The lexical pragmatics of reflexive marking*

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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, cooperative speakers strongly prefer the variant that in certain cases avoids and in other cases maintains ambiguity with the semantically reflexive interpretation which arises in parallel with the intended (anticausative) interpretation. Understanding these preferences requires taking into account the agent bias, i.e. the tendency to interpret human nouns as agents whenever is possible, and the multifunctionality of *se*, which is not only used in the formation of (non-agentive) anticausative predicates, but also in (agentive) semantically reflexive ones. Depending on whether the alternative (agentive) reflexive parse is in line with shared assumptions about the event, the preference for the presence vs. absence of *se* is predicted. We show that similar pragmatic considerations also constrain the availability of *se*-passives and impersonal *il*. The interaction between the choice of form by the cooperative language user 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 their

*Acknowledgements omitted for review. Abbreviations used: AC = anticausative.

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 burns the house
'Ana is burning the house.'

b. *La maison* ∅ *brûle.*
the house burns
'The house is burning.'

c. # *La maison se brûle.*
the house SE burns
(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 damages everything
'The passage of time damages everything.'

b. * *Tout* ∅ *amoche avec le temps qui passe.*
everything damages 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 damages 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, "$\pm se$" AC-verbs.

(3) Optionally marked, $\pm se$ AC

a. *Gaston casse le vase.*
Gaston breaks the vase
'Gaston is breaking the vase.'

b. *Le vase* ∅ *casse.*
the vase breaks
'The vase is breaking.'

c. *Le vase se casse.*
the vase SE breaks
'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 ±*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 semantic or pragmatic factors that enforce the presence or absence of the clitic *se* with ±*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 idiosyncracy 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.[1] However, we also argue that the overall optionality of the clitic *se* found with ±*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, cooperative speakers following the Gricean conversational maxims (Grice 1975) favor the presence or the absence of *se* in particular contexts, if they, thereby, can avoid unintended inferences on the part of the hearer.

Our main empirical contribution provided in section 2 consists of three interrelated generalizations, each substantiated by an acceptability rating study. While ±*se* AC-verbs by definition in principle allow both the marked and unmarked uses, (3), we identify two lexical-semantic subclasses of ±*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 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 first generalization as the *unmarked limited-control preference* (for human arguments). But with IN-CONTROL VERBS like *(se) plier* 'bend, fold', it is the unmarked anticausative variant which becomes dispreferred with a human DP-argument, as illustrated in (5). We refer to this second generalization as the *marked in-control preference* (for human arguments). In these examples, the PP is added in order to enforce the anticausative reading.[2]

[1] 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 or 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) tend to leave this intransitive variant unmarked.

[2] While in this paper, we only look at anticausative verbs, in-control and limited-control subclasses also exist

(4) *Unmarked limited-control preference with ±se anticausatives*

a. *Jeanne a rougi (sous l'effet des compliments).* (limited-control verb)
Jeanne has reddened under the effect of.the compliments
'Jeanne blushed/reddened (under the effect of the compliments).'

b.# *Jeanne s'est rougie (sous l'effet des compliments).*
Jeanne SE is reddened under the effect of.the compliments
'Jeanne blushed/reddened under the effect of the compliments.'

(5) *Marked in-control preference with ±se anticausatives*

a.# *Jeanne a plié en deux (de douleur).* (in-control verb)
Jeanne has bent in two from pain
Intended: 'Jeanne bent over (in pain).'

b. *Jeanne s'est pliée en deux (de douleur).*
Jeanne SE is bent in two from pain
'Jeanne bent over (in pain).'

These preferences only take place for ±*se* verbs, for which there is a choice between forms. Limited-control +*se* verbs (e.g. *s'affaiblir* 'SE weaken') must be marked with *se* (no choice), and this form is obviously unproblematic. Also, in-control −*se* verbs (e.g., *changer de position* 'change in position') must be left unmarked when used as AC (no choice again), and this form is equally unproblematic.[3] That the preferences for one of the two potential forms only hold for ±*se* verbs strongly suggests that these preferences result from a reasoning on the choice of form by the speaker. Inferences of this type are generally analyzed as Manner implicatures (Grice 1975, Levinson 2000, Rett 2015).

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 an agent 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 is that the strings in (4) and (5) without *se* have only one parse and interpretation, where the DP's referent is a theme (and not an agent) of the VP-event, while the corresponding strings marked with *se* are ambiguous (Ruwet 1972, Zribi-Hertz 1982, 1987, Martin and Schäfer 2014). 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, associated with the theme role only. But only the strings with *se* have an additional parse as involving a two-place predicate of caused change that underwent reflexivization, such that

among transitives. For instance in English, as XX (p.c.) made us observe, compared to the neutral statement *X broke Y*, *X dropped Y* suggests that X did not exert control on their agency, and *X smashed Y* in contrast conveys the idea that X performed the VP-event with full control.

[3] In fact, the reflexive variant of *changer de position* 'change in position' is very marked in French. In the French corpus Frtenten20 (Jakubíček et al. 2013), we found 1014 occurrences of a nominative pronoun directly followed by *changer de position*, but only a *single* occurrence of reflexivized variants of such strings. In-control ACs like *descendre* 'go down' or *monter* 'go up' are similarly very rare with the reflexive.

the external and the internal argument variable have both been saturated by the nominative DP, therefore associated with both the theme and agent roles. In other words, the *se*-morpheme can fulfill two different grammatical functions in either forming an (non-agentive) anticausative verb, or an (agentive) semantically reflexive verb.

The analysis will be as follows: when the language user intends to express an anticausative statement with a human subject and a limited-control or an in-control ±*se* verb such as in (4)–(5), they will choose between the marked and unmarked forms so as to manage the ambiguity induced by the *se*-morpheme in the most perspicuous way, following Grice's (1975) Manner supermaxim *Be perspicuous*. With a limited-control verb as in (4), a cooperative speaker will typically *avoid* the ambiguity and therefore choose the unmarked form, which unambiguously conveys the (non-agentive) anticausative meaning. For if they chose the ambiguous *se*-marked form instead, the hearer will reason that the speaker did so because they were after the agentive use (which cannot be conveyed by the unchosen, unmarked form). This is problematic with limited-control verbs, for that goes against prior shared assumptions about events denoted by these verbs. With in-control verbs as in (5), the most perspicuous way to handle the ambiguity amounts on the contrary to *preserving* it: the speaker intending to express an anticausative statement with an in-control verb and a human DP will typically choose the ambiguous variant with *se*. The reason behind this choice is that in the typical case, this speaker does not believe that the human DP completely lacks agency.[4] The speaker will therefore avoid the unmarked variant, because otherwise, they would suggest that they avoided the reflexive reading in order to signal the lack of agency of the theme.[5] This violates shared assumptions expectations about in-control events, e.g. changes of body posture undergone by humans.

According to this proposal, maintaining an ambiguity sometimes serves the communicative purposes better than avoiding it. This goes against the idea that ambiguity should always be avoided if possible, as suggested by the Gricean submaxim of Manner *Avoid ambiguity*. But this has already been called into question before (see Wasow 2015 and references therein, Brochhagen 2018, Achimova et al. 2022). It also has been acknowledged that in some cases, the speaker intends to leave the hearer uncertain as to the intended interpretation (Poesio 1996, 2020), or even intends to communicate more than one (see Grice 1975: 54-55, Lewiński 2021). The marked in-control preference we look at here illustrates another interesting case, namely one where preserving an ambiguity is the most straightforward way to handle it. In that sense, something like *Mind ambiguities* or *Handle them in a perspicuous way* is perhaps more appropriate than *Avoid ambiguity* as a submaxim of manner centered on how ambiguities should be dealt with in cooperative communication.

It is central to our proposal that the (dis)preferences we look at here reflect a *choice* of the speaker and a reflection on this choice by the hearer. If the verb itself leaves no choice between forms to the speaker, no reasoning takes place on the form used by the speaker. This is why we do not observe marked in-control or unmarked limited-control preferences for verbs whose anticausative form is fixed in the grammar, i.e. −*se* and +*se* ACs. For instance, *Pierre a changé de position* 'Pierre changed in position' does not weirdly suggest that Pierre completely lacks agency, although

[4] Obviously, if the speaker's primary intention is to convey the reflexive reading, they will choose *se*, but we focus here on cases where the speaker intends to express the anticausative reading.

[5] The situation where the speaker believes that the reflexive reading is false is atypical with in-control verbs (given the nature of events denoted by change of posture verbs). Interestingly, corpus examples where in-control verbs are used unmarked often make clear the speaker believes the human DP not to be in control at all of their change (see also our constructed example (52) below). This confirms that, as we propose here, the choice of the −*se* form with in-control ±*se* verbs triggers the inference that the human DP lacks agency.

the in-control predicate *changer de position* 'change in position' is left unmarked. This is because as a $-se$ AC, *changer* 'changer' leaves no choice to the speaker.

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 either, even for verbs for which there is a choice, because such entities are *by default* not conceived as exerting limited or full control over events that they undergo. Rather, control is not a relevant agentive dimension for inanimate agents. Since default expectations do not increase the salience of the (agentive) semantically reflexive parse that is formally possible for the string with *se*, both the strings with and without *se* equally accommodate a (non-agentive) anticausative parse.

Our third generalization, which is ultimately related to the first two (the unmarked limited-control preference and the marked in-control preference with humans), 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, bricks or natural forces 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 *bloom* (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 readings are often optional with $\pm se$ ACs in the context of a non-human subject. But if we explicitly ask French speakers to choose the verbal form that makes the non-human more agentive, we expect them to 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 third generalization 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 has faded
'The rose faded.'
b. *La rose s'est flétrie.* (more responsibility attributed to the rose)
the rose SE is faded
'The rose faded.'

Again, we relate this preference to the fact that only the string with *se* allows, besides an anti-causative 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.[6]

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 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, we 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 wrongly predict these meaning differences not only to hold between the two variants of ±*se* AC-verbs, but also globally, between −*se* AC-verbs and +*se* AC-verbs. As mentioned above and as we return to below, this is not supported by the empirical picture since the effects of our three generalizations only occur with ±*se* AC-verbs.

In a distinct variant of the Aspectual Claim, Legendre et al. (2016) and Legendre and Smolensky (2017) propose that only with ±*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. 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

[6] 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 (Cruse 1973, Delancey 1990, Joo et al. 2023, Martin et al. 2022). Some authors such as van Valin and Wilkins (1996) and Koontz-Garboden (2009) use the label 'effector' to encompass all subtypes of agentive roles (human agents and non-human 'doers', instruments, natural forces). We use the label 'agent' but assume that effectivity suffices to make a non-human entity agentive; furthermore, we do not assume intentionality to be a defining property of human agents (see discussion in Joo et al. 2023).

"Human" column correspond to the unmarked limited-control preference found with limited-control verbs and the marked in-control preference found with in-control verbs. The "Non-human" column corresponds to the marked responsibility preference, which arises only when the speaker explicitly aims to present the inanimate as agentive. We remain noncommittal in this 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.

	Causation Claim	Aspectual Claim
+*se*	externally caused	focus on the result state of change/telic event
−*se*	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
±*se* limited-control verbs	variant without *se* preferred (*Experiment 1a*)	no preference between variants (*Experiment 1a*)
±*se* in-control verbs	variant with *se* preferred (*Experiment 1b*)	no preference between variants (*Experiment 1b*)
All ±*se* verbs		variant with *se* preferred to convey responsibility of Non-human (*Experiment 2*)

Table 2: Claims in the current paper on French *se* across ±AC verbs and related experiments.

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, and discusses how the competing analysis of anticausatives as semantically reflexive (Chierchia 2004, Koontz-Garboden 2009; see also Lundquist et al. 2016) can account for the updated empirical picture in French. Section 4 shows how our analysis can be successfully extended to other competition effects triggered by the presence of the clitic *se*, namely the availability of *se*-passives and of impersonal *il* constructions. 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 lexical pragmatic generalizations about the use of ±*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).[7]

(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 (±*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 saw the handkerchief SE redden
'He saw the handkerchief getting red.'
b. *Jeanne (#se) rougit.* (internally caused)
Jean (se) reddened
'Jeanne blushed/reddened.'

[7] 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.

While we agree that the overall optionality that characterizes ±*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 between human and non-human undergoers of 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 ±*se* AC-verbs but that two conceptually determined sub-groups of ±*se* AC-verbs need to be distinguished.

