

# The lexical pragmatics of reflexive marking\*

Fabienne Martin<sup>1</sup>, Florian Schäfer<sup>1</sup> and Itamar Kastner<sup>2</sup>  
<sup>1</sup>Humboldt-Universität zu Berlin; <sup>2</sup>University of Edinburgh

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**Abstract.** In French, a subclass of anticausative verbs is optionally marked with the clitic *se*, traditionally considered a reflexive marker. We show that this optionality does not consist of free variation. Rather, the presence or absence of *se* follows from lexical pragmatic considerations: while by default, both variants are equally acceptable, in the context of a human subject, speakers strongly prefer the variant that avoids alternative and unintended interpretations which arise in parallel with the intended interpretation, following the Gricean *Avoid ambiguity* maxim of manner. Understanding these preferences requires taking into account the multifunctionality of the *se*, which is not only used in the formation of anticausative predicates, but also in semantically reflexive ones. Depending on whether a reflexive or an anticausative parse is intended, the presence of the otherwise optional clitic *se* is resolved. We show that similar pragmatic considerations also constrain the availability of the impersonal *il*-construction and *se*-passives. The connection between intended interpretations and individual verb subclasses is an example of what we call lexical pragmatic effects.

**Keywords:** causative alternation, reflexive, French, limited-control change-of-state verbs, in-control change-of-state verbs, lexical pragmatics, agentivity

## 1 Introduction

Change-of-state verbs with a transitive and an intransitive use, such as English *break* and *open*, are said to undergo the CAUSATIVE/ANTICAUSATIVE ALTERNATION. In their intransitive use, they describe a change-of-state event undergone by the internal argument. In their transitive use, the entity causing the change-of-state is named by the external argument of the (now two-place) predicate. The transitive use is sometimes paraphrased as ‘cause to V[intransitive]’ (Levin and Rappaport Hovav, 1995: 79), although finding the exact characterisation across languages raises a range of questions for theories of syntax, morphology and semantics (Haspelmath, 1993, Alexiadou et al., 2015).

In French, as in other Romance languages, verbs undergoing the causative/anticausative alternation are divided into two morphological and three distributional classes, depending on whether

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\*Acknowledgements omitted for review. Abbreviations used: AC = anticausative; IC = in-control, LC = limited-control.

their anticausative variant does or does not co-occur with the “reflexive” or more accurately NON-ACTIVE clitic *se* (Zribi-Hertz 1982, 1987; Labelle 1992; Schäfer 2008; Heidinger 2010, 2015, Alexiadou et al. 2015 among others). With verbs of the first class illustrated in (1), the anticausative variant (AC) is necessarily *unmarked*, not differing morphologically from its causative counterpart; we call these anticausatives UNMARKED ANTICAUSATIVES and notate them as “–*se*” AC-verbs, because they are incompatible with *se*.

(1) Unmarked anticausatives, –*se* AC

- a. *Ana brûle la maison.*  
Ana burn.PRS.3SG the house  
'Ana is burning the house.'
- b. *La maison ∅ brûle.*  
the house burn.PRS.3SG  
'The house is burning.'
- c. \**La maison se brûle.*  
the house SE burn.PRS.3SG  
(Intended: 'The house is burning')

With verbs of the second class, illustrated in (2), the anticausative variant is obligatorily marked with *se*. We call these MARKED ANTICAUSATIVES and notate them as “+*se*” AC-verbs.

(2) Marked anticausative, +*se* AC

- a. *Le temps qui passe amoche tout.*  
the time that passes damage.PRS.3SG everything  
'The passage of time damages everything.'
- b. \**Tout ∅ amoche avec le temps qui passe.*  
everything damage.PRS.3SG with the time that passes  
Intended: 'Everything gets damaged with the passage of time.'
- c. *Tout s'amoche avec le temps qui passe.*  
everything SE=damage.PRS.3SG with the time that passes  
'Everything gets damaged with the passage of time.'

The third class is illustrated in (3). Since the anticausative variants of these verbs allow both markings, we label them OPTIONALLY MARKED ANTICAUSATIVES, “±*se*” AC-verbs.

(3) Optionally marked, ±*se* AC

- a. *Gaston casse le vase.*  
Gaston break.PRS.3SG the vase  
'Gaston is breaking the vase.'
- b. *Le vase ∅ casse.*  
the vase break.PRS.3SG  
'The vase is breaking.'

- c. *Le vase se casse.*  
the vase SE break.PRS.3SG  
'The vase is breaking.'

Many Indo-European languages show a similar distribution, with the qualification that the morphological marker found with a subset of anticausatives can be either a clitic as in French (e.g. all Romance languages), a weak pronoun (e.g. German) or a verbal affix (e.g. Icelandic, Russian, Greek). However, French is special insofar as the set of  $\pm se$  AC-verbs as in (3) is rather big in this language compared to other Indo-European languages (e.g. Schäfer 2008, Alexiadou et al. 2015).

In this paper, we take up the question of whether the presence of *se* in the formation of anticausative verbs correlates with any consistent meaning differences. In particular, we investigate whether the choice between (3b) and (3c) is really free or whether there are actually semantic or pragmatic factors that enforce the presence or absence of the clitic *se* with  $\pm se$  AC-verbs.

We argue that the marking of anticausatives with *se* does not trigger any systematic meaning differences overall. This means that, from a synchronic perspective, the presence or absence of *se* amounts to a pure lexical idiosyncrasy of verbs undergoing the causative alternation; some alternating verbs are lexically determined to form their anticausative variant with *se*, others to form it without *se*, and for a third class, the choice is left open.<sup>1</sup> However, we also argue that the overall optionality of the clitic *se* found with  $\pm se$  AC-verbs tends to be resolved with some classes of verbs in specific contexts to either the presence or the absence of *se* due to what we consider LEXICAL PRAGMATIC CONSIDERATIONS: while, by default, both variants are equally acceptable, speakers strongly favor the presence or the absence of *se* in particular contexts, if they, thereby, can avoid that alternative and unintended interpretations arise in parallel to the intended interpretation (following the Gricean *Avoid ambiguity* maxim of manner). The logic of our approach is related to Blutner's (1998) and Blutner and Solstad's (2001) account of phenomena such as negative strengthening taking place with gradable adjectives in that it focuses on interactions between lexical semantics and pragmatics. Differently from these works, we address a case of morphological syncretism resolved in a particular direction in specific contexts, and this to obey some specific conversational principles.

Our main empirical contribution provided in section 2 consists of three interrelated generalizations, each substantiated by an acceptability rating study. First, while  $\pm se$  AC-verbs by definition in principle allow both the marked and unmarked use, (3), we identify two lexical-semantic subclasses of  $\pm se$  AC-verbs that tend to enforce or prohibit the appearance of *se*, but only when the sole DP-argument of the anticausative predicate is *human*. With what we call LIMITED CONTROL VERBS (LCV) like (*se*) *rougir* 'blush/redden', the marked anticausative variant becomes dispreferred if the nominative DP-argument is human, as in (4). We refer to this as the *unmarked limited-control preference* (for human arguments). But with IN-CONTROL VERBS (ICV) like (*se*) *plier* 'bend, fold', it is

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<sup>1</sup>Note in this connection that individual verbal concepts often fall into different morphological classes in different languages. See AUTHOR2 for a proposal how to implement this lexical choice in a theory of verbal lexical entries along the lines of Ramchand (2008). Our claim that the behavior of individual anticausative verbs has to be stipulated in synchronic grammar does not deny the possibility of insightful cross-linguistic or diachronic generalizations about what kind of verbs (tend to) form  $-se$  and  $+se$  AC-verbs. For instance, Heidinger (2010) and Haspelmath et al. (2014) have provided corpus data showing that alternating verbs that are more frequently used in their transitive variant (e.g., *fermer* 'close' in French) often have a morphologically marked intransitive variant, while those that are more frequently used in their intransitive variant (e.g., *rougir* 'redden' in French) leave this intransitive variant unmarked.

the unmarked anticausative variant which becomes infelicitous with a human DP-argument, as illustrated in (5). We will refer to this as the *marked in-control preference* (for human arguments).

- (4) *Unmarked limited-control preference*  
*Mora (#se) rougit.* (limited-control verb, LCV)  
 Mora SE redder.PST.3SG  
 'Mora is blushing/reddening.'
- (5) *Marked in-control preference*  
*Mora #(se) plie en deux.* (in-control verb, ICV)  
 Mora SE bend.PST.3SG in two  
 'Mora is bending in two.'

In section 3, we make the case that these preferences follow from the interplay of default expectations about the role of humans in the events in the denotation of verbs like (4) and (5) (whether the human DP undergoing the event described by the verb is prototypically assumed to be in control of the unfolding of this event or not), with the set of syntactic and semantic parses made available by the grammar for the strings with and without *se* in (4) and (5). The decisive point here is that the strings in (4) and (5) without *se* have only one parse and interpretation, while the corresponding strings marked with *se* are, at least on the face of it, ambiguous (Ruwet 1972, Zribi-Hertz 1987, Schäfer and Vivanco 2016). Both strings can be parsed as involving an anticausative verb denoting a one-place predicate of change, whose sole internal argument variable has been saturated by the nominative DP. But only the strings with *se* have an additional parse as involving a two-place predicate of caused change that underwent reflexivization, such that the external and the internal argument variable have both been saturated by the nominative DP. In other words, the *se*-morpheme can fulfill two different grammatical functions in either forming an anticausative verb or a semantically reflexive verb.

The analysis will be as follows: in (4), where a human DP combines with a limited-control verb, the speaker typically chooses to realize the anticausative verb without the marker *se* in order to avoid that the hearer wrongly arrives at a semantically reflexive construal of the corresponding lexical causative variant of the verb and, in turn, at an interpretation of the sole human DP as an external argument (an agent). Since an (entity-denoting) external argument is grammatically encoded as controlling the unfolding of the verbal event (Kratzer 1996), this is problematic with limited-control verbs, for that goes against default assumptions about events denoted by these verbs. In (5), on the other hand, where a human DP combines with an in-control verb, the speaker typically chooses the variant with *se* because only this string allows for a semantically reflexive construal. Such a reflexive construal grammatically encodes that the sole DP is an external argument, thus in control over the unfolding of the event, which is this time in accordance with our default expectations. Choosing to leave the AC unmarked would by contrast oddly suggest that the undergoer was not in control of the event, violating our expectations about IC events, e.g. changes of body posture undergone by humans.

If the sole DP is neither a human nor an artefact with some agentive properties (such as machines or instruments more generally), the in-control or limited-control preferences do not arise because such entities are *by default* not conceived as exerting some control over events that they

undergo. Since default expectations do not increase the salience of the semantically reflexive parse that is formally possible for the string with *se*, both the strings with and without *se* equally accommodate an anticausative parse.

Our third generalization, which is ultimately related to the first two, describes the circumstances under which the *se*-marked form of  $\pm se$  AC-verbs is preferred *even with non-human* nominative DPs. As just said, the way the speaker resolves the choice between the marked and unmarked variants within  $\pm se$  AC-verbs often remains completely uninformative with a non-human and non-instrumental DP. However, construing inanimate entities as endowed with some agency is very common across languages. We regularly present stones, flowers or bricks as agentive in language (Cruse 1973, DeLancey 1984, Piñón 2001, Koontz-Garboden 2009, Fauconnier 2012 among many others). One clear sign of this is that we regularly use inanimate DPs in the subject position of inherently agentive verbs such as *hit* or *do*, see e.g. (6a/b) (Fillmore 1970, Cruse 1973, see also Folli and Harley 2005), or unergative verbs like *blossom* (Piñón 2001, Rappaport Hovav 2020), see e.g. (6c).

- (6) a. A rock hit the tree. (Fillmore 1970: p.14)  
 b. What the bullet did was smash John’s collar-bone. (Cruse 1973: p.16)  
 c. A brave rose blooming in the snow. (pinterest.com)

To be sure, such agentive construals are often optional with non-human subjects. But when we explicitly ask French speakers to choose the verbal form that makes the non-human more agentive, they select the variant with *se*. Thus for instance, if asked to choose which of the two forms (7a) vs (7b) presents the rose as more responsible for its change, we expect French speakers to choose (7b). This is what we call the *marked responsibility preference*.

- (7) a. *Marked responsibility preference*  
*La rose ∅ a flétri.* (less responsibility attributed to the rose)  
 the rose fade.PFV.3SG  
 ‘The rose faded.’  
 b. *La rose s’est flétrie.* (more responsibility attributed to the rose)  
 the rose SE=is fade.PFV.3SG  
 ‘The rose faded.’

Again, we relate this preference to the fact that only the string with *se* allows, besides an anticausative parse, for a semantically reflexive parse, where the sole nominative DP saturates both an internal and an external argument slot of the lexical-causative variant of the alternating verb. Under this semantically reflexive construal, the sole non-human DP is construed as a responsible agent, ‘performing’ its own change.<sup>2</sup>

Our proposal challenges previous accounts, according to which the morphological marking of anticausatives goes along with systematic meaning differences. Labelle (1992), Labelle and Doron (2010) and Doron and Labelle (2011) suggest that two meaning differences distinguish ACs marked with *se* and ACs marked without *se*. First, according to what we call the ‘Causation Claim’, ACs

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<sup>2</sup>Obviously, inanimate agents are reduced agents. When we present flowers or stones as doers in language, we do not necessarily endow them with intentionality. However, we attribute to them some core properties of agency, such as effectivity (Joo et al. 2022, Martin et al. 2022).

marked with *se* denote an “externally caused event”, where some entity different from the sole argument DP is assumed to be the causal force responsible for the coming about of the event. ACs formed without *se* express “internally caused events”, such that the sole DP itself is understood as being responsible for the coming about of the event, and is conceived as ‘internally driven’, that is, ‘as unfolding naturally without obvious external control’ (Labelle 1992: 401). Second, according to what we call the ‘Aspectual Claim’, ACs marked with *se* focus on the achievement of the result state, while ACs left unmarked focus on the process of the verbal event. To derive these alleged differences in meaning, fundamentally different syntactic structures have been proposed for ACs with and without *se*. Labelle (1992) argues that ACs marked with *se* are unaccusative, while ACs left unmarked are unergative, whereas Doron and Labelle (2011) and Labelle and Doron (2010) propose that both forms are unaccusative but differ substantially in their event decomposition and the position where the lexical root is merged in the structure. While we do not go into the details of these proposals, let us point out a crucial point of such syntactic analyses. Since the presence of *se* is correlated with different syntactic structures, and since the alleged meaning differences are assumed to be grounded in these different syntactic structures, these proposals predict these meaning differences not only to hold between the two variants of  $\pm se$  AC-verbs, but also globally, between  $-se$  AC-verbs and  $+se$  AC-verbs.

In a distinct variant of the Aspectual Claim, Legendre et al. (2016) and Legendre and Smolensky (2017) propose that only with  $\pm se$  AC-verbs, that is, if a choice is available, the marked variant necessarily carries a ‘completion interpretation’, while the unmarked variant necessarily carries a ‘partial completion interpretation’. For them, this amounts to saying that the former are interpreted as telic, and the latter as atelic predicates.<sup>3</sup> However, differently from Labelle (1992) and Labelle and Doron (2010), these authors explicitly assume that no such specialization in meaning holds for  $-se$  AC-verbs and  $+se$  AC-verbs. They analyse their specific version of the Aspectual Claim within a bi-directional optimality theoretic system that involves blocking and antiblocking of particular meaning-form pairs. Martin and Schäfer (2014) showed on the basis of attested examples found in corpora that the Aspectual Claim is based on faulty generalizations. As they show, AC-verbs with and without *se* do not differ in terms of completion entailment.

