Estudios de Lingüística • Universidad de Alicante
ISSN 2171-6692

Núm. 43, 2025, pp. 223-246
https://doi.org/10.14198/ELUA.27176

# The resultative construction with “verbs of cooking” and “verbs of colouring” in English and Spanish: a contrastive lexical-constructional study

## La construcción resultativa con “verbos de cocinar” y “verbos de colorear” en inglés y en español: un estudio contrastivo léxico-construccional

### *Abstract*

Despite the extensive interest in cross-linguistic constructional research over the past few decades, the resultative construction in Spanish has largely been overlooked. Unlike its high productivity in English, in Spanish, this construction is confined to very specific contexts such as the culinary or gastronomic scenario or situations involving chromatic change. The present study is contrastive in two senses: on the one hand, it provides a descriptive analysis of the formal and functional differences and similarities of this construction in both languages, and on the other hand, it adopts a lexical-constructional approach combining the theoretical and methodological principles of Goldberg’s (1995) and Boas’s (2003) Construction Grammars. Both principles, traditionally opposed in the literature, aim to determine to what extent the observed properties of the construction under study can be predicted from Goldberg’s generalisations at the constructional level, the event-frame evoked by the predicate as advocated by Boas, or any other factor such as contextual background information or pragmatics. The results of this study are based on the analysis of 1,173 corpus examples of English and Spanish resultative expressions with verbs of cooking and colouring drawn from Levin’s (1993) classification. The data reveal distinctive traits of the Spanish resultative construction with no parallel in English: (i) the unacceptability of inanimate instrument subjects and the prepositional form of the resultative phrase in resultatives with verbs of cooking, (ii) the preference for the prepositional realization of the resultative phrase in examples with verbs of colouring, (iii) the collocational restrictions of the predicates *pintar* (“paint”) and *manchar* (“stain”) with regards to the semantic nature of the subject or the form of the RP respectively. In addition, this study demonstrates that finer-grained analyses of the predicates’ event-frames, as those put forward by Boas (2003), make it possible to arrive at more accurate predictions about the idiosyncratic properties of each language than Goldberg’s (1995) broad-scale generalizations, some of which have been refuted. Furthermore, it demonstrates that contextual background information largely determines the observed syntactic, semantic, and pragmatic features of the resultative construction.

*Autoría*

Isabel Jiménez Sáez
University of Cordoba, Spain
l52jisai@uco.es
https://orcid.org/0000-0002-5085-8510

**Para citar este artículo:**
Jiménez Sáez, I. (2025). The resultative construction with “verbs of cooking” and “verbs of colouring” in English and Spanish: a contrastive lexical-constructional study, *ELUA*, 43, 223-246. https://doi.org/10.14198/ELUA.27176

Recibido: 29/02/2024
Aceptado: 20/05/2024

Agradecimientos: I would like to express my gratitude to two anonymous reviewers for their valuable feedback and suggestions that have contributed to enhancing this work.

Conflicto de intereses: la autora declara que no hay conflicto de intereses.

***Keywords:***
contrastive study; resultative construction; construction grammar; frame semantics; event-frames; lexical-constructional approach.

## *Resumen*

A pesar del interés que han despertado los estudios contrastivos de construcciones en distintas lenguas en las últimas décadas, la construcción resultativa española ha pasado prácticamente desapercibida. A diferencia de su alta productividad en inglés, en español, esta construcción está limitada a contextos muy específicos como el escenario culinario o gastronómico o las situaciones que implican cambio cromático. El presente estudio es contrastivo en dos sentidos: por un lado, ofrece un análisis descriptivo de las diferencias y semejanzas formales y funcionales de esta construcción en ambas lenguas, y por otro, adopta un enfoque léxico-construccional combinando los principios teóricos y metodológicos de las Gramáticas de Construcciones de Goldberg (1995) y Boas (2003), tradicionalmente opuestos en la literatura, con el fin de determinar hasta qué punto los rasgos observados de la construcción objeto de estudio pueden predecirse a partir de las generalizaciones a nivel construccional propuestas por Goldberg, el evento-marco evocado por el predicado como defiende Boas, o cualquier otro factor como la información contextual de fondo o la pragmática. Los resultados de este estudio se basan en un análisis de 1173 ejemplos de corpus de expresiones resultativas inglesas y españolas con verbos de cocinar y de colorear extraídos de la clasificación de Levin (1993). Los datos revelan rasgos distintivos de la construcción resultativa española sin parangón en inglés: (i) la inaceptabilidad de los sujetos inanimados instrumentales y de la forma preposicional del atributo resultativo en las oraciones con verbos de cocinar, (ii) la preferencia por la realización preposicional del atributo resultativo en los ejemplos con verbos de colorear, (iii) las restricciones colocacionales de los predicados *pintar* y *manchar* con respecto a la naturaleza semántica del sujeto o a la forma del atributo resultativo respectivamente. Por otro lado, este estudio demuestra que los análisis más detallados de los marcos de eventos de los predicados, como los propuestos por Boas (2003), permiten llegar a predicciones más precisas sobre las propiedades idiosincrásicas de cada lengua que las generalizaciones a gran escala postuladas por Goldberg (1995), algunas de las cuales han sido refutadas. Además, evidencia que la información contextual de fondo determina en gran medida los rasgos sintácticos, semánticos y pragmáticos observados de la construcción resultativa.

***Palabras clave:***
estudio contrastivo; construcción resultativa; gramática de construcciones; semántica de marcos; eventos-marco; enfoque léxico-construccional.

## 1. INTRODUCTION

More than a decade after the publication of Boas's (2010a) volume, which demonstrated that "constructions are viable descriptive and analytical tools for cross-linguistic comparisons that make it possible to capture both language-specific (idiosyncratic) properties as well as cross-linguistic generalizations" (p. 15), the number of contrastive studies on the resultative construction (RC) in English and Spanish is still scarce. The Spanish RC has received too little attention in the literature due to two prevailing ideas: on the one hand, authors such as Aske (1989), Sanz (2000), Levin & Rappaport Hovav (2019) consider this syntactic pattern to have a very marginal status and even deny its existence in Romance languages; and on the other hand, adopting a less radical stance, authors such as Bosque (1990), Demonte & Masullo (1999), Mendivil Giró (2003) and Mateu Fontanals (2000), among others, consider the Spanish RC as a "spurious resultative" in the original sense of Washio (1997), i.e., it bears a superficial formal resemblance to the English resultative construction but semantically describes a particular manner of action rather than the state resulting from that action, e.g., *El tomate se pica bien finito* (Demonte & Masullo 1999, p. 2493). However, these two assumptions

have been refuted by recent corpus studies, such as those of Rodríguez Arrizabalaga (1999, 2014, 2016, 2022, 2023) and Enghels & Lauwers (2020), which shed light on the productivity and autonomy of this pattern. Nonetheless, little is still known about the idiosyncratic syntactic and semantic properties that differentiate the Spanish RC from its English counterpart.

The RC is a type of transitivity pattern that describes the outcome of a change of state undergone by an entity (animate or inanimate) as a result of the action denoted by the verb. Therefore, it merges in a simple sentence two different relations of predication on the object with a clear cause-effect relationship: a primary verbal predication which denotes the action causing the change of state, and a secondary attributive predication which expresses the effect or result of that action[1]. The oft-quoted example used to illustrate this construction is *He hammered the metal flat*, i.e., He caused the metal to become flat by hammering (on) it.

This construction has been studied from a number of different perspectives. Within the field of Construction Grammar (CxG), two traditionally opposed positions can be distinguished in the study of argument structure constructions, commonly referred to as the "lumper" and "splitter" approaches (Gonzálvez-García 2008, pp. 350-351). The former is illustrated by Goldberg's Construction Grammar (GCG) (1995), and the latter is the perspective adopted by Boas in his frame-semantic approach to Construction Grammar (FSCG) (2003). The main point of discrepancy between these two accounts is the weight attributed to constructional semantics or to the lexical-semantic information of the verb respectively in determining the sentence form and function or in allowing or preventing the lexical-construction fusion process, i.e., the integration of a verb into a particular construction. This difference in focus opened the debate on whether to adopt a top-down or a bottom-up analytical methodology. In other words, while Goldberg (1995) seeks to capture broad-scale generalizations as to the syntactic and semantic constraints imposed by the construction, Boas (2003), following the main ideas of Frame Semantics (Fillmore 1982, 1985; Fillmore & Atkins 1992), proposes conducting fine-grained frame-semantic analyses of each individual verb sense. Nonetheless, their putatively opposing frameworks are not entirely incompatible. At a certain point in their works, the authors themselves recognise the contribution of the predicate's frame-semantics (Goldberg 1995, p. 1) or the need to postulate higher-level constructions (Boas 2003, pp. 7-8) in order to avoid the problem of over-generation of ungrammatical examples and over-proliferation of descriptive categories. Further evidence of their compatibility is the birth of the Lexical Constructional Model (LCM), developed by Ruiz de Mendoza Ibáñez and Mairal Usón (2008), an integrative model that aims to bridge the gap between lexicalist and constructionist approaches by considering the interaction between lexical, constructional, pragmatic and conceptual mechanisms. However, the LCM has developed its own descriptive and explanatory apparatus independent of any theory and approach[2], therefore, it does not solve the debate as to which analytical methodology is more predictive, Goldberg's macro-generalizations or Boas's fine-grained frame-semantic analyses.

