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Anticausatives are weak scalar expressions, not reflexive expressions

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We discuss conceptual and empirical arguments from Germanic, Romance and Slavic languages against an analysis treating anticausative verbs as derived from their lexical causative counterparts under reflexivization. Instead, we defend the standard account to the semantics of the causative alternation according to which anticausatives in general, and anticausatives marked with reflexive morphology in particular, denote simple one-place inchoative events that are logically entailed by their lexical causative counterparts. Under such an account, anticausative verbs are weak scalar expressions that stand in a semantico-pragmatic opposition to their strong lexical causative counterparts. Due to this scalar relation, the use of an anticausative can trigger the implicature that the use of its lexical causative counterpart is too strong. As usual with implicatures, they can be 'metalinguistically' denied, cancelled, or reinforced and we argue that these mechanisms explain all central empirical facts brought up in the literature in favor of a treatment of anticausatives as semantically reflexive predicates. Our results reinforce the view that the reflexive morphemes used in many (Indo-European) languages to mark anticausatives do not necessarily trigger reflexive semantics. However, we also show that a string involving a reflexively marked (anti-)causative verb can be forced into a semantically reflexive construal under particular conceptual or grammatical circumstances.

1 Introduction

Lexical causative verbs such as the verb in (1a) and their anticausative counterparts such as the verb in (1b) are standardly assumed to have semantics along the lines of (2a, b) (e.g. Parsons 1990). Under this view (henceforth: '*the standard theory*'), a causative verb denotes a causal relation between an event and a change of state, the latter being denoted by the corresponding anticausative verb. Consequently, the truth of a clause headed by a causative verb entails the truth of the clause headed by its anticausative counterpart, that is if (1a) is true then (1b) is necessarily true, too:[1]

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[1] See Dowty (1979) for an alternative treatment of the CAUSE predicate; this would not change the entailment relation between (sentences headed by) causative and anticausative verbs, and, in turn, the conclusions of this paper would remain the same. The same holds for accounts that assume that causatives and anticausatives do not differ in their event decomposition; Alexiadou et al. (2006; 2015) and Schäfer (2008) argue (following Kratzer 2005) that causatives and anticausatives both involve (in the semantics) a causative event that directly applies to a result state and that the former differs from the latter only in the presence of a Voice projection introducing an external argument of the causative event. Accounts that propose that causatives and anticausatives involve complementary event predicates, on the other hand, do not express such an entailment relation between (anti-)causative pairs. Pylkkänen (2008), for example, proposes that causatives involve a CAUSE-subevent that directly combines with a result state while anticausatives involve a BECOME-subevent that combines with the same result state. If the difference between CAUSE and BECOME is semantically meaningful, the entailment relation does not follow in such an account. See Cuervo (2015) for a slightly different decomposition of (anti-)causatives, which also involves comple-

(1)　　a.　John opened the door.
　　　　b.　The door opened.

(2)　　a.　λxλy[(y) CAUSE [BECOME [(x) *open*]]]
　　　　b.　　　　　　λx[BECOME [(x) *open*]]

Most English causative-anticausative verb pairs are morphologically identical, constituting a so-called *labile* alternation (with very few exceptions such as *lay* vs. *lie* or *raise* vs. *rise*, which show stem allomorphy). Other languages, however, often differentiate one of the alternates morphologically (e.g. Haspelmath 1993). Many Indo-European languages also have, besides a set of labile or *unmarked* anticausative verbs, a set of morphologically *marked* anticausative verbs. The Spanish examples in (3) and (4) illustrate this. While the anticausative verb in (3b) is morphologically identical to its causative counterpart in (3a), the anticausative verb in (4b) differs from its causative counterpart in (4a) in that it obligatorily co-occurs with a SE-reflexive clitic (other Indo-European languages use a free SE-reflexive pronoun or a reflexive verbal affix to mark (a subset of) their anticausatives.)[2] Without going into any theoretical details, many accounts build on the pre-theoretical intuition depicted in (5a, b) that the presence of the SE-morpheme in marked anticausatives reflects the absence of the external causer argument and the eventuality introducing this external causer argument (the CAUSE predicate and its argument y) in the semantic representation of anticausatives (e.g. Grimshaw 1981; Reinhart 2000; 2002; Doron 2003; Reinhart & Siloni 2005; Schäfer 2008; Alexiadou et al. 2015, though the theoretical assumptions and semantic details differ a lot). Consequently, marked anticausatives denote simple inchoative events, too, as shown in (5b).

(3)　　a.　Juan　aumentó　los　precios.
　　　　　　Juan　increased　the　prices
　　　　　　'Juan increased the prices.'

　　　　b.　Los　precios　aumentaron.
　　　　　　the　prices　increased
　　　　　　'The prices increased.'