Concluding this introduction, Table 1 repeats the two main previous proposals about putative semantic distinctions between the two morphological variants of anticausatives. These claims will be critically discussed and replaced with our generalizations in Table 2, where the two rows of the “Human” column correspond to the unmarked limited-control preference found with limited-control (LC) verbs and the marked in-control preference found with in-control (IC) verbs. The “Non-human” column corresponds to the marked responsibility preference, which arises only when the speaker aims to present the animate as responsible. We remain noncommittal in most of the paper whether the relevant contrast is between humans and non-humans or animates and inanimates; the strongest intuitions concern humans, but there could well be a cline of relevant animacy, with animals or even artefacts patterning more with humans in some contexts than in others.

The remainder of this paper is structured as follows: Section 2 contrasts the Causation Claim with our three novel generalizations and presents our acceptability rating studies which support these generalizations. Section 3 presents our competition-based lexical pragmatic account of these generalizations. Section 4 shows how this account can be successfully extended to other competi-

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<sup>3</sup>That is, they presuppose that any predicate that receives a completive interpretation is necessarily telic. See Martin and Demirdache (2020) for a critical discussion of this assumption.



	Causation Claim	Aspectual Claim
+ <i>se</i>	externally caused	focus on the result state of change/telic event
- <i>se</i>	internally caused, more responsible	focus on the process of change/atelic event

Table 1: Existing claims on French *se* across all AC classes.

	Human	Non-human
LCV	variant without <i>se</i> preferred	no preference between variants in an inchoative context (variant with <i>se</i> preferred to convey responsibility of Non-human)
ICV	variant with <i>se</i> preferred	no preference between variants in an inchoative context (variant with <i>se</i> preferred to convey responsibility of Non-human)

Table 2: Claims in the current paper on French *se* across  $\pm$ AC verbs.

tion effects triggered by the presence of the clitic *se*. Section 5 concludes.

## 2 The limited-control, in-control and responsibility preferences

In this section we review the Causation Claim, according to which external causation leads to unmarked ACs and internal causation to marked ACs. We will replace this claim with our three more fine-grained generalizations about the use of  $\pm se$  ACs.

### 2.1 The Causation Claim

The distinction between EXTERNAL CAUSATION and INTERNAL CAUSATION was originally proposed by Levin and Rappaport Hovav (1995: chapter 3), building on Smith (1970), in order to answer the question of when an intransitive verb has a transitive, lexical-causative counterpart. The idea is that *externally caused change-of-state verbs* such as English *break* and *open* imply some external cause which brings about the breaking and opening event. The external cause can be, for example, an agent or a natural force (Levin and Rappaport Hovav, 1995: 108). While these verbs are assumed to be basically transitive, they allow an intransitive (AC) construal because their external cause argument can be *lexically bound* at the level of lexical semantic representation and, consequently, is not projected to argument structure and syntax. *Internally caused change-of-state verbs* such as English *rust*, *decay* and *wilt*, on the other hand, were taken to be inherently intransitive predicates, characterized as describing events where something inherent to the sole argument of the verb has brought about the eventuality (Levin and Rappaport Hovav, 1995: 91). The single test offered for internal vs. external causation is the (non-)existence of a causative counterpart, illustrated in (8)-(9).<sup>4</sup>

<sup>4</sup>Later work has argued that the distinction between internal and external causation is empirically and conceptually problematic, and grammatically irrelevant (see in particular Alexiadou 2014 and Rappaport Hovav 2014, 2020). An obvious problem is the circularity in the argumentation: “verbs are classified in an intuitive way and then when the data go contrary to the classification, verbs are suggested to be either wrongly classified or to allow more than one classification” (Rappaport Hovav 2020: 227). Relatedly, in some languages (including English), verbs typically classified as internally caused like *wilt* can be used transitively with an external causer subject, and sometimes even with an agentive subject (Wright, 2002). For Rappaport Hovav (2020: 245), the reason why internally caused change-of-state verbs are most of the time used intransitively is not grammatical, but rather conceptual: external causal factors for the changes expressed by these verbs are just very expected to occur, which is why they remain unnamed.

- (8) a. The door opened.  
 b. John opened the door. (externally caused)
- (9) a. The flower blossomed.  
 b. \*The gardener/\*The sun blossomed the flower. (internally caused)

A number of authors have suggested that when a French anticausative verb is attested in both constructions ( $\pm se$  AC-verbs), the change-of-state is presented as *externally caused* when expressed with *se* and as *internally caused* when expressed without *se* ((Bernard, 1971, Rothemberg, 1974, Burston, 1979, Labelle, 1992, Labelle and Doron, 2010, Doron and Labelle, 2011). The idea is that the sole DP is identified as ‘the’ cause of the change (the change is ‘internally driven’), and is consequently presented as responsible for the coming about of the event only if the verb appears without *se*.

This reasoning should explain the alleged contrast between (10a) and (10b) (examples and judgments from Labelle 1992): A handkerchief cannot be held responsible for its becoming red and, thus, this change cannot be internally driven. The verb must therefore be marked to indicate external causation. By contrast, a human who is blushing is necessarily physiologically co-responsible for their change-of-state, which is conceived as internally driven, and thus the verb must remain unmarked.

- (10) a. *Il vit le mouchoir # (se) rougir.* (externally caused)  
 he see.PFV.3SG the handkerchief SE redder.INF  
 ‘He saw the handkerchief getting red.’
- b. *Jeanne (#se) rougit.* (internally caused)  
 Jean (se) redder.INF  
 ‘Jeanne blushed/reddened.’

While we agree that the overall optionality that characterizes  $\pm se$  AC-verbs like *rougir* is suspended in examples like (10b) *with a human subject*, it is actually not in examples *with a non-human subject* like (10a). As discussed further in the next section, the correct empirical (and, in turn, theoretical) divide is thus determined by the participation of a human argument in the change-of-state event, *not* by the distinction between internal and external causation. We will also show that the effect of a human argument is not the same across the whole set of  $\pm se$  AC-verbs but that two conceptually determined sub-groups of  $\pm se$  AC-verbs need to be distinguished.

## 2.2 The unmarked limited-control preference (for humans) and LC verbs

### 2.2.1 Verb class and human undergoer, not causation

According to the Causation Claim, all  $\pm se$  AC-verbs should behave the same and enforce the presence of *se* if the event is characterized as externally caused, while disallowing *se* if the event is internally caused.

Apart from the conceptual problem raised by the distinction between internal/external causation, a further problem for this view is that, under closer scrutiny, only a subset of  $\pm se$  AC-verbs ever becomes problematic with *se*, and this only if their sole argument is human. We call the subset of  $\pm se$  AC-verbs that show this behavior LIMITED CONTROL VERBS (LCV). French examples of



such verbs include the verbs in (11), all of which denote events which, under their most salient readings, describe changes which are typically not controlled by their undergoers, even if these are human.<sup>5</sup> For instance, we typically do not control our blushing. In this class, we only put verbs compatible with human subjects, which can in principle exert control on some of the changes they endure.<sup>6</sup>

(11) Some Limited Control anticausative verbs in French:

- a.  $\pm se$  ACs: *(se) brunir* ‘brown’, *(se) foncer* ‘darken’, *(se) noircir* ‘blacken’, *(se) pâlir* ‘turn pale’, *(se) rajeunir* ‘become young’, *(se) rougir* ‘redden, blush’.
- b.  $+se$  ACs: *s’affaiblir* ‘weaken’, *s’amaigrir* ‘get thinner’, *s’amoinrir* ‘weaken’, *se fortifier* ‘get stronger’, *s’anémier* ‘become anaemic’, *s’arrondir* ‘put on weight’
- c.  $-se$  ACs: *grossir* ‘become bigger’, *maigrir* ‘get thinner’, *pourrir* ‘rot’, *grandir* ‘grow’, *vieillir* ‘grow older’

We exemplify our understanding of the empirical behavior of limited-control  $\pm se$  verbs with *(se) rougir* ‘blush/redden’ in (12a, b) (we briefly come back to limited-control ACs of the other morphological classes at the end of this section). (12a) is actually fine both with and without *se* (as was already indicated above for (10a)), but (12b) is indeed degraded for us with *se*, in line with [Labelle’s \(1992\)](#) judgment. More generally, a preference arises when a canonically uncontrolled/non-volitional event endured by a human entity is realized with the marked version of an optionally marked anticausative verb. We call this the *unmarked limited control preference*.

- (12) a. *Le fleuve (se) rougit.*  
the river SE redden.S.PRS.3SG  
‘The river is reddening.’
- b. *Jeanne (#se) rougit.*  
Jean SE redden.S.PRS.3SG  
‘Jeanne is blushing/reddening.’

The examples in (13), which all have human subjects with  $\pm se$  LC verbs, show that the unmarked limited control preference holds irrespective of the type of causation involved, conformly to our generalization. The examples with *se* in (13a-b) are predicted to be odd also under the Causation Claim because they denote spontaneous (i.e., internally caused) events. But the examples in (13c-d) (again with *se*) are equally bad, even though the adjuncts in these examples make it clear that the change expressed by their AC verb is externally caused. (13a-d) are all fully acceptable without *se*.

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<sup>5</sup>All these verbs alternate in French.

<sup>6</sup>We therefore do not put in our class of LC verbs so-called internally-caused change-of-state verbs such as *flétrir* ‘wilt’ or *rouiller* ‘rust’. The latter verbs cannot be combined with a human subject, or do so only if the subject DP is metaphorically reinterpreted as a (non-agentive) vegetal or mineral entity (as in e.g., *Marie s’est flétrie/rouillée* ‘Marie wilted/rusted’). Verbs like *sleep* or *hiccup* also take a human subject and also express events that cannot be controlled, but these events are activities, not changes. These verbs are thus limited-control *activity* (intransitive) verbs. We are not concerned with these verbs here.

- (13) a. #*Pierre s'est beaucoup rajeuni ces derniers temps.* (internal cause)  
 Pierre SE-is a lot rejuvenated these last times  
 Intended: 'Pierre rejuvenated a lot lately.'
- b. #*Marie s'est beaucoup pâlie ces derniers temps.* (internal cause)  
 Marie SE-is a lot got-paler these last times  
 Intended: 'Marie became much paler lately.'
- c. #*Marie s'est beaucoup rajeunie grâce à cette nouvelle relation.* (external cause)  
 Marie SE-is a lot rejuvenated thanks to this new relationship  
 Intended: 'Marie rejuvenated a lot thanks to this new relationship.'
- d. #*Les gens se rougissent sous l'effet de ces lunettes.*(external cause)  
 the people SE turn.red.S.PRS.3PL. under the effect of these glasses  
 Intended: 'People turn red under the effect of these glasses.' (Zribi-Hertz 1987: 45)

A common point to all the examples in (13) is that they align with the default inference triggered by limited-control verbs that the human enduring the change does not control this change; examples (13c/d) even explicitly reinforce this default inference via the causal adjunct. But verbs that, by default, are interpreted as limited-control predicates can also be used in contexts that make explicitly clear that the human undergoer in fact *does* control the change they endure (the change is then often different from the one described by the default use of the verb; for instance, the AC *rajeunir* by default means *take years off/rejuvenate*, but can also mean *make oneself look younger*). In such semantically reflexive contexts, we predict the opposite pattern than in (13): the marked form of the verb should be preferred to the unmarked one, because reflexive semantics must be expressed with the reflexive marker *se* in French (e.g. Kayne 1975, Reinhart and Siloni 2004).<sup>7</sup> This is indeed the case; for instance, the reflexive has to appear in the example (14), because it is clear that the adults consciously make themselves look younger. The same example without *se* would be very strange, because the purpose clause requires the subject's referent to be an agent, but the limited-control AC indicates that it is not one (cf. English #*He rejuvenated in order to speak with children online*).

- (14) *certains adultes vont tenter de #(se) rajeunir pour rentrer en contact avec vos progénitures*  
 'certain adults will try to SE get.younger to enter in contact with your children'  
 'Some adults will try to make themselves look younger in order to enter into contact with your children.'  
 (Frtenten20, horizonnm.fr)

The next set of examples shows that *non-human* DPs are generally acceptable with both morphological variants irrespective of the distinction between internal and external causation. The examples in (15a-b) mention the existence of an external cause in a prepositional phrase, and the examples in (15c-d) express changes conceived as spontaneous. All these examples, which were taken from corpora and double-checked with additional speakers, are fully acceptable irrespective of whether the AC verb appears marked or unmarked.

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<sup>7</sup>Reflexive semantics is morphologically or lexically marked across languages (e.g. Reinhart and Reuland 1993, Kastner 2017).

- (15) a. *Le métal s'est rougi sous l'effet de la chaleur.* (+*se*, external cause)  
the metal SE-redden.PFV.3SG under the effect of the warmth  
'The metal reddened under the effect of the warmth.' (Zribi-Hertz 1987: 45)
- b. *La pierre avait rougi sous l'effet du feu.* (-*se*, external cause)  
the stone reddened.PLUPERF.3SG under the effect of.the fire  
'The stone reddened under the effect of the fire.' (FrTenTen20, chaslerie.fr)
- c. *l'air se noircit (...) et la tempête arrive.* (+*se*, internal cause)  
the air SE blacken.S.PRS.3.SG and the storm arrives  
'The weather is getting darker and the storm is arriving.'  
(FrTenTen20, academie-francaise.fr)
- d. *le papier thermique (...) a tendance à noircir spontanément.* (-*se*, internal cause)  
the paper thermal has tendency to blacken spontaneously  
'Thermal paper tends get black spontaneously.' (FrTenTen20, docplayer.fr)

In sum, the data suggest that in a default context (i.e., not a semantically reflexive context as in (14)), only the unmarked variant of LC  $\pm se$  verbs can be used if the sole argument is human, but both variants can be used if the sole argument is non-human. The distinction between internal and external causation does not interfere in the distribution of the morphological marking in  $\pm se$  ACs.

The distinction is equally irrelevant for ACs with a fixed morphological behavior. With such verbs, non-human subjects are unproblematic in an internally caused as well as an externally caused setting, as illustrated with the +*se* AC *se briser* 'break' in (16a/b) and with the -*se* AC *exploser* 'explode' in (17a/b).

- (16) a. *le téléphone construit par Huawei rencontrerait (...) de gros soucis de fragilité au niveau de ses vitres qui se briseraient toutes seules selon de nombreux utilisateurs.*  
the telephone built by Huawei meet.COND.3SG of big problems of fragility at.the level of its glasses which SE break.COND.3PL all alone according to of a lot of users  
'The phone built by Huawei has many problems of fragility with regard to its pane which break by themselves according to many users.'  
(internal cause, Frtnten20, begek.fr)
- b. *la majorité des noyaux se brisent sous l'action des photons*  
the majority of.the kernel SE break.S.PRS.3.SG under the.action of.the photons  
'the majority of kernels break under the action of photons.'  
(external cause, Frtnten20, astrosurf)

- (17) a. *L'Iphone a vraiment explosé de lui-même.*  
the.Iphone has really exploded by itself  
'The iPhone really exploded by itself.' (internal cause, Frtnten20, iphon.fr)
- b. *Certaines vitres explosent sous l'action du vent.*  
some glasses explode under the.action of.the wind  
'Some glasses explode under the action of the wind.'  
(external cause, Frtnten20, keraunos.org)

Furthermore, the unmarked limited-control preference for humans does not arise with LC +*se* AC verbs, for which there is no choice between forms.