As a cross-linguistic study, this paper seeks to identify patterns of similarities and differences between English and Spanish resultatives. However, after considering the above scenario, there are two underlying objectives: on the one hand, it pursues to expand the knowledge on the language-specific idiosyncrasies of the Spanish RC and, on the other, to determine to what extent the syntactic and semantic properties of this pattern can be predicted from Goldberg's generalizations at the constructional level, from the fine-grained analysis *à la* Boas of the event-frame evoked by the predicates, or any other factor such as contextual background information or pragmatics. Since the Spanish RC is limited

1 Resultatives should not be confused with depictive sentences whose secondary predication is an adjunct, e.g., *She handed him the towel wet*.

2 See Ruiz de Mendoza & Luzondo Oyón (2012), Luzondo-Oyón (2014) and Peña Cervel (2016, 2017) LCM approaches to the study of the English RC.

to very specific and well-defined contexts, among them the culinary and gastronomic and situations of chromatic change, we have compared resultative expressions containing verbs of cooking or colouring taken from Levin's (1993) classification.

The remainder of this paper is organized as follows. Section 2 provides an overview of the basic theoretical and methodological tenets of Goldberg's and Boas's CxGs and outlines their different views on the RC. Section 3 deals with the corpus compilation methodology and the use of FrameNet database for the analysis of the predicates' event-frames. Section 4 presents the analysis of the syntactic and semantic properties of the three elements that make up the construction: the subject, object and the resultative phrase. Finally, Section 5 briefly summarises the main findings emerging from this contrastive study in response to the stated objectives.

## 2. THEORETICAL UNDERPINNINGS

### 2.1. The "lumper" and "splitter" approaches to CxG

In this section I discuss some important commonalities and differences between Goldberg's (*lumper*) Boas's (*splitter*) constructionist accounts. As hinted at in the introduction, the essential difference between the Goldbergian and the Boasian formulations of CxG is a matter of focus or emphasis. Whereas the explanatory burden of the former revolves around independently existing meaningful constructions, the latter gives more prominence to the lexical semantics of concrete predicates. This discrepancy translates into two opposed views with regards to the licencing factors underlying the process of lexical-constructional fusion and the source of the syntactic and semantic constraints of a particular construction.

To Goldberg, constructions are understood as abstract form-meaning pairings that "exist independently of the particular lexical items which instantiate them" (Goldberg 1995, p. 1). In this sense, she suggests that it is the construction, guided by the general principles of Semantic Coherence and Correspondence (Goldberg 1995, p. 50), that regulates the combination of the participant roles of the verb with the argument roles of the construction. Hence, one of the central goals of GCG is to capture these construction-specific constraints in the form of generalizations.

Although *a priori* her generalizations at the constructional level may seem economic and adequate to account for a large set of expressions, as they avoid the problem of over-generation and postulation of implausible verb senses to account for each possible syntactic pattern, to Boas (2003, p. 103; 2010b, p. 58; 2011, p. 1275) her constraints are too broad to rule out unacceptable sentences and inadequate for capturing the syntactic and semantic differences between closely related predicates. Therefore, in his FSCG he proposes shifting the level of explanation to concrete verbal semantics, as he believes that "each particular sense of a verb constitutes a mini-construction represented by an event-frame with its own semantic/pragmatic and syntactic specifications" (Boas 2003, p. 315). In other words, Boas considers that it is the predicate's event-frame that licences its ability to occur in a specific construction and imposes its own selection or collocational restrictions with regards to the lexical items with which it can co-occur (Boas 2003, p. 145). In that respect, his approach is largely based on the principles of Fillmore's Frame Semantics (1982, 1985), whose basic assumption is that a lexical unit evokes a particular frame and profiles some element of that frame. By the term "frame", Fillmore refers to a structure of background knowledge based on experiences, beliefs or practices, required for the understanding of a given lexical unit (Fillmore & Atkins 1992, pp. 76-77).

It should be noted that in his FSCG Boas does not deny the existence of high-level constructions of the kind proposed by Goldberg, but he rather intends to highlight the necessity to consider more finely-grained lexical entries which, in his view, limit substantially the power of her abstract constructions (Boas 2010b, p. 58; 2013, pp. 7-8). Furthermore, in his monograph he argues that it is possible to state generalizations at the level of event-frames, although each predicate may show

its own idiosyncrasies within the event-frame it evokes (Boas 2003, p. 212). For instance, it is possible to extract generalizations on the colouring event-frame based on the shared properties of the predicates *colour*, *dye*, *paint* or *stain*, but each of them may present individual specifications (Boas 2003, pp. 203-205). In a similar way, at a certain point in her work, Goldberg recognizes the contribution of individual lexical items (Goldberg 1995, p. 1; 2009, p. 105), although she argues that "an entirely lexically-based, or bottom-up, approach fails to account for the full range of English data" (Goldberg 1995, p. 1).

Another point of divergence between these two approaches is the role of contextual background information as licencing factor. Boas (2003, p. 101; 2011, p. 1275) points out that Goldberg's generalizations are not a satisfactory mechanism to deal with the influence of contextual background information which, according to him, is crucial for the interpretation or licencing of a particular construction. He claims that event-frames integrate both lexical and encyclopedic (real world) information (*on-stage* and *off-stage* information in Boas's 2003 terminology). The former includes grammatically relevant information for the interpretation of an event-frame, such as its prototypical event participants. The latter refers to general world knowledge, which is not linguistically immediately relevant information but may be recruited to give information about a word's usage in specific contexts (Boas 2003, p. 172). As he explains, both types of information are intertwined, however, the amount of on-stage and off-stage information needed for the interpretation and licensing of a particular expression crucially depends on the context (Boas 2005, p. 13). For example, a verb such as *wipe* in its "removal of an undesirable object" sense lexically determines the type of conventionally expected results under normal contextual background conditions, e.g., *He wiped the table clean/dry/smooth* (Boas 2003, pp. 136-137). Conversely, when the result is not conventionally expected, as in *He wiped the table damp/dirty/stained/wet* (Boas 2003, pp. 136-137), more off-stage information is required for the correct interpretation of the sentence, for instance, that the wipe was dirty or wet (Boas 2003, pp. 181-189). Hence, the influence of contextual background information cannot be overlooked, as it is crucial to explain what factors are involved in the licensing of non-prototypical participants or combinations[3].

## 2.2. The "lumper" and "splitter" approaches to the resultative construction

Having outlined the principles of both approaches, I will now summarize their different analyses of the RC. In her seminal work, Goldberg hypothesises that simple clause constructions, i.e., involving basic argument structure, encode as their central senses relevant scenes of human experience (Scene Encoding Hypothesis, Goldberg 1995, pp. 39-43). The RC is one of Goldberg's argument structure constructions that expresses the humanly relevant scene of an instigator causing something to change state, or "X causes Y to become Z", as in *He hammered the metal flat*. Goldberg (1995, p. 189) represents the anatomy of the RC with figure 1[4].

The top line in the boxed diagram in figure 1 captures the semantics (Sem) of the RC (CAUSE-BECOME) and the construction's argument roles (<*agent patient result-goal*>). The bottom line displays the syntactic configuration (Syn) of the construction (SUBJ OBJ $OBL_{AP/PP}$). The middle line is left unspecified, as it is to be filled with the participant roles of the predicate (PRED) that fuses with the construction's argument roles. As previously advanced, Goldberg claims that it is the construction itself that licences or prevents the integration of a particular predicate into it; either by contributing additional roles to the semantic structure of

3 For more details on the influence of contextual background information on the licensing of resultatives, see Boas (2011).

4 It should be noted that figure 1 only covers the structure of the transitive resultative construction. The intransitive resultative, which pairs the syntactic form SUBJ V OBLAP/PP to the semantics "X becomes Y", requires a slightly different representation (see figure 8.3 in Goldberg 1995, p. 191).

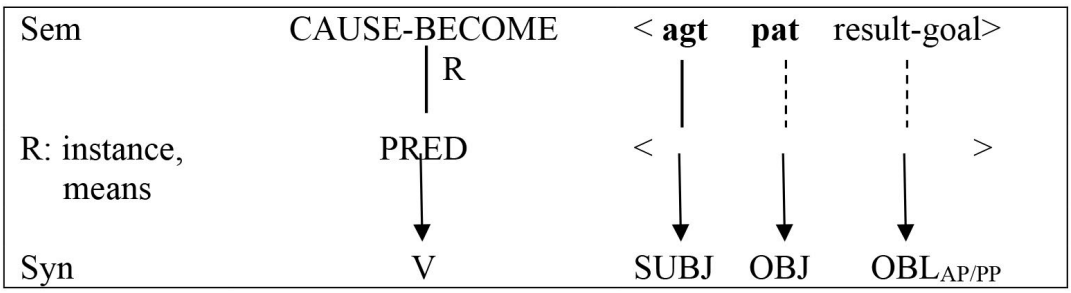



Figure 1. Goldberg's representation of the transitive RC

the predicate, in this case, the *patient* and the *result-goal* (indicated by dashed lines), or by imposing specific constraints, in this case, the construction specifies that the *agent* role must be an independently existing participant role of the predicate (indicated by a solid line). In contrast to this top-down view, Boas places occurrence restrictions on the lexical level. He argues that a verb's ability to occur in a particular construction, such as the RC, is a property that is lexically associated with each individual verb without a construction supplying additional arguments to it (Boas 2003, p. 97).

Apart from that, in order to triangulate sufficient conditions on the appearance of resultatives, Goldberg (1995, pp. 193-198) states other construction-specific semantic constraints which are summarized as follows:

- The subject argument must be an animate instigator, although not necessarily an agent since no volitionality is required (e.g., *She coughed herself sick*).
- The object argument must be patient, i.e., it undergoes a change of state (e.g., *He wiped the table clean*).
- The predicate must encode direct causation, i.e., no intervening period is possible between the action denoted by the verb and the subsequent change of state (e.g., *Harry shot Sam dead*).
- The resultative adjective must designate the endpoint in a scale of functionality (e.g., *He talked himself hoarse*).
- The resultative adjective cannot be deverbal (e.g., **She kicked the door opened/opening*).

