

# Satellite-framed lexicalization of creation events in French?

## A view on effected objects and resultative PPs

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Received: 04-08-2022  
Accepted: 18-11-2022  
Published: 29-11-2022

How to cite: Schirakowski, Barbara. 2022. Satellite-framed lexicalization of creation events in French? A view on effected objects and resultative PPs. RLLT19, eds. Marco Bril, Martine Coene, Tabea Ihsane, Petra Sleeman & Thom Westveer. Special Issue of *Isogloss. Open Journal of Romance Linguistics* 8(5)/12, 1–32.  
DOI: <https://doi.org/10.5565/rev/isogloss.230>

### Abstract

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As a typical verb-framed language, French has only limited ability to combine manner verbs with result-denoting constituents in the VP. Based on an event structural approach, this contribution explores the compatibility of different types of manner verbs with two syntactic means of lexicalizing the product/result of a creation event, namely effected objects and resultative PPs headed by *en*. Data from two acceptability judgment tasks show the following findings: 1) Manner verbs that do not allow for an effected object canonically can still be coerced into a creation reading as long as no general constraint is violated. 2) Resultative PPs prove as acceptable across verb classes, but acceptability is shown to vary based on the internal makeup of the PP, which embeds either a bare noun or a full DP. Verbs that allow for an effected object are judged as well-formed with PPs of both types, whereas verbs not selecting an effected object are only fully acceptable

when a bare noun is embedded in the PP. Creation event lexicalizations that can be regarded as satellite-framed are, thus, not only subject to general structural constraints, but also to more subtle and verb-specific restrictions.

**Keywords:** French, verb-framed, satellite-framed, manner verb, effected object, resultative PP, event structure, judgment data

## 1. Introduction

French is known as a canonical verb-framed (V-framed) language, in which the result or path component of a complex event is typically encoded within the verb and the manner component expressed by an adjunct, if at all, cf. (1). English, on the other hand, is a typical example of a satellite-framed (S-framed) language,<sup>1</sup> which tends to lexicalize the result outside the verb root and manner within the verb, cf. (2) (cf. Talmy 1972, 1975, 1985, 2000, Croft et al. 2010, for an overview of Talmy’s typology).<sup>2</sup>

- (1) Le chat [a nettoyé<sub>RESULT</sub>] l’assiette [à coups de langue<sub>MANNER</sub>].  
 ‘The cat has cleaned the plate with licks’.  
 (literally: ‘with strokes of the tongue’)
- (2) The cat [licked<sub>MANNER</sub>] the plate [clean<sub>RESULT</sub>].  
 (adapted after Levin & Rappaport Hovav 2006: 3)

Talmy’s well-known typological distinction is known to reflect only the prototypical behavior of the respective language (family) and the terms S-framed and V-framed are usually employed to refer to both languages and certain configurations of the VP, which can be regarded as S-framed or V-framed (cf. Levin & Rappaport Hovav 2019: 405). S-framed languages are known to allow for V-framed event lexicalization quite freely. (3), for instance, is certainly stylistically marked, but not unacceptable. S-framed event lexicalization in V-framed languages, on the other hand, is far more restricted. In (4), for example, the adjective *propre* cannot be interpreted as a secondary resultative predicate, cf. (4a), but only as a nominal modifier, cf. (4b).

- (3) The cat [cleaned<sub>RESULT</sub>] the plate [with licks<sub>MANNER</sub>].
- (4) Le chat [a léché<sub>MANNER</sub>] l’assiette propre.  
 The cat has licked the plate clean  
 (a) #‘The cat licked the plate clean.’  
 (b) ‘The cat licked the clean plate.’

<sup>1</sup> Cf. Imbert (2012: 240–241) for a summary of the notion of satellite.

<sup>2</sup> While Talmy’s original classification applied to the expression of motion events (cf. Talmy 1972, 1975, 1985), it was later extended to the lexicalization of dynamic eventualities in general (cf. Talmy 1991, 2000). The analogical treatment of motion events and other event types is owed to the fact that the goal of a directed motion event can be viewed as a subtype of result (cf. Beavers, Levin & Wei Tham 2010, Levin & Rappaport Hovav 2019, for overviews, Aurnague 2008, Aurnague 2019, Aurnague & Stosic 2019, Meinschaefer & Kelling 2004, Kopecka 2009, Pourcel & Kopecka 2005, Sarda 2019 *inter alia*, for motion events in French).

A much-discussed question is whether and, if so, under which conditions V-framed languages such as French also allow for S-framed event lexicalization, and which configurations of the VP even count as S-framed. The answer to the last question can be very different depending on the theoretical framework. The differences between S-framed and V-framed languages have received a great deal of attention in both cognitive accounts and decompositional approaches to event structure (for a cognitive approach cf. Slobin 1987, 2006, for parametric accounts Folli & Harley 2016, 2020, Mateu 2012, Mateu & Acedo-Matellán 2012, Zubizarreta & Oh 2007 *inter alia*, for a lexicalist approach, e.g. Rappaport Hovav & Levin 1998). Any study of the constraints to which V-framed languages such as French are subjected faces the challenge that two kinds of restrictions are involved. On the one hand, there are general constraints that exclude, for example, adjectival resultatives as exemplified in (4). On the other hand, more subtle restrictions can arise, for instance, from verbal semantics or the preposition heading a resultative PP. French manner verbs can, thus, combine with result-denoting expressions only under specific conditions.

This contribution addresses these issues drawing on the lexicalization of creation events, which have so far received significantly less attention than motion events (but cf. Atkins, Kegl & Levin 1988, Mateu 2003, Martínez-Vázquez 1998). Creation events are considered a suitable test ground for investigating the possibility of S-framed event lexicalization in French, as they obligatorily involve a result component and possibly a manner component. Here, I focus on the (in-)compatibility of transitive manner verbs with two means of lexicalizing the result of a creation event, namely effected objects in the sense of Fillmore (1968), cf. (5a) vs. (6a), and resultative PPs headed by the preposition *en*, cf. (5b) and (6b). As the examples below illustrate, both types of constituents are neither freely available nor categorically barred in combination with manner verbs and therefore appear to require a better understanding.

- (5) a. Marie a sculpté une poupée.  
 ‘Marie carved a doll.’  
 paraphrasable as ‘Marie has created a doll by carving.’
- b. ?Marie a sculpté le bois en (une) poupée.  
 Marie has carved the wood in a doll  
 ‘Marie carved the wood into a doll.’
- (6) a. Marie a plié un bateau.  
 ‘Marie folded a boat.’  
 not paraphrasable as ‘Marie has created a boat by folding.’
- b. Marie a plié le papier en (un) bateau.  
 Marie has folded the paper in a boat  
 ‘Marie folded the paper into a boat.’

This study follows an event structural approach to verb meaning and draws on Ramchand’s (2008) *First Phase Syntax* in order to analyze different VP configurations for their ability to denote creation events. Empirically, two acceptability judgment tasks (henceforth AJTs) will show how different verbs and PP-structures influence the acceptability of creation event readings. The study is structured as follows. Section 2 first introduces some essential basics with respect to creation verbs and resultatives. Section 3 presents the relevant aspects of Ramchand’s version of the split VP, while sections 4 and 5 show the empirical part. AJT 1 (sec. 4) explores the acceptability of

effected objects with different types of verbs and investigates the extent to which creation readings can arise through coercion. AJT 2 (sec. 5) is a smaller-scale experiment and devoted to the question as to under which conditions the verbs at issue are acceptable with resultative PPs. Section 6 summarizes and discusses the results.

## 2. Classification of verbs based on their ability to denote creation events

For classifying verbs in terms of their ability to denote creation events, this study draws on verb lexica, which will be introduced briefly in section 2.1. Section 2.2 then presents the two verb classes on which the study is based and section 2.3 summarizes some relevant information on the (un-)availability of resultative constructions.