### 2.2.2 Experiment 1a

To recap our predictions about LC verbs within the class of  $\pm se$  AC-verbs: the combination of a human subject and marking with *se* should be odd in a default context, or more generally a context confirming the default expectation with these verbs that the change is not under the control of the human undergoer. This unmarked limited control preference should not appear in the context of a non-human subject. Furthermore, in a semantically reflexive context, the reflexive form should always be preferred (recall (14)).

To test whether these intuitions are robust, we conducted an online acceptability study with native speakers of French (N = 154) (Full details of the experiment can be found in the Appendix and online materials). Participants were asked to read example sentences built with one of the five LC-verbs listed in (18) and to rate them for acceptability on a 7-point Likert scale (an additional verb, namely *foncer* 'darken', was used with non-human subjects only, as it does not combine naturally with human subjects in French). Distractors were mixed with the test items.

- (18)  $\pm se$  LC verbs used in Experiment 1a  
*brunir* 'brown', *noircir* 'blacken', *pâlir* 'get pale', *rajeunir* 'get young(er), rejuvenate', *rougir* 'redden, blush'

The 2x2x3 design manipulated the following factors:

- (19) a. SE: whether the verb of the sentence appeared with *se*-marking or without.  
b. HUMANNES: whether the sole argument was human or not.  
c. CONTEXT: whether the sentence was presented without context (we call this 'neutral context'), in an inchoative context, or in a semantically reflexive context.

Examples of the three contexts are given in (20) for the verb (*se*) *pâlir* 'fade, go pale, make oneself pale' in the context of a human argument and an unmarked version of the verb (example (20c) is predicted to be bad due to the absence of *se*, recall (14)). Each trial with a human argument contained a proper name in subject position.

- (20) a. NEUTRAL CONTEXT  
*Rachida a pâli.*  
Rachida go.pale.PFV.3SG  
'Rachida went pale.'

b. INCHOATIVE CONTEXT

*Djamila a pâli* à l'annonce de l'infidélité de son amoureux.

Djamila go.pale.PFV.3SG at the.announcement of the affair of her lover.

'Rachida went pale when she heard about her lover's affair.'

c. REFLEXIVE CONTEXT

*Djamila a pâli* pour les besoins de son personnage de théâtre.

Djamila get.pale.PFV.3SG for the needs of her role of theater

'Rachida went pale for her theater role.'

Inchoative contexts were set up with a prepositional causal adjunct specifying an external cause of the change. This context thus confirms the default inference triggered by these verbs that the undergoer is not in control of the change, and thus further supports an inchoative/anti-reflexive parse of the clause. Reflexive contexts were set up with the help of an adjunct reason clause or a purpose adjunct as in (20c), which enforce that the human subject of the main clause is ascribed control over the event (we turn back to the inanimate subjects in section 2.4).

With the reason clause or purpose-PP, we thus enforce a construal where the human sole DP is understood as an external argument. Since no second DP is available that could be interpreted as the internal undergoer argument, the only available parse is one where the sole DP is both, the external and the internal argument, thus a reflexive interpretation. Given that in French, a reflexive interpretation is obligatorily marked with the clitic *se*, we predict the variant with *se* to be rated high and the variant without *se* to be rated low in a reflexive context.

Based on the discussion above, our predictions were as follows:

- (21) a. With human arguments, the variant without *se* will be rated higher than the variant with *se* in the neutral and inchoative contexts. Non-human arguments will not show this preference. This is our unmarked limited-control preference for humans.
- b. With human arguments, the variant with *se* will always be rated higher than the variant without *se* in the reflexive context. With non-human arguments, we do not expect such a difference in the ratings of forms with and without *se* (we come back to this point in section 2.4).

The results of the experiment are summarized in Fig. 1, where each dot indicates a single trial (one sentence rated by one participant) and error bars give 95% confidence intervals. This means that if we ran the same experiment many times, we expect the mean rating to fall somewhere between these error bars 95% of the time; this "spread" of values gives a better indication of uncertainty than a single mean value (the sample mean lies halfway between the two ends of the error bars). Informally, when the error bars of two conditions do not overlap, this is evidence that the two conditions differ. So for example, in the Inchoative and Neutral panes, looking at human subjects, there is evidence that participants rate examples without *se* significantly higher than sentences with *se*. Most ratings are high for the no-*se* conditions, but more varied and negative overall for the yes-*se* condition. By contrast, turning to non-human subjects in the same Inchoative and Neutral panes, there is no visible difference in the ratings for sentences with and without *se* (the error bars of the two conditions overlap). In the reflexive pane with human subjects, participants rated the forms with *se* higher than the forms without *se*, which were negative overall. This difference is again not observed with non-human subjects in the same reflexive pane. The individual dots reflect the overall variation in our sample.

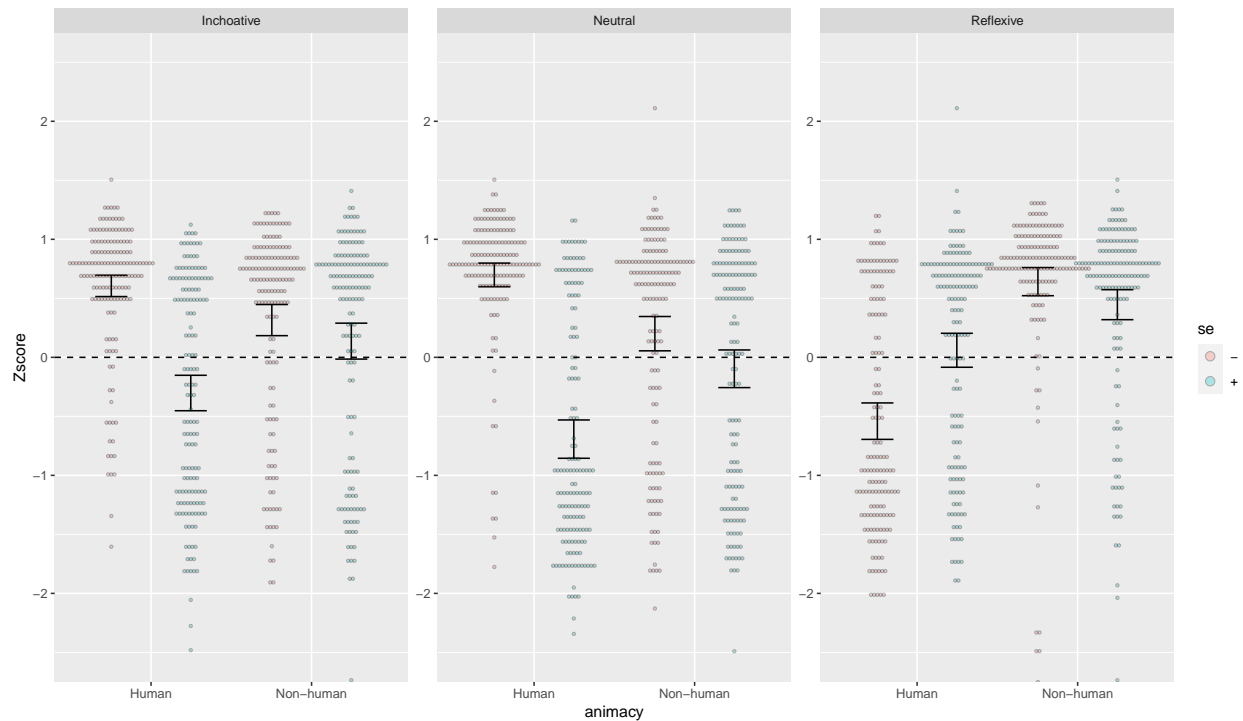


Figure 1: Results of Experiment 1a (LC verbs).

These findings were evaluated with a statistical analysis. An ordinal Bayesian analysis confirmed that the two predictions in (21) were borne out, in line with the impressions given by the plot (see the Appendix for full model output). In particular, the 95% Credible Interval for the interaction of Human and *se* lies in the range  $[-2.16, -0.86]$ , meaning that *se*-marking on humans receives lower ratings: in other words, the unmarked limited-control preference. Predicted ratings based on the statistical model for the two-way interaction of animacy and *se* are plotted in Figure 2, and for the three-way interaction with context in Figure 3. These plots show how likely the statistical model would find a specific rating on the Likert scale for each of the conditions (where 7 means “perfectly natural” and 1 means “completely unnatural”). In Figure 2, for example, a comparison of both panes shows that for no-*se* sentences with humans, 7 is a highly likely rating, but that 1 is at least as likely for yes-*se* sentences.

In sum, we found evidence for the unmarked limited-control preference with LC verbs. These  $\pm se$  limited-control verbs, such as *rougir* ‘blush’, *rajeunir* ‘rejuvenate’ and *pâlir* ‘get pale’—which are those by which the original Causation Claim is typically illustrated—remain preferably unmarked when used as anticausatives with human subjects. This preference does not hold with a non-human subject.

We next carry out the same exercise with a second set of  $\pm se$  AC-verbs, which we call INCONTROL (IC) VERBS.



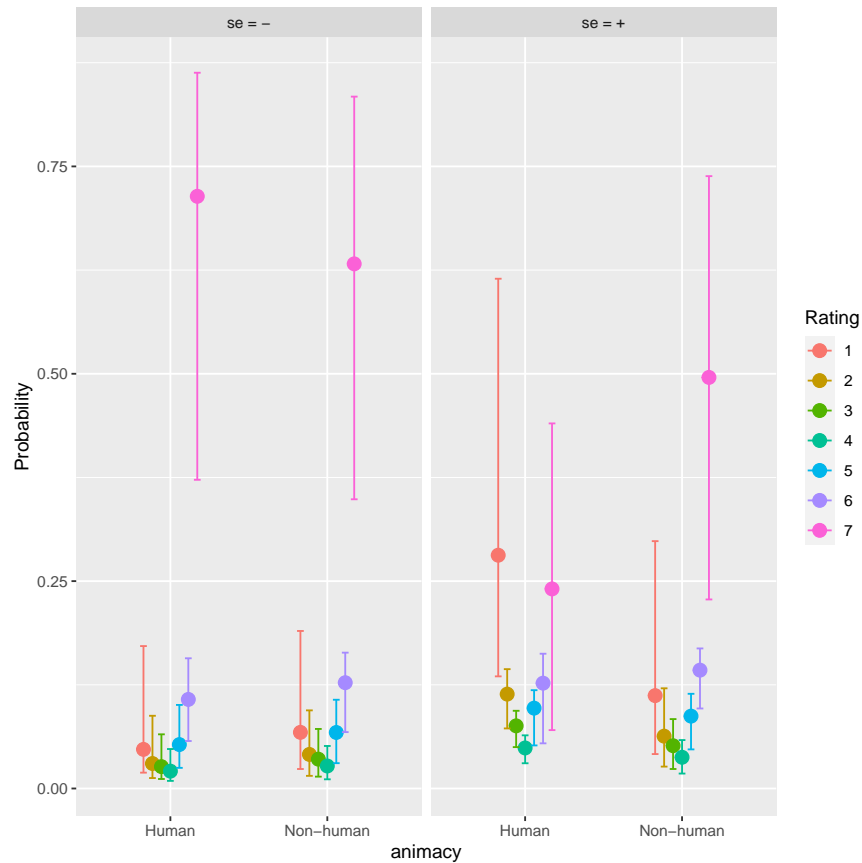


Figure 2: Predicted ratings for interaction of human argument and *se*-marking in Exp 1a (LC verbs, Bayesian analysis).

## 2.3 The marked in-control preference and IC verbs

### 2.3.1 Verb class and human undergoer, not causation

The LC verbs of the previous section contrast with another subclass of  $\pm se$  verbs, ones which denote changes typically under the control of a human undergoer. Examples of this class of INCONTROL INTRANSITIVE VERBS (IC-verbs) are given in (22). These predicates are typically used as motion or posture verbs when combined with a human subject (called auto-causatives by [Creissels 2003](#) and endo-reflexives by [Geniušienė 1987](#) and [Haspelmath 1987](#)), as well as degree achievements expressing a behavioral change, such as the last five verbs in (22a) taken in their behavior-related use. (The relevant use is exemplified in (24b) and (25b)).

(22) Some In-Control anticausatives in French:

- a.  $\pm se$  ACs: *(s')allonger* 'get longer/lie', *(s')approcher* 'get close(r)', *(s')avancer* 'move forward', *(se) plier* 'bend', *(se) radoucir* 'soften', *(se) balancer* 'swing, rock', *(s') arrêter (de marcher)* 'stop (walking/working)', *(se) courber* 'bend, curve', *(se) loger* 'fit, stay', *(se) nicher* 'squeeze in, tuck oneself in', *(se) durcir* 'harden', *(se) raidir* 'stiffen, harden', *(se) ramollir* 'melt/soften', *(se) refroidir* 'get cold(er)', *(se) dégeler* 'unfreeze'

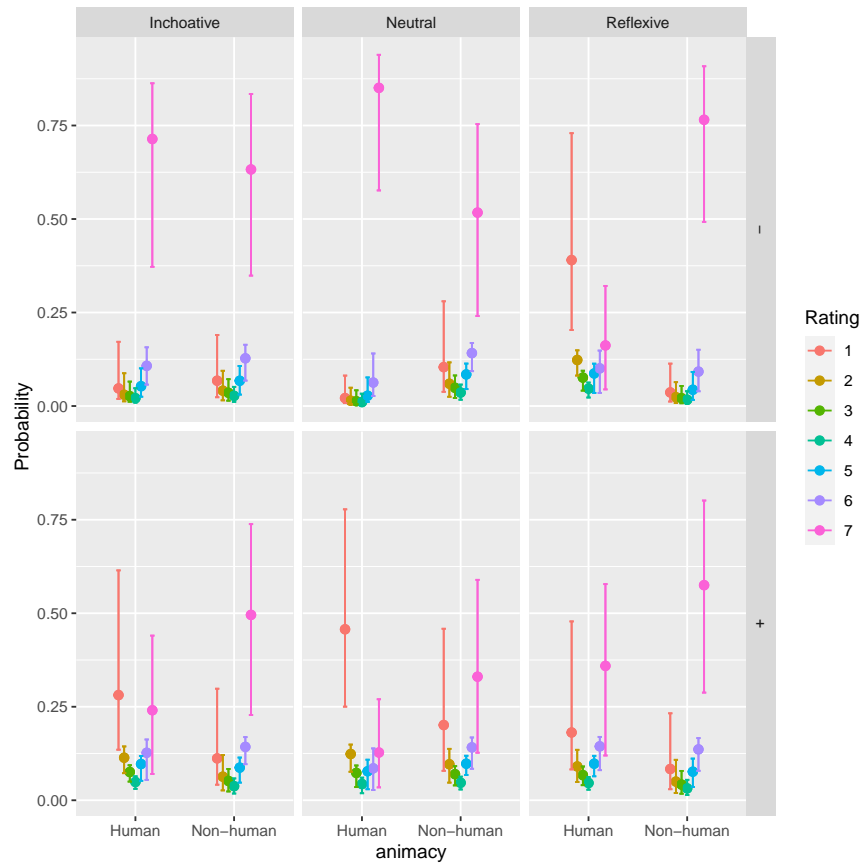


Figure 3: Predicted ratings for interaction of human argument, *se*-marking and Context in Exp 1a (LC verbs, Bayesian analysis).

