

THE INCHOATIVE, MIDDLE AND SUBJECT-INSTRUMENT CONSTRUCTIONS IN THE LEXICAL-CONSTRUCTIONAL MODEL

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Abstract. The Lexical Constructional Model –LCM (Ruiz de Mendoza and Mairal 2008, 2011, Mairal and Ruiz de Mendoza 2008, 2009, Ruiz de Mendoza 2008, cf. Butler 2009 for a critical assessment) is a comprehensive model of language that accounts for meaning construction at the levels of argument structure, implicature, illocution and discourse. Unlike other constructionist approaches (i.e. Goldberg 1995, 2006), the LCM provides a full account of meaning construction where lexico-constructional integration is constrained by a number of internal and external factors. At the level of argument structure, which is the focus of the present contribution, the LCM examines the participation of lexical predicates in argument structure constructions. In this paper I study three related grammatical constructions in English: the inchoative, the middle and the subject-instrument constructions within the framework of the LCM. I examine their semantic and structural properties and the internal and external constraints which regulate them.

Keywords: *Construction, Verbal Predicate, Internal Constraint, External Constraint.*

1. Introduction

The issue of form-meaning pairings is addressed by Construction Grammar approaches (Lakoff 1987; Fillmore and Kay 1996; Goldberg 1995, 2006; Michaelis 2003).¹ Goldberg (2006: 5) defines constructions as “Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency”.

Constructions are operational at all levels of grammatical analysis. For example, Goldberg (2006) mentions idioms, the passive, topicalization and questions as examples of constructions. In the LCM, constructions also occur at all four levels (Ruiz de Mendoza and González-García 2011): argument structure (level 1), implicature (level 2), illocution (level 3) and discourse (level 4).²

The present contribution is concerned with level 1 constructions. In this connection, a high proportion of English verbal predicates partake in argument structure constructions of the kind proposed by Levin (1993) and Goldberg (1995, 2006).^{3,4} In the LCM verbal predicates are represented in the form of lexical templates, i.e. low-level semantic representations that link world-knowledge aspects of meaning to the event-structure representation of lexical items, thus preparing semantic structure for syntactic expression.

Theoretical accounts of argument structure constructions differ in three ways. While some accounts (i.e. Levin’s 1993) can be seen as derivational in that they consider argument

¹ For an overview of Construction Grammar approaches I refer to González-García and Butler (2006).

² In the LCM *subsumption* occurs at different levels, while *fusion* occurs at the same level (i.e. between the caused-motion and the resultative constructions). In Ruiz de Mendoza and González (2011) cases of level-internal fusion are called *constructional amalgams*.

³ Goldberg (1995: 3-4) discusses five types of constructions: ditransitive, caused motion, resultative, intransitive motion, and conative.

⁴ Levin’s (1993) syntactic alternations are distributed in four groups.

structure patterns in terms of alternations (i.e. related constructions), constructionist approaches (i.e. Goldberg 1995, 2006; Michaelis 2003) hold that constructions are independent conceptual characterizations in which verbal predicates can participate under certain conditions. As Goldberg (1995: 11) remarks, “constructions exist independently of particular verbs”.⁵ In this sense, she argues that argument structure constructions designate scenes or frames (cf. Fillmore 2003) that are basic to human experience. Thus, basic clause types are used to encode general event types such as those denoting cause, motion, change of state and so forth. Consequently, aspects of the interpretation involving caused motion, intended transfer or caused result are understood to be contributed by the respective construction rather than by the predicates partaking in those constructions. This would explain why many predicates appear in a range of syntactic configurations where there is a mismatch between verb meaning and constructional meaning, as in *We laughed our conversation to an end*, where an intransitive verb is used transitively with a caused-motion sense. Yet Goldberg fails to provide an explanation for the use of these predicates in constructions they are seemingly incompatible with.

In constructionist approaches the subsumption of predicates into constructions occurs through coercion. This phenomenon constitutes the second discrepancy between accounts of constructions. Whereas Levin’s account suggests that syntactic alternations often result from the properties shared by the verbs belonging to the same lexical class, constructionist approaches agree that constructions are the result of constructional coercion, i.e. a phenomenon whereby lexical structure becomes adapted to constructional requirements (Ruiz de Mendoza and Mairal 2011: 65). It is thus through coercion over lexical structure that verbs such as *shout*, *persuade* and *call*, which do not imply caused motion, can enter into the caused motion construction.

