1995) puts forward abstract meaningful constructions whose fusion with a given verbal predicate is regulated by a number of broad-scale generalizations.² On the other hand, Boas (to

appear) argues that such abstract configurations tend to over-generate since some impossible cases of lexical-constructional integration (even with semantically related verbs) escape the delimiting power of Goldberg's constraints (cf. the acceptability of *She talked herself into existence* (COCA, 2000) with the high oddity of *?He announced himself into existence*). With this scenario in mind, the aim of this paper is to show that while fine-grained analyses of verb meanings are unquestionably imperative, we should also find, whenever possible, generalizations in the form of broad constraints on the basis of which large sets of data can be accounted for.

One linguistic account that supplies us with these needs is the Lexical Constructional Model (LCM; Ruiz de Mendoza & Mairal, 2008, 2011; Mairal & Ruiz de Mendoza, 2009; Ruiz de Mendoza, to appear), whose analytical tools will be utilized in this paper to explain the behavior of the different versions of the family of resultative constructions (cf. Goldberg & Jackendoff, 2004).

In order to deal with these issues, the present paper is structured as follows. Section 2 briefly deals with the corpus compilation methodology. Section 3 provides the reader with the fundamental differences between Goldberg's (lumper) account and Boas's (splitter) perspective. Section 4 discusses the major strengths of the LCM, among them, (i) its interdisciplinary nature, (ii) its ability to bridge gaps between the different positions taken by projectionist (e.g. Rappaport & Levin, 1998) and constructionist accounts (Goldberg, 1995), and, above all, (iii) its ability to account for the possibility or impossibility of integrating lexical predicates into constructions on the basis of a limited set of internal and external constraints. Section 5 is divided into two subsections. The first one explores in some detail the behavior of resultative constructions which, from my point of view, fall into two general organizational

schemas, which I shall respectively term A>A' and A>B. Likewise, subsection 5.1 militates against the need to formulate “mini-resultatives” (*à la* Boas) whenever exceptional realizations of this configuration appear. In turn, subsection 5.2. offers a preliminary analysis of the family of English resultative constructions in which metaphor and metonymy are viewed as constraining factors in lexical-constructural integration. Section 6 briefly summarizes the main ideas discussed throughout the paper.

2. A brief note on methodology

The present study applies some of the LCM tools to examples retrieved from the *Corpus of Contemporary American English* (COCA) and from *Google Books*. The latter source was used as a complementary one because of the sometimes scarce number of occurrences found in the COCA, and also in the *British National Corpus* (BNC, worldwide edition), of resultative uses of some of the non-basic (i.e. hyponymic; cf. Faber & Mairal, 1999) verbal predicates that were the object of this study (e.g. *titter*, *wolf*, *guffaw*, etc.). Consider, by way of illustration, the string “giggle * silly”, which was found twice in the COCA and only once in the BNC (e.g. *All women sit back and giggle themselves silly*, COCA, 2001; *He could see them giggling themselves silly at his expense*, BNC GV8). By contrast, Google Books returns up to 42 hits (accessed on November 3, 2011). The greater number of examples has increased our ability to understand the ins and outs of lexical-constructural interaction. For this reason, this paper also adheres to so-called “Web linguistics” (see Bergh, 2005; De Schryver, 2002, Bergh & Zanchetta, 2008; Meyer, 2006, *inter alios*), a recent branch of modern corpus linguistics that takes textual material collected from the Web as the basis for the

development of empirical research into language. In fact, as Bergh (2005) points out, the skillful use of this (still) non-standard corpus (i.e. the Web) can be a means to produce quantitative analyses (cf. section 5.1).³

We now turn our attention to the two compatible, albeit different in emphasis, approaches of Goldberg and Boas.

3. The lumper and the splitter approaches to CxG

The essential difference between Goldberg's and Boas's perspectives can, for current purposes, be stated as follows. Whereas the former aims to provide a macroscopic picture of lexical-constructional fusion mechanisms in which, clearly, the descriptive and explanatory burden revolves around constructional semantics rather than lexical semantics, the latter concentrates on a microscopic view of lexical-constructional interaction where lexical semantics is accorded a more central role. This discrepancy is evidenced by the different construction-types that each author advocates. On the one hand, Goldberg reduces constructions to abstract skeletal structures such as 'X CAUSES Y TO BECOME Z' for the AP resultative, whose argument roles (i.e. <agent, patient, result-goal>) fuse with the participant role of a given verb (e.g. *eat* <eater eaten>, *wolf* <wolfed>) on the basis of both general and construction-specific constraints (see Boas, 2011, pp. 1274-1275 for a critical discussion of Goldberg's constraints).⁴ Although Goldberg's explanation is *a priori* appealing in that it is elegant and economic, followers of the bottom-up usage-based model (e.g. Boas, 2003, 2008b; González-García, 2009; Iwata, 2008; among others) rightly point to the fact that Goldberg's constraints are insufficient to discard ungrammatical examples (e.g. *He ate himself sick*/**He wolfed himself sick*), and thus her approach leads to over-generation

(cf. Boas, 2010, p. 58; to appear). By the same token, it is argued that reducing verbs to a set of semantic roles alone does not do justice to the role that verbal information plays in its interaction with the semantic requirements of a construction. In sharp contrast to Goldberg's "meta-constructions", Boas's (2003) approach to resultatives prioritizes lower-level configurations or 'mini-constructions', i.e. form-meaning pairings representing an individual sense of a verb (Boas, 2008a, p. 21). For example, in Boas (2011, p. 1288) it is claimed that the "make-safe" collocation (e.g. *He made his pistol safe, How soon do they make sexual intercourse safe?*) is a mini-construction, i.e. a pairing of a particular semantics/pragmatics with a very specific syntactic frame [NP V NP safe] (see *ibid.*, p. 1289 for the formalized representation). Therefore: "individual verb senses should be regarded as mini-constructions with their own frame-semantic, pragmatic and syntactic specifications whenever abstract meaningful constructions over-generate" (Boas, to appear).⁵ Unlike Goldberg's broad-scale patterns, these highly specific mini-constructions hardly leave any room for the over-proliferation of ungrammatical utterances. But ironically Boas's proposal also falls into the analytical trap of over-generation since this procedure may lead analysts to postulate as many categories as instances they want to explain, instead of finding a limited set of more generic, constraining mechanisms that can account for large sets of data, regardless of the construction(s) under scrutiny. I thus concur with the following quotes: (i) "by merely positing lower-level configurations, the facts may be described but not explained (...) It remains to explain why a given verb allows for a particular verb-specific construction in the first place" (Iwata, 2006b, p. 515); (ii) "we have to deal with (...) specific instances (...) but we also have to care for generalizations and the broader the

variety of subclasses that is covered by a (non-trivial) generalization, the better the generalization is” (Müller, 2005, p. 674).

As previously mentioned, this paper intends to find a way to combine broad-scale generalizations *with* fine-nuanced, fully principled analyses; two requirements that the LCM meets. This means that I agree with Boas’s view that a detailed examination of verb meanings should be of paramount importance. As such, lexical entries cannot be merely reduced to “relatively sparse frame-semantic information” (Boas, to appear) as those found in Goldberg (1995; e.g. *eat* <**eater** eaten>, *devour* <**devourer** devoured>). Nevertheless, I believe that parallel to providing fine-grained analyses (of the type pursued by Boas or the LCM) is the need to establish a limited set of generalizations on the basis of which diverse phenomena can be accounted for. In this specific respect, I also take sides with the Goldbergian (1995, 2006) stance which, as much as the LCM, is indeed concerned with finding robust generalizations, which amounts to equipping a given account with economy and elegance. Here, generalizations are to be understood in terms of the set of internal and external constraints put forward by the LCM, which, as I will try to show on the basis of an analysis of resultative constructions, possess a greater delimiting power than those found in Goldberg (1995).

4. The Lexical Constructional Model: A brief overview

Quoting Ruiz de Mendoza (to appear), the “LCM is a comprehensive model of meaning construction through language in context”. This model seeks to achieve the same standards of adequacy proposed by Dik (1997) for his theory of Functional Grammar, i.e. explanatory, psychological, typological, and pragmatic adequacy. Additionally, the computational adequacy of the model has so far proved successful (see

Periñán, to appear). Needless to say that more work needs to be done in various areas (e.g. using data from languages belonging to non-Western cultures in order to reinforce the typological adequacy of the LCM). Moreover, other criteria like acquisitional adequacy (cf. Butler, 2009b), i.e. the consistency of the account with empirical findings on language acquisition, have not been addressed yet.