(4)　　a.　Juan　rompió　el　vaso.
　　　　　　Juan　broke　the　glass
　　　　　　'Juan broke the glass.'

　　　　b.　El　vaso　se　rompió.
　　　　　　the　glass　SE　broke
　　　　　　'The glass broke.'

(5)　　a.　λx　λy[(y) CAUSE　[BECOME [(x) *broken*]]]
　　　　b.　λx　<SE–>∅>　　[BECOME [(x) *broken*]] = λx[BECOME [(x) *broken*]]

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mentary event predicates and, therefore, also faces the problem how to account for the entailment relation at the level of lexical semantics. A reviewer reminds us that Neeleman & Van de Koot (2012) argue that natural language predicates involve a causing event neither in their lexical-semantic representation nor in their syntax. Indeed, the entailment relation could be expressed also in the absence of such an event.

[2] The distribution of marked and unmarked anticausatives differs across languages. For example, most Spanish anticausatives are marked while most Dutch anticausatives are unmarked. German, French or Italian have much more marked than unmarked anticausatives, but the latter class still comprises dozens of verbs. Importantly, the same lexical concepts do not necessarily enter the same morphological class across languages. For example, German *brechen* ('break') is unmarked, while its Spanish counterpart is marked (cf. 4b). Finally, many languages have a small set of optionally marked anticausatives, e.g. French *(se) casser* (break); see Schäfer (2008), Martin & Schäfer (2014) for discussion.

Under the standard account then, SE-marked and unmarked anticausatives do not differ semantically (cf. (5b) and (2b)); both denote simple inchoative events undergone by their sole DP argument. Consequently, both should be entailed by their causative counterparts because the latter denotes the causation of the event denoted by the former.

This standard view on anticausatives in general, and on reflexively marked anticausatives in particular, leaves open, however, an important puzzle. Why are (across languages and far beyond the Indo-European language family; cf. Haspelmath 1993) markers of anticausatives often syncretic with markers of reflexivity, that is, why do we find so often the same morphological marker with anticausative verbs that normally produces canonically reflexive verbs? The Spanish canonically reflexive verb in (6b) illustrates the point again; (6a) shows what we call the 'transitive-disjoint use' of the very same verb.[3]

(6) a. La madre lavó al niño.
        the mother washed to.the boy
        'The mother washed the boy.'

     b. El niño se lavó.
        the boy SE washed
        'The boy washed.'

In (6b), the SE-morpheme arguably acts as a reflexivizer with the meaning in (7) (or as a locally bound variable, i.e. an anaphor)[4] in that it takes a transitive relation $\Re$ such as the transitive verb *lavar* (wash) in (6a) with the semantics in (8a) as its argument and identifies the two arguments of the relation, thereby producing the reflexive verbal meaning in (8b). The sentence in (6b) then means that the boy was the agent as well as the patient of a washing event:

(7) $[se] = \lambda\Re\lambda x\,[\Re(x,x)]$

(8) a. $[lavar]$ $= \lambda x\lambda y\lambda e[wash(e) \wedge \text{AGENT}(e, y) \wedge \text{PATIENT}(e, x)]$
     b. $[se]([lavar]) =$ $\lambda x\lambda e[wash(e) \wedge \text{AGENT}(e, x) \wedge \text{PATIENT}(e, x)]$

A number of scholars, in particular Chierchia (2004) and Koontz-Garboden (2009), suggested that the puzzling syncretism between SE-marked anticausatives and SE-marked canonically reflexive verbs follows from an identical semantic content or function of the SE-morpheme in the two verb classes; SE acts as a reflexivizer in anticausatives just as it does in canonical reflexive verbs. We call this proposal the '*reflexivization analysis of anticausatives*' (henceforth *RAoAC*). Under this proposal, a SE-marked anticausative verb is derived from a transitive lexical entry simply by adding the SE-reflexivizer in (7). The only difference between verbs undergoing canonical reflexivization and verbs forming marked anticausatives lies in the nature of the external argument role. As discussed in more detail in the next section, the external argument role of a causative verb with an anticausative alternate is not a human *agent* but it is an underspecified *effector* (see 9a), which can also be realized as a non-human causer entity. Adding the reflexivizer in (7) to

[3] A further question, which we leave aside here, is why do we find marked and unmarked anticausatives in one and the same language in the first place? See Haspelmath (1993), Schäfer (2008) or Alexiadou et al. (2015) for discussion and further references.

[4] Nothing hinges on the choice between the two concepts at this point as they ultimately provide the same meaning for (6b); see however Doron & Rappaport Hovav (2007), Spathas (2012), Schäfer (2012) or Sportiche (2014) for arguments from focus alternatives which show that the SE-morpheme in canonically reflexive verbs is actually a bound variable/anaphor which carries the internal argument thematic role (pace the standard assumption since Kayne 1975 that SE-reflexive verbs are intransitive).

the transitive causative verb in (9a) sets identical the external argument effector with the internal argument theme as in (9b). Then, according to (9b) the anticausative clause in (4b) says that 'the glass' was the effector as well as the theme of a breaking event. Since *break* is a causative verb, this means that 'the glass caused its own breaking'.