- b. +*se* ACs: *s'abaisser* 'get lower, bend', *se lever* 'raise, stand up', *se déplacer* 'move', *se mouvoir* 'move', *se rapprocher* 'get closer', *se relever* 'got up, get back on one's feet', *se retourner* 'turn over, around'
- c. –*se* ACs: *bouger* 'move', *remuer* 'move', *reculer* 'step backwards, diminish', *changer (de place)* 'change (one's position)', *monter* 'climb, go up', *rentrer* 'go back in', *reposer* 'rest, lie on', *plonger* 'dive into, get immersed', *sortir* 'get out', *tourner* 'turn'

With IC  $\pm se$  verbs, human subjects are also more restricted than non-human ones, but this time it is the *unmarked* form which is problematic. This is what we call the *marked in-control preference* (for humans), illustrated with examples (23)-(25) below. In the (a)-examples a non-human subject is fine with or without *se*; in the (b)-examples, a human subject is fine with *se*, and the (c)-examples show the degradedness of human subjects in the absence of *se*.

- (23) a. *Le papier*  $\emptyset$  *a plié/* *s'est plié* *un peu.*  
the paper fold.PFV.3SG SE=is fold.PFV.3SG a bit  
'The paper folded a bit.'

- b. *Jeanne s'est pliée en deux.*  
 Jeanne SE=is bend.PFV.3SG in two  
 'Jeanne bent over.'
- c. #*Jeanne ∅ a plié en deux.*  
 Jeanne bend.PFV.3SG in two  
 Intended: 'Jeanne bent over.'
- (24) a. *Ici le temps ∅ a radouci/ s'est radouci.*  
 here the weather get-milder.PFV.3SG SE=is get-milder.PFV.3SG  
 'Here the weather got milder.'
- b. *Le président américain Bush (...) s'est radouci après avoir durement critiqué la Corée du Nord. (Internet)*  
 the president american Bush SE=is get-milder.PFV.3SG after having hardly criticized the Korea of-the North  
 'The American president Bush mellowed after he harshly criticized North Korea.'
- c. #*Le président Bush ∅ a radouci.*  
 the president Bush get-milder.PFV.3SG.  
 Intended: 'President Bush mellowed.'
- (25) a. *Le métal ∅ a durci/ s'est durci.*  
 the metal ∅ harden.PFV.3SG SE=is harden.PFV.3SG  
 'The metal got hard.'
- b. *Après la mort de Johnny Hallyday, Laetitia s'est durcie.*  
 after the death of Johnny Hallyday Laetitia SE=is harden.PFV.3SG  
 'After Johnny Hallyday's death, Laetitia became harder.'
- c. #*Après la mort de Johnny Hallyday, Laetitia ∅ a durci.*  
 after the death of Johnny Hallyday Laetitia harden.PFV.3SG  
 Intended: 'After Johnny Hallyday's death, Laetitia became harder.'

The marked in-control preference for humans does not arise with IC *-se* AC verbs, for which there is no choice between forms. For instance, *Pierre a changé de position* 'Pierre changed his position' is completely fine. The intuitions reported in (23)-(25) were also tested in an online acceptability study to which we turn in the next subsection.

### 2.3.2 Experiment 1b

Experiment 1b was carried out with the same participants as Experiment 1a (N = 154), though items were counterbalanced across participants (see the Appendix and online materials). The experimental setup was the same, except that we used five IC verbs and appropriate contexts, within the same 2x2x3 design. Verbs used in Experiment 1b are listed in (26) (distractors were again mixed with the test items).

- (26)  $\pm se$  IC verbs used in Experiment 1b  
*approcher* 'get close(r)', *durcir* 'harden', *plier* 'bend', *radoucir* 'get soft(er)', *refroidir* 'get cold(er)'

Our predictions were as follows:

- (27) a. For human arguments, the marked variant will be preferred in the neutral and inchoative contexts. Non-human arguments will not show this preference. (This is our marked in-control preference for humans.)
- b. For human arguments, the marked variant will also be preferred in the reflexive context. Such a preference is not expected with non-human arguments (see section 2.4).

The results are summarized in Fig. 4, where each dot indicates a rating and error bars give 95% confidence intervals. Fig. 4 shows that in the Inchoative and Neutral panes, looking at human subjects, there is evidence that participants rate examples with *se* higher than sentences without *se*. Most ratings are high for the yes-*se* conditions, but more varied and negative overall for the no-*se* condition. By contrast, turning to non-human subjects in the same Inchoative and Neutral panes, there is no obvious difference in the ratings for sentences with and without *se* (both forms receive positive ratings overall, confirming that the verbs tested are  $\pm se$  ACs). In the reflexive pane with human subjects, participants rated again the forms with *se* higher than the forms without *se*. This difference is again not observed with non-human subjects in the same reflexive pane (we come back to this last point in section 2.4).

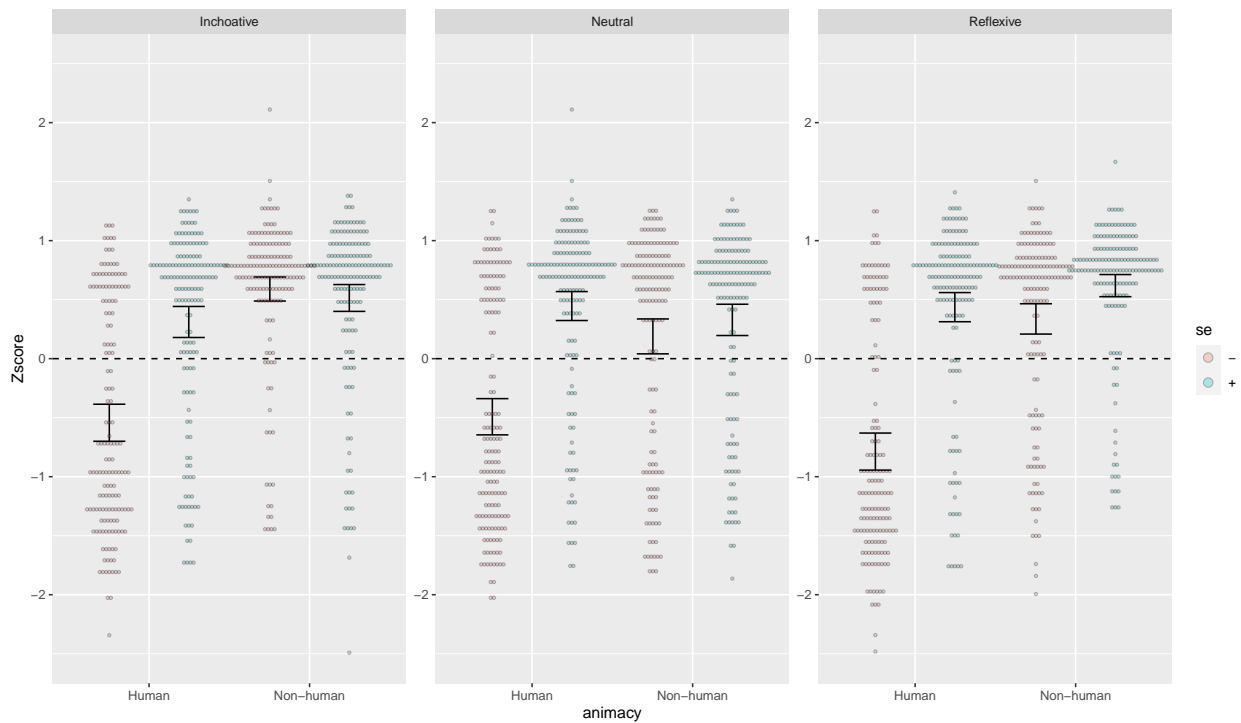


Figure 4: Results of Experiment 1b (IC verbs).

A ordinal Bayesian analysis confirmed the two predictions in (27) (see the Appendix for full model output). In particular, the 95% Credible Interval for the interaction of Human and *se* lies in the range [0.97,2.32]: the marked in-control preference.

Predicted ratings based on the statistical model for the two-way interaction of animacy and *se* are plotted in Figure 5, and for the three-way interaction with context in Figure 6.

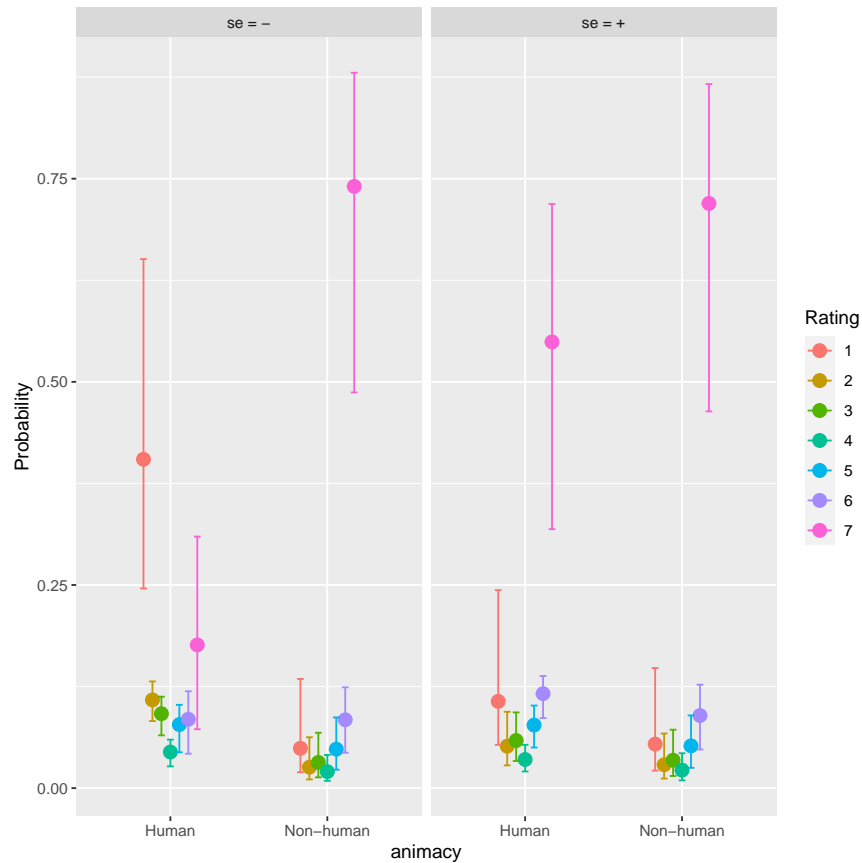


Figure 5: Predicted ratings for interaction of human argument and *se*-marking in Exp 1b (IC verbs, Bayesian analysis).

In sum, this section provided evidence for the marked in-control preference with IC verbs. Also, it indirectly showed that the distinction between in-control and limited-control ACs (anticipated by authors such as [Creissels 2003](#) or [Haspelmath 1987](#)) is crucial, as these verbs give rise to opposite patterns *with human subjects*—with non-human subjects, the distinction between these two subclasses is largely irrelevant.

The marked in-control preference is the opposite of what the Causation Claim predicts (but remember that proponents of this claim do not distinguish between LC and IC verbs like we do). The Causation Claim says that across ACs, the presence of *se* generally characterizes the event as being externally caused. But the marked in-control preference confirmed by the results of Experiment 1b shows that that *se* is favored if the event is under control of sole human argument.

In the next section, we evaluate our third effect against one final set of data involving non-human arguments.

## 2.4 Responsibility, agency and non-human arguments

In the previous sections, we have shown that the morphological marking in  $\pm se$  AC-verbs is completely uninformative and unconstrained if the subject is non-human. In particular, we

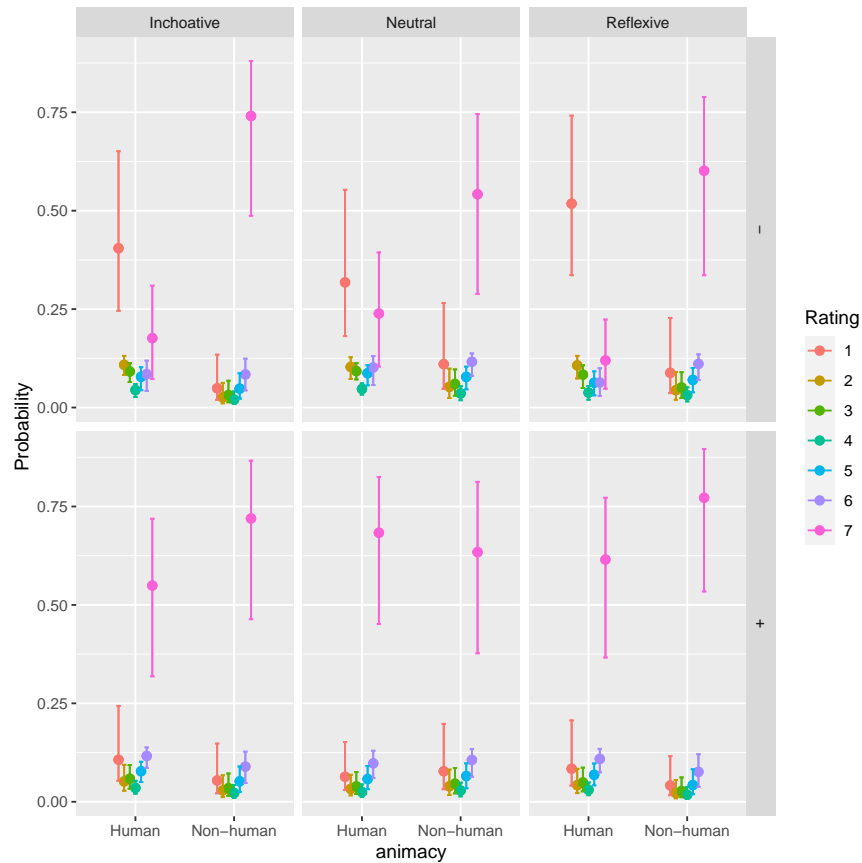


Figure 6: Predicted ratings for interaction of human argument, *se*-marking and Context in Exp 1b (IC verbs, Bayesian analysis).

provided evidence from corpus and experimental data showing that morphological variants are in free variation in the context of a non-human subject (recall examples in (15)). We now take a deeper look at non-human subjects of  $\pm se$  AC-verbs. We show that the marked variant of  $\pm se$  AC-verbs can be chosen in order to trigger some semantic effect, again because the *se* variant is the only form able to yield a semantically reflexive parse of the clause.