To Boas the above constraints are too general to restrict unacceptable examples[5]. In his lexical-semantic approach to the study of resultatives, he provides strong evidence that particular senses of verbs subcategorize for distinct syntactic and semantic classes resultative phrases (see Boas 2003, chapter 5). For instance, *drive*, in its "drive-crazy" sense, only allows resultative phrases denoting a negative mental state, such as *mad/to madness, crazy, to distraction, to suicide*, etc., and it shows a clear preference for adjectival (AP) over prepositional (PP) phrases (Boas 2003, p. 129). He concludes that there is a direct correlation between the collocational restrictions that the verb imposes on its postverbal constituents, and the conventionally expected results associated with the activity denoted by the verb, i.e., off-stage information (Boas 2003, p. 171). Therefore, he claims that it is not possible to predict the distribution of resultatives from abstract constructional constraints since this information is already contained in the predicate's event-frame (Boas 2003, p. 318).

Another point of discrepancy between Goldberg and Boas is their general interpretation of the RC. Goldberg (1995, pp. 81-84) remarks that the RC is to be regarded as a metaphorical extension of the caused-motion construction on the interpretation of change of state as a metaphorical change of location[6]. Contrary to Goldberg's view, Boas (2003, pp. 96-97) advocates for a unified treatment of resultative and caused-motion constructions,

5 See Boas (2011, pp. 1274-1275) for a critical discussion on Goldberg's constraints.

6 See figure 3.6. in Goldberg (1995, p. 88) for a visual representation of the metaphorical relation between the two constructions.

as for him there is no strict difference between the *theme* and *patient* arguments in resultative and caused-motion expressions respectively. Interestingly, Goldberg, in her co-authored paper with Jackendoff (2004), appears to change her mind with regards to the relationship between the resultative and the caused-motion construction, as they incorporate the latter as part of the former in their classification of the family of resultatives, and not the other way around. However, despite this reconsideration, they make a distinction between property resultatives and path resultatives depending on the subevent they describe. In property resultatives, the constructional subevent consists in the object coming to have a property described by the resultative phrase (RP), as in *She watered the plants flat*, whereas in path resultatives, the object traverses a path expressed by the RP, as in *Bill rolled the ball down the hill* (Goldberg & Jackendoff 2004, p. 539).

Finally, the two authors also take a different stance on the mapping between form and meaning. On the account proposed by Goldberg (1995), "the mapping between semantics and syntax is done via constructions, not via lexical entries" (p. 28). As she explains, "certain mappings from semantic roles to grammatical from are only relevant to particular constructions", therefore, "construction-specific linking rules are required" (Goldberg 1995, p. 111). In addition, she claims that constructions inherit the linking specifications of other constructions they are related to (Goldberg 1995, p. 119). For instance, in the case of the resultative construction, she suggests that the syntactic expression of the result-goal role (i.e., $OBL_{AP/PP}$) is inherited from that of the goal role in the caused-motion construction (i.e., $OBL_{pp}$) as a result of their metaphorical relation (Goldberg 1995, pp. 88-89). Later, in Goldberg & Jackendoff (2004), they claim that "the semantic argument structure of the constructional subevent determines the syntactic argument structure of the sentence by general principles of argument linking" (p. 539), that is to say, in property resultatives the RP is linked to an AP and in path resultatives the RP is linked to a PP (Goldberg & Jackendoff 2004, p. 537). Nonetheless, this claim is not a sweeping generalisation, as they recognise that there may be some cases of AP path resultatives, e.g., *He jumped clear of the traffic*, and PP property resultatives, e.g., *The professor talked us into a stupor* (Goldberg & Jackendoff 2004, p. 537). On the contrary, Boas addresses the form-meaning mapping from lexical semantics, although in the same vein as Goldberg, he uses linking rules to regulate the mapping from the prototypical event participants to the syntactic level (Boas 2003, p. 190):

- Prototypical agents are mapped as noun phrases (NPs) to the subject position.
- Prototypical patients are mapped as NPs to the postverbal position.
- Resultative phrases specifying the prototypical end result state of the prototypical agent are linked to immediate post-verbal position.
- Resultative phrases specifying the prototypical end result state of the patient are linked to immediate post-patient position.

Besides the above linking rules, Boas (2003) explains that non-prototypical event participants may be recruited from world knowledge, thus, off-stage information is also relevant in the mapping to syntax.

All in all, despite the aforementioned differences, I believe that Goldberg's and Boas's different perspectives on the RC are compatible and complementary.

## 3. METHODOLOGY

In this paper I have adopted a usage-based methodology consisting in the examination of actual examples of English and Spanish resultatives retrieved from the most recent corpora of Sketch Engine, i.e., the Spanish Web 2018 and the English Web 2021. In particular, my focus has been on the most prototypical pattern in Goldberg & Jackendoff's (2004) family of resultatives: the transitive property resultative construction. This refers to resultatives containing a direct object that comes to have the property expressed by the resultative phrase, as exemplified by *He hammered the*

*metal flat*. In order to reduce the size of the corpus to something more manageable, I have selected three representative predicates from Levin's (1993) cooking (i.e., *bake, boil, cook*) and colouring (i.e., *dye, paint* and *stain*) verb classes and looked for their Spanish equivalents (i.e., *hornear, hervir, cocinar, teñir, pintar* and *manchar*). The search of resultative patterns with the selected predicates in CQL tool of Sketch Engine resulted in a total of 412,497 examples that I manually filtered to keep true cases of transitive property resultatives, 1,173 in total (768 in English and 1,005 in Spanish).

After the corpus compilation, I have first carried out a qualitative statistical analysis of the syntactic and semantic properties of the construction's constituents (i.e., subject, object and result) in order to identify similarities and differences between English and Spanish. We have then explored the results obtained based on the theoretical principles of Goldberg's and Boas's CxGs. In this process, I have relied on the FrameNet lexical database (https://framenet.icsi.berkeley.edu/), developed by Fillmore and his colleagues, to determine the influence of the event-frames of the selected predicates on the properties of each construction element.

## 4. ANALYSIS

### 4.1. The subject

In this section I describe, compare and discuss the syntactic and semantic properties of the first argument of the construction under study. According to the linking specifications of Goldberg (see figure 1) and Boas (2003, p. 190), the agent role in the semantic level is mapped to the subject function and the NP form in the syntactic level. However, the examples in the corpus reveal that the subject can either be syntactically realized by a NP or omitted in both languages. This second option is more frequent in resultatives with verbs of cooking, since the primary communicative function of this construction in the culinary and gastronomic context is to provide instructions for the correct preparation of the food, therefore, these examples show a marked preference for the imperative form which involves the ellipsis of the subject. In contrast, in the examples with verbs of colouring, the subject is more often expressed by a NP. Compare the following corpus examples:

(1) a. Bake the muffins until golden (beantownbaker.com). (Subject = omitted)
b. Hierve el huevo duro aproximadamente 10-12 minutos (manualidadesinfantiles.org). (Subject = omitted)
c. Local architect Albert Frahn painted the interior in burgundy and gray, with glow-in-the-dark murals (redplanet.travel). (Subject = NP)
d. Este tinte de Khadi tiñe el pelo negro (ecco-verde.es). (Subject = NP)

With regards to the semantics of the subject argument, according to Goldberg's constraints only animate instigators are allowed. However, the data extracted from my corpus examples reveal that both types of subjects can occur in resultative expressions. Table 1 shows the frequency rates of animate and inanimate subjects in English and Spanish resultatives[7].

Although the overall values in table 1 indicate a marked preference for animate instigators in both languages, the existence of inanimate subjects in my corpus clearly overturns Goldberg's animate instigator constraint. The problem is that it was postulated based on her and other native speakers' acceptability judgements on a very restricted set of examples containing inanimate instrument subjects, i.e., **The feather tickled her silly*; **The hammer pounded the metal flat* (Goldberg 1995, p. 193), and it was not further triangulated with corpus research. In fact, my corpus confirms that the use of inanimate subjects is not always ungrammatical:

(2) a. *These pots* wouldn't boil the beans soft enough (endtimesreport.com).
b. *The arms of a nebula* painted the sky in pinks and oranges (helovia.com).

7 The tables presented in this article show the relative (#) and absolute (%) frequencies of each variable.

Table 1. Animate and Inanimate subjects

| **Verbs of cooking** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **English** | | | | | | | | |
| **Type of subject** | *bake* | | *boil* | | *cook* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| Animate | 92 | 85.18 | 161 | 89.94 | 314 | 98.74 | 567 | 93.71 |
| Inanimate | 16 | 14.81 | 18 | 10.05 | 4 | 1.25 | 38 | 6.28 |
| **Total** | 108 | 100 | 179 | 100 | 318 | 100 | 605 | 100 |
| **Spanish** | | | | | | | | |
| **Type of subject** | *hornear* | | *hervir* | | *cocinar* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| Animate | 5 | 100 | 9 | 100 | 40 | 100 | 54 | 100 |
| Inanimate | - | - | - | - | - | - | - | - |
| **Total** | 5 | 100 | 9 | 100 | 40 | 100 | 54 | 100 |
| **Verbs of colouring** | | | | | | | | |
| **English** | | | | | | | | |
| **Type of subject** | *dye* | | *paint* | | *stain* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| Animate | 85 | 85 | 159 | 87.36 | 13 | 11.40 | 257 | 64.89 |
| Inanimate | 15 | 15 | 23 | 12.63 | 101 | 88.59 | 139 | 35.10 |
| **Total** | 100 | 100 | 182 | 100 | 114 | 100 | 396 | 100 |
| **Spanish** | | | | | | | | |
| **Type of subject** | *teñir* | | *pintar* | | *manchar* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| Animate | 304 | 83.51 | 459 | 100 | 42 | 49.41 | 805 | 88.65 |
| Inanimate | 60 | 16.48 | - | - | 43 | 50.58 | 103 | 11.34 |
| **Total** | 364 | 100 | 459 | 100 | 85 | 100 | 908 | 100 |

c. *La henna* tiñe la piel de un color cobrizo o amarronado (republica.com).
d. *La sangre* manchará la nieve de rojo (hombrecillosverdes.com).