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

2.2.1 Verb class and human undergoer, not causation

According to the Causation Claim, all ±*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 ±*se* AC-verbs ever becomes problematic with *se*, and this only if their sole argument is human. We call the subset of ±*se* AC-verbs that show this behavior LIMITED-CONTROL VERBS. 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 a human undergoer.[8] 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.[9]

(11) Some Limited Control anticausative verbs in French:

a. ±*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'amoindrir* 'weaken', *se fortifier* 'get stronger', *s'anémier* 'become anaemic', *s'arrondir* 'put on weight'

c. −*se* ACs: *grossir* 'become bigger', *maigrir* 'get thinner', *grandir* 'grow', *vieillir* 'grow older'

We exemplify our understanding of the empirical behavior of limited-control ±*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*.

[8] All these verbs alternate in French.

[9] We therefore do not put in our class of limited-control verbs so-called internally-caused change-of-state ±*se* verbs such as *flétrir* 'wilt' or *rouiller* 'rust'. The latter verbs only combine with a human subject if its referent is metaphorically reinterpreted as a (non-agentive) vegetal or mineral entity (as in e.g., *je (me) flétris* 'I'm wilting' or *je (me) rouille* 'I'm rusting'). 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.

(12) a. *Le fleuve (se) rougit.*
the river SE reddens
'The river is reddening.'

b. *Jeanne (#se) rougit.*
Jean SE reddens
'Jeanne is blushing/reddening.'

The examples in (13), which all have human subjects with ±*se* limited-control verbs, show that the unmarked limited control preference holds irrespective of the type of causation involved. The examples with *se* in (13a-b) are predicted to be odd also under the Causation Claim because they denote spontaneous events (internally caused). 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*.

(13) a. *#Djamal s'est beaucoup rajeuni ces derniers temps.* (internal cause)
Djamal SE is a lot rejuvenated these last times
Intended: 'Djamal rejuvenated a lot lately.'

b. *#Soumia s'est beaucoup pâlie ces derniers temps.* (internal cause)
Soumia SE is a lot got-paler these last times
Intended: 'Soumia became much paler lately.'

c. *#Ada s'est beaucoup rajeunie grâce à cette nouvelle relation.* (external cause)
Ada SE is a lot rejuvenated thanks to this new relationship
Intended: 'Ada 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 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 the context easily accommodates the default inference triggered by limited-control verbs that the human enduring the change does not control this change. 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).[10] 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 his students*).

[10] Reflexive semantics is morphologically or lexically marked across languages (e.g. Reinhart and Reuland 1993, Kastner 2017).

(14) *Certains adultes vont tenter de #(se) rajeunir pour rentrer en contact avec vos*
'certain adults will try to SE get.younger to enter in contact with your *progénitures*
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.

(15) a. *Le métal s'est rougi sous l'effet de la chaleur.* (+*se*, external cause)
the metal SE is reddened 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 has reddened 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 blackens 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 to 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)), the unmarked variant of limited-control ±*se* verbs is very much preferred 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 ±*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*
the telephone built by Huawei meet.COND.3SG of big problems of
fragilité au niveau de ses vitres qui se briseraient toutes seules selon
fragility at.the level of its glasses which SE break all alone according to
de nombreux utilisateurs.
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, Frtenten20, begeek.fr)

b. *la majorité des noyaux se brisent sous l'action des photons*
the majority of.the kernel SE break under the.action of.the photons
'the majority of kernels break under the action of photons.'
(external cause, Frtenten20, 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, Frtenten20, 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, Frtenten20, keraunos.org)

Furthermore, the unmarked limited-control preference for humans does not arise with limited-control +*se* AC verbs, for which there is no choice between forms either (see example (45) and the discussion around it in section 3.2).

2.2.2 Experiment 1a

To recap our predictions about limited-control verbs within the class of ±*se* AC-verbs: the combination of a human subject and marking with *se* should be odd in a default context, or more generally an inchoative context, satisfying 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 limited-control 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. An example of the test items is given in Figure 1. The example is translated into English in (20b).

(18) ±*se* limited-control 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:

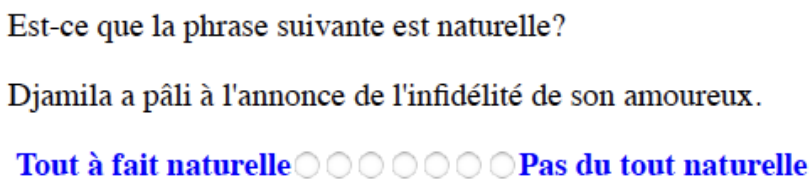


Figure 1: Example of stimuli of Experiment 1a rating scale task

(19) a. SE: whether the verb of the sentence appeared with *se*-marking or without.
b. ANIMACY: 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 has gone.pale
'Rachida went pale.'
b. INCHOATIVE CONTEXT
Djamila a pâli à l'annonce de l'infidélité de son amoureux.
Djamila has gone.pale at the.announcement of the affair of her lover.
'Djamila went pale when she heard about her lover's affair.'
c. REFLEXIVE CONTEXT
Khadija a pâli pour les besoins de son personnage de théâtre.
Khadija has gone.pale for the needs of her role of theater
'Djamila 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 strengthens or at least is in line with 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 PP as in (20c), which indicates that the human subject of the main clause is ascribed control over the event (we return to inanimate subjects in reflexive contexts in section 2.4).

With the reason clause or purpose-PP, we 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:

Context	Animacy	+se M	SE	-se M	SE
Inchoative	Human	4.109	0.197	6.321	0.110
	Non-human	5.167	0.190	5.583	0.173
Neutral	Human	3.218	0.203	6.526	0.109
	Non-human	4.616	0.200	5.2821	0.183
Reflexive	Human	4.904	0.189	3.551	0.198
	Non-human	5.917	0.156	6.449	0.112

Table 3: Raw means (M) and standard errors (SE) for Experiment 1a.

(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 are summarized in Table 3, which gives raw means and standard errors for each condition, and in Fig. 2, where each dot indicates a single trial (one sentence rated by one participant) and error bars give 95% confidence intervals. The confidence intervals can be understood as follows: 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 can still be seen in the black dot 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* substantially 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 ratings and error bars for 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.

These findings were evaluated using an ordinal Bayesian analysis (see the Appendix for full model output and the online repository for additional confirmatory analyses, including ROPE). Our prediction was that we would see lower ratings when human arguments have *se* in the neutral and inchoative contexts. The relevant effects whose estimate is reliably different from zero are given in Table 4, with the full output reproduced in the Appendix.

The model's 95% Credible Interval for the interaction of Human and *se* lies in the range [–3.58,–2.15], meaning that a *se*-marked human clause is rated almost 3 likert points less (estimate = –2.87) than a human clause without *se*, before considering Context. This effect is then immediately qualified by additional interactions; we simplify slightly now by focusing on the three-way interaction between Animacy, Se and Context. The effect just mentioned means that examples with human arguments receive lower ratings when they have *se*, but this assumes the baseline con-

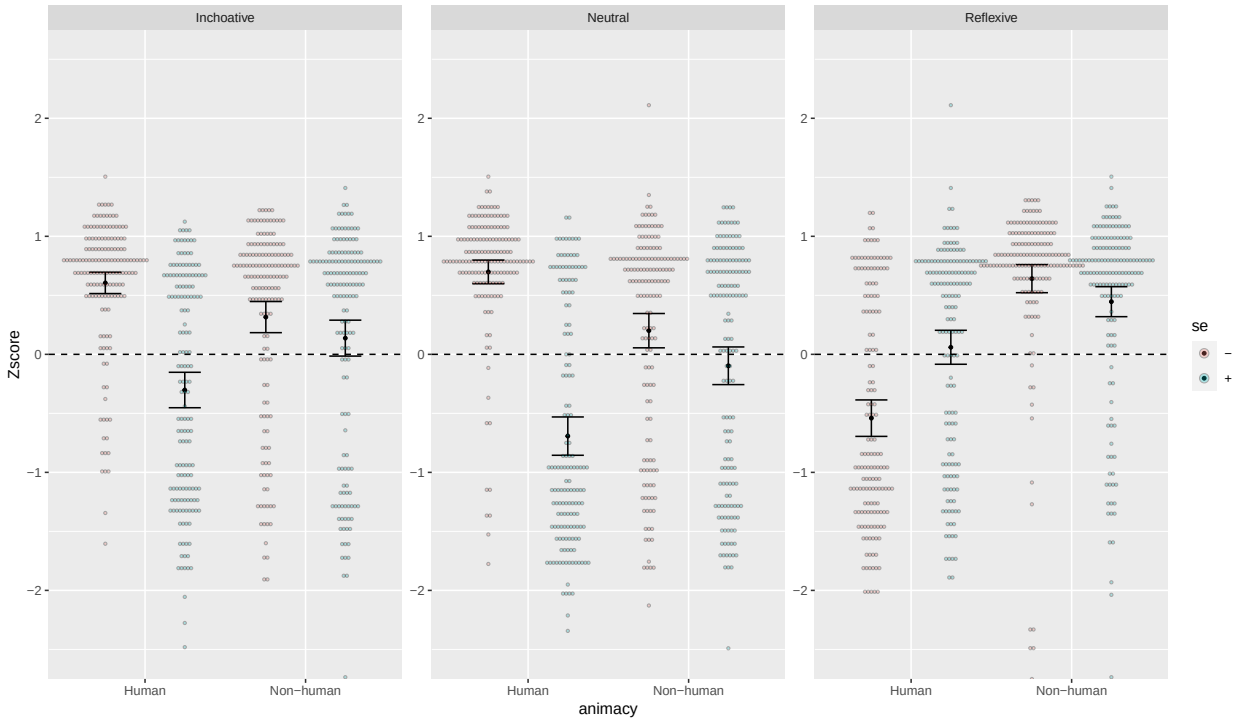


Figure 2: Results of Experiment 1a (limited-control verbs).

text Neutral. The interaction of Human:Se:Context shows that in Inchoative contexts this effect is ameliorated somewhat, with the estimate being 1.35 likert points (still not enough to cancel out the −2.87). The pattern is therefore confirmed for the Inchoative and Neutral contexts, as predicted. In other words, this is the human unmarked limited-control preference. The three-way interaction of Human:Se:Inchoative indicates that the effect is slightly stronger in the Neutral context than the Inchoative one, a pattern that can be seen in Figure 2 as well, and not one we had any prior hypotheses for.[11]

The next prediction concerns the behavior of human and non-human arguments in the reflexive context. Here we predicted no difference for non-humans, but a preference for *se* for humans. This is what we found: the interaction of Se and Reflexive was not reliably different from 0, meaning there was no difference for non-humans whether they had *se* or not. However, the effect for human arguments was robust: the three-way interaction of Human:Se:Reflexive had a very high estimate (4.82), reflecting the preference of *se* for reflexive clauses with humans, effectively reversing the patterns discussed above when Neutral was the reference level. Additional inferential statistics, described in the Appendix and OSF repository, show for example that the model would predict high ratings for no-*se* sentences with humans in the non-reflexive contexts.

In sum, we found evidence for the unmarked limited-control preference with limited-control verbs. These ±*se* limited-control verbs, such as *rougir* 'blush', *rajeunir* 'rejuvenate' and *pâlir*

[11] Our post-hoc account for this pattern is that the overt inchoative context helps the interpreter to understand that they should *not* conclude from the speaker's choice of the *se*-variant that they were after the (agentive) reflexive parse, which is precisely according to our analysis the confusing inference typically drawn on the basis of the maxim of Manner.

Table 4: *Relevant predictors from the Bayesian ordinal model, Experiment 1a (limited-control).*

	Estimate	Est. Error	95% CI
AnimacyHuman	1.66	0.79	[0.12,3.22]
Se	–0.78	0.23	[–1.25,–0.35]
ContextInchoative	0.46	0.24	[–0.01,0.92]
ContextReflexive	1.11	0.36	[0.42,1.81]
AnimacyHuman:Se	–2.87	0.36	[–3.58,–2.15]
AnimacyHuman:ContextInchoative	–1.28	0.38	[–1.99,–0.56]
AnimacyHuman:ContextReflexive	–4.50	0.46	[–5.43,–3.61]
Se:ContextReflexive	–0.10	0.36	[–0.79,0.60]
AnimacyHuman:Se:ContextInchoative	1.35	0.49	[0.37,2.30]
AnimacyHuman:Se:ContextReflexive	4.82	0.51	[3.84,5.81]

'get pale' 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 ±*se* AC-verbs, which we call IN-CONTROL VERBS.