Recall that according to the Causation Claim, the unmarked variant of  $\pm se$  AC-verbs presents the verbal event as internally caused, while the marked variant presents it as externally caused. Crucially, proponents of the Causation Claim typically enrich the distinction between internal and external causation with the assumption that internally-caused changes are under the (full) responsibility of the undergoer. For instance, [Labelle \(1992: 394f.\)](#) claims that “with internally driven processes (...) it should not be possible to deny the crucial responsibility of the entity in the change”. We think that these two dimensions should be kept apart: ‘internally-driven’ causation and ‘responsibility’ of the undergoer should not be understood as necessarily going hand in hand. Internal causation has to do with the locus of the change; e.g., blushing, wilting or withering events are typically understood as taking place within their undergoer, and this without a continuous causal influence of an external entity. But the entity which is blushing or wilting is



very often *not* conceived as responsible for their change; typically, the cause of such events is understood as external to the undergoer. It is in fact possible to express the external cause of such ‘internally driven’ events via an adjunct such as *sous l’effet de* ‘under the effect of’.

Equipped with this uncoupling of internal causation and responsibility, we can understand why a number of French grammarians took the variants with *se* to underline some responsibility of the subject, even for verbs traditionally taken to express internally driven changes (authors cited by Zribi-Hertz 1987: 24). For instance, Vendryes (1948) claims that the reflexive clitic always marks “*la participation du sujet au procès*” [the participation of the subject to the process], Grevisse (1986: 552) suggests that *se* “*met en relief l’activité personnelle du sujet*”, and marks “*un intérêt particulier de ce sujet dans l’action*” [it focuses on the personal activity of the subject, marks a particular interest of this subject in this action], and Gougenheim (1939: 226–227) assumes that *se* indicates that the subject “*a contribué pour une part si minime soit-elle à l’action subie*” [contributed even for a very minimal part to the endured action]. Such authors certainly share the intuition of the tenants of the Causation Claim that verbs like *flétrir* ‘wilt’ or *rouiller* ‘rust’ express an internally driven change, in the sense that the undergoer is the locus of the process leading to the new state. But that does not mean for them that the undergoer is automatically perceived as *responsible* for this change.

Siding with these authors, we thus make opposite predictions to those of the Causation Claim: given pairs such as those in (28)–(29), we expect participants to be more likely to choose the marked variant if explicitly asked to attribute responsibility to the subject. For us, the reason for this is that while the unmarked variant of the verb only has an anticausative parse, the variant with *se* allows besides its anticausative parse a semantically reflexive parse. Under the latter, the referent of the sole DP is not only assigned the internal theta role of an undergoer, but also the external argument theta role of an agent of the lexical-causative variant of the verb. As a result, it is grammatically encoded as the agent (or effector) of an event, which amounts to being responsible for the coming about of this event. But if, as suggested by the Causation Claim, the absence of *se* indicates greater responsibility of the subject for the event, we expect the opposite choice.

- (28) a. *La rose*  $\emptyset$  *a flétri.*  
the rose fade.PFV.3SG  
‘The rose faded.’  
b. *La rose s’est flétrie.*  
the rose SE=is fade.PFV.3SG  
‘The rose faded.’
- (29) a. *Le métal*  $\emptyset$  *a rouillé.*  
the metal rust.PFV.3SG  
‘The metal rusted.’  
b. *Le métal s’est rouillé.*  
the metal SE=is rust.PFV.3SG  
‘The metal rusted.’

### 2.4.1 Experiment 2

This prediction was also tested in an online acceptability study (see again the Appendix and online materials). N = 33 native speakers of French participated in the experiment, none of whom participated in Experiments 1a/1b. They were given 12 minimal pairs like those in (28a, b) and (29a, b) and asked which of the two sentences assigns more responsibility to the subject (*Quelle forme attribue le plus de responsabilité à la rose/au métal dans le procès?* ‘Which form assigns more responsibility to the rose/the metal in the event?’). Judgments were provided on a 7-point scale with the two sentences at the extremes (1 for unmarked, 7 for marked, although the scale was not labelled).

Our test items were formed with the verbs listed in (30a-c). While these verbs come from different sub-classes, we did not expect these classes to matter in the responsibility attribution: the responsibility effect should hold across subtypes of all subtypes of  $\pm se$  ACs, as the ambiguity of the reflexively marked form is exactly the same across subclasses.<sup>8</sup> All verbs have transitive uses beyond their intransitive uses, and thus can enter reflexivization. Verbs in (30a) are examples of internally-caused change-of-state verbs (cf. Wright 2002 and see footnote 4). Those in (30b) and (30c) are a subset of verbs used in Experiments 1a and 1b. Thus when applied to human arguments, verbs in (30b) are LC-verbs and those in (30c) are IC-verbs, but this difference is irrelevant for non-human subjects.

Furthermore, 8 pairs of distractors were mixed with the test items. The task was the same, but this time participants had to choose either between a lexical-causative statement (*Hamida a bougé la chaise* ‘Hamida moved the chair’) and the corresponding anticausative statement (*La chaise a bougé* ‘The chair moved’) (these examples were formed with the alternating verbs in (31a) which form  $-se$  AC-verbs) or between a *se*-passive sentence (*La voiture s’est lavée au garage* ‘The car se-is washed in the garage’) and a corresponding periphrastic passive sentence (*La voiture a été lavée au garage* ‘La car was washed in the garage’) (these were built with the verbs in (31b)). The question for distractors was the same as for test items (*Which sentence assigns more responsibility to the chair/the car?*).

#### (30) Verbs used in the test items of Experiment 2:

- a. “internally caused” verbs: (*se*) *caraméliser* ‘caramelize’, (*se*) *fâner* ‘wilt, decay’, (*se*) *flétrir* ‘wilt, decay’, (*se*) *rouiller* ‘rust’.
- b. Verbs from Experiment 1a: (*se*) *brunir* ‘turn brown(er)’, (*se*) *foncer* ‘darken’, (*se*) *rajeunir* ‘get younger’, (*se*) *rougir* ‘redden’.
- c. Verbs from Experiment 1b: (*se*) *baisser* ‘lower’, (*se*) *durcir* ‘harden’, (*se*) *plier* ‘bend’, (*se*) *refroidir* ‘get cold(er)’.

#### (31) Verbs used in the filler items of Experiment 2:

- a. Alternating verbs: *bouger* ‘move’, *brûler* ‘burn’, *fondre* ‘melt’, *ramollir* ‘soften’.
- b. Non-alternating verbs: *laver* ‘wash’, *nettoyer* ‘clean’, *jeter* ‘throw’, *tuer* ‘kill’.

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<sup>8</sup>Thus the lexical semantic subclasses of  $\pm se$  ACs discussed in the previous sections do not matter here, because they can be contrasted only via the assumptions we hold by default about human participants in the events respectively denoted by verbs of each subclass.

The results of the experiment are given in Figure 7a, where each dot reflects one trial, with error bars giving 95% confidence intervals. If participants had a preference for the marked variant, ratings should fall in the top half of the plot (or in the bottom half in case of a preference for unmarked variants).

An ordinal Bayesian model confirmed the tendency to assign more responsibility to the marked forms. Figure 7b plots the observed ratings as well as the predictions of the model. Model predictions by verb type are given in Figure 8.

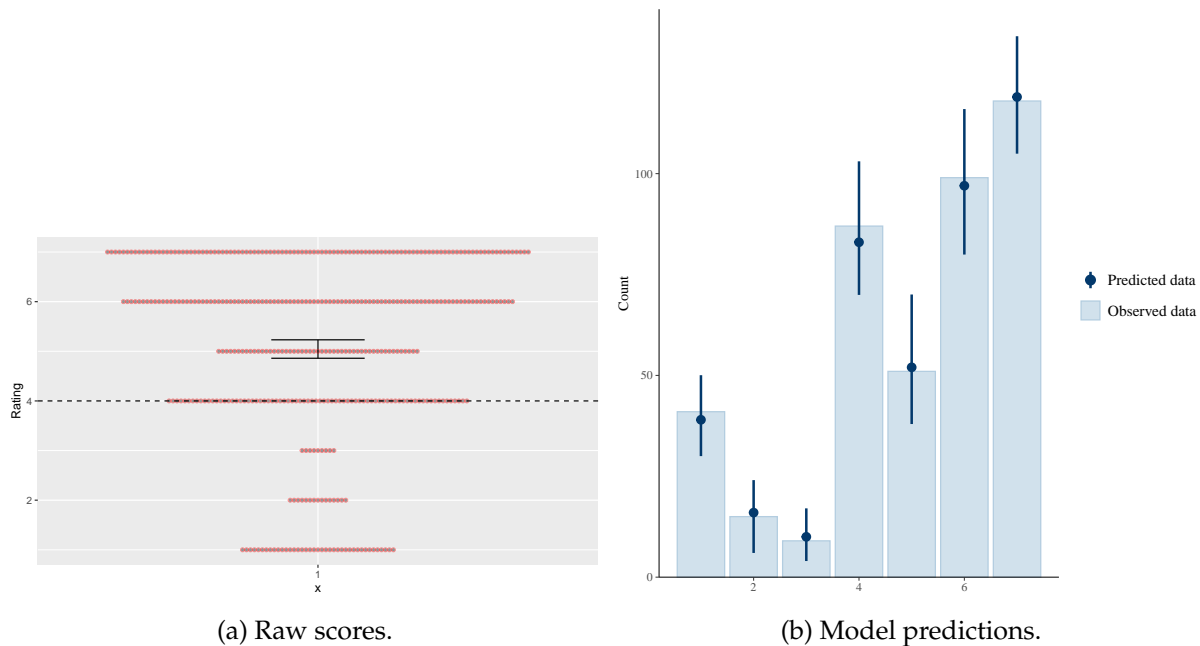


Figure 7: Results of Experiment 2 (non-human responsibility, inanimate subjects).

#### 2.4.2 Experiments 1a/b with non-human subjects

We now come back to Experiments 1a/b, more specifically to the condition with a non-human subject in the reflexive context (see sections 2.2 and 2.3 for the predictions for the inchoative/neutral contexts with a non-human subject). Recall that in Experiments 1a/b, participants were just asked to rate the acceptability of sentences; they were not asked to choose which sentence attributes the most responsibility to the non-human entity. Sentence (32) is an example of test items with non-human subject and LC verb (Experiment 1a), and (33) is an example built with a IC verb (Experiment 1b).<sup>9</sup>

<sup>9</sup>Items with a non-human subject in the reflexive context were put in the present tense rather than the *passé composé*, for the latter tense/aspect morphology would trigger an anomaly in this context independently of whether the reflexive morphology is present or not. Since our goal was to test how the presence vs. absence of reflexive marker affects the acceptability of the sentence, we built the examples so as to make them as natural as possible independently of this factor.

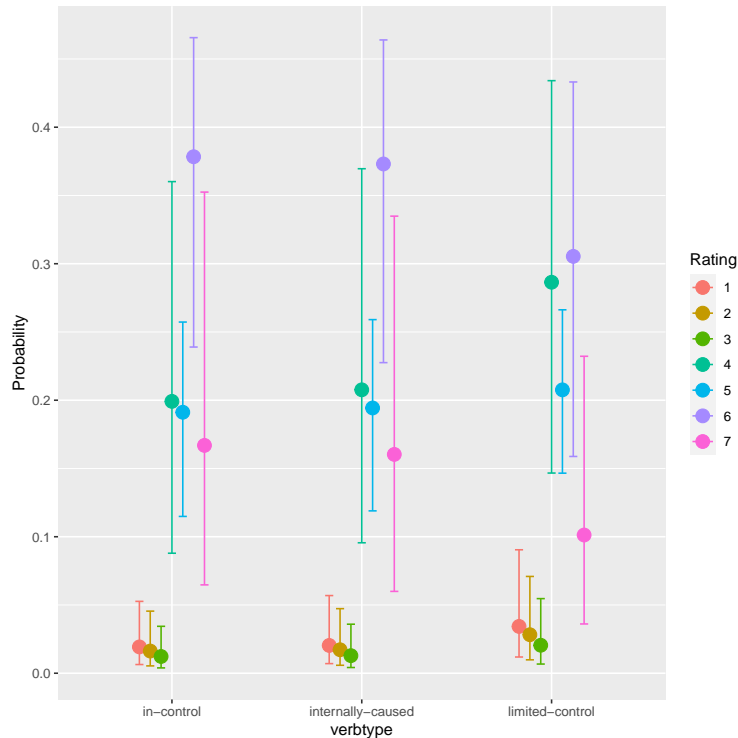


Figure 8: Predicted ratings for each of the three verb classes in Experiment 2.

- (32) *Dans cette situation, la carapace de l'insecte (se) noircit pour échapper aux prédateurs.*  
 in this situation the carapace of the.insect SE blacken.PRST.3SG in order to escape the predators  
 'In this situation, the insect's carapace turns black in order to escape the predators.'
- (33) *Certains chargeurs solaires (se) plient pour mieux s'incorporer dans un sac à dos.*  
 some chargers solar SE fold up.PRST.3SG to better SE.incorporate in a bag to back  
 'Some solar chargers fold up in order to better integrate a backpack.'

Differently from what we observed with human subjects, the reason clause does not force an agentive construal for the referent of the matrix subject. Neither (32) nor (33) forces the charger or the carapace to be construed as external arguments. The reason clause can be understood as just giving the teleological explanation for why the event described in the matrix clause holds. It does not have to be interpreted as the motive behind the behavior of the subject's referent (which therefore does not have to be interpreted as an agent). This conforms to what has been repeatedly observed for English for examples such as (34) (cf. Williams 1974, Williams 2005, Bhatt and Pancheva 2017).

(34) Grass is green to promote photosynthesis. (Williams 1974, cited in Williams 2005)

Given that the presence of the reason clause does not enforce an agentive construal for the non-human subject, this reason clause does not trigger a reflexive construal of the matrix clause with a non-human subject. We, thus did *not* expect a preference for the reflexively marked form in the reflexive context with such non-human subjects. Results summarized in Figures 1 and 4 confirmed this prediction.

In summary, with non-human subjects, the morphological marking in  $\pm se$  verbs remains uninformative and unconstrained if the subject is non-human (Experiments 1a/b). However, if the speaker aims to present the non-human entity as agentive and responsible for the change it endures, they will favour the reflexively marked form over the unmarked form (Experiment 2).

## 2.5 Summary of generalizations

Table 3 repeats the main generalizations about  $\pm se$  AC-verbs that we confirmed experimentally in the last three subsections. With human subjects, the marked form is odd with limited-control verbs, and the unmarked form is odd with in-control verbs. With non-human subjects, both forms are accepted across contexts. But when asked to pick which form attributes more responsibility to a non-human subject, speakers tend to choose the marked form. We now develop a proposal deriving these preferences.

	Human	Non-human
LC verbs	variant without <i>se</i> preferred	no preference between variants (variant with <i>se</i> preferred to convey responsibility of Non-human)
IC verbs	variant with <i>se</i> preferred	no preference between variants (variant with <i>se</i> preferred to convey responsibility of Non-human)

Table 3: The three preferences across  $\pm AC$  verbs.

## 3 A lexical pragmatic account

Understanding the three preferences summarized in section 2.5 requires taking into account the multifunctionality of the morpheme *se*. More concretely, *se* is used to form different verbal diatheses (or Voices) which cannot be distinguished on the basis of the surface string. A surface string of the form [DP *se* verb] is formally ambiguous between different diatheses.