Finally, while Levin’s (1993) account of constructions focus on the properties of specific sentence patterns, constructionist approaches aim to explore generalizations across constructions and formulate principles that regulate the subsumption of predicates into constructions. Thus, in the Goldbergian version of Construction Grammar the correspondence (or fusion) between lexical structure and constructional configurations is regulated by two internal principles: the Semantic Coherence Principle and the Correspondence Principle.⁶ The former ensures that the participant instances of the verb and the argument roles of the construction are semantically compatible. The latter has to do with the discourse function of constructions in that it states that the profiled participant roles are likely to be the ones that are relevant to the discourse.

On the other hand, although Goldberg acknowledges the role of cognitive mechanisms such as frames and metaphor in licensing less prototypical cases of certain constructions (i.e. ditransitives), she does not consider frame structure or metaphor as explicit constraints on constructions. In connection with this, the LCM views frame structure as a constraining factor and refines it through some of the so-called internal constraints. Internal constraints take into account vertical and horizontal (collocational) compatibility between lexical and constructional representation in terms of their event structure and their encyclopaedic structure. This involves a substantial refinement of the too generic frame structure constraint. As regards metaphor, the LCM considers high-level metaphor and metonymy (cf. Ruiz de Mendoza and Mairal 2007) as constraining factors on constructions (cf. below).

⁵ See González-García and Butler (2006) for a detailed discussion of the various versions of Construction Grammar.

⁶ Sometimes the LCM uses the term “integration” as a cover term for subsumption and amalgamation. “Integration” is thus an equivalent of “fusion”.

Besides, as stated by Ruiz de Mendoza and Mairal (2011: 78), constructional approaches are not fully satisfactory inasmuch as limits to coercion are set on the basis of verb classes. An example of Goldberg's inability to explain the participation of lexical items in a given construction, Ruiz de Mendoza and Mairal consider the use of the predicates *convince*, *persuade*, *instruct* and *encourage* in a caused motion sense in cases of figurative motion: *My wife convinced me into selling my art to the public; He persuaded me into staying with him.*

The LCM takes into account semantic coherence as a constraining factor at the level of argument structure and formulates the external constraints on conceptual integration (or lexico-constructional subsumption) when the Semantic Coherence principle is violated. Such constraints allow for constructional coercion. In other words, in the LCM conceptual integration, whereby the conceptual structure of a predicate is incorporated, together with its argument structure, into a construction, hinges on both internal and external factors. Among the former, Peña (2009: 746) mentions the following: *full matching* (which specifies that there must be full identification of variables, subevents, and operators between lexical and constructional templates); *lexical blocking*, which stipulates that one of the components of a given lexical template can rule out the fusion with a given construction because such a component is a suppletive form; *predicate argument conditioning*, according to which the lexical template can impose some restrictions on the kind of instantiation of a constructional argument; and *internal variable* conditioning, whereby the internal predicate variables constrain the nature of the predicate and the constructional arguments. Among the latter, high-level metaphor and high-level metonymy⁷ and metaphorical and metonymic complexes stand out.

The present contribution explores three related grammatical constructions in English within the framework of the LCM: the inchoative, the middle and the subject-instrument constructions.

The structure of the paper is as follows. Section 1 deals with the semantic and syntactic properties of the inchoative, the middle and the subject-instrument constructions and the participation of English verbal predicates in these constructions. This is followed by discussion of the internal and external constraints which make many English verbs compatible with these constructions. Section 3 presents some concluding remarks.

2. The inchoative, middle and subject-instrument constructions

The inchoative, middle and subject-instrument constructions are related since they have similar meanings though different structures⁸. On the one hand, the middle construction is an inchoative with an additional modal element⁹; on the other hand, the causative-inchoative alternation and the subject-instrument construction can be regarded as the result of profiling different segments of an action chain, i.e. the agent, the patient and the instrument (Langacker 2008). Thus, while the transitive clause profiles the entire action chain, the inchoative construction profiles the patient's change of state and the subject instrument construction profiles the instrument-patient interaction.

⁷ Following Ruiz de Mendoza and Mairal (2011: 66), high-level metaphor and high-level metonymy make use of generic-level conceptual structure and are operational at the grammatical level. Two examples are GENERIC FOR SPECIFIC (i.e. *I'll do the dishes*) and ACTIONS ARE TRANSFERS (i.e. *They gave the thug a big beating*).