### 2.1. Verb lexica used

Information on the verbs at stake comes from the resources Verb $\exists$ Net (cf. Danlos, Nakamura & Pradet 2014, Pradet & Danlos 2012) and *Les Verbes Français* [LVF] (cf. Dubois & Dubois-Charlier 1997). Verb $\exists$ Net is an adaption of the English verb lexicon VerbNet (cf. Kipper-Schuler 2005) to the verbal system of French. In both VerbNet and Verb $\exists$ Net, verbs are hierarchically organized into classes based on their semantics and their syntactic behavior, following Levin's (1993) seminal verb classification. For the French version Verb $\exists$ Net, the Levin classes were reorganized where needed. Each verb class is described in terms of its subcategorization frame, the thematic roles of the verbs' arguments and selectional restrictions. Furthermore, the description of each verb class includes a decompositional semantic representation. Syntactic configurations that are available or unavailable in French (in comparison to English) are also listed. The Levin classes that are part of Verb $\exists$ Net and relevant to this study are *creation and transformation verbs* (class 26, e.g. *sculpter* 'to carve' or *tisser* 'to weave') as well as *verbs of combining and attaching* (class 22, e.g. *lier* 'to tie' or *mélanger* 'to mix'). Verb $\exists$ Net is informed by and linked to LVF (cf. François, Le Pesant & Leeman 2007 for an overview), where the relevant verbs belong to class R (*réalisation/mise en état* 'production/change of state'). Members of this class that can select effected objects are identified via the column *opérateur* in which they carry the label *fab[riquer]*.<sup>3</sup>

### 2.2. Two relevant classes of creation verbs

As a starting point for identifying relevant verb classes, I will draw on Jezek's (2014) taxonomy in which different types of creation verbs are distinguished (among other criteria) based on whether they always denote creation ("create verbs") or whether they can give rise to creation readings but do not have creation as their core sense ("derived creation verbs"). In French, transitive verbs that lexicalize a manner component are typically derived creation verbs. In the following, I subsume under manner verbs all verbs that – unlike e.g. *construire* 'to build' or *faire* 'to

<sup>3</sup> All data, resources and tools regarding VerbNet and Verb $\exists$ Net are available on GitHub, cf. <https://github.com/cu-clear/verbnet> and <https://github.com/aymara/verbenet> respectively, for the Verb $\exists$ Net website that allows for searching the lexicon via a user interface cf. <http://verbenet.inria.fr/>, for all information regarding LVF cf. <http://rali.iro.umontreal.ca/rali/?q=fr/versions-informatisees-lvf-dem> (March 30, 2022).

make’ – specify the way in which the product comes into being (cf. sec. 2.3 for the question of manner/result complementarity). Manner of creation can be lexically specified rather roughly as in *modeler* ‘to model, mold, shape’ or very precisely as in *tisser* ‘to weave’. Certain denominal instrument verbs that can denote creation, for instance, *ciseler* ‘to chase, chisel’, pattern with manner verbs in specifying how a product is created by an agent (cf. Kiparsky 1997, Levin & Rappaport Hovav 1991, or, for a summary, Wunderlich 2012).

With regard to the object of this study – effected objects and resultative PPs –, it is possible to identify two relevant subclasses. First, French has a restricted number of transitive verbs that are available in both activity or change of state readings and in creation readings when combined with a direct object. In (7a), the referent of the direct object undergoes the event, in (7b) it comes into existence as the result of the event denoted by the verb and is, thus, an effected object. In the following, I will refer to verbs that allow for both readings as “flexible” verbs, with the term flexible referring to whether or not the verb allows for an effected object in addition to an Undergoer object (cf. sec. 3 for a formal definition of Undergoer). Other verbs that alternate between activity/change of state readings and creation readings are exemplified in (8). They are *creation and transformation verbs* in the sense of Levin (1993). In Verb $\exists$ Net, they appear in subclass 26.1 (*build*-verbs) or subclass 26.3 (*prepare*-verbs). In LVF, they are labelled with the *fab*-tag. The syntactic configuration that gives rise to the creation reading is shown in (9).

- (7) Marie a sculpté a. le bois. b. une poupée.  
 Marie has carved the wood a doll
- (8) *bricoler* ‘to do DIY, fix’, *découper* ‘to cut (out)’, *ciseler* ‘to chase, chisel’, *façonner* ‘to manufacture, fashion, hew’, *forger* ‘to forge’, *modeler* ‘to model, mold, shape’, *mouler* ‘to mold’, *nouer* ‘to knot, tie’, *tisser* ‘to weave’, *tresser* ‘to braid’
- (9) NP V NP<sub>PRODUCT</sub> PP<sub>MATERIAL</sub>

It does not appear to be clear whether a creation reading can also come about by combining the variant exemplified in (7a) with a resultative PP and whether French, thus, allows for the material/product alternation that is available in S-framed languages such as English. This type of argument alternation is characterized by the fact that both the material that is used and the product that comes into existence can surface as either object DP or PP (cf. Levin 1993: 56), cf. (10) for English vs. (11) for French.

- (10) English  
 a. Marie carved a doll out of the wood.  
 b. Marie carved the wood into a doll.
- (11) French  
 a. Marie a sculpté une poupée {à partir du bois / de bois  
 Marie has carved a doll from.DEF wood / of wood  
 ‘Marie carved a doll out of the wood/from wood.’

- b. ?Marie a sculpté le bois en (une) poupée.  
 Marie has carved the wood in a doll  
 ‘Marie carved the wood into a doll.’

In the literature on verbal elasticity in Romance, it has been mentioned that the material/product alternation is not available, as the Romance languages require the event result to be expressed within the verb itself (cf. e.g. Folli & Harley 2016, 2020). Drawing on data from Italian, Folli and Harley consider the alternant with the resultative PP as ungrammatical and the material/product alternation as barred, cf. (12a) vs. (12b).

- (12) Italian (Folli & Harley 2020: 439)
- a. Martha ha intagliato una bambola.  
 ‘Maria carved a doll.’
- b. Martha ha intagliato un pezzo di legno (\*in una bambola).  
 Maria has carved a piece of wood in a doll  
 ‘Maria carved a piece of wood into a doll.’

In their parametric approach, the authors assume a head movement parameter that requires the result component to be moved into the v-head. Similarly, one finds Verb $\exists$ Net pointing out that, unlike in English, the material/product alternation is not available in French either, cf. (13a) vs. (13b).<sup>4</sup> According to Jezek’s taxonomy, however, *construire* is not a derived creation verb with a manner component, which we would expect to alternate, but a *create*-verb expressing creation as its only sense. With these verbs, the material/product alternation is (often) unavailable in English as well.<sup>5</sup>

- (13) a. Luc a construit une cabane (à partir) de planches.  
 Luc has built a hut from planks  
 ‘Luc built a hut out of planks.’
- b. \*Max a construit des planches en une cabane.  
 Max has built INDEF planks in a hut  
 ‘Max built planks into a hut.’

There are, thus, a number of transitive manner verbs that can occur with effected objects, but for which the compatibility with resultative PPs and the availability of the material/product alternation is not entirely clear. The AJT presented in section 5 will provide empirical evidence that resultative PPs headed by *en* are

<sup>4</sup> “En anglais, 26.1 est définie par la materail [sic]/product alternation et 26.4 par les verbes qui ne permettent pas cette alternation. En français, cette alternation n'existe pas : [...]”  
 ‘In English, 26.1 is defined by the material-product alternation and 26.4 by verbs that do not allow this alternation. In French, this alternation does not exist: [...]’  
 cf. <http://verbenet.inria.fr/class/26/> (March 30, 2022)

<sup>5</sup> (I) \*John built the bricks into a mill. (Jezek 2014: 41)

well-formed under specific conditions and that the verbs exemplified in (8) dispose of two syntactic possibilities for denoting the result of a creation event.

The second verb class relevant to this study involves transitive manner verbs that are canonically restricted to activity or change of state readings when combining with only a direct object (henceforth “inflexible” verbs), cf. (14a) vs. (14b).

- (14) Marie a plié un bateau en papier.  
 Marie has folded a boat in paper  
 ‘Marie folded a paper boat.’  
 a. #‘Marie created a paper boat by folding.’  
 b. ‘Marie folded an already existing paper boat.’

They can, however, adopt a creation reading by combining a material-denoting object DP with a resultative PP, as in (15). A selection of verbs that show this pattern is listed in (16). In Verb $\exists$ Net, they are listed in subclass 26.5 (*knead-verbs*), which is characterized by the syntax in (17), or in class 22 (*verbs of combining and attaching*), for which a creation reading is not explicitly listed. In LVF, these verbs do not carry the *fab*-tag.

- (15) Marie a plié le papier en (un) bateau.  
 Marie has folded the paper in a boat  
 ‘Marie folded the paper into a boat.’  
 (16) *battre* ‘to beat’, *lier* ‘to tie’, *mélanger* ‘to mix’, *pétrir* ‘to knead’, *rouler* ‘to roll’  
 (17) NP V NP<sub>MATERIAL</sub> PP<sub>PRODUCT</sub>

It seems noteworthy that many English counterparts of the verbs exemplified above are flexible verbs in our sense as they do allow for an effected object. Manner verbs with effected objects are, thus, certainly not barred in French, but the number of derived creation verbs that allow for effected objects appears to be smaller than in English. This assumption is in line with Slobin’s (2006) findings on motion verbs, which suggest that V-framed languages have smaller inventories of manner verbs. The restrictions imposed on manner verbs in V-framed languages regarding the compatibility with result-denoting constituents can, thus, not always be pinned to a general grammatical constraint, but must, in certain cases, be attributed to characteristics of the lexical inventory.