For the above biases, the relevant diatheses are anticausative predicates (which stand in opposition to transitive, causative variants of the same predicate) and semantically reflexive predicates (which stand in opposition to uses of the same verb with two disjoint arguments). One further verbal diathesis formed with *se* in French and other Romance languages is the *se*-passive (or medio-passives). In section 4.2, we will see that these are sometimes involved in competition-based effects similar to those identified with *se*-marked anticausatives.

In the next subsection, we first flesh out one concrete theory about the way verbs enter these three different diatheses and our assumptions about the semantic interpretations going along with them. In section 3.2., we then discuss how the pragmatic reasoning about possible and impossible interpretations associated with a string with or without *se* yields the three biases. While we use a particular syntactic framework and a specific event decomposition to make the proposal explicit,

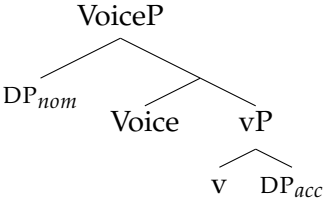
the account proposed for the three biases only hinges on the existence of a different semantics for each diathesis in competition, and not on the specific syntactic properties assumed to underlie them. Alternative theories assuming agent-semantics for semantically reflexive transitives but not for marked and unmarked anticausatives could equally derive the tendencies we are interested in.

### 3.1 The syncretism of anticausative morphology

For concreteness, we ground our proposal within the syntactic theory of verbal diatheses put forward by Schäfer (2008), Alexiadou et al. (2015), Schäfer (2017) and related work. These authors follow the assumption that verbal diatheses are built in the syntax by combining a core verbal predicate (represented in the trees below as  $v/vP$ ) with different functional projections, most importantly for our discussion, the projection Voice which handles the syntactic and semantic properties of external arguments.<sup>10</sup>

Lexical-causative verbs (like other transitive verbs) are built by forming a verb phrase ( $vP$ ) consisting of the core verbal predicate and the internal argument, and then merging the functional head Voice (Kratzer 1996). The thematic role of the internal argument (theme) is provided by the verbal core predicate. Voice determines the semantic and syntactic properties of the external argument. With transitive verbs, an external argument DP is merged in the specifier of Voice and is assigned a thematic role by Voice. We use the term ‘agent’ for this role and assume that this role is assignable both to human and non-human entity-denoting DPs. Thus, (35a) is the structure of a lexical-causative/transitive verb, and the semantic interpretation of this structure before saturation of the argument variables is given in (35b) (where  $P$  represents the property of states encoded by the verbal predicate). The surface linear order derived from the structure of (35a) is given in (35c) (we assume that the external argument DP has moved from Spec,VoiceP to Spec,TP).

(35) Transitive verb/lexical-causative verb:

- a.
- 
- ```

graph TD
    VoiceP --> DP_nom
    VoiceP --> Voice
    Voice --> Voice
    Voice --> vP
    vP --> v
    vP --> DP_acc
    
```
- b.  $[\text{VoiceP}] \rightsquigarrow \lambda y \lambda x \lambda e. \exists s (\mathbf{agent}(e, x) \wedge \mathbf{cause}(e, s) \wedge P(s) \wedge \mathbf{theme}(s, y))$
- c.  $\text{DP}_{\text{NOM}} \text{ V } \text{DP}_{\text{ACC}}$

While French reflexive verbs have often been analyzed as being intransitive (unaccusative or unergative; see Reinhart and Siloni 2004 and references there), we follow arguments in Doron and Rappaport Hovav (2009), and Sportiche (2014, 2022) and assume that they involve an ordinary transitive syntax. The morpheme *se* acts as an anaphoric pronoun merged in object position where it must be locally bound by the external argument DP in Spec,VoiceP, as shown in (36a). The simplified meaning for causative verbs derived from the structure is given in (36b) where the

<sup>10</sup>These authors assume that the verbal predicate consists of an acategorial root combining with the verbalizing head  $v$ ; we leave out the root in our representations for simplicity, but, ultimately, lexical verbs such as different verbs undergoing the causative alternation are differentiated via their roots.



internal and the external argument variable are co-valued. Since the external argument raises from Spec,VoiceP to Spec,TP and *se* cliticizes to the (left of the) verb, reflexive verbs appear in the surface string in (36c).

(36) Semantically reflexive causative verbs:

- a.
- 
- ```

    graph TD
      VoiceP --> DP_nom
      VoiceP --> Voice_ag
      Voice_ag --> vP
      vP --> v
      vP --> se
  
```
- b.  $[\text{VoiceP}] \rightsquigarrow \lambda y \lambda x \lambda e. \exists s (\mathbf{agent}(e, x) \wedge \mathbf{cause}(e, s) \wedge \mathbf{P}(s) \wedge \mathbf{theme}(s, y) \wedge x = y)$
- c.  $\text{DP}_{\text{NOM}} \textit{se-V}$

Unmarked anticausatives such as  $-se$  AC verbs and the variants of  $\pm se$  AC-verbs without *se* involve only a vP hosting the internal argument DP; no Voice layer is present with these verbs. Their structure is depicted in (37a). Since no Voice projection is present, anticausative verbs lack agent-related semantics. Their meaning is given in (37b). Since the internal argument in (37a) is the sole DP in the structure, it rises to the derived subject position Spec,TP. This leads to the linear order in (37c).

(37) Unmarked AC:

- a.
- 
- ```

    graph TD
      vP --> v
      vP --> DP
  
```
- b.  $[\text{vP}] \rightsquigarrow \lambda y \lambda e. \exists s (\mathbf{cause}(e, s) \wedge \mathbf{P}(s) \wedge \mathbf{theme}(s, y))$
- c.  $\text{DP}_{\text{NOM}} \textit{V}$

We have argued above that French marked and unmarked anticausatives are not specialized for external and internal causation respectively. This aligns with Schäfer (2008), Martin and Schäfer (2014), Alexiadou et al. (2015) and Schäfer and Vivanco (2016), who argue that there are no consistent meaning differences between marked and unmarked anticausatives (in French and in other languages using a *se*-morpheme to form marked anticausatives). Both denote one-place predicates of change such that the sole DP is interpreted as the undergoer of the event. Morphosyntactically, however, marked anticausatives differ from unmarked anticausatives via the presence of the pronominal clitic *se*.<sup>11</sup>

To account for these similarities and differences between marked and unmarked anticausatives, Schäfer (2008) and Alexiadou et al. (2015) (see also Wood 2015) propose that the clitic *se*, when

<sup>11</sup>In French, marked anticausatives also differ from unmarked ones with respect to auxiliary selection: the latter select *have* while the former select *be*. In German, we find exactly the opposite distribution of the auxiliaries (Schäfer 2008) and in Italian, both classes select *be* (see Cennamo 2021 and the references there). Differently from Labelle (1992), we thus do not assume that French unmarked anticausatives are unergative verbs. Instead, we see all anticausatives as unaccusative (see also Labelle and Doron 2010, Doron and Labelle 2011 and Reinhart and Siloni 2004 for this assumption) and do not assume aux-selection to be a consistent test for unaccusativity (see Heidinger 2010 for the same conclusion based on a detailed evaluation of the two types of French anticausatives with respect to a bigger set of unaccusativity diagnostics).

forming marked anticausatives, acts syntactically as an external argument which, however, lacks any semantic impact. To this end, they propose that marked anticausatives involve an expletive version of Voice which does not assign any theta role but, nevertheless, *c*-selects for a nominal expression in its specifier. When merged in the specifier of expletive Voice, *se* acts as an ‘argumental expletive’, a nominal expression merged in a potential argument position (specifier of Voice) that lacks any semantic impact as it does not carry any inherent content and is not assigned any thematic role from Voice. Put informally, the idea is that *se* in marked anticausatives marks the absence of external argument entailments. This structure of marked anticausatives is given in (38a). The meaning derived from this structure is given in (38b); since neither Voice nor *se* in (38a) has any semantic impact on the clause (as they are expletive), (38b) is identical to (37b). In the further syntactic derivation, *se* cliticizes to the verb and the internal argument raises to Spec,TP. We thus derive the linearization in (38c), which is surface-identical to the one found with semantically reflexive verbs in (36c).

(38) Marked AC:

- a.
- 
- ```

graph TD
    VoiceP --> se
    VoiceP --> Voice_expletive
    Voice_expletive --> vP
    vP --> v
    vP --> DP_nom
  
```
- b. [VoiceP]  $\rightsquigarrow \lambda y \lambda e. \exists s (\mathbf{cause}(e, s) \wedge P(s) \wedge \mathbf{theme}(s, y))$
- c. DP<sub>NOM</sub> *se*-V

We also quickly illustrate French passives as they will become relevant later. French has two passives, canonical passives illustrated in (39a) and *se*-passives illustrated in (39b). We assume that both passives of lexical causatives have the meaning in (39c) where the external argument variable is existentially bound (as no *by*-phrase introducing an external argument is present). Following Schäfer (2017), we assume that *se*-passives have the same structure as *se*-marked anticausatives in (38). In particular, *se* acts as an expletive in the specifier of Voice. The only difference is that Voice in *se*-passives (like Voice in canonical passives; cf. Bruening (2012)) is not expletive, but introduces an existentially bound external argument variable. Superficially however, *se*-passives yields the same string as semantically reflexive verbs (36) and marked anticausatives (38).

- (39) a. *Trois maisons ont été louées hier.* (canonical passive)  
 three houses have been rented yesterday  
 ‘Three houses were rented yesterday.’
- b. *Trois maisons se sont louées hier.* (*se*-passive)  
 three houses SE are rented yesterday  
 ‘Three houses were rented yesterday.’
- c. [VoiceP]  $\rightsquigarrow \lambda y \lambda e. \exists x \exists s (\mathbf{cause}(e, s) \wedge P(s) \wedge \mathbf{theme}(s, y) \wedge \mathbf{agent}(e, x))$

To conclude, three different diatheses are realized with the very same surface string [DP *se* verb]: semantically reflexive verbs, *se*-marked anticausatives and *se*-passives. The meaning of *se*-

anticausatives can in principle also be expressed with unmarked anticausatives, and the meaning of *se*-passives can be expressed with canonical passives.

Finally, for some interpretations, and for some verbs entering a particular interpretation, the morphological form is fixed by the grammar (i.e., lexicon or syntax), whereas for others there is optionality:

- (40) a. Reflexive semantics must be expressed with the reflexive syntax (36) in French.<sup>12</sup>  
b.  $-se$  verbs are lexically restricted to enter the unmarked AC structure (37).  
c.  $+se$  verbs are lexically restricted to enter the marked AC structure (38).  
d.  $\pm se$  verbs are compatible with both the unmarked and marked AC structures.

### 3.2 Competing readings for *se*-marked strings and *Avoid ambiguity*

Anticausative clauses will show more or less ambiguity depending on the morphological class of the anticausative verb. With  $-se$  AC-verbs, an ambiguity between an anticausative and a reflexive interpretation will never arise, since *se* is forbidden in the anticausative use and mandatory in the semantically reflexive use.  $+se$  AC-verbs are on the surface ambiguous as their morphophonology could also convey the reflexive structure (36); with these verbs, there is however no way of avoiding this ambiguity, as both the anticausative and the reflexive interpretations must be formed with *se*. As for  $\pm se$  AC-verbs, the only possible parse is the anticausative one in (37) when they are unmarked. But when marked, ambiguity arises between the anticausative parse in (38) and the reflexive parse in (36) (ignoring for now *se*-passives, addressed in section 4.2). This is where pragmatics kicks in.

Previewing our conclusions, our proposal is that when hearing *se* in a clause headed by a  $\pm se$  AC-verb *with a human argument*, the reflexive parse will always be among the salient parses as a consequence of the well-known *agent bias* (or *agent preference*) in comprehension studies: we tend to preferentially interpret semantic role-ambiguous DPs such as human DPs as agents (Bickel et al. 2015, Sauppe et al. 2022 and references therein). Hearers faced with the marked variant of a  $\pm se$  AC-verb will thus reason as follows: given that both the variants with and without *se* can in principle be used for the AC reading, while only *se* can be used for the reflexive reading, then if the speaker chooses  $+se$ , it is because they are after the reflexive reading. If the speaker wanted to yield an anticausative reading, they would have chosen the unambiguous  $-se$  to do so. Other readings are thus degraded; in particular, the anticausative reading becomes dispreferred when *se* is used, explaining the unmarked limited control preference. The same logic presumably guides speakers in their choice of utterance—an effort to avoid ambiguity.

In contrast, when hearers do *not* hear *se* in a  $\pm se$  clause containing a human argument, they will reason that *se* was not used in order to avoid the reflexive parse. It is then inferred that the human argument is *not* responsible for the process. If the human argument is presented as not responsible, infelicity arises in the context of verbs expressing changes typically controllable by humans, like motion or posture verbs, explaining the marked in control preference.

For non-humans, the reflexive parse does not enter the set of salient parses by default, because there is no agent preference for non-humans. Non-humans can be construed as agents in

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<sup>12</sup>While English allows naturally reflexive verbs to appear without an anaphoric pronoun, (cf. *John washed (himself)*), reflexive verbs in French must always be marked with *se*).

language, but there is no *a priori* preference to do so. Thus the anticausative parse remains the one and only salient parse for a string marked with *se*. As a result, there is no difference in interpretation between a marked or unmarked form, and the speaker’s choice ends up completely uninformative.

Still, if forced to choose which form endows the inanimate with more responsibility, speakers end up choosing the +*se* form (section 2.4). The reason is that this form is the only one which has an additional meaning, namely the semantically reflexive one, through which the inanimate is agentivized; once it is agentivized, it can be construed as responsible for the event. This explains the marked responsibility preference (with inanimates).

The relevant pragmatic reasoning and the resulting human biases are schematized in Figure 9. We now derive the three biases in more detail: the unmarked limited control preference with humans in Section 3.3, the marked in control preference with humans in 3.4, and the marked responsibility preference with non-humans in 3.5.

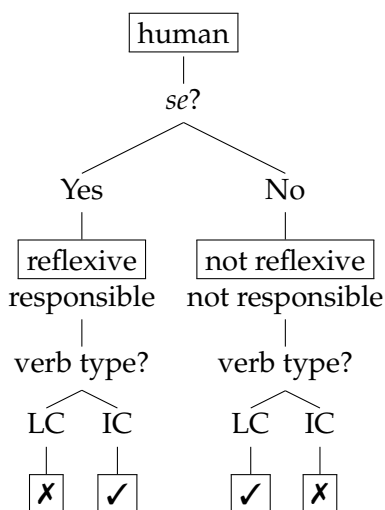


Figure 9: Pragmatic reasoning and resulting preferences with human subjects and  $\pm$ ACs.

### 3.3 Explaining the unmarked limited-control preference

Recall the unmarked limited-control preference, which arises with LC verbs as in (41): these  $\pm se$  anticausatives remain preferably unmarked with human arguments, as shown in Section 2.2.

- (41) *Jeanne #(s')est rougie.*  
 Jean SE=reddden.PFV.3SG  
 'Jeanne blushed/reddened.'