⁸ Heyvaert (2003) calls *agnation* the relationship that holds between constructions with similar meanings but distinct structures.

⁹ For an extensive description of middles from a cognitive linguistic perspective, see Kemmer (1993), Maldonado (1999) and Manney (2000).

An overview of the inchoative, middle and subject-instrument constructions shows that they are manifested by verbs entailing a change of state. The following sentences exemplify the wide variety of verbal predicates that can participate in these constructions:

- Inchoatives
 - (1) What should I do if my car accelerates out of control?
 - (2) The snake coiled around his arm.
 - (3) At night the streets emptied.
 - (4) Pinocchio turned into a donkey.
 - (5) There was a gust of wind and the door closed.
 - (6) They both agreed it was best to divorce.
 - (7) The board splintered under his weight.
 - (8) The onions fried.
- Middles
 - (9) Vegetables chop easily.
 - (10) Clothes often crease in the washing machine.
 - (11) Children dirty a lot.
- Subject-instrument
 - (12) The stone broke the glass.
 - (13) The scissors cut the paper.
 - (14) Mixers mash potatoes.

Differences between the various classes of predicates that enter into the inchoative, middle and/or the subject-instrument constructions lie in the kind of resultant state of the configuration and in the way the final state is reached (Levin 1993).

A closer look at the predicates available for these constructions yields the following classes:

a) Verbs that specify the kind of change involved: *brighten, blur, burn, flood, vibrate, deflate, dissolve, drain, fade, short-circuit, explode, inflate, crisp, dim*.

The following subclasses can be distinguished:

- Pure change of state: *change, alter, vary*.
- Change in physical state: *melt, dry, chill, atrophy, sour, corrode, tire, thaw, crumble, cool, condense, heat, decompose, frost, defrost, freeze, dampen, sicken, putrefy, coagulate, petrify, solidify, liquefy, fossilize, calcify, pulverize*.

- Change in color: *blacken, whiten, tan, redden*.
- Change in shape: *round, slim, thin, flatten, compress, contract*.
- Change in size: *grow, broaden, fatten, lengthen, shorten, enlarge, widen, narrow*.
- Change in quality: *coarsen, worsen, magnify, ameliorate, improve, degenerate*.
- Change in amount/number: *increase, decrease, diminish, shrink, lessen, proliferate, double, triple, multiply, empty, level*.
- Change in psychological state: *gladden, worry, sadden, grieve, cheer*.

b) Verbs that specify the way in which the change comes about:

- Through combination: *intermingle, merge, alternate, cluster, fuse, tape, glue*.
- Through separation: *detach, differ, separate, divorce, part*.
- Through disruption of the material integrity of something: *break, fracture, tear, smash, chip*.
- Through motion: *levitate, capsize, collapse, sink, soak, submerge, open, close, slow, halt*.
- Through contact: *clip, cut, hack, saw, scrape, slash, perforate, dice, slice*.

The inchoative and middle constructions are closely related from a semantic and structural perspective.

Syntactically, the inchoative and middle constructions are transitivity alternations (Levin 1993); more specifically, they are the intransitive variants of a transitive pattern where the object of the transitive use becomes the subject of the intransitive use. In other words, with the incorporation of an activity verb into the inchoative and middle constructions, two changes occur, i.e. the verb's intransitivity and the realization of the object as the syntactic subject. Thus, the object becomes the highlighted element.

Inchoatives and middles can be characterized in the following way:

a) The middle construction does not denote an event. This means that it need not have a specific time reference¹⁰: *Plastic liquefies in intense heat*. In contrast, the inchoative construction is compatible with bounded actions (i.e. temporally limited): *Her hair whitened as she aged*.

b) The middle construction implies an agent, whereas the inchoative construction need not have an understood agent, although it is sometimes directly evoked (i.e. *The door opened with great difficulty*).

c) The middle construction often includes an evaluative element: *Some types of metal dent more easily than others*. Such element is sometimes impossible in the inchoative construction: *The planks splintered *easily / *well*. In fact the middle construction is but an inchoative construction where processual conditions are specified whether these are evaluative or not:

(15) The can would not open (easily) (inchoative).

(16) The new cans open easily (middle).

(17) The new cans only open on one end (middle).

¹⁰ In this sense, Stalmaszczyk (1993: 135) remarks that the middle construction receives a non-eventive, generic, habitual, or potential interpretation.