### 2.3. A note on resultative constructions

As is well known, most types of resultative constructions that occur in S-framed languages are not available in French. Resultatives are usually classified based on at least two criteria, the phrasal category of the resultative XP, which is typically an AP or a PP, and the entity of which the result state is predicated (cf. Beavers 2012, Carrier & Randall 1992, Kaufmann & Wunderlich 1998, Kratzer 2005, Washio 1997 *inter alia*). Strong resultatives in the sense of Kaufmann & Wunderlich (1998) involve an unselected direct object whose referent is the holder of the result state but not the

undergoer of the event denoted by the verb, cf. (18a) and (19a).<sup>6</sup> With weak resultatives, the object referent is also the holder of the result state, cf. (20a). In French, resultative APs and strong resultatives – no matter whether adjectival or prepositional – are barred, cf. (18b), (19b) and (20b).

- (18) a. They drank the wine cellar \*(empty). (EN)  
 b. \*Ils ont bu la cave à vins vide. (FR)
- (19) a. They drank the guests \*(under the table). (EN)  
 b. \*Ils ont bu les invités sous la table. (FR)
- (20) a. John hammered the metal flat. (EN)  
 b. \*Jean a martelé le métal plat. (Burnett & Troberg 2014: 39) (FR)

The unavailability of strong resultatives is also relevant with respect to creation event lexicalization. In English, a number of manner verbs can denote creation events by combining with an effected object and a locative PP as in (21a). Crucially, the effected object is an unselected object, i.e., it is not licensed by the verb but by the PP without which the VP's acceptability is at least reduced. As expected, the French counterparts of these VPs are unacceptable and a different verb such as *faire* has to be used instead, cf. (21b).

- (21) a. The puppy bit a hole in his mistress's boot. (EN)  
 b. Le chiot a {fait/\*mordu} un trou dans la botte de sa maitresse. (FR)  
 'The puppy {made/bit} a hole in his mistress's boot.'

In English, strong resultatives that yield creation readings such as the one in (21a) are possible with different types of verbs. They often occur with contact-by-impact verbs like *bite* or *scratch* (cf. Levin 1993: 148-153) but are, for instance, also possible with instrument verbs such as *hammer* or *saw*. (22) gives an exemplary list of verbs that allow for creation readings by means of a strong resultative construction. In French, this type of creation event lexicalization is generally blocked, that is, independent of the verb lexeme involved, due to the unavailability of strong resultatives. In the following, I will also refer to the French equivalents of the verbs exemplified in (22) as inflexible verbs (type *mordre*), where "inflexible", again, reflects that the verbs do not allow for an effected object.

- (22) burn, hammer, press, rip, rub, saw, scratch, squeeze (En.)

Weak PP-resultatives are the only type of resultative that is known to be permitted in a number of contexts. One factor that influences their availability is the semantics of the verb involved (cf. Fong & Poulin 1998) and the question of whether the verb (root) lexicalizes a resultative meaning component in addition to a manner component. This question touches upon Levin's and Rappaport Hovav's hypothesis of manner/result complementarity, according to which a verb root can only lexicalize one

<sup>6</sup> The terms *weak* and *strong* resultatives have been introduced by Washio (1997), who uses them in a slightly different way. In Washio's systematics, strong resultatives do not necessarily involve an unselected object but are characterized by the fact that the meaning of the verb and the meaning of the resultative adjective are completely independent of each other (cf. Washio 1997: 7).



of the two components (cf. e.g. Levin & Rappaport Hovav 1991, 2010, 2013). The idea of manner/result complementarity is subject to an ongoing debate (cf. e.g. Goldberg 2010, Rapoport 2012, for counter-arguments), and it is not always obvious which component is lexicalized by a given verb. Pure result verbs, i.e., those without a manner component, are known to be compatible with resultative PPs, cf. (23) and (24). These VPs do not instantiate cases of S-framed event lexicalization, as the respective PPs only specify a result but do not introduce it.

- (23) La sorcière a changé le prince *en crapaud*. (Fong & Poulin 1998 : 36)  
The witch has turned the prince in toad  
'The witch turned the prince into a toad.'
- (24) Claude a transformé le garage *en bureau*. (Fong & Poulin 1998 : 36)  
Claude has converted the garage in office  
'Claude converted the garage into an office.'

For the verbs that are at stake in this study it is not straightforward to determine whether they lexicalize a result. The literature on manner/result complementarity has provided a number of tests for identifying the two semantic components in verbal roots. As for truth conditional diagnostics, it has been argued that it should not be possible to deny that a change has taken place if the verb in question is a result verb (cf. Alexiadou, Martin & Schäfer 2017, for French, Beavers & Koontz-Garboden 2012: 336–338). For the verbs at issue here, it is not entirely clear whether a result denial proves as contradictory. French creation verbs therefore appear to require further distributive testing on a case-to-case basis in order to determine which conceptual component(s) they lexicalize. If the verb meaning lexically entails a result, extending the VP by an *en*-resultative would not constitute a case of S-framed event lexicalization in the narrower sense. Interestingly, not all verbs under investigation appear to behave alike in this respect. It is, for instance, possible that flexible verbs, which allow for an effected object, entail a result, while this is not necessarily the case for inflexible verbs, which cannot select an effected object, cf. (25) vs. (26). Creation verbs thus raise open questions with regard to which meaning components they specify lexically, and which are merely contextual.

- (25) L'artiste a sculpté le bois, #mais il n'a pas du tout changé.  
'The artist carved the wood, #but it hasn't changed at all.'
- (26) Le pâtissier a roulé la pâte, { ?mais sans résultat / ?mais ce fut sans effet }.  
'The baker rolled the dough, {but to no result / but it was without effect}.'

Another factor that has received less attention concerns the internal makeup of the resultative PP.<sup>7</sup> It seems noteworthy that many resultative PPs headed by *en* embed

<sup>7</sup> A further factor that is not explored in this study concerns the preposition itself. It has, for instance, been observed that certain prepositions such as fr. *jusqu' à* or sp. *hasta* can head PPs that denote goals or results (cf. e.g. Fortis 2006 for French, Fábregas 2007 for Spanish).

- (II) Jean a mangé le pomme \*(jusqu') au cœur. (Di Sciullo 1999: 51)  
Jean has eaten the apple till the core  
'Jean ate the apple to the core.'

a bare noun (henceforth BN) and not a full DP like their English counterparts, cf. (23) and (24) above (cf. Le Bruyn, de Swart & Zwarts 2012 for an overview of bare PPs). However, both options can be possible, also with the same verb, cf. (27) and (28).

- (27) Et elle y tresse les herbes *en bracelet*  
 and she there braids the herbs in bracelet  
 ‘And she weaves the herbs into a bracelet [...]’  
<http://estuairegironde.net/art/litter/lippinois/appel-fleuve/appel-10.html>
- (28) [...] et [il] tresse les cheveux *en un cordon*.  
 and he braids the hair in a cord  
[https://fr.wikipedia.org/wiki/Porphyrria's\\_Lover](https://fr.wikipedia.org/wiki/Porphyrria's_Lover)  
 ‘[...] and [he] braids the hair into a cord.’  
 ex. taken from the French Web 17 corpus (frTenTen17) (cf. Jakubiček et al. 2013)

Possible constraints related to the structure of the PP therefore seem to be of a more subtle nature. In addition to verb class (flexible vs. inflexible verbs), the PP-internal makeup (embedding of a BN or a full DP) will therefore be considered as a second factor in determining the acceptability of resultative PPs headed by *en* (cf. sec. 5).

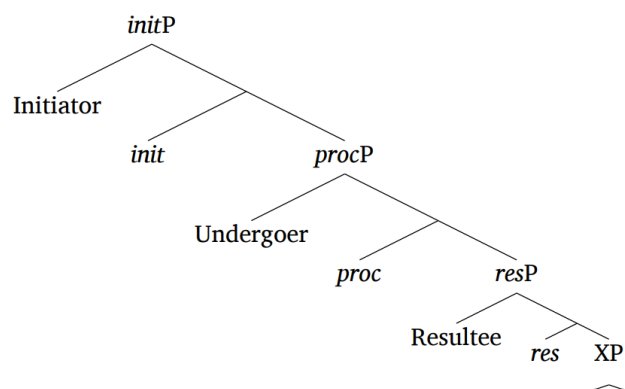
### 3. Creation verbs in *First Phase Syntax*

In order to analyze different configurations of the VP with regard to their ability to denote creation events, this study draws on Ramchand’s (2008) *First Phase Syntax* as a moderate syntactic approach to the representation of event structure. The model captures in a systematic way the aspects critical for this study, namely the distinction between effected objects and other object DPs, and different types of resultative constructions. Within this version of the split VP, verbal predicates are decomposed into up to three subevental components. The V-node is replaced by the three functional heads *init(iation)*, *proc(ess)* and *res(ult)*, and their projections, cf. (29). *Init* is a stative head that stands for causation. *Proc* represents change and is the core of any dynamic predicate, while *res* denotes a final state that can emerge as the result of the event denoted by *proc*.