Our account of this preference rests on the fact that the *se*-marked string in the example above is formally ambiguous between different syntactic parses leading to different semantic interpretations. Most relevant here is the ambiguity between the marked anticausative structure in (38) and the semantically reflexive structure in (36). Invoking the Gricean Manner Maxim *Avoid ambiguity (if possible)!* (Grice 1989), a cooperative speaker will assume that in order to yield an anticausative parse, they should use the unmarked AC over the marked AC, so as to avoid that the

hearer wrongly arrives at a reflexive interpretation. The reflexive interpretation misleadingly triggered by the use of *se* would be particularly problematic with LC verbs, as those denote changes which are typically not under the control of the undergoer.

The hearer's reasoning upon hearing a clause with a marked  $\pm se$  LC verb is decomposed in (42).

- (42) a. The speaker used *se*.  
 b. With a human subject, change of state events with *se* are ambiguous between *se*-AC and reflexive constructions.  
 c. Clauses without *se* are another way of expressing the anticausative with  $\pm se$  AC verbs.  
 d. The speaker did not choose the unmarked AC form, and thus did not intend for the meaning conveyed by the unmarked AC (the anticausative meaning).  
 e. Therefore, the speaker did not intend for the anticausative parse with *se*.  
 f. The speaker must have intended for the reflexive parse with *se*.

The unmarked limited control preference comes from the fact that *se*-marking choice leads to a reflexive parse, while this parse is at odds with the semantics of limited-control verbs, expressing events typically out of the control of the undergoer.

The inferences (42d-f) being implicatures, they are in principle cancellable. But it is known that Manner implicatures are more difficult to cancel than Quantity implicatures, because the former are calculated on the basis of the linguistic form, not content (Horn 1989, Levinson 2000, Rett 2015). More concretely, the inferences (42d-f) are difficult to cancel given the availability of the alternative anticausative form without *se* — if the speaker was after the anticausative, why didn't they say it more directly? (or alternatively: if the speaker was *not* after the reflexive parse, why were they so prolix?).

However, the results of Experiment 1a do support the view that the unmarked limited-control preference is pragmatic in nature: while the ratings for the marked form in the inchoative and neutral contexts are overall negative, they show a lot of variation. This suggests that some participants do manage to retrieve the anticausative reading (expected in these contexts) for the marked, ambiguous form, or manage to construe a reflexive reading that fits the Manner implicatures (42d-f) (in the neutral context—such a reading is very implausible in the inchoative context).

In summary, with  $\pm se$  verbs, the form marked with *se* tends to lead to a reflexive construal with human subject, which then requires a subject in control. This is overall difficult with LC verbs.

### 3.4 Explaining the marked in-control preference

Recall now the marked in-control preference, illustrated in (23c) and repeated in (43):

- (43) #*Jeanne*  $\emptyset$  *a plié* *en deux*.  
 Jeanne bend.PFV.3SG in two  
 Intended: 'Jeanne bent double.'

The full DP is again human, thus naturally construed as an agent. Furthermore, the verb being an IC verb, it expresses changes understood as controlled by the (human) undergoer. In that case, the cooperative speaker should choose the reflexively marked form over the unmarked one. For if the speaker picks up the unmarked form rather than the marked one, they suggest that they

avoided the marked one because of its additional reflexive reading. This would in turn convey that the human DP fulfills the undergoer role, but not the agent role that comes with the reflexive parse only. This ‘no-agent’ inference goes against our default expectations about the way humans participate in the changes-of-state denoted by IC verbs. A schematic for the hearer’s reasoning upon hearing a clause as in (43) (with an IC  $\pm se$  verb without *se*) is given in (44).

- (44) a. With a human DP, clauses with *se* and an in-control change-of-state verb are ambiguous between *se*-anticausative and reflexive structures.  
 b. Clauses without *se* are univocally anticausative.  
 c. Only the reflexive structure involves an external argument position hosting an agent.  
 d. The speaker avoided using the *se* form.  
 e. The speaker avoided the reflexive meaning.  
 f. The DP’s reference is not the agent responsible for the change.

The inference of non-responsibility/agency is at odds with the semantics of in-control change-of-state verbs, expressing events which are normally controlled by a human undergoer.

We again take the inference in (44e/f) to be defeasible, i.e., the lack of responsibility/agency is *not* entailed in, for instance, (43). But again, the inference is strong given the availability of the reflexive form to express the same change. However, results of Experiment 1b do suggest that the inference is cancellable: while ratings for the unmarked form of IC verbs in the neutral or inchoative contexts are overall negative, they show a lot of variation, suggesting that some participants ignore the inference of non-responsibility/non-agency.

### 3.5 Explaining the marked responsibility preference with inanimates

Recall now the third preference observed with  $\pm se$  ACs: if forced to choose the structure that ascribes more responsibility to the referent of a non-human DP like in (45), speakers tend to prefer the *se*-variant over the unmarked variant.

- (45) *La fleur* {*a flétri* / *s’est flétrie*}.  
 the flower has wilt.PFV.3SG REFL=is wilt.PFV.3SG  
 ‘The flower wilted.’

This observation is by now easy to explain. Only the marked string is compatible with a derivation different from the anticausative one, where the DP is grammatically encoded as being responsible. Speakers effectively endorse a reflexive parse if they asked to endow the non-human entity with responsibility, considering that the  $+se$ -variant is the most effective way to do so, as the reflexive interpretation is never available for the unmarked form.

## 4 Extensions to other competition effects

We have shown that the overall optionality found with  $\pm se$  AC-verbs is sometimes suspended due to pragmatic considerations drawn by participants in an exchange concerning the lexical semantics of the verb and the ontological properties of the sole argument DP in combination.

Such a pragmatic explanation can be extended to other cases of competition. We will discuss next how pragmatic considerations constrain the availability of the impersonal *il*-construction (Section 4.1) and *se*-passives (Section 4.2).



#### 4.1 Marked anticausatives with the impersonal *il*

The first extension of our approach looks at the distribution of ACs when combined with the impersonal use of the pronoun *il*. Both *–se* AC-verbs as well as *+se* AC-verbs can combine with impersonal *il*, as can be seen in (46a–b). However, the first example involving a *–se* verb (*brûler* ‘burn’) is actually ambiguous between an anticausative interpretation (where *il* is impersonal *il*) and a transitive interpretation (where *il* is used as a referential 3SG.M pronoun).<sup>13</sup> No such ambiguity exists for *+se* AC-verbs, as the second example shows.

- (46) a. ✓3SG.M, ✓ impersonal. (–se AC)  
*Il a brûlé plein de maisons dans l’incendie.*  
 he/it burn.PFV a lot of houses in the=fire  
 ‘He burned a lot of houses in the fire.’  
 OR: ‘A lot of houses burned in the fire.’
- b. ✗ 3SG.M, ✓ impersonal. (+se AC)  
*Il s’est brisé plein de verres dans l’armoire.*  
 it SE=is break.PFV a lot of glasses in the=cupboard  
 ‘A lot of glasses broke in the cupboard.’

More examples of *–se* AC-verbs with impersonal *il* are given in (47):<sup>14</sup>

- (47) a. *Il pourrit des nattes de figuiers dans des recoins de nuit.* (–se AC)  
 it rot.PRST.3SG some braids of figs in some corners of night  
 ‘Some figs braids are rotting in some night corners.’  
 (Edouard Glissant, *Une nouvelle région du monde*)
- b. ✓3SG.M, ✓ impersonal. (–se AC)  
*Il sèche encore du linge dans le jardin.*  
 he/it dry.PRST still some laundry in the garden  
 ‘He’s still drying some laundry in the garden.’  
 OR: ‘Some laundry is still drying in the garden.’

Next, we turn to  $\pm se$  verbs, i.e. those for which there is a choice between two AC forms. To obtain the impersonal *il*, the marked form of these anticausatives is the best choice, as shown in (48)–(49). Example (48a), although potentially ambiguous, is strongly biased towards the transitive construal with the personal pronoun ‘he’, while (48b) can only be understood as an impersonal anticausative. This behavior, observed already by Labelle (1992: 382) and Legendre et al. (2016), is unrelated to verb subclasses such as LC or IC.<sup>15</sup>

<sup>13</sup>Legendre et al. (2016) claim that *–se* verbs do not allow impersonal *il*, so for them (46a) should be unambiguous. It is ambiguous for us, and we provide an attested example with the impersonal *il* and a *–se* verb in (47a).

<sup>14</sup>Sentence (47a) is independently biased towards the impersonal reading of *il* because *pourrir* ‘rot’ is an internally-caused change-of-state verb and as such transitivizes only in restricted conditions (cf. fn. 4).

<sup>15</sup>For them however, this behavior is hard-wired in that they consider the unmarked form as non-ambiguous. For us, it is ambiguous, but one of the two possible meanings is strongly preferred for pragmatic reasons based on *Avoid Ambiguity*.



- (48) a. No *se*: ✓ 3SG.M, #impersonal. (±*se* AC)  
*Il a cassé plein de verres dans l'armoire.*  
 he break.PFV a lot of glasses in the  
 'He broke a lot of glasses in the cupboard.'  
 NOT: 'A lot of glasses broke in the cupboard.'
- b. With *se*: ✗ 3SG.M, ✓ impersonal.  
*Il s'est cassé plein de verres dans l'armoire.*  
 it SE=is break.PFV a lot of glasses in the  
 'A lot of glasses broke in the cupboard.'
- (49) a. No *se*: ✓ 3SG.M, # impersonal. (±*se* AC)  
*Il a coincé quelque chose dans le tiroir.*  
 he get-stuck.PFV some thing in the drawer  
 'He got something stuck in the drawer.'  
 NOT: 'Something got stuck in the drawer.'
- b. With *se*: ✗ 3SG.M, ✓ impersonal.  
*Il s'est coincé quelque chose dans le tiroir.*  
 it SE=is get-stuck.PFV some thing in the drawer  
 'Something got stuck in the drawer.'

We can again account for these preferred interpretations as resulting from Manner implicatures (via the *Avoid Ambiguity* Principle). The hearer's reasoning upon hearing a sentence with *il* in subject position and a ±*se* verb can be schematized as in (50):

- (50) a. *il*-sentences with unmarked ±*se* verbs are formally ambiguous between a causative structure (personal use for *il*) and anticausative structure (impersonal use for *il*).  
 b. *il*-sentences with marked ±*se* verbs are anticausative (impersonal use for *il*).  
 c. The speaker avoided using the *se* form.  
 d. The speaker avoided the anticausative structure.  
 e. The speaker must have intended the causative parse involving the personal use of *il*.

Once again, –*se* verbs are different: for these verbs, the absence of *se* does not signal avoidance of the intransitive structure, since only the unmarked form is possible in the first place. Hence why sentences such as (46a) or (47b) remain unbiased towards a specific interpretation.

## 4.2 *se*-passives

While the previous sections concentrated on the competition between anticausative and semantically reflexive uses of *se*-marking, our account can be extended to other readings of *se* as well. Related competition effects have been observed to hold between *se*-passives and semantically reflexive construals (Zribi-Hertz 1982, 1986). The following examples involve basically transitive verbs that do not undergo the causative alternation. Adding *se* to these verbs can only produce a semantically reflexive parse (cf. (37a-c)) or a passive parse (cf. (40c)). Again, the ontological nature of the sole argument DP tends to resolve this formal ambiguity. With non-human DPs, the passive reading rather than the reflexive reading obtains for world-knowledge considerations, as

in (51a). With human DPs, in contrast, the reflexive reading is strongly preferred as the result of the agent preference, (51b). Further examples of this effect follow.

- (51) a. Non-human: ✓ passive, # reflexive.  
*L'ancre doit se jeter à l'eau.*  
 the anchor must SE throw at  
 'The anchor must be thrown into the water.'  
 IMPLAUSIBLE: 'The anchor must throw itself into the water.' (Zribi-Hertz 1982: 361)
- b. Human: # passive, ✓ reflexive.  
*Le coupable doit se jeter à l'eau.*  
 the guilty must SE throw at the=water  
 'The guilty one must throw oneself into the water.'  
 DISPREFERRED: 'The guilty one must be thrown into the water.'
- (52) a. Non-human: ✓ passive, # reflexive.  
*La voiture s'est lavée facilement.*  
 the car SE=is washed easily  
 'The car was washed easily.'  
 IMPLAUSIBLE: 'The car washed itself easily.'
- b. Human: # passive, ✓ reflexive.  
*Pierre s'est lavé facilement.*  
 Pierre SE=is washed easily  
 'Pierre washed himself easily.'  
 DISPREFERRED: 'Pierre was washed easily.'
- (53) a. Non-human: ✓ passive, # reflexive.  
*Le moustique s'est tué avec un insecticide.*  
 the mosquito SE=is killed with an insecticide  
 'The mosquito was killed with an insecticide.'  
 IMPLAUSIBLE: 'The mosquito killed itself with an insecticide.'
- b. Human: # passive, ✓ reflexive.  
*Pierre s'est tué avec un insecticide.*  
 Pierre SE=is killed with an insecticide  
 'Pierre killed himself with an insecticide.'  
 DISPREFERRED: 'Pierre was killed with an insecticide.'

The logic behind these facts is of the same kind as in the previous sections. The passive reading obtains easily in examples with a non-human subject, because it does not compete with an implausible reflexive reading. But because of the agent preference, the reflexive reading is very salient with a human subject. As a result, the passive reading becomes dispreferred. To express a passive interpretation, the speaker would need to avoid the *se*-marked form and choose a periphrastic passive, thereby avoiding a situation in which the hearer arrives at the reflexive parse.

The hearer's reasoning upon hearing a sentence with a *se*-marked non-alternating transitive verb can be schematized as follows:

- (54) a. With a human subject, *se*-marked non-alternating transitive verbs are formally ambiguous between a passive and a semantically reflexive structure.  
 b. Periphrastic passives with such verbs are unambiguously passive.  
 c. The speaker avoided using the periphrastic passive form.  
 d. The speaker avoided the passive meaning.  
 e. The speaker must have intended for the semantically reflexive parse.

Yet another competition effect, this time with non-human subjects, is illustrated in (55). Verbs like *casser* 'break' ( $\pm se$ ) or *briser* 'break' ( $+se$ ) found in this example are change-of-state verbs. When used intransitively with a concrete (physical) entity as theme, the anticausative reading of such verbs is very salient. The marked passive construal is available in principle, but the hearer will again compute the Manner implicature that if the speaker avoided the periphrastic passive form which is unambiguously passive, it is because they were after the anticausative use.

- (55) *Le vase s'est brisé/cassé ce matin.* (✓*se*-anticausative, ✗*se*-passive)  
 the vase SE=break.PFV.3SG this morning  
 'The vase broke this morning.'  
 DISPREFERRED: 'The vase has been broken this morning.'

Such reasoning does not hold with verbs like *vendre* 'sell', for those do not have anticausative use to begin with, (56), so no competition arises.

- (56) *Le vase s'est vendu ce matin.* (✗*se*-anticausative, ✓*se*-passive)  
 the vase SE=sell.PFV.3SG this morning  
 'The vase was sold this morning.'  
 NOT: 'The vase sold this morning.'

To summarize:

- (57) a. With non-human DPs, change-of-state verbs like *se casser/se briser* 'SE break' are formally ambiguous between a passive and an anticausative meaning.  
 b. Periphrastic passives with such verbs are unambiguously passive in their meaning.  
 c. The speaker avoided using the periphrastic passive.  
 d. The speaker avoided the passive meaning.  
 e. The speaker must have intended for the anticausative meaning.