The view of the middle construction as a variant of the inchoative construction allows us to convert some middles into inchoatives and the other way round:

(18) The door opened with the wind (inchoative).

(19) Spring-loaded doors open easily with one hand (middle).

d) Although the inchoative and middle patterns do not impose any selection restrictions on the subject argument, an inanimate entity usually fills this slot. This is because of the nature of objects that undergo a change of state and the use of verbal predicates to express such a change. We see non-animate objects more easily as experiencing state changes.

As already mentioned, the inchoative and middle constructions are related to the subject-instrument construction¹¹. This is easy to explain since this construction specifies the instrument used to bring about the change of state designated by the predicate:

(20) The chisel carved the iced sculpture.

(21) This oven bakes bread.

(22) The mower pulverizes grass clippings.

(23) The fork perforated the foil.

However, English verbs participating in the three constructions show a distinct pattern of behavior with respect to the subject-instrument instruction. First, it is a transitive variant of a transitive sentence pattern structurally defined as S (human) + V (non-stative) + O (non-animate) + *with*-PP (instrument). The instrument realized as a PP is profiled as subject:

(24) They smashed the vase with a hammer → The hammer smashed the vase.

The semantic analysis of the inchoative, middle and subject-instrument constructions reveals a number of differences. Inchoative and middle expressions typically imply that the subject argument undergoes a change of state and occasionally a change of location (i.e. *The door closed*). Thus, it has the semantic function of Undergoer. In cases of emotional changes of state, the subject has the function of Experiencer: *Many people sickened and died in the long voyage*.

Further, the inchoative and middle constructions evoke the notion of process. The action is seen as a process.

In addition, inchoative and middles code a causal state of affairs where the identity of the causer is irrelevant. Nonetheless, while the inchoative construction would have the function of helping us to report on this state of affairs, the function of the middle construction would be to assess some aspect of that state of affairs, a function derived from the presence of an evaluative element (Ruiz de Mendoza and Mairal 2011: 74).

On the other hand, the basic semantics of the subject-instrument construction is that the subject argument is used to act on the object, which has the function of Undergoer.

¹¹ Goldberg (1995) points out that the subject-instrument construction is available only with an intermediary instrument.

The semantic and syntactic parallel between the inchoative and middle constructions has led Ruiz de Mendoza and Mairal (2011: 75) to postulate for a single construction rather than two independent, though related, constructions. The middle construction would be essentially an inchoative construction that adds an evaluative component. This argument is supported by the fact that some middles lack the evaluative element: *This door won't open!*

In the next section we look more closely at the internal and external factors that constrain the subsumption of English predicates into the inchoative, middle and subject-instrument constructions.

3. Constraints on subsumption in the inchoative, middle and subject-instrument constructions

3.1. Internal constraints

We will focus on lexical class membership as an internal principle regulating the ascription of verbal predicates to the inchoative, middle and subject-instrument constructions.

Many English verbs participate in the inchoative construction, as illustrated below:

(25) The snake coiled itself around its prey.

(26) The flour mixed into the sugar.

(27) The snow is finally melting.

The middle construction covers a wide array of constructions, traditionally referred to as the middle voice:

(28) This kind of rope coils easily.

(29) Flour and sugar mix well.

(30) Sugar melts in hot liquids.

(31) This device won't scan.

(32) This book sells well.

(33) The book is selling like hot cakes.

As shown in the examples, we may distinguish various types of middles (Kemmer 1993): a) sentences denoting the ease or difficulty of occurrence of an event (28-29); b) sentences expressing a quality judgment (32); c) sentences making an explicit comparison of quality (33).

Sentences (31-33) illustrate a particular case of the middle construction, where the action is the result of some property of the patient (van Oosten 1986; Radden and Dirven

2007).¹² Such internal quality is seen as the *enabling cause* which influences the realization of a process (Radden and Dirven 2007).¹³

As earlier mentioned, the notion of change is inherent to the meaning of verbs taking part in the inchoative and middle constructions. Nonetheless, some predicates show features of the middle construction although they do not denote a change of state:

- (34) The motorcycle handles well.
- (35) These goods fly to America only.

Break is representative of another set of examples which are linguistic realizations of the inchoative and middle constructions:

- (36) A chain will break at its weakest link.
- (37) Chains seldom break.
- (38) Her coat ripped when it caught on the doorknob.
- (39) This fabric rips easily.
- (40) The board split in two.

These verbs entail disruption of the material integrity of the affected entity.