Notwithstanding the examples in 2, we observe in table 1 that Spanish resultatives with verbs of cooking and *pintar* do not allow the use of inanimate subjects. According to a personal query to the *Fundación del Español Urgente* (FundéuRAE) (https://www.fundeu.es/), in Spanish resultatives from the culinary and gastronomic world the subject is typically animate. Nevertheless, they clarify that the use of an inanimate instrument subject could be acceptable in a figurative sense, although some native speakers might find it unacceptable. The *Nueva gramática de la lengua española* (NGLE) (https://www.rae.es/gramática/) explains that the notions of "instrument" and "agent" are closely linked, so it is possible to use inanimate nouns as agents of verbal actions, as in *La llave abrió la puerta*. However, it does not mean that the instrument performs the action by itself, rather

we assume the existence of a person which performs the action but that is not mentioned, i.e., *Alguien abrió la puerta con la llave*. The NGLE further explains that the alternation between subjects and instruments is limited to expressions in which the verb describes the specific function of the instrument, for example a key can open or close a door. Nonetheless, in situations that require skill, intention, will and other higher attributes of individuals, instrumental nouns cannot be used as subjects. Since verbs of cooking require intentionality in their execution, it would be rare to use the subject-instrument alternation because cooking instruments are auxiliary elements with which someone cooks, but do not possess the capacity to perform it. Thus, in Spanish resultatives of this type it would be grammatically more acceptable to express the instrument by means of a prepositional phrase introduced by the preposition *con*. Compare the following translations of example 2a:

(3) a. ?Estas ollas no hervirán las judías lo suficientemente suaves.
b. Las judías no se hervirán lo suficientemente suaves con estas ollas.

In resultatives of chromatic change, it is interesting that inanimate subjects can be perfectly used with the predicates *teñir* (2c) and *manchar* (2d) while in the case of *pintar*, which belongs to the same verb class in Levin's (1993) classification, it is ungrammatical, c.f. **La henna* pinta *la piel de un colour cobrizo o amarronado; *La sangre pinta la nieve de rojo*. Moreover, its English equivalent *paint* allows the use of inanimate subjects, albeit in a figurative sense (2b). Were we to translate example 2b into Spanish, we would have to use the predicates *teñir* o *manchar*, c.f. *Los brazos de una nebulosa *pintaron/tiñeron/mancharon el cielo de rosas y naranjas.*

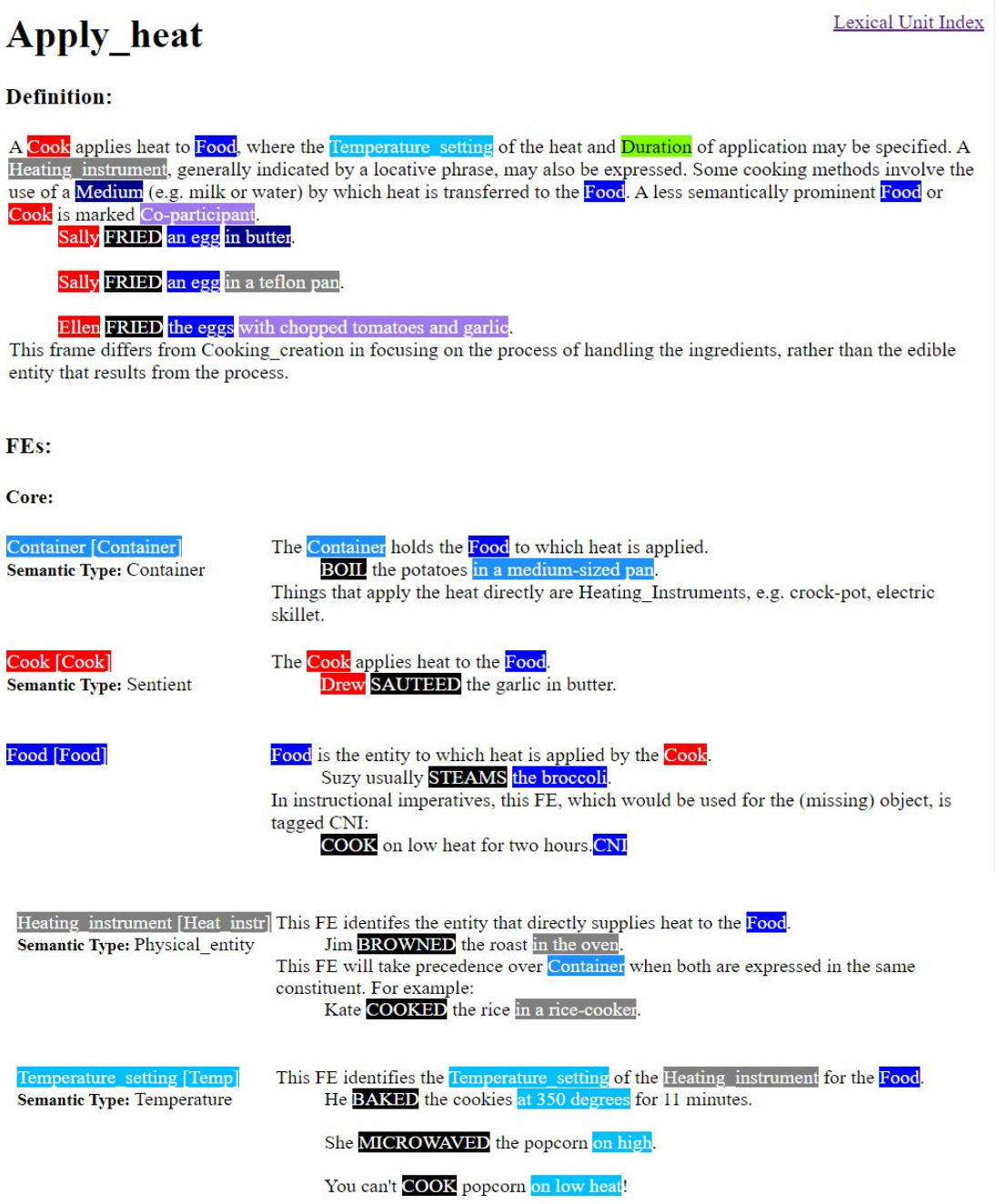
Since Goldberg's animate instigator constraint does not allow us to predict the Spanish verbal idiosyncrasies described above, perhaps an analysis of the frame-semantic information of each individual verb, as proposed by Boas (2003), would be more revealing. As explained in section 2.1., the author claims that the event-frame evoked by the predicate contains lexical information about its prototypical participants. According to FrameNet, the verbs of cooking under study evoke the Apply_heat frame (see image 1).

FrameNet classifies event participants or frame elements (FE) in terms of how conceptually central they are to a particular event-frame. Core FEs are conceptually necessary participants for the event depicted by the frame, whereas non-core FEs specify more general circumstances. This means that while core FEs are specific to a particular frame, non-core FEs may appear as part of that frame but it can also occur in other frames.

In the particular case of the Apply_heat frame, we observe in the core FEs that the Cook is the prototypical subject participant, however, note that the Heating_Instrument FE can also supply heat to the food. Hence, it is no surprise that we find resultative expressions such as 2a with the Heating_Instrument as subject, although their primary communicative function is not to provide instructions on the preparation of a dish, as in 1a and 1b, but to describe the capacity of the Heating_Instrument to cook the food to the desired state. This suggests that the Heating_Instrument FE can occur as subject of resultative expressions under very specific contextual conditions.

With regards to the verbs of colouring, interestingly, FrameNet reveals that predicates of the same verb class evoke different event-frames:

As indicated in the definition of the Processing_materials frame, the main difference with the Filling frame is the degree of penetration of the colouring substance into the patient object. While in the Filling frame, the object is simply covered by a substance of a different colour, the Processing_materials frame emphasises the idea of altering, rather than just covering, the inherent colour of the object by means of a chemical or physical alternant. Thus, in the Filling frame the change of colour is more superficial than in the Processing_materials frame and, for this reason, FrameNet describes the former as a caused-motion event where an actor (Agent FE) or an event (Cause



# Apply_heat

Lexical Unit Index

**Definition:**

A Cook applies heat to Food, where the Temperature_setting of the heat and Duration of application may be specified. A Heating_instrument, generally indicated by a locative phrase, may also be expressed. Some cooking methods involve the use of a Medium (e.g. milk or water) by which heat is transferred to the Food. A less semantically prominent Food or Cook is marked Co-participant.
Sally FRIED an egg in butter.

Sally FRIED an egg in a teflon pan.

Ellen FRIED the eggs with chopped tomatoes and garlic.
This frame differs from Cooking_creation in focusing on the process of handling the ingredients, rather than the edible entity that results from the process.

**FEs:**

**Core:**

Container [Container]
**Semantic Type:** Container
The Container holds the Food to which heat is applied.
BOIL the potatoes in a medium-sized pan.
Things that apply the heat directly are Heating_Instruments, e.g. crock-pot, electric skillet.

Cook [Cook]
**Semantic Type:** Sentient
The Cook applies heat to the Food.
Drew SAUTEED the garlic in butter.