As expected under a pragmatic account, the Manner implicatures (57c–d) that the speaker avoided the passive meaning can in principle be overridden in an appropriate context enhancing the passive meaning. For instance, the context of (58) below makes clear that the speaker targets the passive reading, thanks to the deontic modal and the instrument PP, the latter being banned in an anticausative construal (see Schäfer 2009 among others). In addition, *se* is now compulsory in (58), for otherwise the passive structure required by the PP would be unavailable.

- (58) *Le verre doit #(se) casser avec des gants et lunettes de protection.*  
the glass must SE break.INF with some gloves and glasses of protection  
'Glass must be broken with gloves and protection glasses.'  
(~~X~~*se*-anticausative, ✓*se*-passive)

Verbs like *casser* 'break' with a non-human DP prefer the anticausative reading, (55), but one final case in which they do get the passive reading is with an abstract DP such as *record*, *routine* or *promise*. As is well-known for English, *break* cannot be used anticausatively with such DPs; (59a) exemplifies (Levin and Rappaport Hovav 1995: 85, 105, Koontz-Garboden 2009). Some authors have claimed that the same is true in French (van Voorst 1995). We observe, however, that the French formal counterparts of sentences such as (59a) are acceptable (and easy to find in corpora, see e.g. (59b)). The difference between the languages lies in the fact that these surface strings can also express a passive meaning, which, this time, is not blocked by some anticausative use (given that the latter is unavailable with abstract DPs of this type, both in English and French).

- (59) a. \*His promise/the contract/the world record broke.  
b. *Une certaine routine s'est brisée, comme celle de se lever, se laver, s'habiller.*  
a certain routine SE=break.PFV.3SG like this of SE get up SE wash SE=dress  
'A certain routine has been broken: get up, wash, dress up.'  
NOT: 'A certain routine broke.' (Internet, ~~X~~*se*-anticausative, ✓*se*-passive)

This examination of marked passives has reached similar conclusions to our study of anticausatives: language users are aware of the different uses of *se* and rely on pragmatic reasoning to infer whether an anticausative or passive reading was intended, and accordingly, whether a passive or anticausative structure was generated.

## 5 Conclusions

In this paper, we contested previous analyses according to which French reflexively marked and unmarked ACs and *se* systematically differ in meaning. In particular, we argued that marked and unmarked ACs *do not show* systematic meaning differences with regard to internal vs external causation. Similarly, the claim that French marked and unmarked ACs differ with respect to full result entailments has already been shown to be empirically untenable in Martin and Schäfer 2014. This supports our claim that the presence vs absence of *se* should not be associated with fundamentally different syntactic structures predicting any such semantic differences. Finally, we showed that the true remaining meaning differences accurately noticed by Labelle 1992, Doron and Labelle 2011 and Labelle and Doron (2010) are restricted to  $\pm se$  AC verbs, for which there is a choice, and follow from lexical pragmatic considerations: speakers strongly favor the presence or the absence of *se* in order to avoid that alternative and unintended interpretations arise in parallel to the intended interpretation. While our empirical study was based on French, we expect related effects in other languages once they show Voice syncretisms and optionality in the morphological realization of particular Voice semantics.

## A Appendix: Experimental design

This appendix contains additional details on our experimental setup. Data from both experiments and the analysis script can be found in the OSF repository on [https://osf.io/4jqhn/?view\\_only=aafec40636bd468eaa3c52b4cf7691e4](https://osf.io/4jqhn/?view_only=aafec40636bd468eaa3c52b4cf7691e4).

## A.1 Experiment 1

### A.1.1 Participants

Participants were recruited on Prolific and paid EUR 1.70 for participation. All participants self-reported as native speakers of French aged 18 or over, and born in a Francophone European country (France, Belgium, Switzerland). Since we had no hypotheses about variation, no demographic information was collected. A total of N = 154 (161 before exclusions) participants took part, divided randomly into four lists for counterbalancing purposes (A: 37, B: 36, C: 39, D: 42).

### A.1.2 Procedure

Participants rated the acceptability individual sentences on a 7-point Likert scale. The radio button on one edge was labeled *Pas du tout naturelle* ‘not natural at all’ and the opposite one was labeled *Tout à fait naturelle* ‘completely natural’. Materials were presented visually using PCIBex (Drummond, n.d, Zehr and Schwarz, 2018). Four practice trials preceded the main experiment, in which the order of trials was randomized.

### A.1.3 Materials

Experiment 1 was comprised of two verb classes, LC in Experiment 1a and IC in Experiment 1b. Six LC verbs were used in Experiment 1a and five IC verbs were used in Experiment 1b. In each of these two sub-experiments, items were constructed by crossing three conditions: ANIMACY, SE and CONTEXT.

ANIMACY indicated whether the subject was human or non-human:

- (60) a. *Adèle a rougi sous l'effet des moqueries et de l'humiliation.*  
Adèle redder.PFV.3SG under the=effect of.the teasings and of the=shame  
‘Adèle got red under the effect of the teasing remarks and the shaming.’  
b. *L'eau a rougi à cause du sang sur ses mains.*  
the=water redder.PFV.3SG because of.the blood on his hands  
‘The water got red because of the blood on her hands.’

SE indicated whether *se*-marking appeared or not:

- (61) a. *Adèle a rougi sous l'effet des moqueries et de l'humiliation.*  
Adèle redder.PFV.3SG under the=effect of.the teasings and of the=shame  
‘Adèle got red under the effect of the teasing remarks and the shaming.’  
b. *Adèle s'est rougie sous l'effet des moqueries et de l'humiliation.*  
Adèle REFL=redder.PFV.3SG under the=effect of.the teasings and of the=shame  
‘Adèle got red/made herself red under the effect of the teasing remarks and the shaming.’

CONTEXT coded whether the verb was placed in neutral, anticausative or reflexive context, repeated here from (20) in the main text:

- (62) a. NEUTRAL  
*Rachida a pâli.*  
Rachida go.pale.PFV.3SG  
'Rachida went pale.'
- b. INCHOATIVE  
*Djamila a pâli à l'annonce de l'infidélité de son amoureux.*  
Djamila go.pale.PFV.3SG at the.announcement of the affair of her lover.  
'Rachida went pale when she heard about her lover's affair.'
- c. REFLEXIVE  
*Djamila a pâli pour les besoins de son personnage de théâtre.*  
Djamila get.pale.PFV.3SG for the needs of her role of theater  
'Rachida went pale for her theater role.'

Four lists were created, such that the three conditions were counterbalanced per verb. In total, these crossed conditions and the controls resulted in four counterbalanced lists of 10 experimental trials and 2 control trials in each list. Trials from Experiments 1a and 1b were randomized, so each participant responded to 24 trials in total.

#### A.1.4 Analysis

For outlier removal, responses were z-transformed into a continuous variable. Participants were removed from analysis if their responses on the gold standard items are, on average, more than 2 SDs away from the mean ratings across all participants.

Raw ratings on the Likert scale (not z-transformed) were fed into a Bayesian ordinal model (White et al., 2018, Verissimo, 2021) implemented in the R package brms (Bürkner, 2017) using cmdstanr. Animacy, Se and Context were included as population-level effects ("predictors"), with Animacy as a random intercept by subject and item (group-level or "random" effects).

ANIMACY and SE were sum coded. Context was treatment coded with Inchoative as the baseline level for Experiment 1a and Reflexive as the baseline level for Experiment 1b. The model outputs are given in tables 4–5.

## A.2 Experiment 2

### A.2.1 Participants

Recruitment followed the same procedure as for Experiment 1, resulting in N = 33 (40 before exclusions).

### A.2.2 Procedure

Participants were presented with two sentences, lying on opposite sides of an unlabeled 7-point Likert scale. They were asked which of the sentences ascribes greater responsibility to the subject.

Materials were presented visually using PCIBEX (Drummond, n.d, Zehr and Schwarz, 2018). Two practice trials preceded the main experiment, in which the order of trials was randomized.

Table 4: Full results of the Bayesian ordinal model, Experiment 1a (LC).

	Estimate	Est. Error	95% CI
Intercept[1]	-2.61	0.58	[-3.73,-1.45]
Intercept[2]	-2.09	0.58	[-3.22,-0.93]
Intercept[3]	-1.76	0.58	[-2.87,-0.61]
Intercept[4]	-1.55	0.58	[-2.66,-0.39]
Intercept[5]	-1.14	0.58	[-2.24,0.01]
Intercept[6]	-0.52	0.58	[-1.62,0.62]
AnimacyHuman	0.34	0.79	[-1.33,1.85]
Se	-0.56	0.23	[-1.02,-0.10]
ContextNeutral	-0.47	0.23	[-0.92,-0.02]
ContextReflexive	0.65	0.35	[-0.01,1.35]
<b>AnimacyHuman:Se</b>	-1.51	0.33	[-2.16,-0.86]
AnimacyHuman:ContextNeutral	1.30	0.38	[0.55,2.04]
AnimacyHuman:ContextReflexive	-3.22	0.43	[-4.08,-2.38]
Se:ContextNeutral	-0.22	0.32	[-0.83,0.42]
Se:ContextReflexive	-0.32	0.36	[-1.05,0.39]
AnimacyHuman:Se:ContextNeutral	-1.37	0.49	[-2.32,-0.40]
AnimacyHuman:Se:ContextReflexive	3.46	0.48	[2.53,4.41]

Table 5: Full results of the Bayesian ordinal model, Experiment 1b (IC).

	Estimate	Est. Error	95% CI
Intercept[1]	-2.31	0.51	[-3.27,-1.22]
Intercept[2]	-1.85	0.51	[-2.81,-0.79]
Intercept[3]	-1.47	0.51	[-2.42,-0.41]
Intercept[4]	-1.27	0.50	[-2.22,-0.21]
Intercept[5]	-0.89	0.51	[-1.83,0.19]
Intercept[6]	-0.39	0.50	[-1.32,0.68]
AnimacyHuman	-2.41	0.67	[-3.82,-1.07]
Se	0.81	0.25	[0.32,1.31]
ContextInchoative	0.64	0.25	[0.15,1.11]
ContextNeutral	-0.24	0.23	[-0.68,0.21]
<b>AnimacyHuman:Se</b>	1.65	0.35	[0.97,2.32]
AnimacyHuman:ContextInchoative	-0.19	0.33	[-0.84,0.46]
AnimacyHuman:ContextNeutral	1.07	0.32	[0.43,1.68]
Se:ContextInchoative	-0.93	0.37	[-1.64,-0.23]
Se:ContextNeutral	-0.43	0.34	[-1.09,0.23]
AnimacyHuman:Se:ContextInchoative	0.20	0.50	[-0.75,1.17]
AnimacyHuman:Se:ContextNeutral	-0.1	0.47	[-1.02,0.84]

### A.2.3 Materials

Verbs in Experiment 2 were either internally caused, LC or IC, although this difference was not coded as a condition. Four verbs were sampled from each verb class. All subjects for these verbs were inanimate. The contrast of interest was between the *se*-marked form and the unmarked form. All contexts were “neutral”, in the terminology of Experiment 1:



- (63) *Quelle forme attribue le plus de responsabilité au sabre dans le procès?*  
 ‘Which form attributes more responsibility to the sabre in the process?’
- a. *Le sabre a rouillé.*  
 the sabre rust.PFV.3SG  
 ‘The sabre rusted.’
- b. *Le sabre s’est rouillé.*  
 the sabre REFL.rust.PFV.3SG  
 ‘The sabre rusted.’

Control items were created by using four alternating causatives (with a choice between a causative statement and the corresponding unmarked anticausative statement), two naturally reflexive verbs and two naturally disjoint verbs (with a choice between a *se*-passive statement and the corresponding periphrastic passive statement). We expected the causative statement and the *se*-passive statement to be judged as assigning more responsibility to the theme (the latter because the *se*-marked form was the only one yielding a semantically reflexive reading, which was pragmatically odd but nevertheless possible).

Since verbs did not repeat from trial to trial, each participant saw all 3\*4=12 critical items, as well as 8 control items.

#### A.2.4 Analysis

The analysis followed the same procedure as in Experiment 1, except that the choice on the likert scale was converted to a preference between 1 for the unmarked variant and 7 for the marked variant.

Since there was no manipulation between conditions, the regression consisted of a population-level (“fixed”) intercept and two group-level (“random”) intercepts. Results are given in Table 6.

Table 6: *Results of Experiment 2, ordinal Bayesian model.*

	Estimate	Est. Error	95% CI
Intercept[1]	-3.67	0.52	[-4.69,-2.63]
Intercept[2]	-3.03	0.50	[-4.01,-2.02]
Intercept[3]	-2.17	0.49	[-3.68,-1.73]
Intercept[4]	-0.85	0.48	[-1.78,0.09]
Intercept[5]	0.04	0.48	[-0.90,0.97]
Intercept[6]	1.83	0.49	[0.89,2.78]

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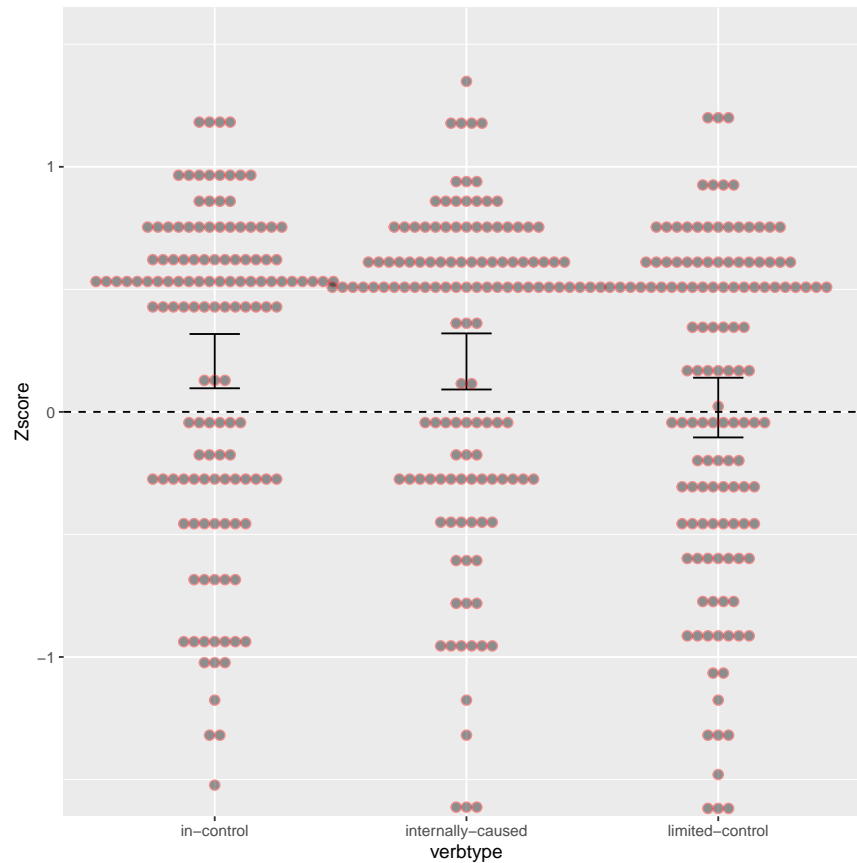


Figure 10: Experiment 2: Ratings by Verb Type.

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