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However, whether VPs that involve PPs with these prepositions are instances of S-framed event lexicalization or not is subject to an ongoing debate (cf. e.g. Arrizabalaga 2014 who argues in favor of this assumption vs. Bigolin & Ausensi 2021 who argue that the PP is an adjunct external to the argument structure of the predicate and, thus, no case of S-framed event lexicalization).

(29) (cf. Ramchand 2008: 39)

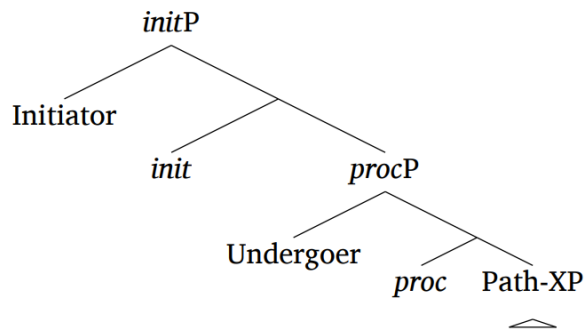


Moreover, the labels *init*, *proc* and *res* refer to the features for which a verbal root (or an affix) can be lexically specified. Event and argument structure is, thus, represented syntactically, but the lexicon is not totally void of categorical information. Verb classes result from the possible combinations of the lexical features *init*, *proc* and *res*. In this study, we are dealing with *init-proc*-verbs, as a *res*-feature is assumed only for verbs such as *arrive* or *break*, which are obligatorily telic and always entail a result state. Verbs whose telicity depends on referential properties of one of their arguments are not specified for a *res*-feature in Ramchand's systematics. Incremental theme verbs such as *eat*, for example, do not carry a *res*-feature. Creation verbs also belong to this type as the mereological structure of the argument referent is homomorphic to the temporal structure of the event. In (30a), for instance, the direct object is a singular count noun, and, due to its quantized reference, the VP is telic as shown by the time adverbial test. In (30b), on the other hand, the direct object denotes a non-quantized material, and the VP is, thus, atelic, or at least allows for an atelic reading.

- (30) a. Il a sculpté une poupée {en deux heures / #pendant deux heures}.  
 'He carved a doll {in two hours / for two hours}.'  
 b. Il a sculpté le bois {?en deux heures / pendant deux heures}.  
 'He carved the wood {in two hours / for two hours}.'

As for arguments that can surface as direct objects, two types can be distinguished based on their position in the configurational structure (cf. Ramchand 2008: 68-70). First, each subevent licenses a DP in its specifier position. *ProcP* introduces the entity that undergoes change (the Undergoer), cf. (29) above. Second, each eventive head can be occupied by an argument that co-describes the corresponding subevent. The complement position of *proc* can be occupied by a Path XP which can be any kind of XP (DP, AP or PP) that provides a part-whole structure to the event, cf. (31).

(31)

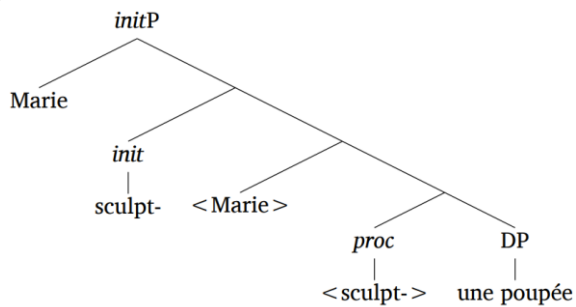


A direct object is, thus, either an Undergoer or a Path. As Ramchand (2008: 68) notes:

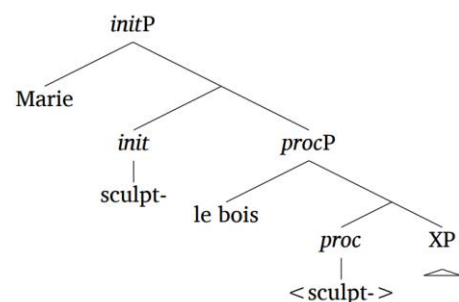
“[t]he class of creation verbs is interesting to examine here because phrases like *bake DP*, or *paint DP* seem to be systematically ambiguous between a reading in which the verb describes the process of an individuated undergoer argument [...] and a completive reading where the DP object that comes into being describes the result [...]”<sup>8</sup>

In (30a), the creation event is completed when the referent of the object DP comes into existence. We are, thus, dealing with a Path that further describes the event introduced by the *proc*-head. In (30b), the object referent is an Undergoer that is merely subject to change and does not (necessarily) delimit the event, cf. (32a) vs. (32b) for the respective event structures.

(32) a.



b.



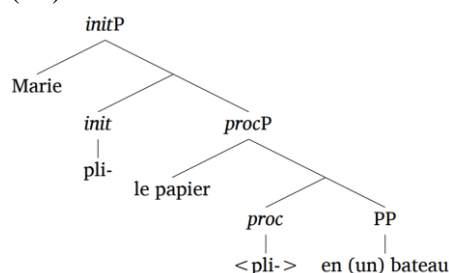
The Path position is also relevant when it comes to different types of resultative constructions, as we can distinguish between so-called ‘Result’-resultatives and

<sup>8</sup> Whereas en. *paint* and fr. *peindre* behave alike in allowing for both an Undergoer object and an effected object, cf. (III), there is no French equivalent to the English manner verb *bake*. The creation event is, thus, lexicalized without a manner component, (IV).

- |       |    |                                  |    |                          |       |
|-------|----|----------------------------------|----|--------------------------|-------|
| (III) | a. | Paul painted the wall.           | b. | Paul painted a picture.  | (En.) |
|       | a. | Paul a peint le mur.             | b. | Paul a peint un tableau. | (Fr.) |
| (IV)  | a. | Paul baked a cake.               |    |                          | (En.) |
|       | b. | Paul a {fait/préparé} un gâteau. |    |                          | (Fr.) |
|       |    | ‘Paul {made/prepared} a cake.’   |    |                          |       |

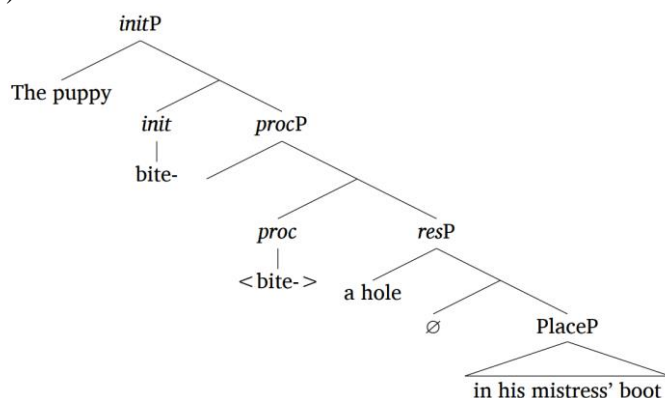
‘Path’-resultatives in the split VP (cf. Ramchand 2008: 125-131). Result-resultatives are built from a *res*-head that takes a true stative predication as its complement, cf. (18a), (19a) and (21a) above, whereas Path-resultatives are directly formed from a *proc*-head without a separate predication being introduced. French allows for Path-resultatives as long as they are PPs, cf. (15) above and (33) for a representation of its event structure. Importantly, such resultative PPs provide the event with a mereological structure just like effected objects do.<sup>9</sup>

(33)



Result-resultatives only occur in configurations in which the verb itself lexicalizes the *res*-head and the Undergoer of the event is also the Resultee (Ramchand 2008: 129), cf. (23) and (24) above. Configurations with an empty *res*-head in which Undergoer and Resultee are not identical are barred as shown in (18b) and (19b) above. Creation event lexicalizations involving effected objects that are pure Resultees are therefore ungrammatical, cf. (21b) above and (34) for the event structure of the English example presented in (21a).

(34)



French manner verbs are, thus, only compatible with result-denoting expressions in the VP that are structurally classifiable as (bounded) Paths and that can

<sup>9</sup> Flexible verbs such as *sculpter* can occur with only a Path-DP but, as one of the reviewers has noted, not with solely a Path-PP, cf. (Va). The ungrammaticality of (Va) is, however, not specific to French, cf. (Vb). If only one component – the material/Undergoer or the product/result is realized syntactically, it is mapped onto the direct object position regardless of whether the verb is flexible or inflexible, cf. (30) above.

- (V) a. \*Marie a sculpté en poupée. (FR)  
 b. \*May carved into a doll. (EN)

surface as either object DPs or resultative PPs. However, since these types of constituents cannot be combined with manner verbs without restrictions, they will be investigated more closely in the experimental part of this study.