Food [Food]
Food is the entity to which heat is applied by the Cook.
Suzy usually STEAMS the broccoli.
In instructional imperatives, this FE, which would be used for the (missing) object, is tagged CNI:
COOK on low heat for two hours.CNI

Heating_instrument [Heat_instr]
**Semantic Type:** Physical_entity
This FE identifes the entity that directly supplies heat to the Food.
Jim BROWNED the roast in the oven.
This FE will take precedence over Container when both are expressed in the same constituent. For example:
Kate COOKED the rice in a rice-cooker.

Temperature_setting [Temp]
**Semantic Type:** Temperature
This FE identifies the Temperature_setting of the Heating_instrument for the Food.
He BAKED the cookies at 350 degrees for 11 minutes.

She MICROWAVED the popcorn on high.

You can't COOK popcorn on low heat!

Image 1. Apply_heat frame evoked by English and Spanish verbs of cooking

FE), causes the colouring substance (THEME FE) to change location covering the area of an object (GOAL FE), as in *Lionel Hutz* [AGENT FE] *coated the wall* [GOAL FE] *with paint* [THEME FE].

Note that among the core FEs of the FILLING frame, only the AGENT (animate) can act as the instigator of the filling action, whereas in the PROCESSING_MATERIALS frame either the AGENT (animate) and the ALTERNANT (inanimate) FEs can act as instigators. This may explain the collocational restriction of the verb *pintar* with regards to animate subjects in Spanish RCs. In English, as previously mentioned, it is possible to find inanimate subjects with *paint* in metaphorical resultative expressions, but as evidenced in table 1 there is still a greater inclination towards animate subjects (87.36% animate vs. 12.63% inanimate). Interestingly,

# Filling

Lexical Unit Index

**Definition:**

These are words relating to filling containers and covering areas with some thing, things or substance, the Theme. The area or container can appear as the direct object with all these verbs, and is designated Goal because it is the goal of motion of the Theme. Corresponding to its nuclear argument status, it is also affected in some crucial way, unlike goals in other frames.

Lionel Hutz COATED the wall with paint.

**FEs:**

**Core:**

| | |
|---|---|
| Agent [Agt]<br>**Semantic Type:** Sentient<br>**Excludes:** Cause | The Agent is the actor who instigates the filling. |
| Cause [cau] | An event which brings about the filling of the Goal. |
| Goal [Goal]<br>**Semantic Type:** Goal | The Goal is the area or container being filled. Goal is generally the NP Object in this frame. |
| Theme [Thm]<br>**Semantic Type:** Physical_object | The Theme is the physical object or substance which changes location.<br>Rev. Lovejoy carefully BRUSHED the rolls with butter. |

Image 2. FrameNet's description of the FILLING frame evoked by *paint* and *pintar*

# Processing_materials

Lexical Unit Index

**Definition:**

An Agent alters some Material in some useful way by means of some chemical or physical Alterant. Typically, this involves placing a reagent in contact with the Material, or applying heat, pressure, etc. Often a specific Agent and/or Result is mentioned. The Alterant is often incorporated in the target, as in tin.v, galvanize. (The Preserving frame is a special case of Processing_materials, in which the Material is immersed in the Alterant for the Purpose of preventing decay.) Processing_materials is distinguished from Filling in that the Material in Processing_materials is fundamentally altered (often chemically), rather than simply being covered with a different substance.

Native Americans DYED textiles with dyes made from cedar strips.

Watering cans are often GALVANIZED to prevent rust.

**FEs:**

**Core:**

| | |
|---|---|
| Agent []<br>**Semantic Type:** Sentient | The Agent is a person who applies the Process to the Material. |
| Alterant [Alt] | The Alterant causes a change in the Material. |
| Material [Mat] | The Material is altered by the Agent in some useful way.<br>Stu TREATED the lumber with magical waterproofing fairydust. |

Image 3. FrameNet's description of the PROCESSING_MATERIALS frame evoked by *dye, stain* and their Spanish equivalents

we can observe a similar tendency in English resultatives with *dye* (85% animate vs. 15% inanimate), but this is not the case for the examples found with *stain* which show a higher frequency rate of inanimate subjects (11.40% animate vs. 88.59% inanimate) despite the fact that both verbs evoke the same event-frame, i.e. PROCESSING_MATERIALS. Therefore, the selection of animate or inanimate subjects cannot be attributed to the event-frame these verbs evoke, but to our general world knowledge associated with the type of processing event they describe: while the process of dyeing typically involves the prior preparation of a chemical alternant by a person, in the process of staining there is already a colour-impregnated object that has not normally been prepared beforehand with the intention of changing the colour of something. In fact, English and Spanish speakers use the verbs *stain* and *manchar* when they consider that the object is spoiled after losing its original colour, therefore, the action is generally performed by an inanimate subject or less frequently by an animate subject unintentionally[8].

This brings us to another aspect worthy of examination, which is the volitionality or intention of animate subjects in the performance of the action denoted by the verb. After stating the animate instigator constraint, Goldberg (1995) adds that the "animate argument is not necessarily an agent, since no volitionality is required", as in *She coughed herself sick* or *She slept herself hoarse* (p. 193). However, actions often have a purpose that the agent intends to accomplish. Consider the following examples:

(4) a. Boil the beans until soft and mash them into a soft paste *for your baby's easy consumption and digestion* [PURPOSE] (boldsky.com).
b. Hervir los huevos duros *para tomar de ellos para el personal médico sólo las yemas de huevo* [PURPOSE] (mymedinform.com).
c. Paint the heads black *to hide them better* [PURPOSE] (dannix.net).
d. Pinté las paredes rosas *por ti, por si regresabas* [PURPOSE] (foroactivo.com).

In Washio's (1997) classification, these examples would be considered "weak resultatives" because the activities these verbs denote are done for certain specific purposes and, consequently, it is possible to predict from the semantics of the verb what kind of state the object will come to have. That said, contrary to Goldberg's generalization, we might think that volitionality is always required in resultatives with verbs of cooking and colouring because the subject performs the action denoted by the verb intentionally to change the state of the object for a specific purpose. Nonetheless, according to FrameNet, the result of the processing action in the PROCESSING_MATERIALS frame may be intended or not. In other words, in resultative expressions with *dye* and *stain* and their Spanish equivalents, the subject may alter the colour of the object intentionally or accidentally, causing a desired or undesirable state. Consider the following examples:

(5) a. Someone I worked with [...] [accidentally] dyed a streak of grey in his hair (bash.org).
b. Teñí [accidentalmente] el uniforme verde (potterfics.com).
c. The researchers [accidentally] stained the cells green (mit.edu).
d. Me he manchado [accidentalmente] la mano de color azul (rankia.com.ar).

In the examples in 5, we cannot predict the intentionality of the subject simply by looking at the semantics of the verb. Only by extending the context can we know whether the subject intended to change the object's colour for a particular purpose or not:

(6) a. Someone I worked with [...] dyed a streak of grey in his hair *to look*

8 In fact, one reviewer suggested that the predicate *stain* and its Spanish equivalent *manchar* could be semantically classified as a "degradation" verb, such as *corrupt* (*corromper*) or *spoil* (*estropear*). Although in this study I stick to Levin's (1993) classification of English verbs, in which *stain* is considered a "verb of colouring", this reviewer's observation supports my claim about the described encyclopedic information associated with this predicate, which can be considered a crucial factor for the selection of inanimate subjects.

*"distinguished"* [Intentional] (bash.org).

b. Teñí el uniforme verde *para que parezca de Slytheirn* [Intentional] (potterfics.com).

c. *To confirm that the iPS cells had become dopamine-producing neurons* [Intentional], the researchers stained the cells green (mit.edu).

d. Me he manchado la mano de color azul. *El bolígrafo que compré en el chino ha reventado* [Unintentional] (rankia.com.ar).

Interestingly, if we remove the purpose in the examples in 4 with cooking verbs, *paint* and *pintar*, we cannot say that the action has been accidentally performed:

(7) a. [*Accidentally] boil the beans until soft and mash them into a soft paste (boldsky.com).

b. Hervir [*accidentalmente] los huevos duros (mymedinform.com).

c. [*Accidentally] paint the heads black (dannix.net).

d. Pinté [*accidentalmente] las paredes rosas (foroactivo.com).

Considering all the examples, we could argue that having a purpose or not does not distinguish type of actions. In fact, the PURPOSE is a non-core FE that occurs in all the frames evoked by the predicates under study, i.e., the APPLY_HEAT, FILLING and PROCESSING_MATERIALS frames. Furthermore, as a non-core FE it is not a nuclear argument of the event described, therefore it is often syntactically unexpressed. For this reason, it is not possible to predict the volitionality of the subject by the mere presence of the PURPOSE FE in the event-frame evoked. Instead, what determines the intentionality in the execution of the verbal action in the examples above is the encyclopedic or off-stage information associated with the event-frame of that predicate, together with the context or circumstances in which it is performed. In other words, thanks to our general world knowledge, we know that intentionality is always required when cooking or painting an object, but that a material can be dyed or stained intentionally or accidentally depending on the circumstances.

After this analysis, we can conclude that the semantic information of the predicate allows us to arrive at more accurate predictions than Goldberg's animate instigator generalisation about the type of event participants that can act as subject and the intentionality in the execution of the action, however, we note that the contextual background information associated with an event-frame plays a very important role.