One of the aims of the LCM is to bridge gaps between putatively opposing theoretical frameworks, such as functionally-oriented projectionism versus cognitively-oriented constructionist accounts. A clear advantage of constructionist theories over projectionist approaches (e.g. Rappaport & Levin, 1998; Jackendoff, 1990) is that the former circumvent the problem of postulating an excess of argument structure patterns – each associated with a concrete meaning – for each verbal predicate. Such an account would have to list as separate patterns the (figurative) caused-motion uses of *talk* in *She talked some sense into me* or *Can I talk you out of a cigarette?* and its resultative meaning in *He talked himself hoarse*. However, the three patterns have elements in common, such as their resultative meaning, which need to be accounted for. In their turn, construction-based accounts (e.g. Goldberg, 1995) have yet to fully determine the exact conditions under which certain verbal predicates are allowed into a given syntactic pattern, whereas others, whether semantically related or not, are blocked, e.g. *Raid kills them stone dead*, **Raid assassinated them (stone) dead*, **Raid hammers them (stone) dead*. In response to issues like these, the LCM seeks to combine generalizations in the form of a limited apparatus of internal and external constraints to lexical-constructional integration, while maintaining fine-grained lexico-semantic analyses. More concretely, two are the major strengths of the LCM for my purposes herein:

(i) The LCM is a four-layered account of meaning construction where representations are prepared for syntactic projection through the specification of argument structure variables that are bound to other semantic and pragmatic meaning variables (cf. Ruiz de Mendoza & Mairal, 2008, 2011). The first layer of this model is structured around low and high-level (i.e. abstract) non-situational cognitive models.⁶ At this level, lexical structure is integrated into argument structure constructions (ditransitive, resultative, caused-motion, etc.). Low-level situational cognitive models are part of the implicational layer or level 2, where we find constructions such as *What's X doing Y* (Kay & Fillmore, 1999; Ruiz de Mendoza, 2001), which codes the conventionalized meaning implication that there is a situation that bothers the speaker. The X and Y variables receive partial structure from level 1. Level 3 is based on high-level situational models such as 'begging', 'requesting', 'offering', which abstract common conceptual material away from low-level situations. Such models underlie illocutionary constructions, which, like their level 2 counterparts, consist of fixed and variable elements: *Can You X?*, *You Shall Have X*, *Let's X*. Finally, non-situational high-level cognitive models are treated at the fourth level, which deals with discourse structure, in which level 1 configurations are coupled through relational patterns like 'cause-effect', 'condition-consequence', 'action-result', among others.

In its postulates, the LCM coincides with Boas's lexico-constructional approach insofar as the role of verb meaning is accorded a more central role than it has in Goldberg's proposal. This position thus contrasts with the Goldbergian affirmation that constructions are better overall predictors of sentence meaning (Butler, 2009a, p. 142). Hence, regarding the crucial issue of how to provide a descriptively and explanatorily adequate account of the division of labor between verbal and constructional semantics,

the LCM commits itself to the idea that the intricate, dynamic interaction between lexical and constructional semantics should be understood in terms of a cline, rather than as an all-or-none issue. For instance, in the oft-quoted example *He hammered the metal flat*, we assume that the resultant state (i.e. the metal being flat) is not derivable from the semantics of the predicate alone. In other cases, the lexical semantics of the verb has a greater power than that of the construction, as in *John sent a letter to Peter*, in which the (attempted) transfer meaning is already conveyed by the verb, thereby making the constructional meaning fully redundant (see Bencini & Goldberg, 2000, p. 642). By contrast, in *They laughed the poor kid out of the playground*, the caused-motion interpretation can solely be attributed to the construction, the verb being simply amenable to a metaphorical reinterpretation according to which laughing, which is a target-oriented activity, is seen as if it were an action affecting an object through physical impact (as is the case of *kick* and *push*). We shall come back to this issue below. Now, simply note that, in order to answer to the question of why, say, *They laughed the poor kid out of the playground* or *He laughed himself silly* are possible while *?They owned the kid out of playground* or **He expressed himself silly* are highly odd, the LCM draws on the Goldbergian model in its concern with finding generalizations in the form of constraints instead of tending towards a mini-constructionist approach to grammar. Notwithstanding commonalities among these models, the LCM drastically differs from Goldberg's and Boas's theories in that it not only takes on board argument structure constructions, but also constructions below and above the sentence level (e.g. *Hello?!*, *Can/could/would you Y*, *Just because X doesn't mean Y*, etc.). These constructs are parsimoniously assigned different places and functions within the *same* architecture.

(ii) Some models like the LCM or Goldberg's CxG aim to provide an economic solution to the mammoth task of constraining lexical-constructional integration. In the case of the LCM, *subsumption* (i.e. a cognitive process whereby lower-level structure is built into higher-level structure) is regulated by a number of well-delimited constraints, which can be *internal* and/or *external* to such a process. At the argument structure level (the first one in the LCM), internal constraints are those that specify the conditions under which 'lexical templates' can be integrated into argument structure constructions on the basis of lexical class ascription, lexical-constructional compatibility and predicate-variable conditioning (see Ruiz de Mendoza & Mairal, 2008, for a detailed description). Internal constraints, which act as blocking factors, "work on the basis of the compatibility between the conceptual characterizations of lexical predicates and argument-structure constructions" (Ruiz de Mendoza, to appear). Note that these issues are in keeping with the need to provide finer-grained analyses of the interaction of verbal meaning and constructional meaning. For the sake of clarification, lexical templates in the LCM (cf. Mairal & Faber, 2002, 2005, 2007), which are lexical semantic representations, take the following schematized format:

predicate: [SEMANTIC COMPONENT <lexical functions>] [AKTIONSBART COMPONENT <semantic primes>].

The second unit captures the *Aktionsart* structure of a given predicate following the inventory of logical structures provided in *Role and Reference Grammar* (cf. Van Valin & LaPolla, 1997; Van Valin, 2005). The first component contains the idiosyncratic

features of a predicate (i.e. semantic and pragmatic information) that distinguish it from other members within the same lexical domain. These are in turn represented by an inventory of lexical functions (Mel’cuk, 1989; Mel’cuk et al., 1995; Alonso Ramos, 2002), a list of semantic primitives, which largely coincide with those used in Wierzbicka’s *Natural Semantics Metalanguage* (Wierzbicka, 1996; Goddard & Wierzbicka, 2002), and other non-primitive lexical items. Lexical templates then fuse with constructional templates, which share the same metalanguage, in a principled manner. Let me now illustrate the role of lexical templates with examples (1)-(3) below. According to Levin (1993, pp. 213-215) *eat* and *devour* are grouped under the larger domain of “verbs of ingestion”. Nonetheless, their behavior is different when embedded in an AP resultative:

- (1) a. The kids ate their plates clean.
 b. *The kids devoured their plates clean (Boas, 2005, p. 453).

This otherwise perplexing situation becomes clearer if we take a closer look at the semantic configuration codified in the following lexical templates:

- (2) *Eat* = **do'** (x [**eat'** (x, y)]) & BECOME/INGR **consumed'** (y)

[The logical structure of this activity predicate reads as follows: ‘x’ acts in such a way on ‘y’ (by means of eating) that as a result, ‘y’ is consumed].⁷

- (3) *Devour* = [MANNER₁ quick & RESULT₂ FIN₂] [**do'** (x, [**eat'** (x, y)]) & INGR **consumed'** (y)], where x=1, y=2

[*Devour* is an active accomplishment, since apart from specifying the rapid way in which the substance is ingested (i.e. MANNER₁ quickly), it also codifies the end-result of ‘y’=2 through the lexical functions RESULT₂ FIN₂].

The most neutral or generic (cf. Faber & Mairal, 1999) member of this verbal class, i.e. *eat*, can be straightforwardly subsumed into a goal-oriented transitive pattern, like the AP resultative, in order to make fully explicit an otherwise expected, albeit non-conceptually relevant, result (cf. *The kids ate their plates {clean/ voraciously/ and ran back to the playground/ and drank their juice}*). By contrast, the semantic component of the lexical template in (3) shows that the semantic characterization of *devour* contains the information that the entity is consumed (quickly) until there is nothing left (RESULT₂ FIN₂), i.e. it codes cessation of existence. Therefore, because the structure of the AP resultative displays a BECOME state’ (y) component, and the conceptual material of *devour* already contains an end-result slot (completion of activity), it is only natural that the construction cannot supply yet another resultative element. In fact, AP resultative constructions seem to follow a general law, i.e. whenever the semantics of the predicate indicates culmination of activity, subsumption will be blocked unless their valence is augmented for emphasis, e.g. *The year-old water in it froze solid* (COCA, 2009), *Raid kills them stone dead* (see Iwata (2006a) and Richter & van Hout (2010)). In the LCM there is one internal constraint that accounts for the ungrammaticality of “*devour* + Y +AP”, namely, the *lexical class* constraint, which as its name suggests, has to do with the possibility or impossibility to subsume a lexical item into a given construction by virtue of the lexical class to which it belongs. Thus, although *eat* and *devour* do share part of their meaning (i.e. both codify ingestion), they do not appear to

share their high-level structure. Whereas *devour* belongs to the lexical class of cessation of existence, *eat* does not. Therefore, the construction at hand may be employed to further specify how the object resulted from the eating action, except for cases like *devour*, whose adscription to the aforementioned class tends to impede the realization of yet another resultative ingredient. Although thus far I have only dealt with one of the five internal constraints proposed in the LCM, the reader may have noted that this constraint is coherent with a fine-nuanced type of analysis (in terms of the attention paid to the rich information codified by the verb) while still taking the form of a broad generalization.