#### 4. AJT 1: Effected objects and coercion into creation readings

It is well-known that the (un-)acceptability of a linguistic utterance can arise from a number of sources, among which are grammaticality, semantic well-formedness, pragmatic plausibility, the frequency of the lexical items and syntactic structures involved as well as processing costs (cf. Cowart 1997, Schütze & Sprouse 2013 *inter alia*). A notorious problem of acceptability judgments is that it is never entirely clear to which factors a given rating refers (cf. Fanselow 2007). A key feature of judgment data is the fact that the dependent variable – acceptability – is measured offline, i.e., after language processing has been completed. The data thus provide information about the interpretation of certain utterances in discourse but cannot provide direct information about language processing, unlike online methods such as self-paced reading or eye tracking (cf. e.g. Vorweg 2012 for an overview). However, certain correlations between processing and acceptability have been observed, in particular, in dual task designs. Processing difficulties, which become visible, for instance, by comparatively slow reading speed, have been shown to correlate with judgments of reduced acceptability (cf. Fanselow 2021, Fanselow & Frisch 2006, Sprouse 2008 *inter alia*). Low acceptability values can thus be considered as indicative of increased processing efforts, all other things kept constant.

The relationship between acceptability and processing is relevant for this study as increased processing effort can result from coercion, that is, the repair of mismatches between a selector (here the verb) and a selected element (in our case the direct object) (cf. Lauwers & Willems 2011, de Swart 2011 for overviews). The research literature on coercion processes concerning the VP has taken a great deal of interest in aspectual coercion (cf. e.g. Darby et al. 2021, Lukassek et al. 2017) as well as complement coercion (cf. e.g. Pustejovsky 2011, Zarccone et al. 2017). Studies in complement coercion typically focus on the clash between the selectional restrictions of the verb and the semantic type of its direct object. A prototypical example involves an event-selecting verb that is paired with a noun denoting a physical object, as in (35) (cf. Pustejovsky 1995).

- (35) English (Lauwers & Willems 2011: 1221)
- a. I began a book.
  - b. I heard the river.

The interpretation of such sentences requires the selected element to be coerced into an eventive reading (*writing/reading the book, the sound of the river*) and a meaning shift due to which the semantic mismatch is resolved. It has been observed that complement coercion can increase, for instance, reading speed, and lower acceptability when comparing sentences like the ones in (35) to sentences in which no type clash occurs.

The constellation at stake here involves selectional restrictions of different types of manner verbs that canonically select an object on which the event is

performed, rather than an effected object that arises as the result of the event. The AJT tests the extent to which VPs involving such verbs can be coerced into creation readings, that is, whether or under which conditions the object DP can be interpreted as an effected object. The experiment is based on the hypothesis that VPs involving an effected object that is structurally a Path are acceptable at least to a limited extent. This assumption is based on the fact that Path-DPs are in principle available in French and compatible with manner verbs as can be observed in flexible verbs such as *sculpter*. Thus, with verbs such as *plier*, the selectional restrictions of a particular verb have to be adapted, but no general grammatical constraint has to be overridden in order to achieve a creation reading. VPs that instantiate event structures involving a *resP* with an empty *res*-head, on the other hand, are expected to turn out as comparatively unacceptable because French does not permit pure Resultees to surface as direct objects. The unavailability of structures with an empty *res*-head and a pure Resultee is independent of the verb lexeme involved and can be considered a general structural constraint of the French VP. The main assumption underlying AJT 1 is that we are dealing with gradient acceptability values that reflect, at least to a certain degree, the effort that is involved in the repair of the mismatch between the verb and its complement (cf. Darby et al. 2021: 147, for a similar view on aspectual coercion). In the case of VPs such as (14), repeated as (36), a mismatch between a specific verb and its complement has to be resolved for the intended event reading. However, the interpretation of the VP requires no more than that the VP receive an interpretation that is in principle available for French manner verbs, just not canonically for the verb in question. In cases such as (21b), repeated as (37), however, a lexeme-independent constraint has to be cancelled in order to interpret the VP in a felicitous way. Thus, the effort of coercing the direct object in (37) into an effected object reading should decrease the acceptability to a higher degree than in the case of (36).<sup>10</sup>

- (36) Marie a plié un bateau en papier.  
 Marie has folded a boat in paper  
 ‘Marie folded a paper boat.’  
 a. #‘Marie created a paper boat by folding.’ (intended, but canonically not available reading)  
 b. ‘Mary folded an already existing paper boat.’ (canonical reading)
- (37) \*Le chiot a mordu un trou dans la botte de sa maitresse.  
 The puppy has bitten a hole in the boot of his mistress  
 Intended, but canonically not available reading:  
 ‘The puppy bit a hole in his mistress’s boot.’

In order to reach a more fine-grained understanding of the extent to which different VP configurations are accepted as creation event denotations, the experiment includes the three types of manner verbs introduced in section 2, that is, flexible verbs (type *sculpter*) and inflexible verbs of two different types. The first type involves verbs such as *plier*, which canonically can receive a creation reading only by means of a resultative PP, not by means of an effected object. The second type involves verbs of

<sup>10</sup> The acceptability signs do not reflect the intended event reading in each case but indicate unacceptability in Standard Hexagonal French. The hash shows that the VP in question is in principle acceptable but canonically disallows the intended interpretation, while the asterisk indicates that it is generally unacceptable.

the type *mordre*. In S-framed languages such as English, these verbs can adopt creation readings when combined with a non-selected object and a locative PP. In French, this is not possible due to the general blocking of strong resultatives. Furthermore, all creation event descriptions are also presented as VPs in which *faire* is the finite verb. VPs with manner verbs are, thus, not only compared against each other, but also to counterparts in which manner is not lexicalized in the verb. Therefore, the AJT is based on a 2x3-design and acceptability gradations are expected as follows. Within the group of manner verbs, flexible verbs (type *sculpter*) should reach the highest acceptability scores as they canonically license an effected object. They should thus be preferred over inflexible manner verbs of either type, as the latter require coercion to some degree. Among the inflexible verbs, verbs of the type *plier* should prove as more acceptable than verbs of the type *mordre* due to the structural differences in the VP laid out above, cf. (38). As for differences between VPs with manner verbs and VPs with *faire*, I expect flexible manner verbs to be at least as acceptable as *faire*, cf. (39a). In the case of inflexible verbs, the VP with *faire* should reach higher acceptability ratings in each case, (39b). The difference between the respective manner verb and *faire* is expected to be greater in the case of *mordre*-type verbs than in the case of *plier*-type verbs.

- (38) flexible verbs (type *sculpter*) >> inflexible verbs (type *plier*) >> inflexible verbs (type *mordre*) (H1)
- (39) a. VPs in which a flexible verb is relevant: manner verb  $\approx$  *faire*  
 b. VPs in which an inflexible verb is relevant: *faire* >> manner verb (H2)

#### 4.1. Material

The six experimental conditions laid out above are exemplified in (40), (41) and (42).

- (40) À partir du reste du bois, le menuisier a {sculpté/fait} une poupée pour le théâtre de guignol.  
 ‘From the rest of the wood the carpenter {carved/made} a doll for the puppet theater.’
- (41) Pour mieux supporter la chaleur, Inès a {plié/fait} un éventail.  
 ‘To better withstand the heat, Inès {folded/made} a fan.’
- (42) a. En jouant, le chiot a mordu un trou dans la botte de sa maitresse.  
 ‘While playing, the puppy bit a hole in his mistress’s boot.’  
 b. Avec ses dents pointues, le chiot a fait un trou dans la botte de sa maitresse.  
 ‘With his sharp teeth, the puppy made a hole in his mistress’s boot.’

In most cases, the VPs are identical except for the verb, cf. (40). In one case, the sentence-initial adverbial phrase is varied slightly to evoke an unambiguous creation reading, cf. (42a) and (42b). The adverbial phrase either specifies the material from which the product was made, cf. (40), or the instrument that was used to make it, cf. (42b). In some cases, it provides plausible context to support the creation reading in the best possible way, cf. (41) and (42a). The experimental material involves 40 critical stimuli à 20 token sets. Ten cases involve flexible manner verbs, cf. (43), ten cases manner verbs that are inflexible, cf. (44). Five of the inflexible verbs are of the



type *plier*, cf. (44a) as well as (16) above. They are combined with canonically impermissible effected objects as in (41). The other five inflexible verbs are of the type *mordre* and involve four contact-by-impact verbs and one instrument verb (*scier*), cf. (44b). They are, thus, French equivalents to the verbs introduced in (22) above. These verbs are combined with effected objects and locative PPs as in (42a) above (cf. sec. 8.1 in the appendix for all test items).