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

2.3.1 Verb class and human undergoer, not causation

The limited-control verbs of the previous section contrast with another subclass of ±*se* verbs, ones which denote changes typically under the control of a human undergoer.[12] Examples of this class of IN-CONTROL INTRANSITIVE VERBS are given in (22).[13] These predicates are typically used as motion or posture verbs when combined with a human subject (called auto-causatives by Geniušienė 1987 and Creissels 2003 and endo-reflexives by 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 (25b) and (26b).

(22) Some In-Control anticausatives in French:

a. ±*se* ACs: *(s')allonger* 'get longer/lie', *(s')approcher de* 'get close(r) to', *(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',

[12] Control is independent from desire and foreknowledge, which are for Egré (2014) two dimensions involved in intentionality. For instance, humans typically exert control on their changes in position or posture, but such changes can be performed while the agent does not know that their action can be described with the VP. As an example, I can get closer to a location and control my movements while doing so without knowing that I'm getting closer to this location (because I ignore its existence, for instance).

[13] Some of the verbs listed under (22c) can be used *se*-marked with a single human argument, see (ia) below. However, they must remain unmarked when used with a single non-human argument (see (ib)), which we take to indicate that the *se*-marked variant with a human DP is always semantically reflexive, and never anticausative.

(i) a. Pierre (se) bouge/ (se) recule.
Pierre SE moves/ SE stepsbackwards
b. La pierre (#se) bouge/ le ballon (#se) recule.
the stone SE moves/ the ball SE steps backwards

(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'

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', *plonger* 'dive into, get immersed', *entrer* 'get in'

A natural construal for in-control verbs with a single human DP is the reflexive, agentive use, and since reflexive semantics requires an overt reflexive marker in French (Kayne 1975), the *se*-form must be selected by a speaker who intends to convey this reading. But we are here interested in the case where in-control verbs enter into an anticausative construal, where the human DP is just assigned the role Theme in the grammar. This is for instance the use selected for *se plier* 'SE bend' in (23c) when it is used as an answer to (23a) (and note that (the exchange (23a/c) sounds more felicitous than the exchange (23b/c), which is unsurprising given the choice of the unaccusative verb *tomber* 'fall' and the modification of *se plier* by the cause-PP *de douleur* 'from pain').

(23) *...Et alors Judy a tiré sur Jim.*
'...And then Judy shot Jim.'

a. *Oh wow, et qu'est-ce qu'il lui est arrivé?*
'Oh wow, and what happened to him?'

b. *Oh wow, et qu'est-ce qu'il a fait?*
'Oh wow, and what did he do?'

c. *Il est tombé à genoux et s'est plié de douleur.*
he is fallen to knees and SE has bent from pain
'He fell to his knees and bent over in pain.'

With in-control ±*se* ACs, 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 (24)-(26) 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*. We add a cause-PP across examples to favour the inchoative reading.

(24) a. *La tôle ∅ a plié/ s'est pliée en deux (sous le poids).*
the metal sheet has folded SE is folded in half under the weight
'The metal sheet folded in half under the weight.'

b. *Jeanne s'est pliée en deux (de douleur).*
Jeanne SE is bent in two from pain
'Jeanne bent over (in pain).'

c.# *Jeanne ∅ a plié en deux de douleur.*
Jeanne has bent in two from pain
Intended: 'Jeanne bent over (in pain).'

(25) a. *Ici le temps ∅ a radouci/ s'est radouci avec l'arrivée de l'été.*
here the weather has gotten-milder SE is gotten-milder with the arrival of the summer
'Here the weather got milder with the start of the summer.'

b. *Xiao s'est radouci sous la pression et a libéré les pratiquantes.*
Xiao SE is gotten-milder under the pressure and freed the churchgoers
'Xiao mellowed under the pressure and freed the churchgoers.' (Internet)

c.# *Xiao ∅ a radouci sous la pression.'*
Xiao has gotten-milder under the pressure.
'Xiao mellowed under the pressure.

(26) a. *Le métal ∅ a durci/ s'est durci sous la chaleur.*
the metal ∅ has hardened SE is hardened under the heat
'The metal got hard with the heat.'

b. *Laeticia Hallyday s'est durcie après la mort de Johnny.*
Laeticia Hallyday SE is hardened after the death of Johnny
'Laeticia Hallyday became harder after Johnny's death.' (leparisien.fr)

c. *#Après la mort de Johnny Hallyday, Laeticia ∅ a durci.*
after the death of Johnny Hallyday Laeticia has hardened
Intended: 'After Johnny Hallyday's death, Laeticia became harder.'

The marked in-control preference for humans does not arise with in-control *−se* AC verbs, for which there is no choice between forms. For instance, *Pierre a changé de position (à cause de la douleur)* 'Pierre changed his position (because of the pain)' is completely fine (see also (44) below). The intuitions reported in (24)-(26) were also tested in an online acceptability study to which we turn next.

2.3.2 Experiment 1b

Experiment 1b was carried out with the same participants as Experiment 1a (N = 154) during the same session, though items were counterbalanced across participants (see the Appendix and online materials). The experimental setup was the same, except that we used five in-control verbs and appropriate contexts, within the same 2x2x3 design. Verbs used in Experiment 1b are listed in (27) (distractors were again mixed with the test items).

(27) ±*se* in-control verbs used in Experiment 1b
approcher de 'get close(r) to', '*durcir* 'harden', *plier* 'bend', *radoucir* 'get soft(er)', *refroidir* 'get cold(er)'

Our predictions were as follows:

(28) a. For human arguments, the marked variant will be preferred across all contexts (neutral, inchoative and reflexive contexts). (This is our marked in-control preference for humans.)
b. Non-human arguments will not show this preference.

Context	Animacy	+se M	SE	-se M	SE
Inchoative	Human	5.590	0.167	3.506	0.201
	Non-human	6.051	0.147	6.237	0.124
Neutral	Human	5.904	0.154	3.628	0.200
	Non-human	5.641	0.172	5.269	0.192
Reflexive	Human	5.891	0.153	2.994	0.196
	Non-human	6.308	0.124	5.654	0.165

Table 5: Raw means and standard errors for Experiment 1b.

Raw means and standard errors are given in Table 5. The results are summarized in Fig. 3, where each dot indicates a rating and error bars give 95% confidence intervals. Fig. 3 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 ±*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).

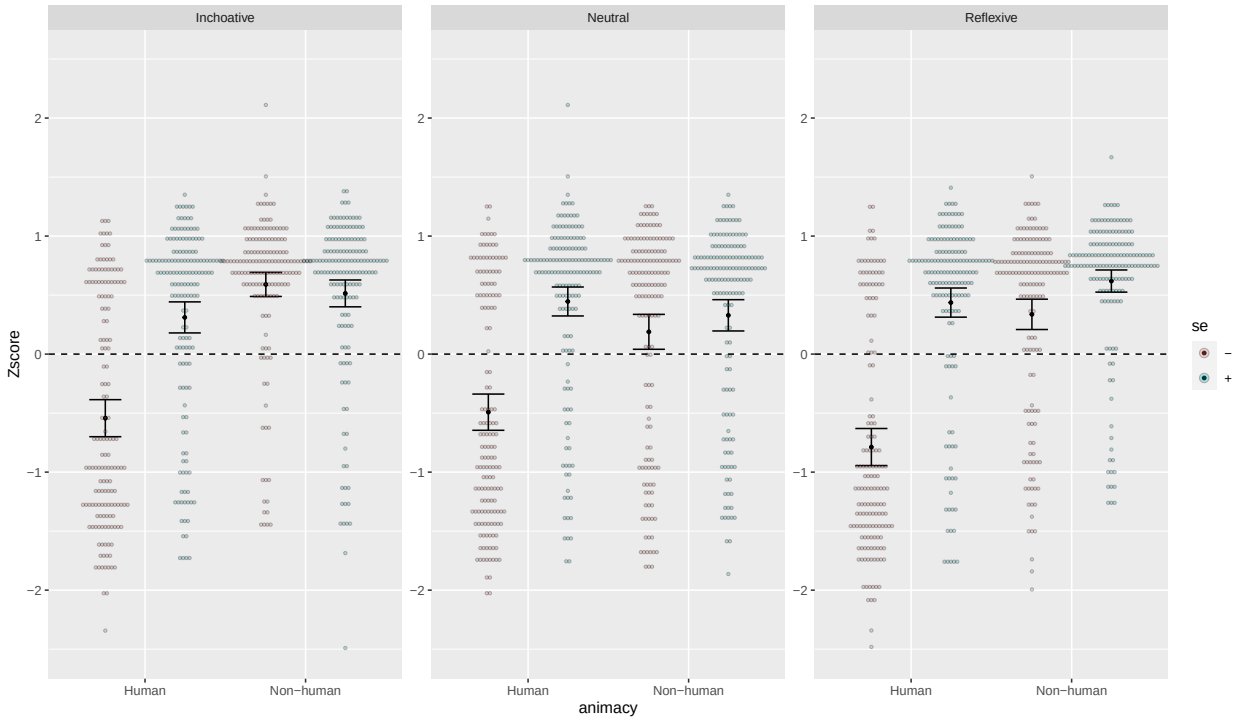


Figure 3: Results of Experiment 1b (in-control verbs).

These findings were evaluated using an ordinal Bayesian analysis (see the Appendix for full model output and the online repository for additional confirmatory analyses). Our prediction was that we would see higher ratings when human arguments have *se* in all three contexts. The relevant effects whose estimate is reliably different from zero are given in Table 4, with the full output reproduced in the Appendix.

The model's 95% Credible Interval for the interaction of Human and *se* lies in the range [0.93,2.21], meaning that a *se*-marked human clause is rated one and a half likert points higher (estimate = 1.57) than a human clause without *se*, across contexts. This effect is qualified by additional interactions; we simplify by focusing on the three-way interaction between Animacy, Se and Context. The effect just mentioned means that examples with human arguments receive higher ratings when they have *se*; the interaction of Human:Se:Context shows that the same happens in Inchoative, which is not reliably different from Neutral (the 95% Credible Interval covers zero, meaning the low estimate of 0.29 is not particularly strong). In other words, there is no difference between Inchoative and Neutral, unlike in Experiment 1a. The general pattern is therefore confirmed, as predicted. This is the human marked in-control preference.

Table 6: *Relevant predictors from the Bayesian ordinal model, Experiment 1b (in-control).*

	Estimate	Est. Error	95% CI
AnimacyHuman	-1.32	0.68	[–2.63,0.09]
Se	0.38	0.23	[–0.07,0.85]
ContextInchoative	0.87	0.25	[0.39,1.39]
ContextReflexive	0.22	0.23	[–0.21,0.67]
AnimacyHuman:Se	1.57	0.32	[0.93,2.21]
AnimacyHuman:ContextInchoative	–1.25	0.34	[–1.93,–0.61]
AnimacyHuman:ContextReflexive	–1.06	0.32	[–1.69,–0.45]
Se:ContextReflexive	0.44	0.34	[–0.24,1.09]
AnimacyHuman:Se:ContextInchoative	0.29	0.47	[–0.61,1.22]
AnimacyHuman:Se:ContextReflexive	0.08	0.47	[–0.84,0.99]

The next prediction concerns the behavior of human and non-human arguments in the reflexive context. Here we predicted no difference for non-humans, but a preference for *se* for humans. This is what we found: the interaction of Se and Reflexive was not reliably different from 0, meaning there was no difference for non-humans whether they had *se* or not. Additional inferential statistics and model predictions are available in the OSF repository.

In sum, this section provided evidence for the marked in-control preference with in-control verbs. It also 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 did not distinguish between limited-control and in-control 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 when there is a shared assumption that the sole human argument is probably in-control of the event they undergo.

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

arguments.

2.4 Agency and non-human arguments

In the previous sections, we have shown that the morphological marking in ±*se* AC-verbs may remain completely uninformative and unconstrained when the subject is non-human. In particular, we provided evidence from corpus and experimental data showing that morphological variants are in free variation in the context of a non-human subject, (15). As we argue in more detail in Section 3, this difference between human and non-human DPs is due to the fact that when a DP is ambiguous between an agentive and non-agentive interpretation (as the case for one-place change-of-state predicates marked with *se*), the agentive interpretation is strongly preferred *when the DP is human*. This 'agent bias' (Bickel et al. 2015, Sauppe et al. 2022 a.o.) does not show up with role-ambiguous *non-human* DPs, because inanimate DPs are easily conceived as non-agentive undergoers of their changes.