Furthermore, in the LCM cognitive phenomena such as high-level metaphor and metonymy are viewed as external constraining factors whose recurrent presence in many of the argument structure constructions discussed in the literature also affect subsumption processes either permitting or disallowing them (see Ruiz de Mendoza & Pérez, 2001; Ruiz de Mendoza & Peña, 2008; Peña, 2009 for examples and details). In other words, external constraints, as will be shown throughout the paper, are based on how lexical structure can be re-constructed in order to make it fit into a given construction (e.g. why *laugh* may take place within the caused-motion construction). These cognitive operations are termed high-level in the sense that they involve generic cognitive models thus working at higher levels of abstraction (e.g. the notions of ‘action’, ‘process’, ‘effect’, ‘cause’, etc.). Let us go back to the case of the integration of the activity predicate *laugh* into the caused-motion construction, e.g. *The audience laughed the actor off the stage*. For this verbal predicate to be subsumed into the construction in question, thus necessarily dropping its canonical prepositional complement (x *laugh-at* y), it needs to undergo a process of subcategorical conversion, i.e. a change in the

subcategorization properties of a predicate involving a change in transitivity type. This grammatical phenomenon is a symptom of the meaning of the verb accommodating to the requirements of the construction (cf. Michaelis, 2003). This is possible through a metaphorical reinterpretation of the verb whereby a goal-directed action without direct impact on its object (i.e. the experiential action of ‘laughing *at* somebody’) is seen as if it were an effectual action with a direct physical impact on the patient (i.e. ‘to cause somebody to abandon a location by means of laughing at them’). In other words, psychological or emotional impact in the above-cited example is understood in terms of physical impact causing motion, thus giving rise to the high-level metaphor AN EXPERIENTIAL ACTION IS AN EFFECTUAL ACTION (Ruiz de Mendoza & Pérez, 2011, p.14).⁸ Some scholars (e.g. Langacker, 2005) have argued that frequent use may have led to the gradual acquisition of a causative meaning in examples like *He sneezed the napkin off the table* or the ‘x-laugh-y-PP’ case (cf. Dirven & Ruiz de Mendoza, 2010, pp. 26-29, for detailed discussion). True as this suggestion may be, it has relevant weaknesses. First, the notion of frequency is used rather laxly: one may wonder about the criteria to determine frequency thresholds in developing a causative meaning and what other factors may cooperate with frequency (the originally innovative use does not arise out of the blue but needs to respond to a set of changing patterns within a system). Second, entrenchment does not seem to determine why *laugh* can be felicitously built into resultative or caused-motion contexts, whereas, as Google Books and COCA queries show, a related verb such as *chortle* is far more problematic:

- (4) a. ?The audience chortled the actor off/out of the stage.
b. ?He chortled himself into a coma.

- (5) a. He laughed himself {silly/sick/#unconscious/hoarse}.
- b. He chortled + fake reflexive + silly (3 entries in Google Books. Accessed on November 3, 2011).
- c. *He chortled himself {sick/unconscious/hoarse}.

Obviously, although within a given lexical domain (e.g. ‘verbs of non-verbal expression’; Levin, 1993, p. 219), each member shows different degrees of permeability when it comes to allowing figurative reinterpretations of the type signaled above (cf. “laugh oneself sick” > “giggle oneself sick” > “?chuckle oneself sick” > “*jeer oneself sick”), we need to clearly state what licenses and/or motivates their potential incorporation into a construction. In this respect, I agree with Boas (2003, 2008b) that the role of verb meaning cannot be accounted for by merely reducing it to a set of participant roles (*laugh* <**laugher**>, *chortle* <**chortler**>), as Goldberg does, which later on fuse with the arguments of the construction.

With regard to the caused-motion construction, or PP resultative, it seems that the stronger the speaker *perceives* the action as having some kind of impact on the object (whether physical or psychological), the easier it is to adapt the meaning of the verbal predicate to the requirements of a cause-effect configuration (cf. *The vase broke into pieces*, *He loved me back into existence*, *They laughed the actor out of the room* vs. *?They described him out of the room/into existence/*into pieces*; Ruiz de Mendoza & Mairal, 2008, p. 379). *Chortle* codifies a more salient manner component than *laugh*. This friendly, non-aggressive way of laughing (i.e. ‘to laugh in a noisy, gleeful way’, Oxford dictionary online) could thus hardly be conceived as having a strong psychological impact on the object. Under normal circumstances, this factor hinders the

participation of *chortle* with a motional subevent of the type “off the Z” or “out of Z” since, unlike *laugh*, this verbal predicate cannot generally cause an emotional or psychological reaction on the patient that will cause self-induced motion. In turn, its participation in the AP resultative is only marginally possible with the adjective *silly*, which is the one that expresses the lightest kind of result if compared to *sick*, *unconscious*, or *hoarse*. In any case, example (5b) above would be motivated by the high-level metaphor AN ACTIVITY IS AN EFFECTUAL ACTION. Here, *chortle* is transitivized differently from the example *The audience laughed the actor off the stage/out of the room*, since the fake-reflexive in (5b) “is not treated as an affected object but as the object of a change” (Ruiz de Mendoza & Mairal, 2007, p. 44). In other words, whereas in *The audience laughed the actor off the stage/out of the room*, the actor is both the target of the action and the object of a change, in *John chortled himself silly*, “himself” is not the one being laughed at, but simply the one that is laughing so hard at something that he ends up changing state. Thus, if we do not acknowledge the role of metaphor (as well as metonymy) in licensing and/or motivating argument structure constructions of the type discussed thus far, we will still fail to provide explanatorily adequate analyses of many cases of lexical-constructional interaction. Boas contends that, “while the role of metaphor in structuring language has been amply demonstrated in the literature, its role in licensing particular argument structure constructions remains a matter of debate” (Boas, 2010, p. 57). *Pace* claims of this kind, this paper demonstrates that metaphor (and metonymy) are essential not only to account for many cases of verbal-constructional integration into the resultative, caused-motion or *way* constructions, but also to determine in what way members of the family of resultatives relate.

5. Resultatives at the crossroads between the lumpers and splitters approaches

5.1. The A>A' and A>B schemas

With the exception of the work carried out by authors such as González-García (2009) on 'object-related depictives' (e.g. *He thinks himself virtuous*) or Goldberg and Jackendoff's (2004) proposal for a family of English resultatives, construction grammarians have not devoted much attention to the articulation of groups of constructions connected in a family-resemblance fashion.⁹ By *family-resemblance*, quoting Goldberg and Jackendoff (2004: 536), I am also referring to "the sort of family resemblances recognized to exist in non-linguistic categories" (e.g. Wittgenstein, 1955).

This paper thus furnishes a preliminary account of what the family of resultatives looks like and how each configuration can be connected to other members of this family. To this end, following the LCM, my objective is to provide the reader with generalizations that arise from an exhaustive description of the issue under scrutiny. Before discussing the family in detail, consider the following examples:

- (6) a. He drank the cup dry (Google Books: *More than a dream*, by Lauraine Snelling, 2011. Accessed November 5, 2011).
- b. They laughed themselves silly (COCA, 2002).
- c. She drank herself unconscious/into a coma (COCA, 1991/2004).
- d. ?She imbibed herself into a coma.
- e. He cackled himself into total exhaustion (Google Books: *The everything tall tales, legends and outrageous lies book*, by Nat Segaloff, 2001. Accessed November 5, 2011).

f. ?He cackled himself into a depression.

h. Mama drank herself to death (COCA, 2005).

I should first clarify that by “resultative construction” I am indistinctly referring to two patterns, namely the AP version of the resultative (e.g. *The blacksmith hammered the metal flat*) and the PP resultative construction, e.g. *The kid broke the plate into a thousand pieces* (cf. Boas, 2003; Broccias, 2003). Both configurations denote a change of state of the postverbal element. The first does so directly while the second makes use of the metaphor STATES ARE LOCATIONS (Lakoff, 1987, 1993; Lakoff & Johnson, 1999) as a licensing factor. Since caused-motion can be used figuratively to express a result, there is no reason to regard the resultative, contrary to what Goldberg (1991, 1995) claims, as a metaphorical extension of the caused-motion construction, at least not from a synchronic perspective.