- (43) *bricoler* ‘to do DIY, fix’, *découper* ‘to cut (out)’, *ciseler* ‘to chase, chisel’, *façonner* ‘to manufacture, fashion, hew’, *forger* ‘to forge’, *modeler* ‘to model, mold, shape’, *mouler* ‘to mold’, *sculpter* ‘to carve’, *tisser* ‘to weave’, *tresser* ‘to braid’
- (44) a. *lier* ‘to tie’, *mélanger* ‘to mix’, *pétrir* ‘to knead’, *plier* ‘to fold’, *rouler* ‘to roll’  
 b. *déchirer* ‘to tear, rip’, *gratter* ‘to scratch’, *mordre* ‘to bite’, *presser* ‘to press, squeeze’, *scier* ‘to saw’

#### 4.2. Test subjects

The test subjects were 30 speakers of Hexagonal French. They were recruited via the crowdsourcing platform *Prolific Academics* and received 3,50 £ each for their participation.<sup>11</sup> In order to recruit monolingual speakers, who were influenced by an S-framed language or any other language as little as possible, potential test subjects were pre-screened for certain language biographical information. All test subjects whose judgments are included in the analysis reported that they met the following criteria: They were French citizens who had been raised in France, monolingually French-speaking. None of them had lived outside France for more than three consecutive years.

#### 4.3. Procedure

The experiment was based on a within-subject design. For purposes of counterbalancing, the material was distributed onto two lists, each of which included 20 items with creation event lexicalizations involving an effected object and 30 filler items. The study was carried out as a web-based experiment using the questionnaire tool *SoSci Survey*.<sup>12</sup> In the introductory part, test subjects were asked to fill out a questionnaire which was concerned with certain linguistic features of Hexagonal French. They were told that their intuitive judgments as native speakers were needed but not aware of the exact object of investigation. The test subjects were asked to read the paragraphs presented to them and informed that each paragraph contained a critical item, which was underlined. After reading the paragraph in question, they judged the underlined item with regard to naturalness. Judgments were elicited on a seven-point Likert scale on which 1 was labelled (*La partie soulignée me paraît pas du tout naturelle dans le contexte donné* ‘(The underlined part seems to me) not at all natural in the given context’ and 7 stood for *parfaitement naturelle dans le contexte donné* ‘perfectly natural within the given context’. The working instruction included three anchor items for the lowest, the middle and the highest point in order to counteract scale bias and to establish a floor and a ceiling (cf. Schütze & Sprouse 2013: 37). The

<sup>11</sup> <https://www.prolific.co/> (March 30, 2022)

<sup>12</sup> <https://www.sosicurvey.de/> (March 30, 2022)

stimuli were presented in a pseudo-randomized order alternating experimental items and filler items in an irregular fashion. Each questionnaire started with three fillers as unannounced practice items in order to familiarize the test subjects with the task. The filler material was taken from two stimulus sets, one of which was concerned with subject-verb agreement in the case of collective nouns (cf. e.g. Pusch 2020), the other with the (in-)compatibility of past tense forms and time adverbials. The fillers included acceptable, unacceptable, and disputable items in order to cover the full range of the scale. The questionnaire took 20-25 minutes to complete.

#### 4.4. Results

Prior to the statistical analysis, the acceptability ratings of each test subject were transformed into z-scores in order to eliminate potential biases in how different test subjects used the 7-point scale (cf. Schütze & Sprouse 2013: 43). As the dataset did not contain outliers, all 600 judgments were included in the analysis (cf. Staum Casasanto, Hofmeister & Sag 2010: 226, for outlier detection). To estimate the effects of the experimental manipulations, a Linear Mixed Model (LMM) with a Gaussian family distribution was performed using R (R Core Team 2021) and the package lme4 (Bates et al. 2015). Verb type (manner verb vs. *faire*) and type of manner verb (flexible, inflexible (type *plier*), inflexible (type *mordre*)) and interactions of it were treated as fixed factors. The model included a by-item random intercept. P-values were obtained by pairwise comparisons of a model with an effect in question against the model without this effect using ANOVAs and Bonferroni correction.

**Figure 1.** Acceptability of verbs with effected objects (N = 600, N for each condition [from left to right] = 150, 150, 75, 75, 75, 75)

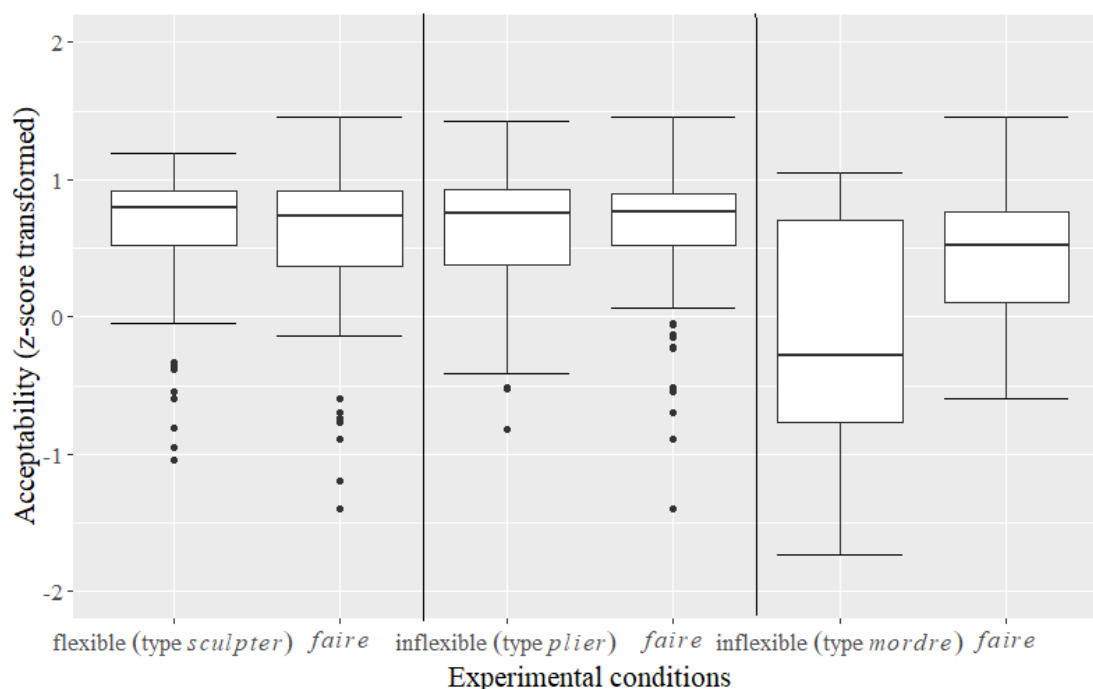


Figure 1 shows the following acceptability gradations: As expected, among the VPs that embed a manner verb those with a flexible verb achieve the highest

acceptability scores. They prove to be about as acceptable as their equivalents with *faire*. Whether manner is lexicalized or not does not seem to affect acceptability significantly, although the context suggests in each case that the product comes into existence in a particular way. This finding is consistent with the observation that V-framed languages such as French are low manner-salient in the sense of Slobin (1996). For VPs in which inflexible verbs are relevant or occur, the following differences can be observed: Inflexible manner verbs of the type *plier* that are coerced into creation readings are slightly less acceptable than their counterparts with *faire* and VPs with flexible manner verbs. However, compared to manner verbs of the type *mordre*, they turn out to be significantly more acceptable and show predominantly positive z-values. This indicates that, for the most part, they can be successfully coerced into the intended reading.<sup>13</sup> The ratings of VPs with inflexible verbs of the type *mordre* are considerably dispersed and include z-values in the negative range. Their counterparts with *faire* receive much higher ratings in all cases. In the final model, both verb type and type of manner verb survive as significant predictors of acceptability ( $\chi^2(5) = 89.52, p < 0,001$ ). Hypotheses H1 and H2 are, thus, borne out. The findings corroborate the assumption that coercing a VP into a reading that involves a generally inadmissible event structure lowers acceptability considerably more than coercing it into a reading that is structurally available and only in conflict with the selectional restrictions of a specific verb.

## 5. AJT 2: Factors influencing the acceptability of resultative PPs

The previous sections have shown that, if a manner verb is involved, it is not yet fully understood under which conditions the product of a creation event can be lexicalized by a resultative PP (cf. sec. 2.2), but that an object DP is not always readily available either (cf. sec. 4). AJT 2 therefore examines two conditions that, according to previous findings, might influence the acceptability of resultative PPs as a second means of lexicalizing the result of a creation event. While we know that verbal semantics has an influence, it is not clear how flexible and inflexible verbs differ in terms of their compatibility with resultative PPs. This experiment is based on the following questions: Can resultative PPs denote the result of a creation event in both verb classes under investigation, and, if so, do we find differences regarding the PPs that are involved? The starting point for clarifying these issues is the observation presented in section 2.2 that resultative PPs in French can embed either a BN or a full DP. Issues related to the semantics of bare PPs will not be discussed in this paper (cf. e.g. Le Bruyn, de Swart & Zwarts 2012, Martin 2004), but it seems at least worth mentioning that the two variants come with distributional differences, for instance, with respect to the accessibility for discourse anaphora. While the full DP can denote an individual and antecede a pronoun such as *celui-ci* in (45a), prenominal resumption is not readily available when a BN is embedded into the resultative PP, cf. (45b).<sup>14</sup>

<sup>13</sup> Higher z-scores represent higher ratings, which lie above the test subject's mean rating, lower z-scores stand for lower ratings, which lie below the test subject's mean (cf. Cowart 1997: 114). Positive z-scores typically occur with items whose acceptability is beyond dispute (cf. e.g. Kush, Lohndal & Sprouse 2018: 760).