That being said, it is very common to endow non-humans with agency in language. Non-human and more generally inanimate entities can be associated with an agentive thematic role in natural languages (Cruse 1973, Delancey 1990, Folli and Harley 2005, Koontz-Garboden 2009 a.o.). For instance, across languages, we find agent-introducing 'control' morphologies that are compatible with DPs referring to inanimates, not necessarily with the effect of personification of the inanimate (Fauconnier 2012, see e.g. Jacobs 2011 on control morphology in Salish). Similarly, agentive verbs can be combined with non-human subjects across languages. For example, in English, as in French, unergative verbs (like *whistle* in English) can take an inanimate subject (Folli and Harley 2005). Likewise, non-alternating manner verbs of contact like *frapper* 'hit' or *toucher* 'touch' select for an agent (or instrumental) subject (see Fillmore 1970, Cruse 1973 on English), at least when they are used in their eventive (non-stative) meaning.[14] Such verbs, too, can have non-human subject DPs, as illustrated in (29).

(29) *La pierre a frappé la fenêtre.*
the stone has hit the window
'The stone hit the window.'

Alternating verbs combined with non-human external argument can obviously also be used agentively in reflexive construals. This means that for ±*se* alternating verbs, it is in principle possible to associate a non-human DP with the role of agent when the verbal form is *se*-marked. It is not, however, when the verbal form is unmarked, since reflexive semantics must be expressed with the reflexive morpho-syntax in French.

Therefore, if a French speaker aims to endow a non-human entity with agentive properties with a ±*se* AC-verb, we expect them to choose the marked variant, because the *se*-marked variant is the only form able to yield a semantically reflexive parse of the clause. 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.

More concretely, given pairs such as those in (30)–(31), we expect participants to be more likely to choose the marked variant if explicitly asked to attribute responsibility to the subject,

[14] Jackendoff (1972: 44) argues that on its stative use, English *touch* associates the roles Theme and Goal/Location to its arguments.

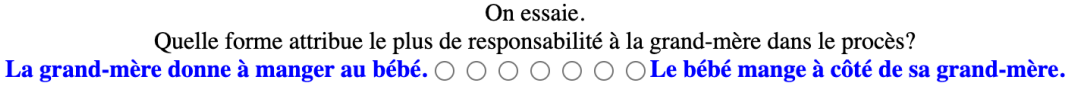


Figure 4: Experiment 2 responsibility scale task (training item)

as responsibility is a key property of agents or effectors. 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. 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.

(30) a. *La rose ∅ a flétri.*
the rose has faded
'The rose faded.'

b. *La rose s'est flétrie.*
the rose SE is faded
'The rose faded.'

(31) a. *Le métal ∅ a rouillé.*
the metal has rusted
'The metal rusted.'

b. *Le métal s'est rouillé.*
the metal SE is rusted
'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 (30a/b) and (31a/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). Participants were introduced to the responsibility scale through training items, of which an example is given in Figure 4. Training items are translated under (32).[15]

[15] We choose to probe the intuition of participants on the dimension of responsibility rather than agency, since graded responsibility attribution is more frequent in the layman language than graded agency attribution, and relatedly, it is more usual to attribute overtly responsibility rather than agency to non-human entities in ordinary language (e.g., *Which sentence assigns more agency to the chair/the car in the event* is a less natural question than our test question in usual language).

(32) Q: On essaie. Quelle forme attribue le plus de responsabilité à la grand-mère/Yining dans le procès?
'Let's try. Which form assigns more responsibility to the grandma/Yining in the event?'

a. La grand-mère donne à manger au bébé/ Le bébé mange à côté de la grand-mère.
'The grandma feeds the baby/ The baby is eating next to the grandma.'

b. Yining et Jinhong réparent le bateau ensemble/ Jinhong et Yining réparent le bateau ensemble.
'Yining and Jinhong are repairing the boat together/ Jinhong and Yining are repairing the boat together.'

Our test items were formed with the verbs listed in (33a-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 all subtypes of ±*se* ACs, as the ambiguity of the reflexively marked form is exactly the same across subclasses.[16] All verbs have transitive uses beyond their intransitive uses, and thus can enter reflexivization. Verbs in (33a) are examples of internally-caused change-of-state verbs (cf. Wright 2002 and see footnote 4). Those in (33b) and (33c) are a subset of verbs used in Experiments 1a and 1b. Thus when applied to human arguments, verbs in (33b) are limited-control-verbs and those in (33c) are in-control 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 (34a) 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 non-alternating verbs in (34b)). The question for distractors was the same as for test items (*Which sentence assigns more responsibility to the chair/the car in the event?*).

(33) 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)'.

(34) 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'.

[16] Thus the lexical semantic subclasses of ±*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 summarized in Figure 5, where it can be seen that participants predominantly used the points at the *se*-marked half of the scale, as opposed to the unmarked one, when choosing the form assigning more responsibility to the subject.

An ordinal Bayesian model confirmed the tendency to pick the marked form as the one assigning more responsibility to the single (non-human) DP; this intercept-only model can be found in the Appendix. Results did not differ considerably between verb types, although the preference might be slightly weaker with limited-control verbs; see the OSF repository for post-hoc analyses including model fits.

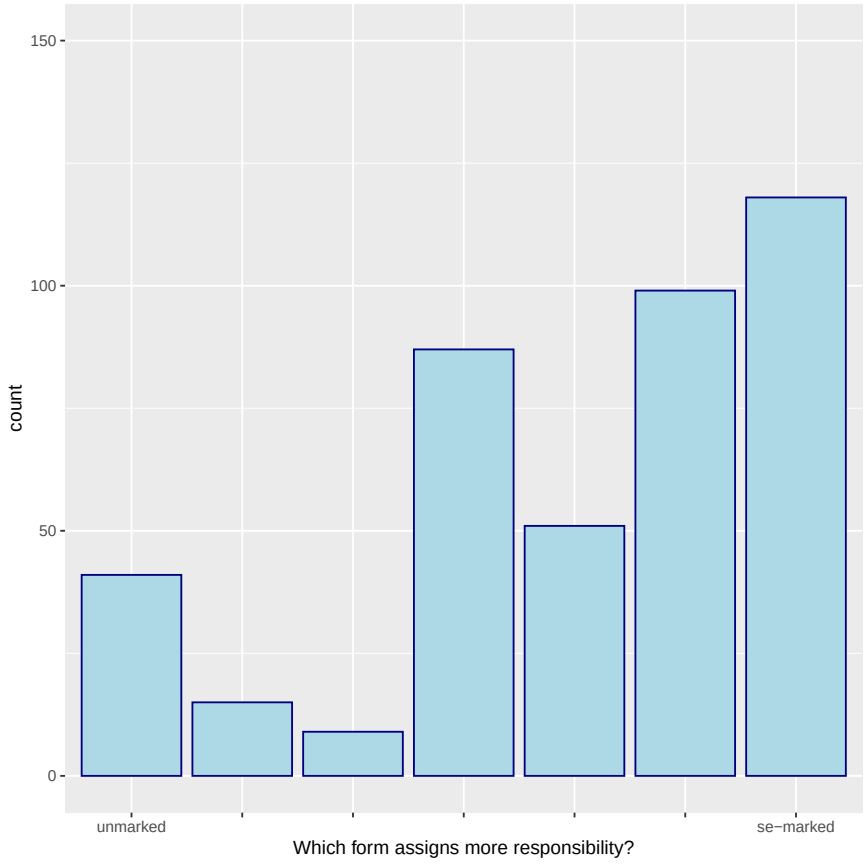


Figure 5: Results of Experiment 2 (non-human responsibility, inanimate subjects).

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 (35) is an example of a test items with a non-human subject and limited-control verb (Experiment 1a), and (36) is an example built with

an in-control verb (Experiment 1b).[17]

(35) *Dans cette situation, la carapace de l'insecte (se) noircit pour échapper aux prédateurs.*
in this situation the carapace of the.insect SE blackened in order to escape the predators
'In this situation, the insect's carapace turns black in order to escape the predators.'

(36) *Certains chargeurs solaires (se) plient pour mieux s'incorporer dans un sac à dos.*
some chargers solar SE fold.up in order 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 (35) nor (36) force 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 (37) (cf. Williams 1974, Williams 2005, Bhatt and Pancheva 2017).

(37) 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 2 and 3 confirmed this prediction.[18]

[17] 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.

[18] A reviewer suggests that examples such as (35) may receive an analysis as a *se*-passive with the implicit agent being identified with the possessor of the internal argument DP (e.g., the insect in (35)). In this perspective, examples such as (35) are derived from an active string such as [i.] below (see Lundquist 2016: 184-185 for an analysis of similar examples involving the syncretic morpheme *-s* in Swedish).

(i.) *Dans cette situation, l'insecte noircit sa carapace pour échapper aux prédateurs.*
'In this situation, the insect blackens its carapace in order to escape the predators.'

While this analysis has some appeal, intuitively, we see a number of reasons speaking against it. First, it is not entirely clear to us how a sentence such as (35), where the possessor of the internal argument is a referential expression, could technically be derived as a passive of (i.), where the possessor of the internal argument is a possessive pronoun.

In summary, with non-human subjects, the morphological marking in ±*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 7 repeats the main generalizations about ±*se* AC-verbs confirmed in this section. 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
limited-control verbs	variant without *se* preferred *Exp. 1a*	no preference between variants *Exp. 1a*
in-control verbs	variant with *se* preferred *Exp. 1b*	no preference between variantst *Exp. 1b*
All ±*se* verbs		variant with *se* preferred to convey responsibility of Non-human *Exp. 2*

Table 7: The three preferences across ±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.

Second, it is not clear how the implicit external argument could be co-valued with the possessor of the internal argument, the latter being an R-expression. Third, there is a difference in meaning between (35) and (i.), namely that (35) does not agentivize the insect the way (i.) definitely does. We take this to indicate that the *se*-variant of examples such as (35) well and truly has an anticausative reading. ((35) also has, in principle, a semantically reflexive reading, which can be enforced by adding the intensifier *elle-même* (itself), the latter being bound by the possessee DP *carapace*.) For us, (36) is the single item of this condition for which a true *se*-passive reading is possible, where the implicit agent (understood as the user of the charger) controls into the purpose clause. This is also the single item where the *se*-variant can be felicitously replaced with a standard *be*-passive. In the other examples including (35), a paraphrase with a *be*-passive is odd, as it suggests the involvement of an agent different from the possessor in the DP (due to the well-known disjoint reference effect holding between the implicit external argument of passives and any R-expression inside the VP; see e.g. Bhatt and Pancheva 2017, Schäfer et al. 2021). For instance, *#La carapace de l'insecte est noircie pour échapper aux prédateurs* 'The carapace of the insect is blackened in order to escape the predators' is quite odd in French, just like its English counterpart. That being said, even if some participants accessed a passive reading for some items of the +*se*.Non-human.ReflexiveContext condition, this would not affect our general point that the preference we observe for the *se*-marked variant with a human DP in the reflexive context does not hold with a non-human DP.

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 mediopassives). In section 4.2, we will see that *se*-passives 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 plausible and implausible 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 could equally derive the tendencies we are interested in as long as they assume agent-semantics for semantically reflexive transitives but not for unmarked anticausatives, and derive the effects via some kind of Gricean reasoning on the choice of form. In Section 3.6, we show how an analysis of marked anticausatives along the line of those developed in Chierchia (2004), Koontz-Garboden (2009) and Lundquist et al. (2016) could account for the French data discussed here, as long as it is enriched with some kind of lexical pragmatic account as the one developed below.

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 comes in three variants (active, passive, and expletive) to handle the syntactic and semantic properties of external arguments.[19]

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 serving as the subject of eventive predicates (see Cruse 1973, Fauconnier 2012 a.o., cf. also theta-role 'instigator' in Borer 2005 or Ramchand 2008).[20] Any agent (inanimate or animate) does something, i.e is effective, see (38a). We assume with Dowty (1979: 118) or Demirdache (1997) among others that the role of agent grammaticalized in natural language has more to do with the notion of agent control than with the notion of intentionality when characterizing humans. With Joo et al. (2023) (see also Martin et al.

[19] 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.

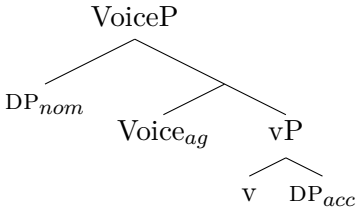
[20] Entity-denoting DPs of transitive *stative* predicates are introduced by Holder Voice (Kratzer 1996).

2022), we assume that the agent role is ambiguous between a weak 'just effector' meaning, which is the single meaning inanimates can satisfy, and a stronger 'in-control effector' meaning, preferred via the Strong Meaning Hypothesis when applied to a human DP; see (38b/c), where v is the type for eventualities.