In the light of the examples in (6), the question arises as to whether the choice of an AP over a PP (and vice versa) is arbitrary, as it appears to be at first sight, or whether, by contrast, it is motivated and thus follows some general pattern. In line with Ruiz de Mendoza and Luzondo (2012), the following broad generalization may be stated:

(7) Resultatives under one common denominator: Whenever the action denoted by the predicate implies a change in the object, the selection of an AP or a PP follows either of two rules:

(i) If the affected entity (A) is perceived or construed as experiencing a holistic, conspicuous change in one or more of its properties, so that A can no longer be

considered the same entity, a prepositional phrase is required. I shall label this the A>B schema (e.g. *The beast's jaws chewed the arrow to pieces* (COCA, 1992), *Txanis crunched the piece of food into powder* (COCA, 2009)).

(ii) If the affected entity (A) acquires a new property/quality but ultimately retains its essence, and adjectival phrase is employed. I shall call this the A>A' schema (e.g. *They drank the barrels dry*, *He ate herself sick*, *They laughed themselves silly*, etc.).¹⁰

This proposal is consistent with the following claim: “(...) while adjectives in the result-slot typically denote properties of end-points that have been changed along parameters with variable settings, NPs introduced by the preposition ‘to’ refer to the new kind of entity that has been created by a force-dynamic event” (Saurenbach, 2008, p. 199). In this line of thinking, if the blacksmith hammers, bangs, knocks, etc., the metal flat (A>A'), the metal will still be metal. Seemingly, a person can laugh or drink to the point of becoming silly or unconscious, but such an acquired temporary state does not alter the nature of the subject referent. However, the A>A' schema is not confined to adjectival phrases alone. A case in point is that of (6h) above, in which, even though the “essence” of the agent who drinks herself to death does not change either (i.e. the person is still an individual of the human species whether alive or dead), a PP is preferred. Thus, many instances of the PP resultative can also display the A>A' schema,¹¹ when only some of the properties of the entire set of qualities attributed to an entity are altered (from being alive to being dead, from being happy to being depressed, etc.).¹² In fact, changes such as ‘becoming depressed/exhausted/dizzy’ or ‘dying’ are codified through figurative motion towards a different state, and although both

“drinking oneself to death” and “drinking oneself dead” are possible, the former version occurs much more frequently (e.g. the COCA currently displays 32 entries just for the string “drank * to death”, while only two entries are retrieved for the case of “drink * dead” and none for “drank * dead”). It seems that ‘dead’ in the AP construction can be utilized to refer to situations in which the process of becoming dead is achieved in a shorter span of time (cf. Goldberg & Jackendoff, 2004, p. 561), as opposed to ‘to death’, which hints at a longer process of immoderate consumption which ultimately causes the heavy drinker to pass away. Compare, *Eventually, he drank himself to death* with the strangeness or even impossibility of saying *He eventually drank himself dead*. Note that there is an iconicity issue at work here too. Putting together the object and the resultative adjective (e.g. “drink + object + silly”) suggests a more immediate impact than when the preposition *to* is inserted between the fake reflexive and the resultative phrase (e.g. *She drank herself to death*). An additional factor for this constructional specialization is the fact that we employ motion to talk about the durative aspects of the progress-result relationship (e.g. *We are moving in the right direction to our destination* means ‘We are making adequate progress towards our goals’). This is so because ‘progress-to-achieve-a-result’ and ‘motion-to-reach-a-destination’ co-occur in our experience (i.e. as we move forward to reach our destination, we come closer to achieving our goal of reaching such a destination), which may result in experientially-grounded conflation of the two concepts in our minds, as discussed by Lakoff and Johnson (1999) for correlational metaphors (see also Gibbs, 2006). In consequence, when change goes beyond the partially productive meaning potential of the AP resultative (cf. Boas, 2005 for a discussion), it is not surprising that speakers turn to the figurative use of the caused-motion pattern. This is possible because change and motion

frequently co-occur thereby giving rise to potential conflation of both concepts in our mind, to such an extent that they may even be difficult to pull apart. As Lakoff and Johnson (1999), on the basis of Grady (1997), have noted, conflation is a conceptual mechanism through which speakers pair subjective experience with sensorimotor experience in order to give rise to hundreds of primary metaphors such as MORE IS UP, AFFECTION IS WARMTH, DIFFICULTIES ARE BURDENS, or in the case of the resultative, STATES ARE LOCATIONS.

To conclude, metaphorical motion can also be utilized to express an even greater impact on the object than that of example (6e: A>A') above. Such configurations, which are grounded in the A>B schema, encode holistic changes in which the patient typically results in a completely different entity or undergoes a process of fragmentation, e.g. *The dog chewed the bone to pieces*, *The prince turned into a frog*, *He shattered the window into smithereens*, etc. It should be noted that this last schema requires verbs whose semantic composition codifies a strong effect on the patient, e.g. “chewing”, “breaking”, “changing”, “turning”, to name but a few.

All in all, resultative constructions can be placed along a continuum that ranges from the less productive AP resultative (e.g. *The couple painted the room green*), going through the A>A' motion version of the resultative (e.g. *The blacksmith hammered the metal into the shape of a heart*), to the most “effectual” configuration based on the A>B pattern, as in *He turned from a prince into a frog*, *Tucson businessman Gary Triano's car was blown to pieces* (COCA, 2009) in which the entity (A) ceases to be what it was. The advantage of the generalization in (7) above is that it largely allows us to determine what type of resultative phrase a given verb occurs with, despite Boas's statement to the contrary:

Given the current architecture of lexical entries and their interaction with meaningful constructions in a Goldberg-style Construction Grammar, it is hard to predict with what type of resultative phrase a given verb will occur *because a construction has no way of distinguishing between the two types of resultative phrases* (Boas, 2008b, p. 123, emphasis added to the original).

Thus far I have discussed some generalizing principles, but I have remained largely silent about the bewildering acceptability differences between corpus-attested pairs such as the ones in (4) through (6) above, some of which are here repeated (with new examples) for the reader's convenience:

- (8) a. She drank herself into a coma.
b. ?She {imbibed/guzzled} herself into a coma.
- (9) a. He cackled himself into total exhaustion.
b. ?He cackled himself into a depression.
- (10) a. He laughed himself {sick/silly/hoarse}.
b. *He {chortled/guffawed/jeered/cackled} himself sick.
c. They giggled themselves {silly/sick}.
d. They giggled themselves {?hoarse/*unconscious}.

As Boas has repeatedly pointed out (e.g. Boas, 2005, 2007, 2008b), given that semantically related verbs sometimes exhibit disparate behavior when used with the resultative construction, more detailed semantic and pragmatic information is necessary

to determine whether a verbal predicate may be compatible with a given syntactic frame or to determine which verbs should contribute what types of additional argument roles. As accurate as this statement is, this does not mean, however, that “mini-resultatives” should be ubiquitously posited. Specifically, since tendencies occur in the compatibility of a verb class and a given construction, generalizations may be stated along with more detailed explanations than those usually offered in Goldberg’s construction-centered work. Let us illustrate this idea with examples (8) to (10). These examples appear to reveal that the greater the degree of codification of the manner component of a predicate, the greater its inability to be subsumed into the AP resultative (cf. “laugh somebody silly/sick”, “*guffawed somebody silly/sick”). This is also the case, albeit to a lesser extent, of the PP resultative, since it allows for the figurative reinterpretation of some predicates in marginal contexts such as that of (9a). As shown in (8a), while a basic-level concept (in the sense of Lakoff, 1987) like *drink* is the one that will most likely occur in a wider variety of syntactic patterns, the more specific categories such as *guzzle* or *imbibe* in (8b) tend to resist subsumption within a resultative pattern.¹³

As far as resultatives are concerned, there is also a degree of conventionalization in the type of outcome result that a verb typically governs (cf. Boas, 2003). World knowledge tells us that one can (somewhat exaggeratedly) end up feeling exhausted after laughing/cackling for a long time (cf. (9a)), but we will hardly find these verbs collocating with PPs such as “into a depression”, unless contextual factors suggest otherwise (cf. Boas, 2005, p. 453; see also 2011). The LCM accounts for the high oddity of *?He cackled himself into a depression* in (9b) above in terms of two closely related internal constraints on lexical-constructional subsumption, i.e. *predicate argument conditioning* and *internal variable conditioning*. The former constraint

accounts for how the instantiation of a constructional variable affects the kind of co-instantiation of the rest of constructional variables. For instance, in the caused-motion construction with *sneeze*, the first argument instantiated by, say, “John”, and the Z variable realized by the PP “off the table”, determine the type of Y element that we can have: “the napkin” is thus allowed whereas it is unlikely, although not impossible, that “the stone” is (e.g. #*He sneezed the stone off the table*). By the same token, the type of resultative ingredient in the “cackle” example above calls for a human Y argument (e.g. **He cackled the car into a depression/ into exhaustion*). In its turn, the latter constraint applies to situations in which the internal semantic structure of the verbal predicate that realizes the event structure elements of a construction (e.g. CAUSE, MOVE) places requirements on the nature of the predicates that instantiate constructional variables. This explains the negative nature of the Z element in *She drank herself into a coma*, since “drinking” in this sentence is connected to the effects of excessive alcoholic consumption. Seemingly, according to the data examined, the nature of the resultative phrase of an event involving “cackling” is mostly restricted to conceptually compatible instances of the type “into a fit of coughing” or “into exhaustion”, etc. Hence, it is unlikely that we find collocations of the type “cackling/laughing oneself into a depression” since getting depressed is not a usually expected result from the activity of cackling.