Another set of realizations of the inchoative and middle constructions are illustrated by means of the following examples:

- (41) Arts subjects alternated with science subjects.
- (42) Arts subjects alternated well with science subjects.
- (43) The background music did not harmonize with the action on-screen.
- (44) In her short stories, science fiction and romance intermingle.
- (45) The brush detaches from the vacuum cleaner for easy cleaning.

The predicates, which entail the combination or separation of two entities, include the following: *blend, combine, join, merge, mingle, mix, interconnect, interchange, alternate, amalgamate, coincide, consolidate, correlate, harmonize, marry, interlink, intermingle, unify, unite, segregate, sever, detach, disassemble, part, divorce*.

Another set of instantiations of the inchoative and middle constructions describe a change of state as the transformation of an entity from one form into another, i.e. *She grew intellectually and emotionally in her first year at college; A blossom develops from a bud*.

¹² Van Oosten (1986) refers to the middle as the *patient-subject* construction.

¹³ Radden and Dirven (2007) include in the middle construction sentences designating other types of enabling situations, i.e. *The plane blew a tire, A leak sank the ship, Our new stadium seats 100, 000 and These caves are dipping water*.

The case of *mature* is different. It cannot occur in the inchoative pattern since it implies a psychological transformation: * *Girls matured earlier than boys both physically and mentally*.

Consider now the following examples:

(46) The morning fog gradually cleared.

(47) The theatre emptied quickly.

Examples like this are less relevant cases of the inchoative construction. The verbs express an externally controlled action¹⁴. This would explain the impossibility of using *clean*, a verb belonging to the same class, in an inchoative pattern, since it implies a volitional agent: **The carpet cleaned*. The occurrence of *clean* in middles, as evidenced in (48), is licensed by the metonymy OBJECT FOR AGENT, which explains the use of *won't*, a verbal form that expresses will:

(48) If your carpets won't clean up why not try a salvage yard?

Verbal predicates used in the inchoative pattern generally occur in the middle construction, but there are a number of verbs found in the middle construction that do not participate in the inchoative construction. Research into inchoatives and middles reveals that English verbs partake in the middle construction more readily than in the middle pattern. In this sense, Goldberg (1995) claims that the incorporation of a predicate into the inchoative construction is subject to semantic constraints associated with the predicate's ascription to a lexical class.

As advanced above, a semantic constraint on the occurrence of verbal predicates in inchoatives and middles is that they have to be pure change of state verbs. Thus, it is hardly surprising that those predicates that specify the manner in which an entity comes apart or two entities are combined (i.e. *chip, clip, crash, crush, crack, hack, hew, splinter, scratch, shake, beat, knead, scramble, roll, shuffle, stir, whisk, swirl, attach, bind, sew, fasten, stick*) are not used in an inchoative or middle pattern: **The cake batter must stir for 10 minutes*; **Salad dressings shake well*; **The paint on my car scratched*. Yet there are a few exceptions represented by the verbs *whip, cluster* and *gather*: *They clustered around the fire*; *A crowd began to gather on the sidewalk*.

As regards the middle construction, it has been pointed out that the ability of a predicate to participate in the middle construction is dependent on the verb's semantics inasmuch as the verb has to entail a change of state. However, this restriction is insufficient to account for a particular case of middles. A set of verbs represented by *turn* and *grow* (i.e. *alter, change, convert, metamorphose, transform, transmute, develop, evolve*) and several verbs of removal (i.e. *clear, drain, empty*) found in the inchoative construction are not available for the middle. A constraint associated with argument structure comes into play here. The notion of transformation or radical action inherent in the meaning of these verbs is incompatible with the modal or evaluative element required by the construction: **In this science fiction story people metamorphose well into giant bugs*.

As far as the subject-instrument construction is concerned, it is sensitive to four types of verbal predicates:

¹⁴ Following Lee (2001: 90-92), *clear* and *empty* are the only verbs of removal that can take part in the inchoative construction since they are pure change-of-state verbs that denote a process resulting in a particular state of affairs without specifying how that result is achieved.

(i) Action verbs:

(49) A grenade destroyed the building.

The subject-instrument construction is not available with all instruments in an action schema. Consider the following examples:

(50) A bomb killed a group of tourists in Rabat.

(51) *A sword killed the knight.