(38) a. $\forall e \forall x(\textbf{agent}(e,x) \rightarrow \textbf{effectivity}(e,x))$
(Any 'agent' is characterized by the dimension of effectivity)
b. $\forall e \forall x(\textbf{ic-agent}(e,x) \leftrightarrow \textbf{agent}(e,x) \wedge \textbf{control}(e,x))$
('in-control agent' holds of e and x just in case 'agent' holds of e and x and 'control' holds of e and x)
c. $\text{Voice}_{ag} \rightarrow \lambda P_{\langle v,t\rangle} \lambda x \lambda e.\textbf{(i-c)agent}(e,x) \wedge P(e)$ (Joo et al. 2023)

In (39a) is given the structure of a lexical-causative/transitive verb, and the semantic interpretation of this structure before saturation of the argument variables is in (39b) (where P represents the property of states encoded by the verbal predicate). The surface linear order derived from the structure of (39a) is given in (39c).

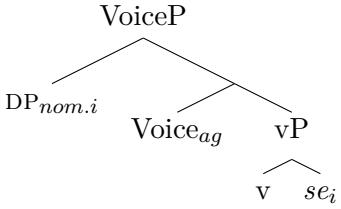
(39) Transitive verb/lexical-causative verb:
a.



b. $[\text{VoiceP}] \rightsquigarrow \lambda y \lambda x \lambda e.\exists s(\textbf{agent}(e,x) \wedge \textbf{cause}(e,s) \wedge \boldsymbol{P}(s) \wedge \textbf{theme}(s,y))$
c. DP_{NOM} V DP_{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 Voice layer in semantically reflexive construals involves the same (agent) Voice head as in non-reflexive transitives. 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 (40a). The simplified meaning for causative verbs derived from the structure is given in (40b) where the 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 (40c).

(40) Semantically reflexive causative verbs:
a.



b. [VoiceP] $\rightsquigarrow \lambda y \lambda x \lambda e.\exists s(\textbf{agent}(e,x) \wedge \textbf{cause}(e,s) \wedge \boldsymbol{P}(s) \wedge \textbf{theme}(s,y) \wedge x = y)$

c. DP_{NOM} *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 (41a). Since no Voice projection is present, anticausative verbs lack agent-related semantics. Their meaning is given in (41b). Since the internal argument in (41a) is the sole DP in the structure, it raises to the derived subject position Spec,TP. This leads to the linear order in (41c).

(41) Unmarked AC:

a. 

b. [vP] $\rightsquigarrow \lambda y \lambda e.\exists s(\textbf{cause}(e,s) \wedge \textbf{P}(s) \wedge \textbf{theme}(s,y))$

c. DP_{NOM} 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. Morpho-syntactically, however, marked anticausatives differ from unmarked anticausatives via the presence of the pronominal clitic *se*.[21]

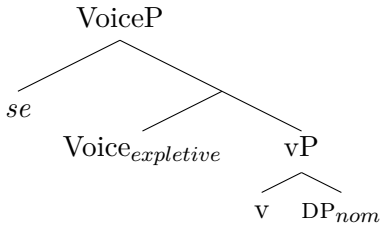
To account for these similarities and differences between marked and unmarked anticausatives, Schäfer (2008) and Alexiadou et al. (2015) (see also Wood 2015) propose that the clitic *se*, when forming marked anticausatives, acts syntactically as an external argument which, however, lacks any semantic 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 does not carry any inherent content and is not assigned any thematic role from Voice. This technical implementation aims to translate the intuition that *se* in marked anticausatives marks the absence of external argument entailments. This structure of marked anticausatives is given in (42a). The meaning derived from this structure is given in (42b); since neither Voice nor *se* in (42a) have any semantic impact on the clause (as they are expletive), (42b) is identical to (41b). In the further syntactic derivation, *se* cliticizes to the verb and the internal argument raises to Spec,TP. We

[21] In standard French, marked anticausatives also differ from unmarked ones with respect to auxiliary selection: the latter select *have* while the former select *be* (in child French and non-standard adult French though, *have* is used with the reflexive, too). 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 larger set of unaccusativity diagnostics).

thus derive the linearization in (42c), which is surface-identical to the one found with semantically reflexive verbs in (40c).

(42) Marked AC:

a.



b. [VoiceP] $\rightsquigarrow \lambda y \lambda e. \exists s(\mathbf{cause}(e, s) \wedge \boldsymbol{P}(s) \wedge \mathbf{theme}(s, y))$

c. DP_{NOM} *se*-V

We also quickly illustrate French passives as they will become relevant later.[22] French has two passives, canonical passives illustrated in (43a) and *se*-passives illustrated in (43b). We assume that both passives of lexical causatives have the meaning in (43c) 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 (42). 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 yield the same string as semantically reflexive verbs (40) and marked anticausatives (42).

(43) 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] $\rightsquigarrow \lambda y \lambda e. \exists x \exists s(\mathbf{cause}(e, s) \wedge \boldsymbol{P}(s) \wedge \mathbf{theme}(s, y) \wedge \mathbf{agent}(e, x))$

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.

3.2 Pragmatic reasoning on the form of the anticausatives

The three effects documented through the experiments take place with $\pm$*se* verbs only, for which there is a choice between forms. As mentioned earlier, $-$*se* verbs include in-control verbs

[22] For reasons that we make clear in section 4 and already discussed in footnote 18, the passive reading is not a viable option for the *se*-marked test items across our experiments. The single exception is one of the 8 items with non-human subject in the reflexive context, namely example (36) (which, however, can also have an anticausative reading). The other items of the same condition such as (35) do not hint at the involvement of an implicit agent in the VP-event, for Zribi-Hertz (1982) a condition for the *se*-passive reading to arise (see section 4 for details). For instance, (35) cannot be paraphrased with a canonical *be*-passive, and does not present the insect as an agent (differently from (i.) in footnote 18).

(e.g., *changer de position* 'change in position', *descendre* 'descend', *monter* 'ascend'); see (44).[23] As these examples show, these verbs are perfectly acceptable in the unmarked form in an inchoative context with a human DP, which is unsurprising, given that they *must* form their AC this way. With a human DP, these verbs tend to be understood as conveying a change performed and controlled by the theme, despite the fact that the subject of the AC is not presented as an agent in the grammar.

(44) *in-control −se verbs*
Valentina a changé de position/ est monté/ est descendu de deux mètres à cause
Valentina has changed of position is ascended is descended of two meters because
du changement de pression dans le vaisseau spatial.
of.the change of pressure in the ship spatial
'Valentina changed in position/ ascended/ descended by two meters due to the change in pressure in the spacecraft'.

Similarly, there is no unmarked limited-control preference for limited-control +*se* AC verbs (e.g., *s'affaiblir* 'weaken', *s'anémier* 'become anaemic'). These verbs are completely fine in the marked form with a human DP, see (45). This is again unsurprising given that their AC *must* be marked. With a human DP, these verbs tend to be understood as conveying a change not controlled by its theme, despited the fact that the subject is potentially presented as an agent in the grammar, given the presence of *se*.

(45) *limited-control +se verbs*
Chaïm s'est affaibli/ s'est anémié.
Chaïm SE is weakened SE is gotten.anaemic
'Chaïm weakened/got anaemic.'

Therefore, the infelicitous cases documented through the experiments on ±*se* verbs cannot be just due to the fact that the presence or absence of *se*-marking induces a clash with the default meaning of the verb (in-control or limited-control). Otherwise, these effects should be observed with limited-control/in-control verbs across the three morphological subclasses of ACs. Instead, what we see is that −*se* and +*se* verbs superimpose their limited-control or in-control lexical bias onto whatever form they must get when used as ACs.[24]

That these effects show up only for verbs for which *se*-marking is optional strongly suggests that they result from a reasoning on the *choice of form* taken by the speaker. It is because −*se* and +*se* verbs leave no room for choice in the formation of their AC that they do not show these effects.

Inferences generated by virtue of reasoning about choice of forms are generally analyzed as involving the maxim of Manner (Grice 1975, Levinson 1983, Rett 2015 a.o). The maxim of Manner relates to *how* things are said (as opposed to *what* is said). It includes the supermaxim 'Be perspicuous', and various submaxims such as 'Avoid obscurity of expression', 'Be brief', and 'Avoid ambiguity', which we proposed in the introduction can be replaced with something like 'Mind/Handle ambiguities in a perspicuous way', so as to also cover the marked in-control preference where

[23] While *monter* 'ascend' and *descendre* 'descend' typically behave as 'pure' unaccusatives in the context of a human theme, they still *can* alternate if the causation is direct (see Ruwet 1972 for discussion), which is why we use them in these examples.

[24] We thank XX for pushing us to emphasize this point.

the most helpful way to handle an ambiguity is to maintain it. Other situations where the speaker deliberately refrains from disambiguating have been discussed by Poesio (1996, 2020) and Wasow (2015: section 4).[25]

In the following sections, we argue that the unmarked limited-control preference and the marked in-control preference with human DPs both reflect a search for the most optimal way to handle the ambiguity induced by one of the available forms to express an anticausative with a ±*se* verb, namely the *se*-marked variant. Briefly, our proposal is that with a human DP, *when se-marking is optional* and therefore the speaker faces a choice between forms, they will prefer the form aligning better with prior shared assumptions—assumptions also fed by the lexical semantics of the verb used in the anticausative statement. With in-control ACs, this is the form with *se* (the ambiguity is preserved) while with limited-control ACs, this is the form without *se* (the ambiguity is avoided). Alternative choices are suboptimal because they invite the hearer to conclude either that the theme of the in-control event is not an agent, or that the theme of the limited-control event is an agent. In both cases, this inference clashes with default assumptions.

The relevant pragmatic reasoning and the resulting human biases are schematized in Figure 6. The effects do not show up with non-humans because the lexical bias of limited-control or in-control verbs is inert with non-humans (the notion of control is typically irrelevant for inanimate agents; see also discussion in Joo et al. 2023), and because role-ambiguous non-human DPs are anyway not preferably biased towards the agentive role across the board (there is no 'agent bias' for non-human DPs). As a result, the anticausative parse is always the most salient parse with non-humans across −*se* and +*se* forms.

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.

3.3 Explaining the unmarked limited-control preference

Recall the unmarked limited-control preference, which arises with limited-control verbs as in (46), repeated from (4): these ±*se* anticausatives remain preferably unmarked with human arguments, as shown in Section 2.2.

(46) a. *Jeanne a rougi sous l'effet des compliments.*
Jeanne has reddened under the effect of.the compliments
'Jeanne blushed/reddened under the effect of the compliments.'

[25] By casting 'Avoid ambiguity' as a submaxim of manner, Grice (1975) suggests that perspicuity always diminishes with ambiguity. But recent research makes clear that ambiguity has many *raisons d'être*: it is a feature of efficient communication systems, allowing a smaller lexicon and better signal compression, among other advantages (Brochhagen 2018, 2020, Achimova et al. 2022 and references therein). In the approach developed in Brochhagen (2018, 2020), a speaker judges whether their addressee will be able to find the intended meaning via an ambiguous message, and avoids ambiguity when it decreases the risk of misunderstanding. Ambiguity is harmless for instance when alternative unintended meanings are nonsensical or when discrimination of the different interpretations does not matter for communication (see also Wasow 2015: 9). In the case of the *se*-morpheme, the difference between anticausative and the reflexive meanings is often crucial in the context of a human DP, as the DP's referent is presented as a (responsible) agent of the event in one of the two readings only. In that sense, the ambiguity of *se* is often *not* harmless and therefore has to be handled with care in the context of a human DP.