<sup>14</sup> I am indebted to a reviewer and Fabienne Martin for contributing to this example.

- (45) a. Julie a plié la serviette en *un éventail*<sub>i</sub> et a offert  
 Julie has folded the towel in INDEF.M fan and has offered  
 celui-ci<sub>i</sub> à sa mamie pour qu'elle s'évente.  
 DEM.M to her grandmother to fan herself.
- b. ?Julie a plié la serviette *en éventail*<sub>i</sub> et a offert  
 Julie has folded the towel in fan and has offered  
 celui-ci<sub>i</sub> à sa mamie pour qu'elle s'évente.  
 DEM.M to her grandmother to that-she herself-fan  
 'Julie folded the towel into a fan and offered it to her grandmother to  
 fan herself.'

Flexible verbs differ from inflexible verbs in the type of direct object they permit (cf. sec. 2 and 4). With the former, the object DP can be an effected object and, thus, denote an individual with resultative semantics, which is not the case with inflexible verbs. The AJT is, therefore, based on the overall hypothesis that resultative PPs are, in principle, available in both verb classes, but that the selectional restrictions of the verb influence the type of PP that is preferred. It appears that flexible verbs, which allow for a result-denoting object DP, also more easily support a resultative PP embedding a full DP than inflexible verbs, which canonically do not allow for a result-denoting object DP, cf. (46). Verbs from both classes should be equally compatible with resultative PPs that embed just a BN, (47). The AJT is, thus, based on a 2x2x-design with type of manner verb (flexible vs. inflexible (*plier*-type)) and makeup of the PP (full DP vs. BN) being the manipulated factors.

- (46) PP embeds a full DP: flexible verbs >> inflexible verbs (H1)  
 (47) PP embeds a BN: flexible verbs ≈ inflexible verbs (H2)

### 5.1. Material, procedure, and test subjects

As AJT 1 and AJT 2 are based on the same experimental design, only the characteristics that apply exclusively to AJT 2 are described. The four conditions that result from the experimental design laid out above are exemplified in (48) and (49) (cf. sec. 8.2 in the appendix for all test items).

- (48) Comme surprise pour sa femme,  
 Claude a forgé l'or a. en médaillon b. en un médaillon.  
 Claude has forged the gold in locket in a locket  
 'As a surprise for this wife, Claude forged the gold into a locket.'
- (49) Pour mieux supporter la chaleur,  
 Julie a plié le papier a. en éventail b. en un éventail.  
 Julie has folded the paper in fan in a fan  
 'To better withstand the heat, Julie folded the paper into a fan.'

The material consisted of 32 stimuli à 16 token pairs. Eight pairs involved flexible manner verbs, cf. (50), the other eight inflexible manner verbs (type *plier*), cf. (51).<sup>15</sup> Each questionnaire included 16 items with creation event lexicalizations

<sup>15</sup> In AJT 1 and 2, the same verbs were used in many cases, but not always, because the two experiments were initially created independently of each other. They are now considered

involving a resultative PP and 24 filler items. The test subjects were 20 speakers of Hexagonal French.<sup>16</sup>

- (50) *ciseler* ‘to chase, chisel’, *façonner* ‘to manufacture, fashion, hew’, *forger* ‘to forge’, *modeler* ‘to model, mold, shape’, *nouer* ‘to knot, tie’, *tisser* ‘to weave’, *tresser* ‘to braid’
- (51) *battre* ‘to beat’, *chiffonner* ‘to crumple’, *cuire* ‘to cook’, *limer* ‘to file’, *mélanger* ‘to mix’, *plier* ‘to fold’, *pétrir* ‘to knead, mold’

## 5.2. Results

The statistical analysis of the data was performed in a similar procedure as in AJT 1 (cf. sec. 4.4). Data points with z-scores more than 2,5 standard deviations from the mean were excluded. This outlier removal process affected 10 of 320 judgments. The remaining 310 z-scores were the data on which the LMM was performed. Verb class and makeup of the PP as well as interactions of the two factors were treated as fixed factors and the model included a by-item random intercept.

**Figure 2.** Acceptability of verbs with resultative PPs (N = 310, N for each condition [from left to right] = 79, 76, 80, 75)

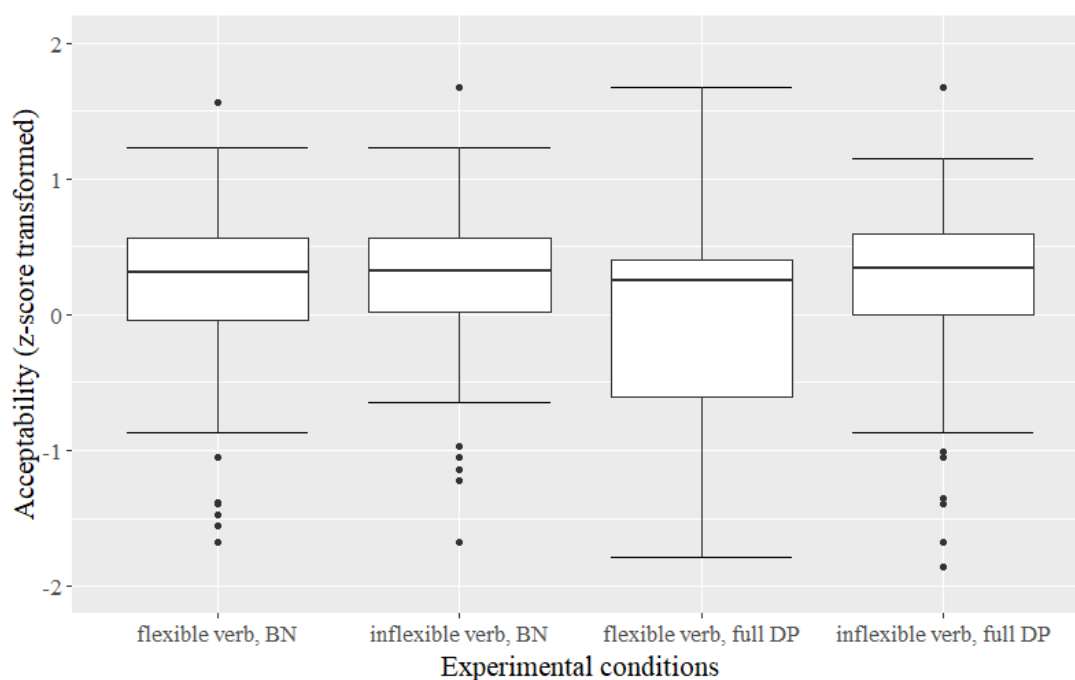


Figure 2 shows that resultative PPs received high acceptability scores with both verb classes when a bare noun is embedded in the PP. However, when the PP contains a full DP, the VPs with flexible verbs turn out to be considerably more acceptable than those with inflexible verbs, whose acceptability is significantly reduced (as indicated

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together in order to obtain a more comprehensive overview of creation event lexicalization in French.

<sup>16</sup> A filter offered by Prolific ensured that test subjects could participate in only one of the two experiments.

by the z-values in the negative range). A closer inspection of the individual verb lexemes representing the group of inflexible verbs shows that in fact all verbs but one turn out more acceptable when a BN is embedded than when a DP is embedded.<sup>17</sup> Inflexible verbs, thus, show a preference for embedding only a BN, while VPs with flexible verbs are equally acceptable under both conditions, which confirms the hypotheses laid out above. The final model includes the interaction of verb class and makeup of the PP as the best predictor for acceptability of VPs with a resultative PP ( $\chi^2(2) = 11.622$ ,  $p < 0,01$ ). However, when interpreting the results, it should be noted that the influence of only two variables has been addressed in this experiment. A number of other factors such as the nature of the subject argument (agent or causer) or the interpretation of the verb involved (literal or figurative) could also influence the makeup and acceptability of resultative PPs headed by *en*. Work by Alexiadou, Martin & Schäfer (2017) and Martin & Schäfer (2017), for instance, indicates that, with certain manner verbs, a resultative reading of the VP is only implied and cancellable when the subject is an agent, but lexically entailed when it is a causer. Furthermore, PPs embedding a full DP have proven as more frequent with causer subjects, cf. (52), than with agentive subjects in a small-scale corpus study by Schirakowski (2020).