As stated by Nishimura (1993: 495), the difference in acceptability between (50) and (51) can be explained in terms of the plausibility of conceiving of a bomb as an autonomous agent bringing about death in the situation in question. The reason why some inanimate entities can be categorized as agents is that they are considered to have a force of their own which allows them to perform certain actions typically associated with human entities¹⁵. In contrast, a sword is understood as a subsidiary entity subordinate to the agent. In Delancey's (1984: 18) terms, the instrument "[...] functions only as an extension of the agent's will".

(ii) Verbs detailing the manner specifics of the action designated by the verb:

(52) *This oven bakes potatoes.*

(iii) Pure change of state verbs:

(53) The pliers bent the wire.

(54) The hairdryer dried my clothes.

(iv) Verbs whose meaning includes some specification concerning the instrument used to bring about a result.

(55) Axes cut wood.

(56) This microwave grates meat dishes.

Two semantic constraints block out the subsumption of predicates into the subject-instrument construction. First, if we take an expression which codes the instrument in the verbal predicate, it is not possible to further specify the instrument through a subject NP. Thus examples like (57) and (58) are not feasible:

(57) *The chisel chiseled the marble.

(58) *The crack cracked the nuts.

¹⁵ Radden and Dirven (2007: 289) sees the instrument as having a certain degree of independence from the agent.

It goes without saying that if the verb's meaning includes some specification concerning the instrument used to bring about a result, the subject-instrument construction is not available: **A mincer minces meat*; **This screw screwed the boards together*.

Likewise, predicates whose meaning contains a specification of the nature of the result cannot take part in the construction: **The knife diced the peppers*; **This sharp knife filleted the fish*.

To conclude this section we summarize the similarities and differences between the inchoative and middle constructions in figure 1:

	Similarities	Differences
Semantic level	Inchoatives and middles are manifested by state change verbs. The action is seen as a process. The subject has the function of Undergoer (or Experiencer).	Some inchoatives are manifested by verbs involving transformation or radical action (i.e. <i>turn, grow, clear, empty</i>). Some middles are manifested by verbs not entailing a state change (i.e. <i>handle, fly</i>). Inchoatives report on a process, while middles assess some aspect of the process Middles are incompatible with bounded actions. Middles are compatible with processual conditions specification.
Syntactic level	Inchoatives and middles are intransitive variants of a transitive pattern. The subject is prototypically inanimate.	Middles often include an evaluative element.

Figure 1: Similarities and differences between the inchoative and middle constructions.

3.2. External constraints

Ruiz de Mendoza and Mairal (2011) postulate external constraints (i.e. high-level metaphor and high-level metonymy) to account for certain syntactic features of the inchoative and middle constructions. Thus, the impossibility of using an agentive complement in these constructions (**The burgers grilled by John*) is accounted for in terms of the high-level metonymy PROCESS FOR ACTION (Ruiz de Mendoza and Pérez 2001).

From a semantic perspective, the action designated by the verb is construed as a process. Nonetheless, the subject has an agent-like quality which licenses the fusion of either construction with the instrument-subject construction.

The agentivity load of the subject of the inchoatives and middle constructions is a controversial issue. Langacker (2008) claims that the patient in inchoative sentences has a passive role, the process being construed with no reference to the force or agent that induced it. The middle construction invokes the agent but leaves it unprofiled. Ruiz de Mendoza and Mairal (2011: 75) highlight the *agentivity load* of both inchoatives and middles as compared to the agentivity component of passives.

The agentivity of middles is refuted by other scholars like Rapaport (1999: 147-155) and Stalmaszczyk (1993: 134).

I believe that the notion of agentivity is not just linked to the construction type but to the predicate's lexical class and to the sentence pattern. Thus, in sentences like *The window opened* and *The shirt turned yellow in the wash*, where the object undergoes a change of state and a change of location respectively, it would seem that the window and the shirt are capable of acting on their own. On the contrary, sentences like *The flour blended with the eggs* and *The vase smashed to pieces*, with predicates involving the combination of two entities and the disruption of material integrity respectively, imply an agent.

In much the same way, further distinctions should be made with regard to the middle construction. It is obvious that in sentences like *Rubber bends easily* the modal component

implies the agent's efforts. Yet in cases like *This wine drinks like water* there is not an affected argument, the object being more agent-like.