Finally, one can point out that the distribution of resultatives elements in (10) is rather arbitrary and does not seem to follow the hypothesis presented above (cf. (10c)), i.e. specific-level verbs tend to repel subsumption within the AP resultative. The question now arises as to whether mini-constructions should be posited for this apparently random situation. In order to be in a position to properly address this issue,

let me offer a list of the various semantically related verbs of non-verbal expression (i.e. *cackle, chortle, chuckle, giggle, guffaw, jeer, laugh, snicker, snigger* and *titter*; Levin, 1993, p. 219) and the type of post-verbal elements with which they may collocate. In the elaboration of Table 1, I have employed the Google Books corpus by playing the following wildcard searches for each predicate: “verb (past form)+ {myself/ yourself/ itself/ himself/ herself/ ourselves/ themselves} + (*) + {sick/ silly/ hoarse/ unconscious}”. The asterisk was also meant to retrieve occurrences including adverbs such as *almost* or *nearly* before the resultative element. In addition, searches have been restricted to the following time period: 1900-2011. Examples were accessed on November 3, 2011. The following are the results gathered:

| VERB | FAKE REFLEXIVE | ADJECTIVE AND # OF OCCURRENCES PER ADJECTIVE | TOTAL # OF OCCURRENCES |
|----------------|-----------------------|---|-------------------------------|
| <i>Jeer</i> | Themselves | HOARSE (3) | 3 |
| <i>Titter</i> | -- | -- | 0 |
| <i>Snigger</i> | Himself / Themselves | SICK (1) SILLY (1) | 2 |
| <i>Snicker</i> | Themselves | SICK (1) | 1 |
| <i>Guffaw</i> | Himself | HOARSE (1) | 1 |
| <i>Chuckle</i> | Himself/ Themselves | SICK (1) SILLY (2) | 3 |
| <i>Chortle</i> | Himself | SILLY (3) | 3 |
| <i>Cackle</i> | Himself / Themselves | SILLY (2) HOARSE (1) | 3 |

| | | | |
|---------------|-----------------------------|-----------------|-----|
| <i>Giggle</i> | Myself / Itself / Himself / | SICK (12) | 55 |
| | Herself / Ourselves / | SILLY (42) | |
| | Themselves / Yourself | HOARSE (1) | |
| <i>Laugh</i> | Myself / Itself / Himself / | SICK (137) | 368 |
| | Herself / Ourselves / | SILLY (140) | |
| | Themselves / Yourself | HOARSE (87) | |
| | | UNCONSCIOUS (4) | |
| | | | |

Table 1: Distribution of resultative phrases with verbs of non-verbal expression using Google Books.

Before proceeding any further, two issues need to be clarified. First, a total of 28 searches per verb were conducted (e.g. “jeered + myself + {sick / silly / hoarse / unconscious}”, “jeered + himself + {sick / silly / hoarse / unconscious}”, etc.). However, for reasons of space, Table 1 only illustrates those cases in which a hit was indeed obtained. For example, *jeer* only appeared three times with *themselves* + *hoarse*. Since no other results were found, I did not list them on the table. In turn, Google Books yielded two instances for *snigger*, one collocating with *sick* (i.e. SICK (1) in Table 1) and one collocating with *silly* (i.e. SILLY (1) in Table 1). By contrast, *laugh* was found to occur with every reflexive pronoun and with every adjective: 137 times with *sick*, 140 with *silly* and so on. Needless to say, I was solely interested in the amount of occurrences with the adjectives proposed in this study, rather than in the kind of reflexive pronoun with which verbs appeared. Second, even though I only computed a maximum of 20 examples for each string (if such an amount existed), the Google Books search engine recovered many more instances in the case of *laugh*. Whether 137 cases for “laugh + * + sick” or 140 cases for “laugh + * + silly” count as sufficiently frequent to achieve the status of a conventionalized construction is beyond the scope of the

present paper, all the more since the frequency issue is still an unresolved one. Having said this, Table 1 demonstrates that, except for *giggle*, the rest of specific-level predicates, viz. *cackle*, *chortle*, *chuckle*, *guffaw*, *jeer*, *snicker*, *snigger* and *titter*, are rarely used with the AP resultative construction. As discussed in section 4, note that this is only possible thanks to the high-level metaphor AN ACTIVITY IS AN EFFECTUAL ACTION, which works as a motivating factor. Thus, in various degrees, all members of the class are sensitive to external constraints on lexical-constructional subsumption, although *laugh* and, to a lesser extent, *giggle* are still the ones that occur more frequently. In any case, although the considerably unconstrained (although not fully unconstrained) creative potential of the speaker results in the existence of two or three cases (e.g. “jeered * hoarse”), such combinations need to be distinguished from more entrenched patterns like those found with *laugh*. This strongly suggests that the above-mentioned generalization applies to this lexical domain, i.e. the greater the degree of codification of manner, the smaller the ability of a verb to fuse with AP resultative constructions. Obviously, further investigation of other verbal classes needs to be carried out in order to consolidate or refute the validity of such a generalization.

The question now arises as to whether we should posit a mini-resultative for the puzzling case of specific-level verb *giggle*, which occurs a total of 55 times and allows for more combinations than other members such as *jeer*, *titter*, *snigger*, etc. The answer would not be in the affirmative. In order to clarify my position, consider the following table, which displays the total number of occurrences of five of the verbs under scrutiny in four different corpora:

| | BNC | COCA | GOOGLE | GOOGLE |
|--|-----|------|--------|--------|
|--|-----|------|--------|--------|

| | | | BOOKS | |
|------------------|-------|--------|--------------|------------|
| <i>Laughed</i> | 4.457 | 18.590 | 33.700.000 | 86.700.000 |
| <i>Giggled</i> | 362 | 1.278 | 2.710.000 | 8.860.000 |
| <i>Guffawed</i> | 25 | 121 | 189.000 | 301.000 |
| <i>Titter</i> | 19 | 75 | 272.000 | 238.000 |
| <i>Sniggered</i> | 45 | 45 | 128.000 | 398.000 |

Table 2: Frequency of use of five semantically related predicates.

However coarse-grained, Table 2 evidences that there is a dramatic decrease in the number of times that *guffaw*, *snigger* and *titter* appear in any of these corpora with respect to the frequency of availability of *laugh* and/or *giggle*. Bearing in mind that the AP resultative is only a partially productive construction, the more frequently that a verb is accessed by speakers, the greater the chances of finding that verb within such a construction. Finally, note that, in all cases, the collaborative work between the semantic characterization of the verb (i.e. the internal configuration of the predicates at hand) and that of the construction ('X CAUSES Y TO BECOME Z') constrain the type and nature of the resultative ingredient. Hence, in line with *predicate argument conditioning*, the Y constructional argument must be human (**They laughed the teddy bear silly*), while *internal variable conditioning* accounts for the axiologically negative nature of the Z element: from “silly” or “sick” to the most hyperbolic result, “to laugh oneself unconscious”.

In closing, the account proposed here strongly suggests that a detailed examination of the semantics of the predicates should be as essential to the analysis as the use of broad-scale constraining factors (as those put forward by the LCM) which can encompass a wide range of data. There is thus no need to confine ourselves to the

level of mini-constructions, should we wish to avoid a projectionist-like approach in which the only exception is that the role of constructions is acknowledged. With this idea in mind, we finally move on to the family of resultative constructions.