## 4.2. The object

The object is the second participant in the change of state event that is affected by the activity of the subject. It is syntactically realized by a NP, however my corpus shows a wide range of words that can function as objects. Table 2 displays the count of tokens (i.e., total number of words acting as objects) and types (i.e., total number of *different* words acting as objects) and the type-token ratio (TTR) in the resultative expressions with each predicate:

Table 2. Type-token count of objects and type-token ratio

| **Verbs of cooking** | | | |
|---|---|---|---|
| **English** | | | |
| **Verb** | **Type** | **Token** | **TTR** |
| *bake* | 74 | 108 | 68.51% |
| *boil* | 76 | 179 | 42.45% |
| *cook* | 131 | 318 | 41.19% |
| **Spanish** | | | |
| **Verb** | **Type** | **Token** | **TTR** |
| *hornear* | 5 | 5 | 100% |
| *hervir* | 1 | 9 | 11.11% |
| *cocinar* | 3 | 40 | 7.5% |
| **Verbs of colouring** | | | |
| **English** | | | |
| **Verb** | **Type** | **Token** | **TTR** |
| *dye* | 78 | 126 | 61.90% |
| *paint* | 108 | 182 | 59.34% |
| *stain* | 62 | 114 | 54.38% |
| **Spanish** | | | |
| **Verb** | **Type** | **Token** | **TTR** |
| *teñir* | 91 | 364 | 25% |
| *pintar* | 122 | 459 | 26.57% |
| *manchar* | 46 | 85 | 35.93% |

The TTR is calculated by dividing the total number of types by the total number of tokens. It shows the degree of lexical variation or diversity in the words that can act as object, i.e., a high TTR indicates a greater variety of word-forms, while a low TTR tells us that there is less diversity and more repetition of word-forms. *A priori* we could think that a low TTR is an indicator of the existence of restrictions with respect to the object, however, in this case the TTR does not help us to compare both languages because the number of corpus examples is not the same for each predicate. Even in that case, the degree of lexical variation would not be sufficient to explain why not all words in a language can function as patients in a particular resultative expression. For instance, it is acceptable to use words such as *hair, beard* or *eyebrows* as objects in resultatives describing a chromatic change, as in *He dyed his hair/beard/eyebrows golden brown*; however, they cannot occur in resultatives from the culinary and gastronomic world, e.g., **He baked his hair/beard/eyebrows golden brown*. Furthermore, it would even sound "odd" to native speakers to use these words as objects in resultatives with other verbs of colouring despite being closely related in meaning, e.g., *?He painted his hair/beard/eyebrows golden brown; ?He stained his hair/beard/eyebrows golden brown.*

Among her generalizations on the resultative construction, Goldberg asserted that the object must "potentially undergo a change of state as a result of the action denoted by the verb" (1995, p. 188), thus already implying that it is the type of action described by the verb that determines which words can act as patient in a resultative expression. However, this constraint is too broad to predict the specific collocational dependencies of a particular predicate that differentiate it from others of the same semantic class, as is the case with *paint* and *stain* in the examples above.

The idea that "certain verbs semantically subcategorize for specific types of arguments" was originally stated in Boas's monograph (2003, p. 204). As he explains, event-frames contain on-stage information about their prototypical event-participants. For instance, according to FrameNet, the prototypical object in the APPLY_HEAT frame is FOOD, in the FILLING frame is a SURFACE or an object exhibiting a surface and in the PROCESSING_MATERIAL frame is a MATERIAL. However, as he points out, individual predicates specify the information of such event-frames, so they may exhibit their own collocational idiosyncrasies. For instance, as we have previously seen, *dye* subcategorizes for a specific type of material, typically HAIR or FABRIC. The following graphs show the types of objects appearing with each predicate in the corpus examples ordered by categories, together with their frequency of occurrence:

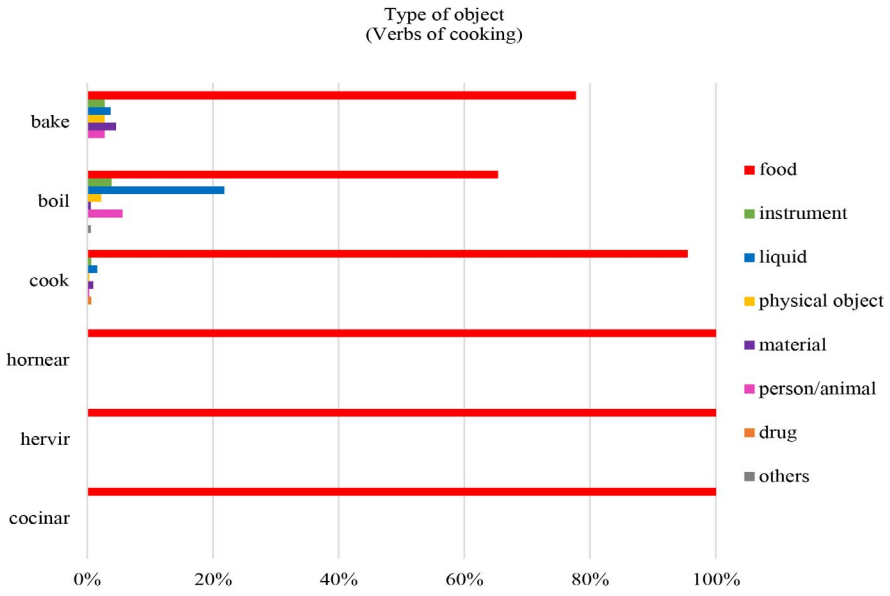



Figure 2. Types of object occurring in resultative expressions with verbs of cooking

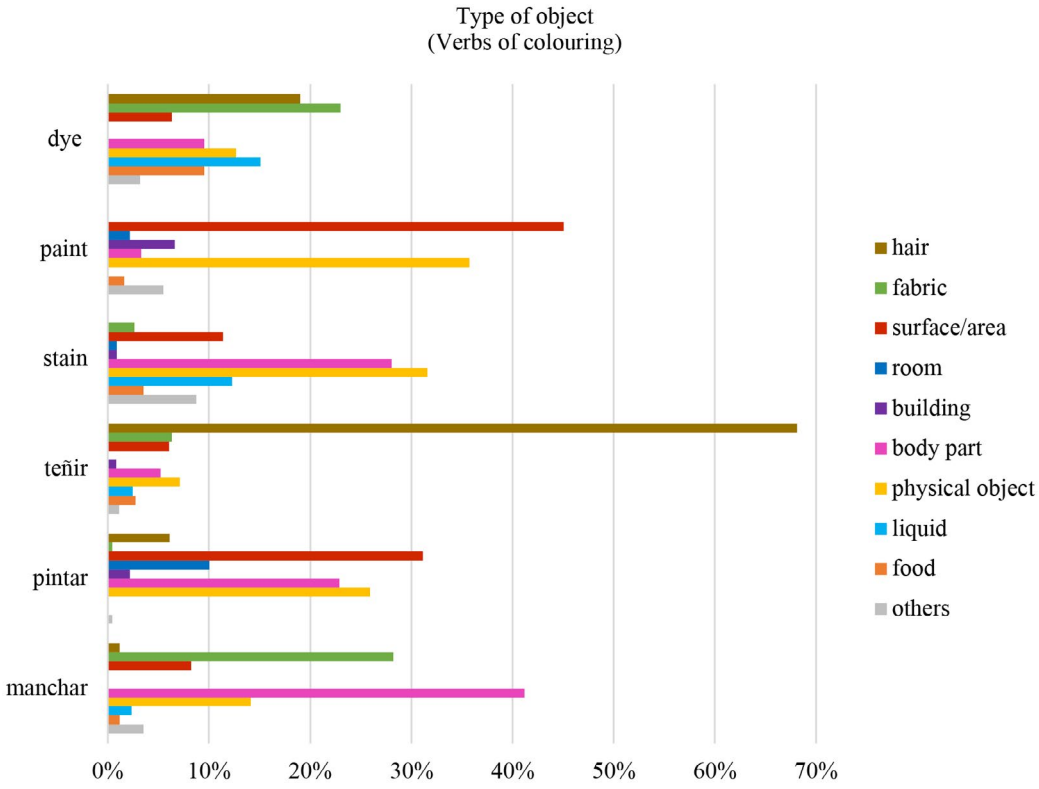



Figure 3. Types of object occurring in resultative expressions with verbs of colouring

In general terms, we observe no major differences between the two languages with regards to the prototypical type of patient. Since FOOD is the prototypical object of the APPLY_HEAT frame, it is no surprise that it has the higher frequency rate in figure 2. Nonetheless, in English resultatives with verbs of cooking it is also possible to find off-stage non-prototypical patients recruited from world knowledge associated with the APPLY_HEAT frame. Consider the following examples:

(8) a. Long after even our sun has boiled *the seas* [liquid] dry (gawker.com).
b. Someone spilled dreadful water onto one of Alan's copies and I can still see all of us registering the little stove in John Levy's apartment to bake *the book* [physical object] dry and return our party of wellwishers (longhousepoetry.com).
c. The steel plate that the finished tile can be seen on was placed over the mouth of the smelter to bake *the clay* [material] dry (warehamforge.ca).
d. He had seen photographic evidence that interrogations include the use of drowning, suffocation, rape and even boiling *the victims* [person] to death (earthrainbownetwork.com).

Note that all the previous examples are ungrammatical if we literally translate them into Spanish. For instance, expressions such as **Hervir los mares secos* or **Hornear la arcilla seca* are grammatically unacceptable, however, examples in 9 in which the patient is the prototypical object of the APPLY_HEAT frame, i.e., FOOD, are perfectly acceptable.

(9) a. Horneó *la rosca* [food] esponjosa y la cubrió de un glaseado hecho con azúcar (foroactivo.com).
b. Este tipo de piedra [...] te ayudará a hornear *las pizzas* [food] crujientes (losutensiliosdelchef.com).
c. El recuerdo que tengo de los judíos es de sus panaderías, donde horneaban *unas galletas* [food] duras como hormigón (diariodecuba.com).

d. Hervimos *los huevos* [food] duros y asamos el pimiento y la berenjena (miscosillasdecocina.com).