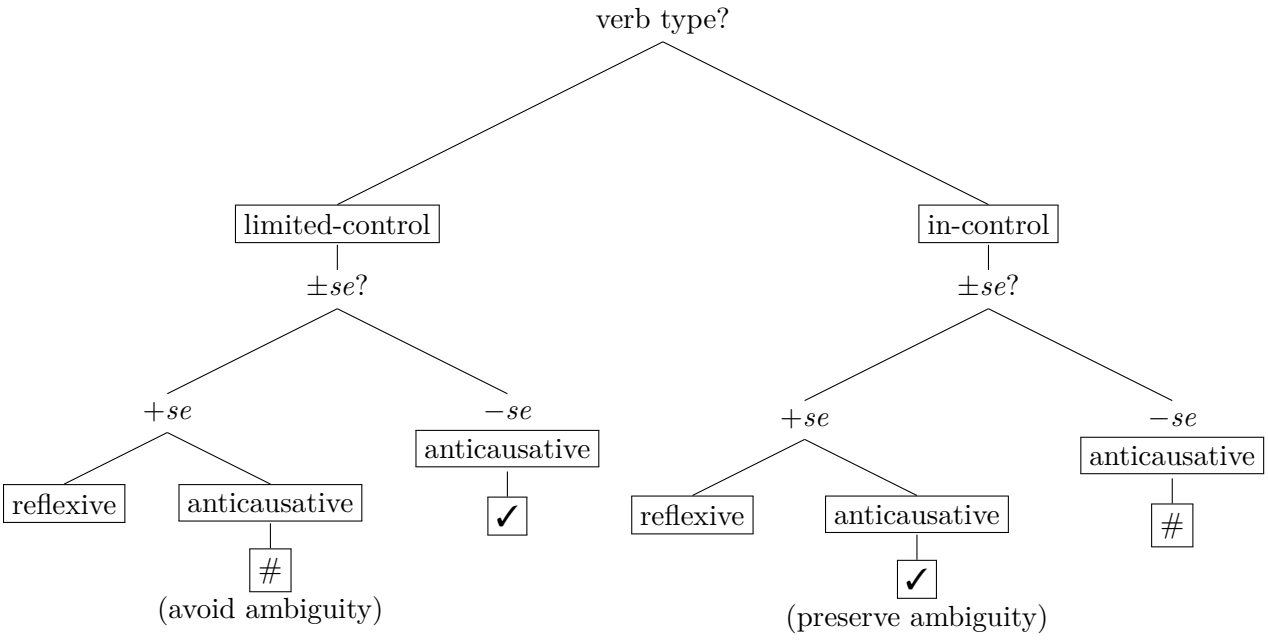


Figure 6: Pragmatic reasoning and resulting preferences with human subjects and ±verbs ('reflexive'= semantically reflexive reading, 'anticausative' = anticausative reading).

b.# *Jeanne s'est rougie sous l'effet des compliments.*
Jeanne SE is reddened under the effect of.the compliments
'Jeanne blushed/reddened under the effect of the compliments.'

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 (42) and the semantically reflexive structure in (40).

We assume that when hearing or reading *se* in a clause headed by a ±*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 as agents (Bickel et al. 2015, Sauppe et al. 2022 and references therein), at least when the DP is *human*. Assuming that the speaker handles the ambiguity induced by *se* in the most perspicuous way, hearers faced with the *se*-variant of a ±*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 (which is non-agentive), while only *se* can be used for the reflexive reading (which is agentive), then if the speaker chooses +*se*, it is because they are after the reflexive, agentive, reading. If the speaker wanted to yield an anticausative reading, they would have chosen the unambiguous −*se* unmarked form to do so. Other readings are thus degraded; in particular, the anticausative reading becomes dispreferred when *se* is used. The reflexive interpretation misleadingly triggered by the use of *se* is problematic with limited-control verbs, as those denote changes which are typically not under the control of the undergoer, explaining the unmarked limited control preference. The same logic guides speakers in their choice of utterance — an effort to handle the ambiguity in the

most helpful way, which in this case amounts to avoiding it.

The hearer's reasoning upon hearing a (degraded) clause with the *se*-form of a ±*se* limited-control verb is decomposed in (47).

(47) a. The speaker used *se*.
b. With a human subject, change of state events with *se* are ambiguous between *se*-AC (non-agentive) and reflexive (agentive) constructions.
c. Clauses without *se* are another way of expressing the anticausative with ±*se* AC verbs.
d. The speaker did not choose the unmarked AC form, which univocally conveys the anticausative meaning.
e. Therefore, the speaker did not intend for the anticausative parse with *se*.
f. The speaker intended for the reflexive (agentive) parse with *se*.
g. The DP-referent is the agent of the change.

The inference (47g) explains why *se* is less natural with limited-control verbs. As this inference is obtained via a Gricean reasoning, it is in principle cancellable. But it is known that inferences motivated by the maxim of Manner 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 inference (47g) is difficult to cancel given the availability of the alternative anticausative form without *se* — if the speaker was after the anticausative meaning, why didn't they say it more univocally? Or alternatively: if the speaker was *not* after the reflexive parse, why did they choose the ambiguous form?

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.

Furthermore, it is not the case that the suboptimal form with limited-control verbs is never found with a human subject. This combination is less natural and less frequent, but does exist in corpora. Examples (48) below are attested examples where the limited-control ±*se* verb *rougir* 'get red' most plausibly instantiates the anticausative use while they are used with *se*.

(48) a. *Je me rougis encore en pensant à un moment où j'ai utilisé un slur et*
I SE redden still while thinking at a moment where I have used a slur and
après coup j'ai réalisé que c'était inapproprié
after the fact I have understood that it was inappropriate
'I'm still blushing while thinking at a moment where I used a slur and realized after the fact that it was inappropriate.' (Twitter)

b. *J'ai les yeux dans mon café (...) et quand je relève les yeux, elle se rougit*
I have my eyes in my coffee and when I raise the eyes she SE reddens
et se détourne.
and SE turns away
'I keep my eyes in my coffee (...) and when I raise my eyes she gets red and turns away.' (canardpc.com, frTenTen20)

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 language, but there is no *a priori* preference to do so. Thus the anticausative parse remains the most salient and obvious parse for the strings marked with or without *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.

3.4 Explaining the marked in-control preference

Recall now the marked in-control preference, illustrated in (49), repeated from (5):

(49) a.# *Jeanne ∅ a plié en deux (de douleur).*
Jeanne has bent in two from pain
Intended: 'Jeanne bent over (in pain).'

b. *Jeanne s'est pliée en deux (de douleur).*
Jeanne SE is bent in two from pain
'Jeanne bent over (in pain).'

The full DP is again human. Furthermore, the verb being an in-control verb, it expresses changes understood as typically performed and controlled by the undergoer when human, even when the change is non-intentional and externally caused, as the PP suggests in (49). This means that the language user intending to convey an anticausative statement with an in-control verb typically does not take the reflexive reading to be false. But if the speaker chooses the variant without *se*, the hearer will assume that the speaker handles the ambiguity with perspicuity and avoided the marked form because of its additional reflexive reading. The hearer will then conclude that the human DP does not have the agentive properties that only come with the form the speaker avoided. This 'no-agent' inference goes against shared default expectations about the way humans participate in the changes-of-state denoted by in-control verbs. This explains why the unmarked form is not very natural with an in-control verb and a human DP. A schematic for the hearer's reasoning upon hearing a (degraded) clause as in (49) with an in-control ±*se* verb but without *se* is given in (50).

(50) a. With a human DP, clauses with *se* and an in-control change-of-state verb are ambiguous between (non-agentive) *se*-anticausative and (agentive) 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 (agentive) reflexive meaning.
f. The DP's referent is not the agent of the change.

We again take the inference in (50f) to be defeasible, i.e., the lack of agency is *not* entailed in, for instance, (49a): while the anticausative form does not associate the DP with the role of agent, it does not prevent one from conceiving the DP's referent as an agent at the conceptual level. This is in fact what most probably happens with in-control −*se* ACS (like e.g. *changer de position* 'change

in position', *entrer* 'enter'), for which the *se*-form is not available in the grammar, despite the fact that conceptually, the human DP is an agent.[26]

But again, this inference is not so easy to ignore given the availability of the reflexive form to express the same change while in the same time associating the DP with the thematic role of agent. However, the results of Experiment 1b do suggest that the inference is cancellable: while ratings for the unmarked form of in-control 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-agency.

Furthermore, although with a human subject, in-control verbs are less natural when used without *se*, this combination does exist in corpora. The examples (51) below are attested examples where in-control ±*se* verbs *plier* 'bend' and *approcher de* 'get close(r) to' are used as anticausative without *se* in the presence of a human subject.

(51) a. *À ce moment, j'ai saisi la première chose que j'ai vue et je*
at that moment I have grasped the first thing that I have seen and I
l'ai frappé. Il a plié en deux, mais il a lâché un sacre avant
him have hit he has bent in two but he has dropped a curse word before
de me donner un coup de poing.
to me give a punch
'At that moment, I grasped the first thing I saw and hit him. He bent in two, but he dropped a curse word before giving me a punch.' (www.lecitoyenrouynlasarre.com)

b. *dès qu'il approche d'un homme, il crie sans relâche: Ne me touchez*
as soon as he gets.closer of a man he shouts without stopping NEG me touch
pas!
NEG
'As soon as he gets closer to a man, he shouts without stopping: don't touch me!' (canardpc.com, frTenTen20)

Interestingly, it seems that in situations similar to those explored experimentally in Joo et al. (2023) where the human DP is fully incapacitated, e.g. completely unconscious or in a coma, the version without *se* becomes preferred over the version with *se*; see e.g. (52).

(52) *Paul est très rapidement entré dans le coma quand le camion a foncé dans*
Paul is very quickly entered in the coma when the truck has charged in
la voiture, et ensuite a plié en deux/ #s'est plié en deux sous le poids de
the car and then has bent in two SE is bent in two under the weight of
la tôle du camion.
the sheet metal of.the truck
'Paul quickly fell into a coma when the truck crashed into the car, and then folded in half under the weight of the truck's metal.'

[26] Recall that in French, reflexive semantics must be expressed with the reflexive marker (Kayne 1975), i.e. *Jean* in *Jean change de position* cannot be an agent beyond a theme in the grammar without *se* being spelled out. Therefore, Jean is an agent at a conceptual level, but not in the syntax.

We can easily account for why maintaining the ambiguity with the agentive reflexive reading is odd: Paul is here not even a performer of his change of position. The unmarked form is therefore more appropriate in this context, as it presents the human DP as a pure theme.

Another relevant point is that when the same verbs are taken in an abstract sense, they sometimes lose their in-control bias (i.e., are not understood as denoting events typically under the control of their undergoer when human), and can in that case unproblematically be used as AC without *se* with a human subject. For instance, *plier sous les responsabilités* 'bend under the responsibilities' can be used to express an abstract change. Such changes are not typically understood as controlled by their human undergoer; the form without *se* turns out to be preferred over the form with *se*; see e.g. (53).

(53) *Pierre a plié/ #s'est plié sous le poids des responsabilités.*
Pierre has bent SE-is bent under the weight of responsibilities
'Pierre bent under the weight of responsibilities.'

To summarize, when hearers do *not* hear *se* in a clause containing a ±*se* AC and a human DP, they will reason that *se* was avoided in order to avoid the reflexive (agentive) parse. It is then inferred that the human argument is *not* agentive in the process. Infelicity then arises in the context of verbs expressing changes typically controllable by humans, like motion or posture verbs, explaining the marked in control preference. With non-human DPs, there is no preference for the *se*-marked variant because non-human are not typically conceived as in control of the change expressed by in-control verbs.

3.5 Explaining the marked responsibility preference with inanimates

Recall now the third preference observed with ±*se* ACs: if forced to choose the structure that ascribes more responsibility to the referent of a non-human DP like in (54), speakers tend to prefer the *se*-variant over the unmarked variant.

(54) *La fleur {a flétri / s'est flétrie}.*
the flower has wilted SE is wilted
'The flower wilted.'

This observation is by now easy to explain. Only the marked string is compatible with an agentive derivation, different from the anticausative one. Language users effectively endorse a reflexive parse if they are asked to endow the non-human entity with responsibility/agency, considering that the *se*-marked variant is the most effective way to do so, as the reflexive interpretation is never available for the unmarked form.

3.6 An alternative account: marked anticausatives as semantically reflexive

In the analysis developed in Section 3.1, we followed authors such as Schäfer (2008), Alexiadou et al. (2015) and Wood (2015) who argue against systematic semantic differences between marked and unmarked anticausatives. We assume that the presence of *se* in marked anticausatives reflects the presence of a syntactic layer on top of vP, a middle or 'expletive' Voice, without semantic import; see (56b). The presence of this expletive Voice projection may trigger (morpho-)syntactic

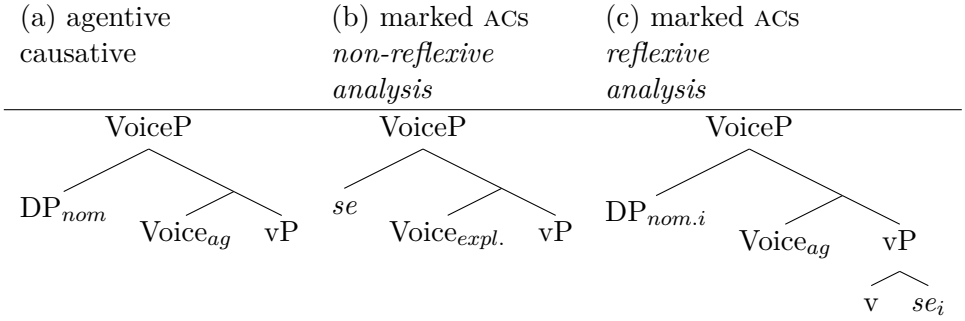
differences (e.g., auxiliary selection in French) but does not add any semantics (Schäfer 2017, Wood 2015).