This leads us to propose the incorporation of the notion of causativity into the schema of agentivity.¹⁶ Thus, the semantic function of Agent would cover a spectrum with a volitional entity that is the immediate cause at one extreme (i.e. *Jim broke the drawer with a hammer*) and an inherent characteristic of an inanimate entity viewed as an enabling cause at the other extreme (i.e. *This novel reads easily*), with an inanimate entity acting on its own (i.e. *The door opened*), an inanimate entity externally controlled (i.e. *The window shattered*) and an instrument as ultimate cause of an event (i.e. *The hammer broke the drawer*) lying in between the two extremes, as shown in the following diagram:

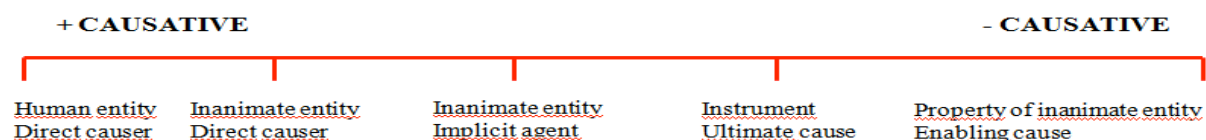


Figure 2: The continuum of causativity.

The agentivity load of the subject of inchoatives and middles obtains through the interaction of the ACTIONS ARE PROCESSES metaphor with the PROCESS FOR ACTION metonymy. We first see an action as if it were a process and then we make the process stand for the action.

The reading of inchoative and middle expressions as processes allows a wide range of co-occurrence restrictions to be accounted for. For example, inchoatives cannot occur with verbs involving cessation of existence since they involve radical action and radical outcome (Ruiz de Mendoza and Mairal 2011:73).

Similarly, the inchoative construction is not feasible when the verb semantics focuses on the resulting state rather than the process. The predicates contain a specification of the manner or means in which the final state is reached: **The picture nailed to the wall*; **The key strung around her neck*.

The metaphor ACTIONS ARE PROCESSES is subsumed into the high-level metonymy PROCESS FOR ACTION. In other words, what we have here is a conceptual complex based on the incorporation of a subsidiary metaphor, ACTIONS ARE PROCESSES, into the architecture of the high-level metonymy PROCESS FOR ACTION, as shown in figure 3:



Figure 3: High-level conceptual complex.

¹⁶ The issue of causation and agency has been discussed by Nishimura (1993) and Lee (2001).

As a result, the prototypical cases of the inchoative and middle construction are represented by pure change of state predicates involving an externally caused change of physical state, shape, color or size since the agentivity load of the subject is greater.

Conversely, certain verbs involving disruption of material integrity cannot occur in the inchoative construction. The contact component included in the semantic description of these verbs acts as a semantic constraint that blocks their occurrence in the inchoative construction: **The car scraped. *Many of the cans dented*. These predicates, which include *cut, chip, saw, scrape, scratch, chop, dent, drill, grind, pulverize, spear* entail bringing a sharp object into contact with a surface. Thus, the human agent is salient and emphasized, blocking out the agent-like quality of the subject.

The agent is also manifested when the verb expresses the combination or separation of two entities. Although it is obvious that entities cannot join, mingle or separate by themselves, the agent is more evident in verbs like *connect, add, link, mingle, pool, incorporate, integrate, disconnect, divide, unbutton, unchain, unfasten, unscrew, untie, unzip*. As a result, these predicates are not eligible for inchoatives or middles:

- (59) *The hose connects to the sprinkler.
- (60) *The hose and faucet disconnected.
- (61) * The boat unfastened from its moorings.

The same semantic principle holds true for predicates like *associate, distinguish, differentiate, compare, contrast, dissociate, confuse*. These verbs express a mental process necessarily involving a human entity, which is thus brought into light, making expressions like **The twins differentiate in the color of their eyes* impossible.

Likewise, predicates denoting a change of psychological state can marginally be used in the inchoative pattern: *The crowd cheered as he crossed the finish line; I worry about his poor health*.

The most interesting cases of inchoatives are construed in terms of a high-level metaphor lying at the base of their grammatical configuration. The metaphor STATES ARE LOCATIONS (Lakoff 1993) underlies the conceptualization of the predicates *coil, roll, drop, clear* and *slide*. The expressions code a metaphorical change of location; they involve understanding a change of state in terms of movement to a new location. The new location is expressed as a PP. Some examples of English expressions reflecting this metaphor are provided below:

- (62) The ball rolled slowly to a stop.
- (63) The ball dropped between the right and centre fielders.
- (64) The cat coiled up into a ball.