The reason why the use of non-prototypical patients of the APPLY_HEAT frame is ungrammatical in Spanish is due to the fact that, as mentioned above, the resultative construction in Spanish is restricted to very specific contexts and uses. According to the NGLE, the resultative interpretation is favoured in contexts where the resulting states express natural consequences of the actions that are carried out. Although the concept of "natural consequences" is too vague, I understand from the previous statement that this natural consequence is derived from the event-frame evoked by the main verb, which in the case of verbs of cooking is the APPLY_HEAT frame described as "a cook applies heat to the food" (FrameNet). Therefore, examples in 8 suggest that English speakers map the event described in the APPLY_HEAT frame onto any situation in which heat is applied to an object other than food. To put it another way, English speakers describe the heating process in the examples in 8 metaphorically as a cook applying heat to food. In contrast, since Spanish speakers only use the RC to express the natural consequences of the event that the main verb evokes, the event described by the APPLY_HEAT frame can only be used literally to describe the heating process in the culinary and gastronomic context. Having said that, we can conclude that the use of non-prototypical objects in English resultatives of this type is due to the metaphorical use of this construction and the subsequent mapping of the APPLY_HEAT evoked by the main predicate onto other similar events.

With regards to resultatives of chromatic change, figure 3 reveals no significant differences between the two languages with respect to the type of object that can act as patient of a given predicate in the RC. This time, resultatives with verbs of colouring in English and Spanish can occur with the prototypical patients of the PROCESSING_MATERIALS and FILLING frames they evoke, as we can alter the colour of virtually any type of material or surface. The only point of divergence relies on their frequency of occurrence. For instance, the verb *dye* and its equivalent *teñir* collocate with the same type of objects in both languages, however the frequency rate of HAIR in Spanish is striking compared to English. Similarly, the high frequency of occurrence of FABRIC with the verb *manchar* compared to its English equivalent *stain* is noteworthy. In the case of *paint* and *pintar*, BODY PARTS also have a higher frequency rate in Spanish. However, an important observation should be made here. As previously noted in section 4.1., the degree of penetration of the colouring substance is more superficial in the FILLING frame than in the PROCESSING_MATERIALS frame. Therefore, all the objects occurring with *paint* and *pintar* could be grouped within the category of SURFACE/AREA under the interpretation that the object only changes the colour of its surface, on the other hand, when dye and stain and their Spanish equivalents collocate with a SURFACE/AREA, it implies the penetration of the colouring substance into it. Compare the following examples:

(10) a. We had painted *those cabinets* [physical object] white too (confessionsofaserialdiyer.com).
b. Pintamos *los cajones* [physical object] de negro con un esmalte en aerosol (hogarmania.com).
c. He therefore gathered 500 members of his clan and committed with them mass suicide, dyeing *the ground* [surface] in red and black with their blood (wikipedia.org).
d. La gran cantidad de molibdeno del suelo tiene su origen en la pizarra, abundante en la zona, que junto con el hierro que tiñe *los suelos* [surface] de rojo, hacen de sus vinos una gran explosión mineral (bodeboca.com).
e. Two hundred miles to the north and west, aging eighteen-wheelers pound through an urban bypass tunnel, staining *the walls* [surface] black with diesel fumes (ourenvironment.berkeley.edu).
f. Amberes es famoso por sus "cafés marrones", donde siglos de humo de los cigarrillos han manchado *las paredes* [surface] de estos históricos cafés de color ocre (amberes.org.es).

As can be seen in the examples above, the object is affected differently depending on the type of chromatic change described by the selected colouring verbs. For this reason, we can predict the specific type of object that may collocate with a given predicate by carefully examining the event-frame they evoke. However, the information offered by FrameNet does not indicate the cause of the different frequency rates of the types of objects found in English and Spanish, so we must again attribute it to the different contexts or situations in which speakers of both languages make use of the RC.

### 4.3. The resultative phrase

The resultative phrase conveys the most important information of a resultative sentence, as it specifies the particular outcome of the activity denoted by the verb, or in other words, the resulting state of the object participant. According to Goldberg (1995, p. 189), it can be syntactically realized by an AP or a PP[9] (see figure 1). In Goldberg & Jackendoff (2004, p. 539) they explain that the constructional subevent determines the syntactic argument structure of the sentence by general principles of argument linking, so in property resultatives the RP is typically linked to an AP. However, my corpus contains examples of property resultatives whose result is expressed by a PP, and even in some cases they are more frequent than adjectival property resultatives:

An important observation, already noted in Rodríguez Arrizabalaga (1999, pp. 411-412), should be made regarding Spanish resultatives with verbs of cooking. According to the author, the main difference with respect to English lies in the relationship between the primary and secondary predications: while in English the two predications are lexically fused by the mediation of single verb; in Spanish the secondary predication is syntactically related to the primary predication by means of a subordinate clause (SUBR) introduced by the conjunctive locution *hasta que*, which requires the mediation of a second verb, usually *estar* or *quedar(se)*. Compare the following examples:

(11) a. Bake the potatoes until soft (toppers-place.com). (Result-goal = PP)
b. Hornea la batata hasta que esté/(se) quede blanda (recetasgratis.net). (Result-goal = SUBR)

Although semantically both examples convey the notion of change of state, 11b cannot be formally considered as a genuine RC because there is no fusion of verbal and attributive predication. This is not to say, however, that there are no cases of authentic RCs with cooking verbs in Spanish, although they are only of the adjectival type and occur much less frequently than in English.

(12) a. Consejos para hornear la masa de pizza crujiente (menusview.com). (Result-goal = AP)
b. Hierve el huevo duro aproximadamente 10-12 minutos (manualidadesinfantiles.org). (Result-goal = AP)
c. Usa una cazuela honda, ya que en esta misma cocinaremos el arroz caldoso (recetaarrozcaldoso.com). (Result-goal = AP)

In addition, these expressions are often so conventionalised that the combination of the object with the resultative phrase forms a collocation that is frequently used outside the RC to name the dish:

(13) a. Comimos *huevos duros* y almendras en un parque que está cerca de la casa (storysta.com)
b. Pedimos un *arroz caldoso* sin haberlo reservado con antelación y aun así, nos lo hicieron y estaba buenísimo (eltenedor.es).

As already mentioned in section 4.1., the primary communicative function of resultative sentences in the culinary and gastronomic context is to instruct the reader on how food should be cooked, especially, for

9 Other linguists such as Lee (1995, p. 57) include NPs as a third type of resultative phrase, e.g., *She painted the barn a weird shade of red; They ran their sneakers a dingy shade of grey.*

Table 3. Adjectival and prepositional resultative phrases

| **Verbs of cooking** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **English** | | | | | | | | |
| **Type of RP** | *bake* | | *boil* | | *cook* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| AP | 23 | 21.29 | 62 | 34.63 | 73 | 22.95 | 158 | 26.11 |
| PP | 85 | 78.70 | 117 | 65.36 | 245 | 77.04 | 447 | 73.88 |
| **Total** | 108 | 100 | 179 | 100 | 318 | 100 | 605 | 100 |
| **Spanish** | | | | | | | | |
| **Type of RP** | *hornear* | | *hervir* | | *cocinar* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| AP | 5 | 100 | 9 | 100 | 40 | 100 | 54 | 100 |
| PP | - | - | - | - | - | - | - | - |
| **Total** | 5 | 100 | 9 | 100 | 40 | 100 | 54 | 100 |
| **Verbs of colouring** | | | | | | | | |
| **English** | | | | | | | | |
| **Type of RP** | *dye* | | *paint* | | *stain* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| AP | 100 | 79.36 | 123 | 67.58 | 108 | 94.73 | 331 | 78.43 |
| PP | 26 | 20.63 | 59 | 32.41 | 6 | 5.26 | 91 | 21.56 |
| **Total** | 126 | 100 | 182 | 100 | 114 | 100 | 422 | 100 |
| **Spanish** | | | | | | | | |
| **Type of RP** | *teñir* | | *pintar* | | *manchar* | | **Total** | |
| | # | % | # | % | # | % | # | % |
| AP | 73 | 26.73 | 143 | 47.19 | - | - | 216 | 30.90 |
| PP | 200 | 73.26 | 160 | 52.80 | 85 | 100 | 445 | 67.32 |
| **Total** | 273 | 100 | 303 | 100 | 85 | 100 | 661 | 100 |

how long it should be cooked. Thanks to our world knowledge, we understand that for food to achieve the state described in the RP, the action denoted by the verb must take some time. Hence, in this type of expressions, the RP does not only contain information about the outcome of the action denoted by the verb, but also it indicates the requisite duration of the activity to prevent the food from being under- or over- cooked. It would then be possible to paraphrase the adjectival RP in the examples in 12 by a temporal subordinate clause of the type in 11b: *Consejos para hornear la masa de pizza [hasta que esté/(se) quede] crujiente; Hierve el huevo [hasta que esté/(se) quede] duro; Cocinaremos el arroz [hasta que esté/(se) quede] caldoso*. This leads us to suggest that the syntactic form of the RP in resultatives with verbs of cooking is the result of a chaining of ellipses motivated by the metonymy SALIENT PART OF FORM FOR WHOLE FORM (Barcelona 2008).