A prominent alternative analysis of reflexively marked anticausatives is developed by Chierchia (2004) for Italian and Koontz-Garboden (2009) for Spanish (see also Lundquist et al. 2016 for Norwegian and Amaral et al. 2023 for Brazilian Portuguese).[27] According to the latter authors, anticausatives marked with the non-active morphology are *semantically* reflexive, as the paraphrase of the Italian example (55) illustrates: the undergoer of the change is identified with its agent or effector.

(55) *La porta si è aperta.*
the door SE is opened
'The door opened.'
≈ some property of the door (or some state the door is in) caused it to open.
(Chierchia 2004)

A question is whether an alternative analysis along these lines can account for the French data discussed in previous sections, including the results of Experiments 1 and 2. For the purpose of comparison, we first briefly show how a reflexive analysis of marked anticausatives can be implemented in the Voice framework adopted here; see (56b) vs. (56c). In (56c), the Voice head introduces an external argument – an agent/effector – just as in ordinary transitive clauses, (56a), and the internal argument is realized as an anaphor (*se* bound by the external argument).[28]

(56)



A key feature of an implementation of the analysis of reflexively marked anticausatives as semantically reflexive along this line is that the DP's referent ends up associated with two different thematic roles in the event: it is both a theme and an agent/effector of the VP-event. On this view, there is a one-to-one mapping between meanings and forms of the anticausative: the form with *se* is agentive (the DP's referent is an undergoer and an agent/effector) and the form without *se* is not (the DP's referent is a pure undergoer). Furthermore, the *se*-variant asymetrically entails the unmarked variant; e.g., if the truth conditions for *La branche s'est cassée* 'The branch SE broke'

[27] For arguments in favour or against the reflexive analysis of marked anticausatives, see also Horvath and Siloni (2013), Beavers and Koontz-Garboden (2013), Alexiadou et al. (2015) and Schäfer and Vivanco (2016), among others.

[28] Under this perspective, reflexive verbs are transitive. Alternatively, semantically reflexive verbs can be assumed to be intransitive (e.g., Reinhart and Siloni 2004). In this case, the Voice head is in charge of the reflexivisation operation (Labelle 2008) and therefore has a different semantics than the agent Voice head found in agentive transitives. Nevertheless, this 'reflexive Voice' would still introduce an agent role (Koontz-Garboden 2009 uses the underspecified 'effector' after van Valin and Wilkins 1996; see fn. 2).

are fulfilled (i.e. if there is a breaking event having the branch as its effector and undergoer), necessarily, the truth conditions for *La branche a cassé* 'The branch broke' are also fulfilled (i.e., there is a breaking event having the branch as an undergoer), but the reverse is not necessarily true.

We now briefly show how the three effects documented for ±*se* verbs can be accounted for under an analysis of marked anticausatives along this particular implementation of the analysis of marked anticausatives as semantically reflexive. The conclusion of this exercise will be that such an analysis should also be enriched with a pragmatic component in order to avoid wrongly predicting that the preferences also take place across the three morphological classes of anticausatives (rather than across ±*se* verbs only).[29]

The marked responsibility preference with non-humans is obviously very easy to account for under this alternative analysis: if forced to choose the structure that ascribes more responsibility to a non-human DP, speakers tend to prefer the *se*-variant over the unmarked one because the marked string is the only one where the DP is grammatically encoded as an agent/effector.

Turning to the marked in-control preference in the context of human DPs (*Jeanne #(se) plie en deux de douleur* 'Jeanne SE bends over in pain'), supporters of the reflexive analysis of marked anticausatives could simply argue that with in-control verbs, the form with *se* must be chosen because it is the single one presenting the DP's referent as an agent. Leaving out *se* yields infelicity because in-control verbs express events under control of a human undergoer, and the variant without *se* cannot associate the role agent/effector to the theme.

However, if the problem of the unmarked variant of ±*se* in-control verb was just due to a clash between the morphological form of the anticausative and the lexical semantics of the verb, we would expect this problem to also arise with −*se* in-control verbs. But we saw that this does not happen: −*se* verbs must remain unmarked and therefore do not allow the human in-control undergoer to be presented as an agent/effector in the grammar. Therefore, something must be added to this alternative analysis so as to account for why the clash between the morphological form and the lexical verbal meaning leads to infelicity *only when the use of the unmarked form results from the speaker's choice* between the marked and unmarked forms. As far as we can see, the most straightforward way to do so is to derive the marked in-control preference from a pragmatic reasoning.

Recall that under this alternative analysis, the choice does not take place between two truth-conditionally equivalent forms as we assume to be the case, but rather between a weak and a strong alternative (since the marked variant asymetrically entails the unmarked one). We are therefore dealing with a Quantity implicature rather than a Manner one: the implicature triggered by the absence of *se* is in this view generated by virtue of reasoning about *what* is said, and not about *how* things are said. More concretely, proponents of the reflexive analysis could say that when the speaker chooses the unmarked, thus weaker, form of in-control verbs over the marked, stronger

[29] In what follows, we assume that the distinction between −*se* ACs and ±*se* ACs can be integrated in an analysis *à la* Chierchia/Koontz-Garboden. As pointed out in Alexiadou et al. (2015: section 3.2), this is not trivial, because a lexical causative verb can in principle always be reflexivized with the help of *se*. Thus, only +*se* or ±*se* verbs are strictly speaking expected. But −*se* verbs do exist in French. An example is sentence (1c) (*#la maison se brûle* 'the house SE burnt'): this sentence has no anticausative reading, but only a funny semantically reflexive reading under which the house is acting on itself (the passive reading is not available with alternating verbs and a non-human DP if the context does not hint at the involvement of an implicit agent, a point to which we come back in the next section). See also footnote 2 about −*se* verbs such as *changer de position* 'change in position' or *monter/descendre* 'go up/dow', which are in fact very rarely used with the reflexive as one-place predicate.

alternative, the hearer derives the (Quantity) implicature that the stronger alternative is false (see Schäfer and Vivanco 2016 for a related hypothesis). The 'no-agent' inference computed this way clashes with general assumptions about in-control events. But when the unmarked form has no marked alternative, as with in-control $-se$ verbs, no similar reasoning takes place.

Let us now turn to the unmarked limited-control preference exhibited by $\pm se$ verbs in the context of a human subject (*Jeanne (#se) rougit sous les compliments* 'Jean SE reddens/blushes under the compliments'). Supporters of an analysis *à la* Chierchia or Koontz-Garboden could argue that with limited-control verbs, the speaker must select the form without *se*, because the form with *se* carries agentive entailments in conflict with shared assumptions about limited-control events undergone by humans. Such an account raises a problem similar as before: we do not observe a similar clash with limited-control $+se$ verbs. Why are agentive entailments coming with the *se*-variant problematic for limited-control verbs for which there is a choice between forms ($\pm se$ limited-control verbs), but not for those for which there is no choice ($+se$ limited-control verbs)? It seems that solving this problem requires to enrich the reflexive analysis of marked anticausatives with a pragmatic component, too. For instance, one could assume with Joo et al. (2023) that the role of agent has a weak and a strong meaning (cf. (38)). Under the weak meaning, agents are just simple effectors/doers (they satisfy the core property of agency, effectivity, but no others), and under the strong meaning, they exert agent control besides effectivity. One could postulate that when the role of agent is imposed on the DP by the morphology of the anticausative, as the case with $+se$ AC, the role of agent can be taken in its weakest meaning only (the Strong Meaning Principle would be suspended because the speaker cannot escape the association of the agent role to the DP under the morphological constraint imposed by $+se$ verbs). But when it is clear that the speaker *chooses* the marked form over the unmarked form, as it happens when they choose the marked over unmarked form of $\pm se$ verbs, the hearer understands that they are after the stronger meaning of the role of agent, and infers thereby that the agent exerts control over the event. A conflict with assumptions on limited-control verbs arises in the latter case only.

To conclude, the reflexive analysis of marked anticausatives also covers the French data discussed in the previous sections as long as it incorporates a pragmatic component so as to account for why the effects arise only for anticausatives for which there is a choice between two alternatives.

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, through Gricean reasoning involving the maxim of Manner *Be perspicuous*.

We will discuss next how pragmatic considerations constrain the availability of *se*-passives (Section 4.1) and the impersonal *il*-construction (Section 4.2).

4.1 *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. (40a-c)) or a passive parse (cf. (43c)). 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 (57a). With human DPs, in contrast, and as already foreshadowed by Zribi-Hertz (1982: 362), the reflexive reading is strongly preferred, for us a result of the agent preference, (57b). Further examples of this effect follow.[30]

(57) a. Non-human: ✓ passive, # reflexive.
L'ancre doit se jeter à l'eau.
the anchor must SE throw at the water
'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 himself into the water.'
DISPREFERRED: 'The guilty one must be thrown into the water.'

(58) 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.'

(59) 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.'

[30] Recall from section 3.1 that we characterize the role of agent applied to a human DP as involving the notions of effectivity and control, not the notion of intentionality; so for instance in (59), Pierre is the in-control effector of the event leading to his death, but this does not entail that he intended to kill himself.

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 role-ambiguous subject. As a result, the passive reading (where the human DP is associated with the theme role only) becomes dispreferred. To express a passive interpretation, the speaker would need to avoid the *se*-marked form and choose a periphastic passive, thereby avoiding a situation in which the hearer is faced with a salient reflexive parse.

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

(60) 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.
f. The DP's referent is an agent.

Yet another competition effect, this time with non-human subjects, is illustrated in (61).[31] Verbs like *casser* 'break' (±*se*) or *briser* 'break' (+*se*) found in this example are alternating change-of-state verbs. Besides the anticausative reading, the *se*-passive construal is also in principle available, but as observed by Zribi-Hertz (1982) strongly dispreferred in examples such as (61), where no contextual element hints at the involvement of an implicit agent. For us, this is another kind of Manner implicature: the hearer will reason that if the speaker avoided the periphrastic passive form which is unambiguously passive, it is because they were after the anticausative use.

(61) *Le vase s'est brisé /cassé ce matin.* (✓*se*-anticausative, # *se*-passive)
the vase SE broken /broken 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 uses to begin with, (62), so no competition arises.

(62) *Le vase s'est vendu ce matin.* (✗*se*-anticausative, ✓*se*-passive)
the vase SE is sold this morning
'The vase was sold this morning.'
NOT: 'The vase sold this morning.'

Interestingly, the passive reading of *se* is almost always illustrated with non-alternating transitive verbs in French, such as *vendre* 'sell', *nettoyer* 'clean', *voir* 'see', *décider* 'decide', *discuter* 'discuss,

[31] The reflexive reading is ignored from now on; with non-humans, it is in principle available but in the default case implausible.

construire 'build', *organiser* 'organize', *chanter* 'sing', *faire* 'make', where the anticausative reading is out of the competition.[32]

To summarize:

(63) 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.
f. The asserted VP-event involves the subject DP's referent only.

As expected under a pragmatic account, the inference (63f) derived through a reasoning involving the Manner maxim *Handle ambiguities in a perspicuous way* can in principle be overriden in an appropriate context enforcing the passive meaning. In French, the key distinction between the passive and anticausative construals for *se*-marked forms is that *se*-passives report an event involving an implicit agent (Zribi-Hertz 1982: 353-355). With a non-human DP, the *se*-passive reading of alternating verbs therefore wins over the anticausative *if an element in the context signals the presence of an agent* (e.g., *se casser d'une seule main* 'SE breaks with one hand only', cf. Zribi-Hertz 1982: 354).[33] For instance, the context of (64) 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, while (*se*) *casser* 'break' is a ±*se* AC, *se* is now compulsory in (64), for otherwise the passive structure required by the PP would be unavailable.