Nonetheless, as Goldberg (1995) points out, the inchoative construction is only available if the motion is externally controllable. This semantic restriction excludes predicates like *glide, revolve, float* and *drift*: ** The plane glided to a safe landing; The logs floated down the river*.

Several middle expressions which lack a causal component (i.e. *handle*) or the evaluative element (i.e. *ship*) do not convey a change of state but express a controlled action.

Their occurrence in the middle construction is licensed by the high-level metaphor ACTIONS ARE PROCESSES, as figure 4 illustrates:

Source (Process) Undergoer	Target (Action) Agent (causer) Object (undergoer)
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Figure 4: High-level metaphor.

The LCM provides a more fined-grained description of the middle construction. This construction has two variants (Ruiz de Mendoza and Mairal 2007; Ruiz de Mendoza and Peña 2008):

- a) a process-oriented variant, as in *The door didn't close easily*.
- b) a result-oriented variant, as in *Clothes don't wash well*.

The latter variant is grounded on a double metonymic shift from process to action to the result of the action (PROCESS FOR ACTION FOR RESULT). First there is a metonymy PROCESS FOR ACTION underlying the process-oriented variant of the middle construction; a second metonymy is then activated, THE RESULT OF THE PROCESS FOR THE PROCESS, which gives rise to the result-oriented variant.

Starting from the assumption that the inchoative and the middle constructions entail a change of state and on the basis of the conceptual mechanisms underlying inchoative and middle expressions, we postulate a lexico-syntactic continuum¹⁷ where the extremes are represented by the inchoative construction and the result-oriented variant of the middle construction, the process-oriented variant of the middle construction being located midway, as shown below:

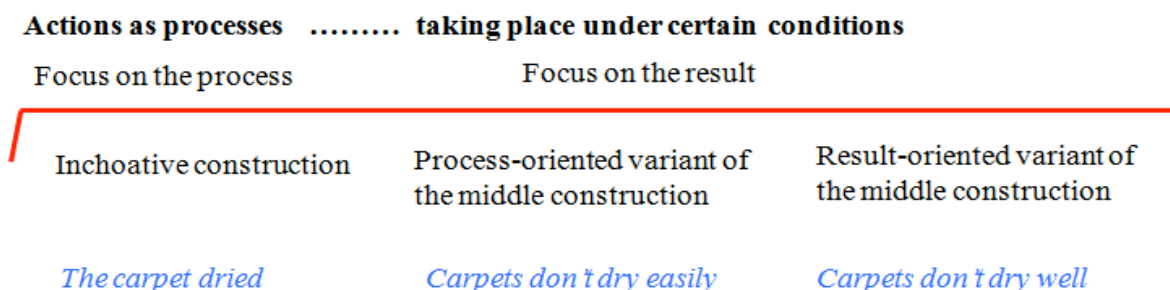


Figure 5: Lexico-syntactic continuum.

4. Conclusion

In this paper I have examined the inchoative, middle and subject-instrument constructions in the light of the LCM, as developed by Ruiz de Mendoza and Mairal (2008) and Mairal and Ruiz de Mendoza (2009). I have also drawn from Levin's (1993) and Goldberg's (1995) account of these constructions. My analysis shows that participation in the inchoative and middle constructions is correlated with the notion of change of state, although motion is also involved (i.e. *coil*, *turn*, *slide*). The additional feature of contact inherent to the meaning of a set of verbs (i.e. *break*, *cut*, *bake*, *bend*) makes them readily available for the subject-instrument configuration. Thus, subsumption into the inchoative, middle and subject-instrument constructions is largely grounded on internal factors, i.e. lexical class ascription

¹⁷ Peña (2009: 757) puts forward a cognitive continuum for the caused-motion and resultative constructions.

since the bulk of predicates are pure change of state verbs. Nonetheless, as suggested in the LCM, conceptual interaction is a cognitive process that is constrained by both internal and external factors (i.e. higher-level metaphor and high-level metonymy) which license or block out the incorporation of lexical structure into constructional configurations. In this connection, the facets of the inchoative and middle constructions do not only follow from semantic constraints but also from high-level metaphor, high-level metonymy and conceptual complexes. Among them, the metaphors ACTIONS ARE PROCESSES and STATES ARE LOCATIONS, the metonymies PROCESS FOR ACTION and PROCESS FOR ACTION FOR RESULT, and the conceptual complex PROCESS FOR ACTION + ACTIONS ARE PROCESSES.

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