- (52) [...] *des sources d'eaux chaudes* [...] ont, depuis des milliers d'années, modelé la montagne *en une cascade de bassins naturels* [...].  
 '[...] hot springs [...] have, for thousands of years, shaped the mountain into a cascade of natural pools [...].'  
 ([http://robinland.uniterre.com/entry\\_tags.php?w=robinland&id=45587&tags=Turquie&k=1](http://robinland.uniterre.com/entry_tags.php?w=robinland&id=45587&tags=Turquie&k=1))  
 ex. taken from the French Web 17 corpus (frTenTen17) (cf. Jakubiček et al. 2013)

These observations may indicate that a non-cancellable resultative meaning is more likely to be expressed by a full DP. However, the distributional and semantic differences between resultative PPs embedding only a BN and those containing a full DP certainly require further investigation

## 6. Conclusion and discussion

Focusing on effected objects and resultative PPs headed by *en*, this contribution has explored two syntactic possibilities of lexicalizing the result of a creation event and their compatibility with manner verbs. According to Ramchand's (2008) version of the split VP, effected objects are structurally Paths, while resultative PPs are generally either Paths or Resultees. Since Paths further describe the event introduced by the *proc*-head but do not introduce a separate subevent, it is not surprising that these result-denoting expressions are also available in a V-framed language such as French. Importantly, though, they are not as freely available as in typical S-framed languages

<sup>17</sup> Only VPs with *pétrir* 'to knead' are rated as about equally acceptable with both options.

such as English. Therefore, this study has addressed the question of which factors contribute to the acceptability of manner verbs with effected objects or resultative PPs.

AJT 1 has shown that the acceptability of manner verbs and effected objects depends essentially on the verb lexeme involved. A considerable number of French manner verbs do not select canonically for effected objects (type *plier*) but can still be coerced into creation readings, as indicated by the fairly high acceptability values of the respective VPs. I tentatively attribute this finding to the fact that only a lexeme-specific, but no general constraint has to be cancelled in order to achieve a creation reading. This assumption is supported by the observation that manner verbs with unselected effected objects (type *mordre*) are significantly less acceptable. A creation event interpretation, thus, appears difficult to reach when the event structure of an *init-proc*-verb has to be augmented by a *resP*, but comparatively unproblematic when both readings, the canonical and the coerced one, are associated with only an *init-proc*-structure.

It remains to be shown to which degree the gradient acceptability attested in this experiment is paralleled by varying processing effort in an online experiment such as a self-paced reading task. Coercion that requires overriding a general structural constraint (typical of V-framed languages) is assumed to cause greater processing difficulties and a more costly repair than a canonically unacceptable combination of a verb lexeme and its direct object. From a diachronic perspective, it seems particularly interesting how differences in coercion processes might contribute to language change (cf. e.g. Willems & Lauwers 2011: 1229), for instance, in contact situations that involve V-framed and S-framed languages.

Resultative PPs (AJT 2) haven't proven as fairly acceptable under three of four experimental conditions. Only VPs involving inflexible verbs (type *plier*) showed reduced acceptability values when the PP embedded a full DP. This finding might be influenced by the fact that inflexible verbs, unlike flexible verbs (type *sculpter*), do not license a fully referential result-denoting expression in the first place. However, as addressed in section 5.2 above, a number of other contextual factors could contribute to determining what type of internal structure a resultative PP has and how acceptable it turns out to be. Moreover, although the distinction between obligatory arguments and optional adjuncts is not relevant for the notion of Path in the split VP, it seems worthwhile applying tests of argumenthood to the resultative PPs at stake.

Finally, the question remains whether the VP constellations investigated in this study are even instances of S-framed event lexicalization. If we subsume under S-framed event lexicalization manner verbs with Path arguments, French does allow for S-framed lexicalization under specific conditions, some of which were at stake in this study. VPs involving a *resP* and an empty *res*-head, on the other hand, have been confirmed as mostly unacceptable and S-framed creation event lexicalization can be considered as unavailable if the notion of S-framing is limited to this type of structure. Furthermore, it is still an open question whether the creation verbs studied here themselves carry a resultative meaning component (cf. sec. 2.3 above). For those that do the combination with a resultative PP is certainly not a case of S-framed event lexicalization as the PP only specifies a result already lexicalized by the verb. Creation events have been chosen as the object of this study because they show in a clear way that both subtle and verb-specific constraints as well as general structural restrictions are at play when it comes to combining manner verbs with result-denoting expressions in the VP.

## Acknowledgments

Parts of this study have been presented at *Going Romance 2020* and 2021. Thanks are due to the editors of this special issue and three anonymous reviewers for helpful remarks on a previous version of this paper. I would also like to thank Fabienne Martin for valuable comments as well as Claire D'Armagnac and Julie Kairet for help with the French data. All remaining errors are mine.

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## 8. Appendix

### 8.1. Test items (AJT 1)

- (1) À partir du reste du bois, le menuisier a {sculpté/fait} une poupée pour le théâtre du guignol.
- (2) Dans un travail laborieux, Paul a {forgé/fait} un médaillon comme surprise pour sa femme.
- (3) Avec la laine qui lui restait Sophie a {tissé/fait} un tapis et l'a exposé dans son atelier.
- (4) À partir des bâtonnets, chaque enfant a {façonné/fait} un santon pour la crèche de Noelle.
- (5) Avec des marguerites, Laure a {tressé/fait} une couronne de fleurs pour le mariage de sa sœur.
- (6) Pour l'exposition, le sculpteur a {ciselé/fait} une statue et l'a placée sur un piédestal.
- (7) Avec le plâtre, Marie a {modelé/fait} un buste pour l'exposition temporaire.
- (8) À partir du chocolat fondu, la pâtissière a {moulé/fait} un lapin de Pâques pour sa nièce.
- (9) À partir du papier, Inès a {plié/fait} un éventail pour mieux supporter la chaleur.
- (10) a. En jouant, le chiot a mordu un trou dans la botte de sa maitresse.  
b. Avec ses dents pointues, le chiot a fait un trou dans la botte de sa maitresse.
- (11) À partir du reste de la pâte, Marie a {roulé/fait} un boudin et l'a mis au réfrigérateur.
- (12) À partir des roses et des marguerites, la floriste a {lié/fait} un bouquet pour le client.
- (13) À partir de l'argile qui lui restait, Marie a {pétri/fait} un bol pour le marché artisanal.

- (14) Enfin, le policier a {scié/fait} une ouverture dans la porte pour atteindre la poignée.
- (15) Hier soir, notre chien a {gratté/fait} un trou dans le gazon pour cacher son os.
- (16) Pour les enfants, le cuisinier a {mélangé/fait} une boisson à base de fruits et de sirop.
- (17) À partir du carton rouge, Zoé a {bricolé/fait} un lampion pour la fête d'automne.
- (18) À partir du papier jaune, Emma a {découpé/fait} une étoile et l'a collée sur le lampion.
- (19) Avec ses griffes acérées, le chat a {déchiré/fait} une fente dans le tissu et a, ainsi, irrité son maître.
- (20) Ensuite, Marie a {pressé/fait} un puits dans la pâte et y a ajouté le lait et la levure.

### 8.2. Test items (AJT 2)

- (1) Dans un travail laborieux, le menuisier a sculpté le bois en (une) poupée.
- (2) Comme surprise pour sa femme, Paul a forgé l'or en (un) médaillon.
- (3) Après la tonte des moutons, Marie a tissé la laine en (un) tapis.
- (4) Pour l'exposition, les paysagistes ont façonné le terrain en (un) labyrinthe.
- (5) Pour la fête d'été, les enfants ont tressé les fleurs en (une) guirlande.
- (6) Pour son projet actuel, le tailleur de pierre a ciselé la roche en (un) pic.
- (7) Pour son nouveau client, le potier a modelé l'argile en (une) statuette.
- (8) Avant la randonnée, Nicolas a noué le linge en (un) balluchon.
- (9) Pour mieux supporter la chaleur, Julie a plié le papier en (un) éventail.
- (10) Pour ne rien jeter, Marie a cuit la viande et les légumes en (un) ragout.
- (11) Comme barrière de lit, elle a roulé la couverture en (un) boudin.
- (12) Comme cadeau pour sa mère, le menuisier a limé le morceau de bois en (un) bol.
- (13) Pour le marché d'artisanat, Marie a pétri l'argile en (un) vase.
- (14) Pour le petit-déjeuner, Louis a d'abord battu les œufs en (une) omelette.
- (15) Alors que l'enseignant s'approchait, l'élève a rapidement chiffonné le papier en une boule.
- (16) Pour les enfants, le cuisinier a mélangé le sirop et les fruits en (une) boisson.

### 8.3. Statistical analyses (model comparison)

**Table 1.** AJT 1

	AIC	BIC	$\chi^2$	df	<i>p</i>
null model	1016.3	1029.52			
<b>final model</b>	936.8	971.98	89.528	5	2.2e-16

**Table 2.** AJT 2

	AIC	BIC	$\chi^2$	df	<i>p</i>
null model	748.25	759.46			
<b>final model</b>	740.63	759.31	11.622	2	0.002994