5.2. The family of resultatives: A preliminary study

Revolving around the two schemas introduced above, namely $A > A'$ and $A > B$, the following is a schematized representation of all the proposed members of this family, which I will later on discuss in more detail:

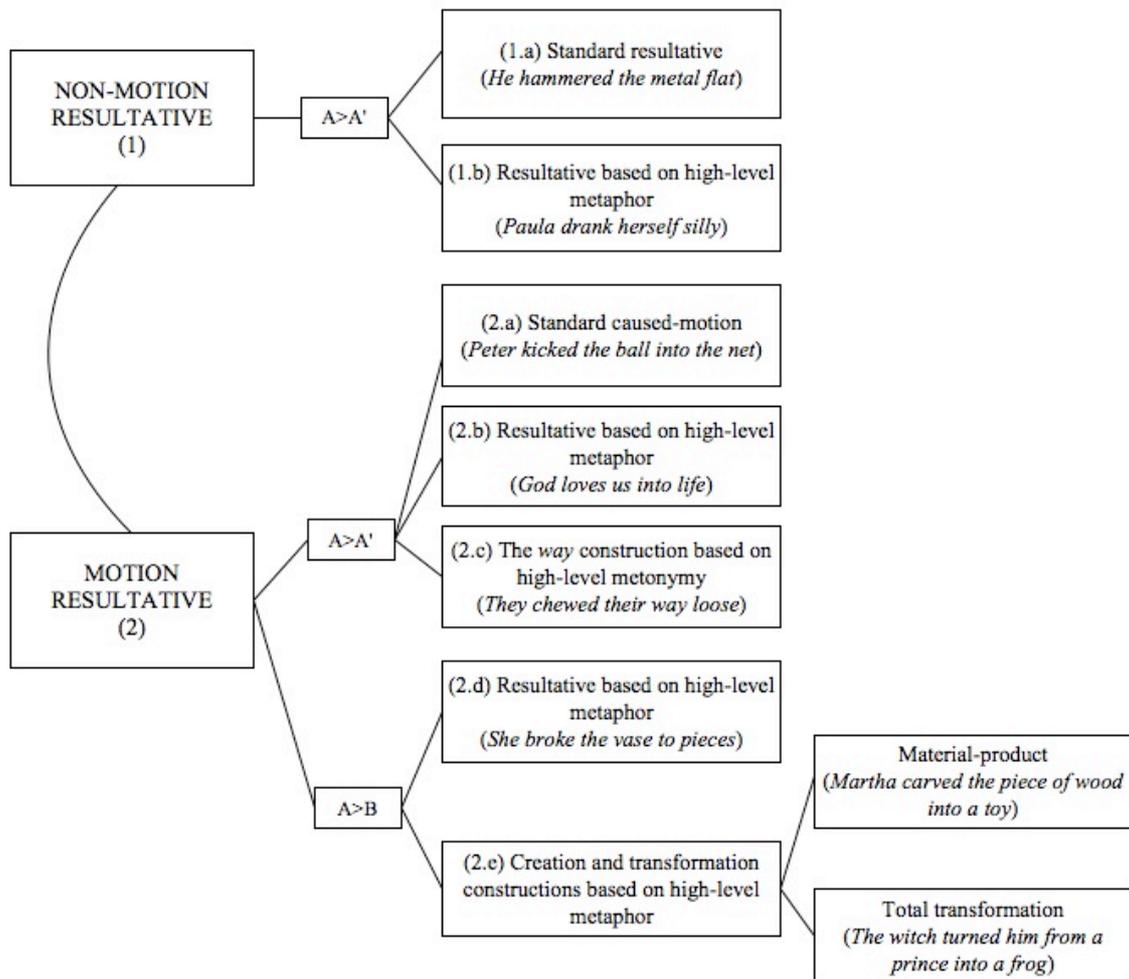


Figure 1: The family of English resultative constructions

The full gamut of constructions presented herein, all of which express result (with or without a motion component), relate to one another on the grounds of the high-level metaphor STATES ARE LOCATIONS (cf. Ruiz de Mendoza & Pérez, 2011, p.14), 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 the various members of the family. Drawing on Lakoff and

Johnson (1999, p. 52), I assume that STATES are conceptualized as LOCATIONS; consequently, changes of state are naturally seen as changes of location. Following up on this logic, 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, SELF-INSTIGATED CHANGES OF STATE ARE SELF-INSTIGATED CHANGES OF LOCATION and CHANGING STATE IS SELF-PROPELLED MOTION (which has ACHIEVING A GOAL IS REACHING A DESTINATION as a dependent metaphor, cf. Lakoff et al., 1989). Having suggested a possible system that establishes principled connections among the various members of this family, we move on to the individual examination of each of these patterns.

Departing from Goldberg and Jackendoff's (2004) initial work, two major categories can be posited: (1) *non-motion resultatives* and (2) *motion resultatives*. The former group is subdivided into the following construction-types:

(1.a) The standard form of the resultative, as in *He hammered the metal flat*, *The dog licked the wound clean*, *They drank the barrels dry*, etc. By "standard", I refer to any realization that is not treated figuratively as a whole. Although in this subclass we find metonymic objects (cf. CONTAINER FOR CONTENT in, for instance, *He ate the plate clean*), the example, as a whole, would not be figurative, as opposed to others like *Paula laughed/chortled herself silly* (cf. section 4). The examples above involve a dynamic relation between the subject and object referents, where the latter is changed through a continual input of energy caused by the subject's activity. Here, the patient, after the iterative action denoted by the verb, ends up acquiring a new property (i.e. the metal becomes flat, the wound becomes clean, and so on) but its core features remain

intact. In other words, the metal continues being what it was despite its new shape. As previously noted, this type of construction is only partially productive and thus speakers tend to resort to other ways of expressing result (e.g. through figurative motion), probably due to the scarcity of adjectives to convey certain changes. This fact becomes clear when we compare in Figure 1 the amount of subtypes for the category of non-motion resultatives and the number of realizations for the case of motion resultatives.

(1.b) As we have seen, resultatives with non-subcategorized objects or fake-reflexives (e.g. *Kelly laughed herself silly*, *Anna ran her Nikes threadbare*) are based on the high-level metaphor AN ACTIVITY IS AN EFFECTUAL ACTION, according to which the activities of laughing or running (target domain) are treated as though they were effectual actions causing changes of state. In other cases like *He talked himself blue in the face* the metaphor licensing the incorporation of *talk* into the resultative would be A COMMUNICATIVE ACTION IS AN EFFECTUAL ACTION.

The two kinds of resultatives shown in (1.a) and (1.b) are subsumed into the A>A' schema, since whether the patient solely acquires a new property (cf. the walls becoming red in *The couple painted the house red*) or whether the entity changes into a different state (cf. Kelly becomes silly), such transformations do not entail a complete modification of the type *The kids broke the plates into pieces* (A>B). Moreover, three more categories can be found within the A>A' schema, namely the standard caused-motion construction, the motion resultative based on high-level metaphor, and the *way* construction. However, these subtypes are located within the broad category of motion resultatives (group 2 in Figure 1), given that, as its name suggests, they add a motion component to the state of affairs. Let us deal with each of them separately:

(2.a) This first sub-kind deals with cases of standard or prototypical caused-motion that are not exploited figuratively. For example, in *John kicked the ball into the net*, the resultative phrase does not add an acquired attribute of the type discussed thus far (e.g. becoming red, becoming sick, becoming flat, etc.). Rather, the resultant state here is that of a mere location change (i.e. [BECOME **be-loc**' (ball, net)]). In other words, the ball was not in the net and as a result of the kicking action, it changes location (A>A'). Obviously, if in a non-figurative context, motion towards a distinct location is treated as a resulting state, it is only natural that other changes of state are realized as figurative motion to a given location (e.g. "eating oneself into a food coma", "breaking a glass to pieces", etc.).

(2.b) Examples such as *God loves us into life*¹⁴ or the hyperbolic realization *They laughed themselves to death* (COCA, 2003) instantiate the second sub-type of motion resultatives grounded in high-level mechanisms. The former example is based on the high-level metaphor AN EMOTIONAL STATE IS AN EFFECTUAL ACTION (Ruiz de Mendoza & Mairal, 2008, p. 383). The latter is once again licensed by the high-level metaphor AN ACTIVITY IS AN EFFECTUAL ACTION. However, while (1.b) and (2.b) make use of the same abstract cognitive operation (i.e. high-level metaphor), they differ in that the result state in *They laughed themselves to death* is understood as figurative motion towards another location, which expresses a change of state. Note too that, in some cases, there is also a difference in the temporal duration of low-level configurations employing an AP vs. a PP. For example, an instance such as *He drank himself sick* indicates that the subject was drinking for some time (probably hours) until he gets sick. However, the same verbal predicate collocating with a PP like "into a depression" (e.g. *He drank himself into a depression*) hints at a longer period of

alcoholic consumption, which eventually results in the patient becoming depressed. Thus, in the default context, we would not expect somebody to drink for a few hours and suddenly fall into a state of depression.