(14) a. SUB OBJ **OBL**$_{AP}$ (e.g., *Hierve el huevo duro*; *Boil the egg hard*)
Metonymy: SALIENT PART OF FORM FOR WHOLE FORM

b. SUB OBJ **OBL$_{PP}$** (e.g., **Hierve el huevo hasta duro*; *Boil the egg until hard*)
Metonymy: SALIENT PART OF FORM FOR WHOLE FORM

c. SUB OBJ **SUBR** (e.g., *Hierve el huevo hasta que esté/(se) quede duro*; *Boil the egg until it becomes hard*)

For instance, the adjective *hard* in the example *Boil the eggs hard*, is the salient part of its prepositional phrase *until hard*, which is in turn the salient part of the temporal subordinate clause *until it becomes hard*. In other words, the adjectival form of the RP derives from the omission of the preposition in its prepositional variant, which in turn comes from the omission of the second predicate in its subordinate clause paraphrase. This is possible in English resultatives thanks to the double function of *until* as a preposition and a conjunction. In Spanish, however, there is no intermediate step between the subordinate clause and the AP, because for the preposition *hasta* to express the end of the duration of an activity it needs to be followed by an infinitive, e.g., *hasta endurecerse*, or by the conjunction *que*, in which case requires the mediation of a second predicate to be grammatically correct, e.g., *hasta que quede duro*.

This metonymic chaining of syntactic ellipses also applies to resultatives with verbs of colouring in English, e.g., *He dyed his hair blond* (AP) > *He died his hair in blond* (PP) > *?He dyed his hair until it became blond* (SUBR), and Spanish e.g., *Se tiñó el pelo rubio* (AP) > *Se tiñó el pelo de rubio* (PP) > *?Se tiñó el pelo hasta que quedó rubio* (SUBR). However, in this type of resultatives, the use of a temporal subordinate clause may sound strange to native speakers of both languages because the main function of the RP in resultatives with verbs of colouring is not to inform about the duration of the activity, but to describe the activity's outcome[10]. Note that, unlike the Spanish resultatives with cooking verbs, in this case the use of the prepositional variant is not only grammatically correct, but also more frequent than the adjectival realization, as the data in table 3 shows (total value AP = 30.90% vs. PP = 67.32%). Furthermore, we even notice that the verb *manchar* prevents the use of the adjectival variant of the RP, in contrast, its English counterpart occurs with almost absolute frequency with an AP. Compare the following corpus examples and their translations into Spanish:

(15) a. La sangre corre calle abajo, manchando las baldosas de rojo (foroactivo.com). (RP = AP)
(c.f. *La sangre corre calle abajo, manchando las baldosas *rojo*) (RP = PP)
b. The blood from her stab wound was running down her legs staining the ground *red* beneath her (adult-fanfiction.org). (RP = AP)
(c.f. The blood from her stab wound was running down her legs staining the ground *in red* beneath her) (RP = PP)

Apart from that, I have also observed verbal idiosyncrasies with regards to the type of preposition used in PPs. For instance, *paint* only allows the use of the preposition *in* (16a), whereas *dye* and *stain* can occur with other prepositions such as *of* or *into* (16b and 16c). In contrast, its Spanish equivalent *pintar* is not restricted to a single preposition, as it can occur with *en* and *de* indistinctively (16d).

(16) a. Empress had painted the vehicle *in* gold for Her Majesty's Golden Jubilee (showbus.com).
(c.f. *Empress had painted the vehicle *of* gold for Her Majesty's Golden Jubilee)
b. Hailey couldn't resist smirking at her impish friend, who'd recently dyed a streak *of* ruby red in her long blond hair against her mother's wishes (everyfreechance.com).
(c.f. Hailey couldn't resist smirking at her impish friend, who'd recently dyed a streak *in* ruby red)
c. Red drops of blood beaded to the surface, staining the flesh *into* purple (newsgarden.org).

10 See chapter 5.4. in Boas (2003) for an extended analysis of the different communicative functions of resultatives.

(c.f. Red drops of blood beaded to the surface, staining the flesh *in* purple)

d. Cuando hay crisis las mujeres se pintan los labios *de* rojo (albeos.org).
(c.f. Cuando hay crisis las mujeres se pintan los labios *en* rojo)

As hinted at earlier, since all the examples analysed are property resultatives according to Goldberg and Jackendoff's (2004) classification, we can conclude that their generalisation based on the constructional subevent is not sufficient to explain either the radically opposite inclinations in the use of the adjectival or the prepositional form of the RP in both languages or the idiosyncratic collocational restrictions exhibited by certain predicates. However, a detailed examination of the predicates' event-frames, as Boas supports, does not fully explain these issues either. The information contained in the predicate's event-frames may help to predict the type of preposition used to introduce the result in prepositional form of the RP. For example, since in the APPLY_HEAT frame the amount of time heat is applied to the food is relevant, we can therefore predict the use of the preposition *until* as it indicates the continuity of action to a certain point in time. In the FILLING frame, the act of covering an area with a different colour is described as a change of location, therefore, we can expect from the event described the use of the prepositions *in* and *en* given their locative sense. In the PROCESSING_MATERIALS frame the alternator colouring substance penetrates the material, thus, the event described allows us to predict the use of *in*, *into* and *en*, in their "insertion or inclusion" sense, and *of* or *de*, in the sense of "component of something". Nevertheless, the information contained in event-frames do not serve to elucidate why a particular verb shows collocational restrictions in a language and not in the other, or why both languages show completely opposite tendencies regarding the use of AP or PP.

In her studies on the Spanish RC, Rodríguez Arrizabalaga (1999, pp. 436-440; 2016, pp. 72-74) concludes that the marked preference for the prepositional form in this language is motivated by the necessity to avoid the ambiguity with a depictive reading caused by the sequential postposition of the adjective to the object, especially in resultatives with verbs of colouring. For instance, it is not clear whether the colours denoted by the APs in 17a and 17b are obtained after the execution of the colouring action (resultative reading) or they simply describe a property that the object had before being subjected to the verbal action (depictive reading):

(17) a. Fui a la peluquería a cortarme las puntas y me teñí el pelo negro (modaeconomica.com).
Depictive reading: The hair was already black before dying it.
Resultative reading: The hair became black after dying it.

b. Acabo de pintar mis paredes blancas (decorailumina.com).
Depictive reading: The walls were already white before painting them.
Resultative reading: The walls became white after painting them.

In English, there is no such ambiguity since adjectives tend to occupy a fixed position in depictive and resultative sentences: in the former it is placed before the object, whereas in the latter it is postponed. This explains the inclination towards the adjectival form in English resultatives with verbs of colouring:

(18) a. After the party, I'll dye the dress black (wisebread.com). (Resultative)

b. There are references to women dyeing their black dresses when they were in full mourning (victorian-era.org). (Depictive)

Similarly, I propose that the marginality of the adjectival variant in Spanish resultatives with verbs of cooking can be explained by pragmatic reasons. The use of a temporal marker, such as *until* or *hasta,* allows the speaker to emphasise the exact moment in which the hearer should stop cooking the food so that it does not reach an unwanted state. This explains why in English resultatives from the culinary and gastronomic context the prepositional form is preferred to the adjectival form, in contrast to the tendency

of resultatives of chromatic change. However, as explained above, since the prepositional form is ungrammatical in Spanish, a temporal subordinate clause introduced by *hasta que* is alternatively preferred.

In sum, the previous analysis suggests that the different inclinations towards the adjectival or prepositional forms are simply due to reasons of ambiguity or emphasis, and therefore cannot be predicted by generalisations at the level of construction or by the information contained in the predicate's event frames.

## 5. CONCLUSIONS

In this paper I have contrasted English and Spanish resultative expressions with a selected sample of verbs of cooking and verbs of colouring by combining the theoretical and methodological principles of Goldberg's and Boas's constructionist approaches.

Firstly, in line with the findings of Rodríguez Arrizabalaga (1999, 2014, 2016) and Enghels & Lauwers (2020), the comprehensive analysis of these two type of resultatives carried out in this paper has allowed me to identify idiosyncratic properties of the Spanish RC that are not present in English, these are: (i) the unacceptability of inanimate instrument subjects and the prepositional form of the RP in resultatives with verbs of cooking, (ii) the preference for the prepositional realization of the RP in examples with verbs of colouring to avoid ambiguity with a depictive reading, (iii) the collocational restrictions of the predicates *pintar* and *manchar* with regards to the semantic nature of the subject or the form of the RP respectively. Despite their differences, I have also observed common features between the two languages, for example: (i) both languages show a marked preference for animate subjects over inanimate ones, (ii) the volitionality requirement in animate subjects depends on the event-frame evoked by the predicate and the associated contextual background information, (iii) both languages make use of the same type of objects although with differences in their frequency rates.

Secondly, I have observed that Goldberg's generalizations at the constructional level are too general to account for the specific idiosyncrasies of each type of resultative in a language and that some of them, such as the animate instigator constraint, are overruled by the evidence provided by my corpus. Moreover, they show limitations when applied to corpus examples of real language in use and languages other than English. In contrast, the information contained in the predicates' event-frames has allow me to arrive at more precise predictions, for instance, on the prototypical subject and object or the type of preposition used to introduce the result. Nonetheless, using event-frames as *tertium comparationis* may lead to an over-proliferation of mini-constructions which is not economical for cross-linguistic research. Not to mention the amount of time and work it would take to analyse each predicate of a language to account for its individual specifications. Furthermore, as we have seen in the analysis of the corpus examples, certain syntactic and semantic properties can only be explained by contextual background information or pragmatics, such as the use of non-prototypical patients or the preference for AP or PP realisations for reasons of ambiguity or emphasis. All things considered, this study demonstrates that the lumper and splitter approaches are not only compatible, but also mutually necessary to overcome their limitations. In addition, the combination of the two approaches allows us to stablish generalizations at the level of the construction, verb classes or identify the idiosyncrasies of a particular predicate, which can help us to identify patterns of similarities or differences between languages.

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