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

But one final case in which alternating verbs do get the passive reading when *se*-marked 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; (65a) exemplifies (Levin and Rappaport Hovav 1995: 85, 105, Koontz-Garboden 2009). The same is true in French (van Voorst 1995). We observe, however, that the French formal counterparts of sentences such as (65a) are acceptable (and easy to find in corpora, see e.g. (65b)). The difference between the languages lies in the fact that these surface strings can also express a passive meaning, which, this time, does not compete with an anticausative use (unavailable with abstract DPs of this type, both in English and French), and is reinforced by the fact that the events denoted by verbs in this use necessarily involve an agent (for Zribi-Hertz 1982 a condition for the passive reading of *se* to arise).

[32] See examples (8a-e) and (32a-k) in Zribi-Hertz 2008 and authors cited therein. A related claim about the *se*-passive in French is that it is mostly used with inherently agentive verbs (what Zribi-Hertz 1982: 355 calls '+actif' verbs). For us, this is because inherently agentive verbs often do not form anticausatives (Levin and Rappaport Hovav 1995, Alexiadou et al. 2015 among others), thus no anticausative reading is competing with a passive reading.

[33] For this reason, the passive reading is not an option across our test items in Experiment 1a/b and Experiment 2, except for the item repeated under (36), which is the single of the 6 items of the non-human/reflexive context condition hinting at the involvement of an implicit agent.

(65) 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 is broken 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, ✗*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.

4.2 Marked anticausatives with the impersonal *il*

The second 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 (66a–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).[34] No such ambiguity exists for +*se* AC-verbs, as the second example shows.

(66) a. ✓3SG.M, ✓ impersonal.
Il a brûlé plein de maisons dans l'incendie. (−*se* AC)
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.
Il s'est brisé plein de verres dans l'armoire. (+*se* AC)
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 (67):[35]

(67) 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.
Il sèche encore du linge dans le jardin. (−*se* AC)
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.'

[34] Legendre et al. (2016) claim that −*se* verbs do not allow impersonal *il*, so for them (66a) should be unambiguous. It is ambiguous for us, and we provide an attested example with the impersonal *il* and a −*se* verb in (67a).

Next, we turn to ±*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 (68)-(69). Example (68a), although semantically ambiguous, is strongly biased towards the transitive construal with the personal pronoun 'he', while (68b) 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 limited-control or in-control.[36]

(68) a. No *se*: ✓ 3SG.M, #impersonal.
Il a cassé plein de verres dans l'armoire. (±*se* AC)
he break.PFV a lot of glasses in the
'He broke a lot of glasses in the cupboard.'
DISPREFERRED: '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.'

(69) a. No *se*: ✓ 3SG.M, # impersonal.
Il a coincé quelque chose dans le tiroir. (±*se* AC)
he get-stuck.PFV some thing in the drawer
'He got something stuck in the drawer.'
DISPREFERRED: '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 the preferred interpretation of unmarked forms of ±*se* AC like in (69a) as resulting from an inference derived through a Gricean reasoning involving Manner. The hearer's reasoning upon hearing a sentence with *il* in subject position and a ±*se* verb can be schematized as in (70):

(70) 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*.

[35] Sentence (67a) 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).

[36] For Labelle (1992) and Legendre et al. (2016), 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 *Handle Ambiguity with perspicuity*.

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 (66a) or (67b) remain unbiased towards a specific interpretation.

5 Conclusions

In this paper, we looked at the ways lexical-semantic biases of verbal predicates interact with general conversational principles, focusing on the Manner supermaxim *Be perspicuous*. Starting with the assumption that French anticausatives marked with *se* or left unmarked do not differ in meaning, we examine how cooperative language users are guided in their choice between the marked and unmarked forms. We showed that while the choice between the forms is completely uninformative when the (unique) overt DP is non-human, it becomes strategic when the DP is human. The reason why this choice becomes laden with consequences when the DP is human is that human DPs that can in principle be associated either with a Theme role (only) or an Agent role (too) tend to be interpreted as agentive (this is the *agent bias*). We argued that in such situations, a cooperative speaker will handle the ambiguity of *se* with perspicuity, in line with the Manner supermaxim *Be perspicuous*. This amounts among others to aligning with shared assumptions about events denoted by the VP. In this respect, we argued that two subclasses of verbs are particularly relevant: limited-control verbs express events that tend to be understood as not under the (full) control of a human undergoer, while in-control verbs express events that tend to be understood as under the control of a human undergoer. Aligning with these shared assumptions means preferring the unmarked variant of limited-verbs, to avoid an ambiguity with the semantically reflexive reading which endows the human DP with agency, but preferring the *se*-marked variant of in-control verbs, to maintain the ambiguity with the reflexive reading and as such avoid triggering the inference that the human DP is not agentive at all. These two preferences (the unmarked limited-control and the marked in-control preferences) are only at play with verbs for which there is a choice between form ($\pm se$ verbs), which supports our view that these preferences result from a pragmatic reasoning on the basis of general Griceans principles of conversation. We call such effects lexical pragmatic effects.

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.

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). Experiments 1a and 1b ran in the same session.

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, limited-control in Experiment 1a and in-control in Experiment 1b. Six limited-control verbs were used in Experiment 1a and five in-control 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:

(71) a. *Adèle a rougi sous l'effet des moqueries et de l'humiliation.*
Adèle has reddened 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 has reddened 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:

(72) a. *Adèle a rougi sous l'effet des moqueries et de l'humiliation.*
Adèle has reddened 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 SE is reddened 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:

(73) a. NEUTRAL
Rachida a pâli.
Rachida has gone.pale
'Rachida went pale.'

b. INCHOATIVE
Djamila a pâli à l'annonce de l'infidélité de son amoureux.
Djamila has gone.pale at the.announcement of the affair of her lover
'Djamila went pale when she heard about her lover's affair.'

c. REFLEXIVE
Khadija a pâli pour les besoins de son personnage de théâtre.
Khadija has gone.pale for the needs of her role of theater
'Khadija 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, such that each of the ∼ 40 participants in each list saw a given verb only twice, regardless of which of the 12 conditions it was in (Animacy x Se x Context). 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, Veríssimo, 2021) implemented in the R package brms (Bürkner, 2017) using the `cumulative()` family in `cmdstanr`. Animacy, Se and Context were included as population-level effects ("predictors"), with Animacy as a random slope by subject and item (group-level or "random" effects). While the choice of priors for Bayesian models can be the subject of its own analysis, two things to keep in mind are the value of prior/posterior predictive checks (Nicenboim et al., 2023) and that the brms default priors often provide good starting points, as does any weakly informative prior compared to a uniform prior (e.g. Veríssimo 2021). Since we did not have previous hypotheses or results to draw on, we chose to use the default priors (Stan's "improper flat" prior for predictor means; half-Student t-distribution with 3 degrees of freedom and scale factor 2.5 for random intercepts and predictor standard deviations; all correlation matrices equally likely for calculation of random slopes). The results of the predictive checks can be found in the OSF script.

ANIMACY and SE were sum coded. Context was treatment coded with Neutral as the baseline level (intercept). The model outputs are given in tables 8–9.

These models can also generate predicted ratings. The OSF repository contains code and figures which model two-way and three-way interactions, showing how likely the model would find a specific rating on the Likert scale for each conditions, for example how likely a "7" rating is.

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 8: *Full results of the Bayesian ordinal model, Experiment 1a (limited-control).*

	Estimate	Est. Error	95% CI
Intercept[1]	–2.15	0.56	[–3.18,–0.95]
Intercept[2]	–1.62	0.56	[–2.66,–0.44]
Intercept[3]	–1.30	0.56	[–2.33,–0.12]
Intercept[4]	–1.09	0.56	[–2.13,0.09]
Intercept[5]	–0.67	0.56	[–1.71,0.50]
Intercept[6]	–0.06	0.56	[–1.11,1.13]
AnimacyHuman	1.66	0.79	[0.12,3.22]
Se	–0.78	0.23	[–1.25,–0.35]
ContextInchoative	0.46	0.24	[–0.01,0.92]
ContextReflexive	1.11	0.36	[0.42,1.81]
AnimacyHuman:Se	–2.87	0.36	[–3.58,–2.15]
AnimacyHuman:ContextInchoative	–1.28	0.38	[–1.99,–0.56]
AnimacyHuman:ContextReflexive	–4.50	0.46	[–5.43,–3.61]
Se:ContextInchoative	0.22	0.33	[–0.42,0.88]
Se:ContextReflexive	–0.10	0.36	[–0.79,0.60]
AnimacyHuman:Se:ContextInchoative	1.35	0.49	[0.37,2.30]
AnimacyHuman:Se:ContextReflexive	4.82	0.51	[3.84,5.81]

Table 9: *Full results of the Bayesian ordinal model, Experiment 1b (in-control).*

	Estimate	Est. Error	95% CI
Intercept[1]	–2.05	0.53	[–3.04,–0.94]
Intercept[2]	–1.59	0.53	[–2.60,–0.49]
Intercept[3]	–1.21	0.53	[–2.21,–0.10]
Intercept[4]	–1.01	0.53	[–2.00,0.09]
Intercept[5]	–0.63	0.53	[–1.62,0.48]
Intercept[6]	–0.12	0.53	[–1.11,0.99]
AnimacyHuman	-1.32	0.68	[–2.63,0.09]
Se	0.38	0.23	[–0.07,0.85]
ContextInchoative	0.87	0.25	[0.39,1.39]
ContextReflexive	0.22	0.23	[–0.21,0.67]
AnimacyHuman:Se	1.57	0.32	[0.93,2.21]
AnimacyHuman:ContextInchoative	–1.25	0.34	[–1.93,–0.61]
AnimacyHuman:ContextReflexive	–1.06	0.32	[–1.69,–0.45]
Se:ContextInchoative	–0.50	0.35	[–1.20,0.17]
Se:ContextReflexive	0.44	0.34	[–0.24,1.09]
AnimacyHuman:Se:ContextInchoative	0.29	0.47	[–0.61,1.22]
AnimacyHuman:Se:ContextReflexive	0.08	0.47	[–0.84,0.99]

A.2.3 Materials

Verbs in Experiment 2 were either internally caused, limited-control or in-control, 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:

(74) *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 has rusted
'The sabre rusted.'

b. *Le sabre s'est rouillé.*
the sabre SE is rusted
'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 10.

Table 10: *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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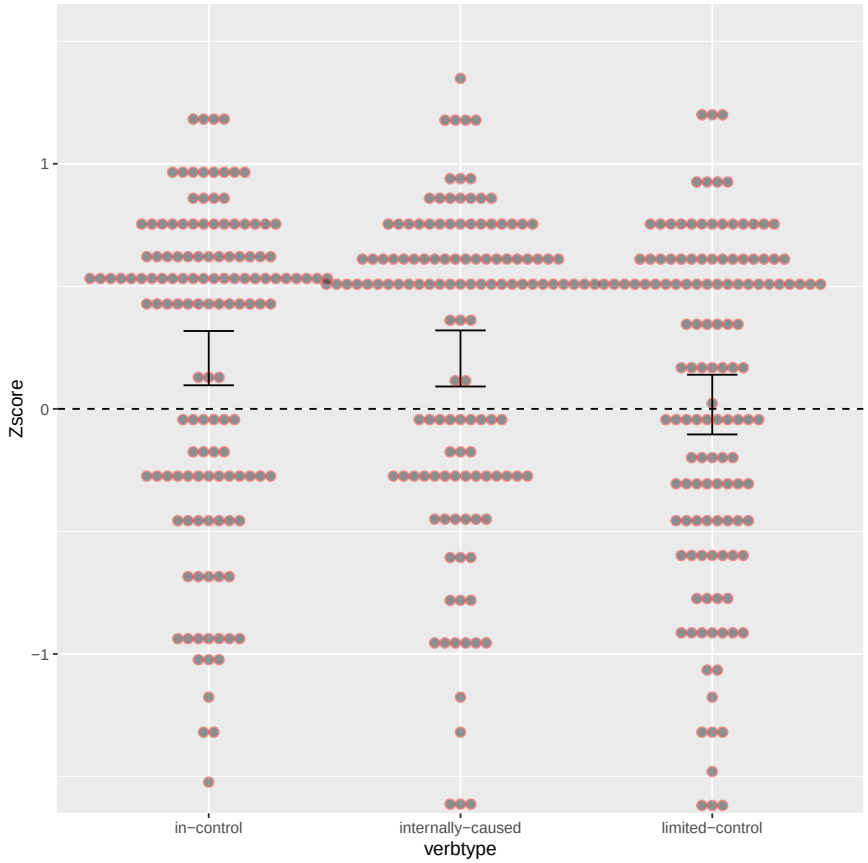

Figure 7: Experiment 2: Ratings by Verb Type.

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