(2.c) The last construct grouped under the A>A' configuration is that of the *way* construction, in which only cases expressing result are considered to be part of this family, e.g. *They chewed their way loose* (COCA, 2003), *He fought his way free* (COCA, 2010), *Caterpillars can feed their way into adulthood* (COCA, 2001), *They sang their way into the hearts of millions around the world* (COCA, 2009), etc. From my point of view, the incorporation of the verb into this partially-fixed pattern is licensed by high-level metonymies such as MEANS/MANNER FOR ACTION (e.g. *Ranch livestock ate their way through the island* (COCA, 2004)) or INSTRUMENT FOR ACTION (e.g. *The girl elbowed her way into the room*) (cf. Ruiz de Mendoza & Mairal, 2007). The resultative element in the *way* construction can either take the form of an AP (e.g. *They chewed their way loose*) or much more frequently of a PP (e.g. *They fought their way to freedom*), both cases being subsumed under the rubric of the A>A' schema. Note that one of the prerequisites imposed by the *way* construction is that the verb must be followed by a non-subcategorized object, i.e. the non-parametrizable 'X's way' ingredient. In turn, the A>B schema activated, for example, by *bombed* in *Warplanes bombed the city (to ashes)* necessitates an affected object (cf. *US warplanes bombed Iraq (to ashes) > *US warplanes bombed to ashes*), which becomes transformed into a substantially different entity. If one tried to subsume this lexical piece within the *way* syntactic frame, the constructional specification that the object must be expressed as a path would clash with the object that this predicate usually governs, thus impeding the overt realization of either a different affected theme or both at the same time, i.e.

**Warplanes bombed the city's way to ashes, *Warplanes bombed the city its way to ashes.* An important generalization ensuing from the above is that neither pure change of state verbal predicates such as *break, shatter*, nor some members of, for example, the consumption class (e.g. *chew*), can fulfill the stipulations of the A>B schema when embedded into the *way* construction (e.g. *Demons broke their way into the locked church* (BNC HPW), *Grown beetles have chewed their way out* (COCA, 2002), *Coons cut or chewed their way into an empty tent* (COCA, 1994), etc.), although they do in other resultative constructions (e.g. *He broke the vase to pieces*, A>B).

Still within the realm of motion resultatives, two more subtypes are postulated: (2.d) resultatives based on the high-level metaphor STATES ARE LOCATIONS; and (2.e), the so-called 'creation and transformation' alternations discussed in Levin (1993, pp. 55-58). These constructs differ from the ones presented thus far in that the result of the action denoted by the verb requires de postulation of a different schema, namely A>B, since the patient is perceived as becoming a fundamentally different entity or as undergoing a process of fragmentation:

(2.d) Some examples of resultatives based on the STATES ARE LOCATIONS metaphor are *The palm-tree, or the box and yew are burnt solemnly to ashes*,¹⁵ *She smashed a skull to bits* (COCA, 1993), *The beast's jaws chewed the arrow to pieces* (COCA, 1992), where a change of state is perceived as figurative motion into a location. Whereas pure change of state verbs like *break* and its hyponyms are (in varying degrees) easily incorporated into the A>B version of the resultative, other lexical domains are much more restrictive, as is the case of verbs of consumption. For instance, only predicates such as *chew*, and more marginally, *chomp* and *crunch* can be subsumed into the A>B schema as licensed by the *internal variable conditioning* constraint (e.g.

The dog chewed the bone to pieces, She crunched it to pieces,¹⁶ She chomped it to pieces¹⁷). That is, once the PP slot has been filled with “to pieces” or “into bits”, only predicates whose semantics encode a strong effect on the theme role can take part in the pattern at hand. Also, in terms of the LCM, the *lexical class* internal constraint discussed above would block the incorporation of *laugh* and its hyponyms into the A>B pattern since they do not codify the type of affectedness imposed by the semantics of the construction (e.g. *He laughed himself into a frenzy* (*A>B)).

(2.e) A final couple of configurations revolve around the A>B configuration, i.e. the material and production construction and the total transformation construction, which I also consider as instances of the family of resultative constructions. In my view, Levin’s examples for these patterns: *Martha carved a toy out of wood* > *Martha carved a piece of wood into a toy*, *He turned into a prince*, *The witch turned him from a prince into a frog*, etc., are all motivated by the high-level metaphors A CAUSED CHANGE OF STATE IS A CHANGE OF LOCATION (for the transitive version) and CHANGING IS MOVING in conjunction with CHANGES OF STATE ARE SELF-INSTIGATED CHANGES OF LOCATION, which regulate intransitive examples. I will now dwell on the conceptual mechanisms underlying the instances presented in Levin’s (1993, p. 56) work:

- (11) a. Martha carved a toy out of the piece of wood.
- b. Martha carved the piece of wood into a toy.
- (12) a. David constructed a house out of bricks.
- b. *David constructed the bricks into a house.
- (13) a. I kneaded the dough into a loaf.

- b. *I kneaded the loaf from the dough.
- (14)
- a. The witch turned the prince into a frog.
 - b. He turned into a frog.
 - c. The witch turned him from a prince into a frog.
 - d. *He turned from a frog.
 - e. *The witch turned the prince from a frog.

The predicate *carve* is depicted in example (11) as an event involving a figurative path of motion leading to a result. It may either take the target ('a toy') as its direct object followed by the source expressed as a PP ('out of wood'), or by contrast, the source (i.e. 'the piece of wood') can occupy the object slot preceding a PP (i.e. 'into a toy') or target element. In the former case, the source represents the container out of which the object is carved, whereas in the latter, the target is reached through metaphorical motion into a new entity (i.e. $A > B$). However, not every verb can collocate with the resulting entity or the source entity indistinctively. Take the cases of *construct* and *knead* in (12) and (13). While *construct* requires the resulting product or target as its immediate direct object (i.e. 'construct a house (from bricks)/*the bricks' = [V + result]), the verbal predicate *knead* imposes the realization of the source component ('the dough') as the direct object, i.e. [V + moldable substance]. This again is a matter of the world knowledge attached to the internal variables of the verbs at hand, i.e. the *internal variable conditioning* constraint. Moreover, the discrepant syntactic behavior manifested by *construct* and *carve* may also be argued to be a matter of the lexical classes to which each of these predicates belong, an issue which falls into the realms of the *lexical class* constraint. On the one hand, while a human entity may *construct* or

create a house ('Z' = the result of the action), the objects (e.g. 'Y' = the bricks), which together compose Z, cannot fill in the direct object slot (i.e. one cannot 'construct bricks'). This is so because the activity codified by the verb entails that some kind of entity must directly result from such an action, while the (understood) material from which the resulting entity is formed need not be compulsorily expressed in order for the sentence to be grammatical; e.g. *David constructed a house (out of/from bricks)*. The rationale behind this sentence would thus be as follows:

(15) Construct = Agent (A) > *constructs* > resulting object (Z) (> optional specification of the entity that composes the resulting entity (from/out of Y)).

In sum, from a linear temporal perspective, a house (Z) cannot be constructed into its material (Y), e.g. **David constructed a house into bricks*, since placing all the bricks together is a previously necessary requirement for a house to be built. Moreover, one cannot construct the material (Y) into the resultant object (Z), e.g. **David constructed the bricks into a two bedroomed apartment*. On the other hand, the 'kneading' event is different from the *construct* instance in that the result of the action (i.e. 'the loaf') cannot precede the 'kneading' of the substance¹⁸ ('the dough' being the DO), which first ought to be necessarily manipulated in order to obtain a loaf, e.g. *She kneaded the dough > She kneaded the dough into a loaf > She kneaded a loaf* vs. *She constructed a house/She constructed the bricks (into a house)*.¹⁹ In other words, the 'kneading' action cannot fall upon the resulting entity, the dough being in this case a compulsory element:

- (16) Knead = Agent (A) > *kneads* > a conceptually necessary object (Y = the dough)
> (Z = optional result).

Note incidentally that, whereas the (Z) element (i.e. ‘into a loaf’) is an optionally attributable component, the ‘dough’ (Y) is required in order for the sentence to be grammatical, e.g. **She kneaded into a loaf*. Finally, (14de) above are problematic simply because the predicate *turn* either subcategorizes for an outcome (‘turned somebody into something else’ as in (14abc)), or instead, the whole figurative path needs to be expressed: *The witch turned him from a frog into a prince*. It is obvious that the transitive and intransitive utterances **The witch turned the prince from a frog*, **He turned from a prince/a frog* are rendered conceptually inappropriate without the specification of the destination of the metaphorical path. Now consider the following:

- (17) a. That acorn will grow into an oak tree.
b. An oak tree will grow from that acorn.
- (18) a. Martha carved the piece of wood into a toy.
b. **Martha carved the piece of wood from a branch into a toy.*

Grow in (17) may either take the source (‘the acorn’) or the resulting product (‘the tree’) as its subject. As much as (18b) is ungrammatical, a sentence like **The oak tree will grow from an acorn into a tree* is also ill-formed, since one cannot mention the same two sources (‘a piece of wood’ and ‘a branch’) or the same two target results (i.e. ‘an oak tree’ and ‘a tree’) in the same sentence without being redundant. In the LCM, this situation is a matter of the internal constraint labeled *lexical blocking*, which accounts

for cases in which one of the components of the lexical template impedes the unification with a grammatical construction, given that such a component is a suppletive form (e.g. **Tom killed* in the interpretation that Tom died). Note, however that, if the sources are felt as distinct categories or entities, the sentence is grammatically acceptable, i.e. *Our faith will grow from a seed into a giant tree, He turned from {a prince/a human/a monster} into a frog, *He turned from himself into a frog*. In any case, the total transformation configuration may be claimed to be an extension of the caused-motion construction in which all the components making up the figurative path of motion are specified.

6. Conclusion

In this paper I have tried to show that both the Goldbergian macro-respective on lexical-constructional interaction and the more detailed approach pursued by the Boasian bottom-up usage-based account can be made compatible *without* falling into the trap of over-proliferation. The LCM, a linguistic model capable of bridging the gap between the lumpers and splitters proposals, has been shown to be a highly valuable tool to shed light on the complex matter of how and why lexical pieces incorporate into a given construction. To illustrate this, I have offered a preliminary analysis of the family of English resultative constructions in which both internal, and above all, external constraints can be seen to play a crucial role. Further, a continuum among the various subtypes of resultative constructions has been postulated to be organized around two basic schemas, namely $A > A'$ and $A > B$. Since many objects in this world can undergo various types of transformations, it is only natural that such a range of possibilities reflects itself in diverse syntactic projections. In other words, the examples offered in

this paper demonstrate that there is an ordered collection of changes which is syntactically distributed along a continuum whose scope categorizes resultative constructions on the basis of an increasing change parameter: “hammering a metal flat” < “hammering a metal into the shape of a heart” < “hammering a vase to pieces”.

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¹ Although I employ the abbreviation “CxG” in singular, it should be pointed out that I am referring to a whole gamut of construction grammar accounts (CxG(s)).

² Goldberg’s (1995) definition of construction was modified and expanded in Goldberg (2006). The original formulation revolved around the criteria of idiosyncrasy and non-compositionality as essential requirements for a construction to be recognized as such. The 2006 definition no longer considers the issue of compositionality a requirement for constructional status, thus acknowledging transparent configurations as constructions as long as they occur with sufficient frequency. Nothing is said, however, about what counts as “sufficient frequency”.

³ Bergh (2005, pp. 42-43) observes that, “looking into the Web *in toto*, we should not even expect the results to be the same as those derived from standard corpora (...) It is only when we can restrict our research of the Web to specific, controlled domains that we can achieve frequency-based comparability”.

⁴ In Goldberg’s (1995) notation, the profiled participant roles of the verb and the profiled argument roles of the construction appear in bold letters. Lexically profiled participants are those entities which are obligatorily accessed and thus function as focal points. In turn, construction profiling occurs as follows: “every argument role linked to a direct grammatical relation (SUBJ, OBJ or OBJ₂) is constructionally profiled” (Goldberg 1995: 48). The fusion of verbs and constructions is constrained by two broad principles, namely the ‘Semantic Coherence Principle’ and the ‘Correspondence Principle’ (*ibid.*, p. 50). In addition, in order to account for unacceptable utterances like **The feather tickled her silly* (*ibid.*, p. 193), Goldberg proposes construction-specific constraints (e.g. “only animate instigators are acceptable as subjects of two-argument resultative constructions”).

⁵ Suffice it to say that “meta” and “mini” constructions are by no means incompatible. Boas (2008b, p. 130) observes that “item-specific knowledge is crucial for correctly encoding resultatives (in terms of mini-constructions)”, whereas high-level schematic resultatives *à la* Goldberg are necessary when decoding resultatives.

⁶ While low-level cognitive models consist in non-generic semantic structures that result from the principled connection of elements from our encyclopedic knowledge, high-level cognitive models arise by abstracting away conceptual material shared by low-level cognitive models. Non-situational or propositional cognitive models are those that designate entities and their relations. In turn, situational cognitive models are conventional, coherently connected series of events (cf. Ruiz de Mendoza, 2007).

⁷ INGR and BECOME are modifiers of the predicate. According to Van Valin and LaPolla (1997, p. 104), whereas INGR (i.e. ingressive) codes instantaneous changes, BECOME codifies changes that occur over some temporal span.

⁸ For the sake of clarity, by effectual action I am referring to one that has direct physical impact on an object in such a way that the object is caused to change its state, location or to become physically affected. Likewise, I would also like to point out that one anonymous reviewer has observed that the example *They laughed the poor kid out of the playground* is not metaphorical but a case of metonymic coercion (i.e. ACTIVITY → ACCOMPLISHMENT) since, for this reviewer, the cognitive operation takes place within one single domain. Although this may be a possible explanation, the following is the main reason why I still believe this example is metaphorical. From my point of view, *laugh* is treated as if

it were a verb like *kick*, these two verbs being part of two different discrete domains, i.e. experiential verbs (e.g. *stare*, *wink*) and effectual verbs (e.g. *push*, *kick*). Note that the object in the example above (i.e. the poor kid) cannot be the effectual object of *laugh* (cf. *John kicked Peter*). Thus, in order for *laugh* to be licensed into the caused-motion construction, we need to recategorize it and treat it as if it were a verb belonging to a class that does denote an effectual action. In addition, since it is possible to set up mappings of the type “effector – actor”, “effectee – experiencer”, “effecting – acting” (Ruiz de Mendoza & Mairal, 2008, p. 380), I lean towards a metaphorical interpretation of the example.

⁹ See González-García (2009) for a discussion of why a family resemblance analysis rather than a constructional polysemy analysis seems more adequate to capture commonalities as well as the idiosyncratic particulars, in the case of object related depictives in English and Spanish.

¹⁰ One reviewer wonders whether the differences between A>B and A>A’ amount to an opposition of the type ‘permanent/essential’ vs. ‘temporary/incidental’. This is often true, but not always the case. Compare, by way of illustration, the examples *He hammered the metal flat*, *They painted the house red* with *He ate himself sick*, *She drank herself silly*, all of which display the A>A’ schema. Whereas in the first two examples the results are permanent (i.e. the entities will remain flat and red unless re-changed), the same rationale does not apply to the other two instances, in which the affected entities will naturally go back to their initial state.

¹¹ Other authors such as Goldberg and Jackendoff (2004, p. 558) have similarly observed that “spatial resultatives appear to be totally productive”.

¹² An attentive reviewer has argued that the change from being ‘alive’ to ‘dead’ is much more radical (i.e. irreversible) than the one from ‘happy’ to ‘sad’. I do agree that this is the case, for the most part. In the cline ranging from prototypical A>A’ changes (e.g. *He hammered the metal flat*) to prototypical A>B changes (e.g. *The kid broke the vase to pieces*), “drinking oneself to death” falls within a fuzzy area which at first sight appears to be closer to that typical of the A>B schema. However, note that the basic part-whole structure of the object in the example *Mama drank herself to death* (A>A’) is not altered, neither can it be understood as changing into a completely different entity (e.g. *The witch turned the prince into a frog*). By contrast, in *The kid broke the vase into pieces* (A>B), the object undergoes a process of fragmentation. While a participant who has not witnessed the whole breaking event, would not know exactly to which entity those pieces belonged, a deceased person is normally recognizable as the entity that it used to be.

¹³ In Faber and Mairal (1999, pp. 188-189) it is argued that the troponyms of the generic term *drink* “are much more restricted in their syntactic patterns”.

¹⁴ Google Books: *Preaching to the Converted*, by Richard Leonard, 2007. Accessed on November 12, 2011.

¹⁵ Google Books: *Castle Dangerous*, by Sir Walter Scott, John H. Alexander, 2006. Accessed on November 12, 2011.

¹⁶ Google Books: *Lies are the Devil’s Candy*, by Lee Meagher, 2008. Accessed on November 12, 2011.

¹⁷ Google Books: *Bear Attacks of the Century: True Stories of Courage and Survival*, by Larry Mueller, Marguerite Reiss, 2005. Accessed on November 14, 2011.

¹⁸ Note that with ‘kneading’ the scope of the action (i.e. ‘the dough’) is not the same as the result of the action, ‘the loaf’. However, in the case of ‘constructing’, the scope and the result of the action coincide (i.e. ‘the house’).

¹⁹ This sentence may be felicitous if ‘the loaf’ is understood as metonymically standing for the substance (‘the dough’) out of which the former is made.

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