(9)   a.   [romper]   = $\lambda x \lambda y \lambda s \lambda e[\exists v[\text{CAUSE}(v,e) \wedge \text{EFFECTOR}(v,y) \wedge \text{BECOME}(e,s) \wedge$
                             $\text{THEME}(s,x) \wedge \text{broken}(s)]]$
      b.   [se]([romper]) = $\lambda x \lambda s \lambda e[\exists v[\text{CAUSE}(v,e) \wedge \text{EFFECTOR}(v,x) \wedge \text{BECOME}(e,s) \wedge$
                             $\text{THEME}(s,x) \wedge \text{broken}(s)]]$

Note that the reflexivization analysis of anticausatives in (9a, b) crucially differs from the standard analysis in (2a, b/4a, b) in that it predicts that a causative clause does *not* entail its corresponding anticausative clause, i.e. (4a) should not entail (4b). This is the same as with the canonically reflexive sentence (6b), which is, of course, not entailed by its transitive-disjoint counterpart in (6a).

The reflexivization analysis of anticausatives (RAoAC) was proposed most prominently in the work by Chierchia (2004) for Italian and Koontz-Garboden (2009) for Spanish (see also Beavers & Koontz-Garboden 2013a; b) and we will concentrate on their proposals because they provide explicit semantics that allow for falsification (in particular (9a, b) which is taken from Koontz-Garboden 2009). However, other authors have made (sometimes only in passing) similar suggestions for different languages, for example Manzini & Savoia (2001; 2011) for Italian, Medová (2012) for Czech, Beavers & Zubair (2013) for Sinhala, Fehrmann et al. (2014) for Russian or Lundquist et al. (ms.) for Norwegian.

We will discuss a number of conceptual and empirical arguments that suggest that the RAoAC cannot be upheld.[5] In fact, a number of authors have argued against the RAoAC before, in particular Horvath & Siloni (2011; 2013) (with rejoinders in Beavers & Koontz-Garboden 2013a; b) and Alexiadou et al. (2015). In section 2, we will take up from these preceding publications some basically conceptual aspects in the discussion of the RAoAC in order to set some background. In section 3, we will add new semantic arguments that are complementary to those given in the above-mentioned earlier work. We, thereby, hope to add further support to the conclusion reached by these authors and to further clarify aspects in the argumentation that seemed to remain undecided. In particular, we will apply in section 3 tests that show that marked and unmarked anticausatives are entailed by their causative counterparts, while the same does, of course, not hold for canonically reflexive verbs and their transitive-disjoint counterparts. As we will also discuss, the arguments presented in the literature in favor of the RAoAC turn out to be conceptually and/or empirically misguided; under closer scrutiny they do not point to a reflexive relationship between causatives and anticausatives but to a *scalar relationship*. Such a scalar relationship follows from the standard semantics in (2a, b)/(4a, b) which state that a causative clause entails its anticausative counterpart. As is well known, scalar predicates can trigger implicatures; and in fact, the use of an anticausative often triggers the implicature that its causative counterpart does not hold true, an effect that derives a number of observations in the context of the causative alternation in general, and in the discussion of the RAoAC in particular (see Rappaport Hovav 2014 for related observations about contextual restrictions on the use of (anti-)causatives).

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[5] While Koontz-Garboden (2009) characterizes clauses headed by SE-marked anticausative verbs such as (4b) straightforwardly as '*The glass caused its own breaking*', Chierchia (2004) and Lundquist et al. (ms.) provide more vague characterizations. Chierchia paraphrases clauses like (4b) as '*(A property of) the vase causes its own breaking*' and Lundquist et al. (ms) paraphrase them as '*The vase (somehow) causes its own breaking*'. As far as we can see, our arguments and tests presented below make these vague characterizations untenable, too.

More far-reaching, our results support the conclusion that SE-marked anticausatives form a semantically uniform class with unmarked anticausatives (e.g. Schäfer 2008; Horvath & Siloni 2011; 2013; Alexiadou et al. 2015) as well as with other clearly inchoative structures such as non-alternating unaccusative verbs and eventive copula + adjective constructions (Schäfer 2008; Alexiadou et al. 2015). This means that the SE-morpheme does not always act as a reflexivizer (or a bound anaphor; cf. fn. 4) and that the identical morphological marking found in anticausatives and canonically reflexive verbs across languages is a real syncretism (same form, different function). However, as we will discuss, nothing (except world knowledge) blocks semantic reflexivization of causative verbs. Therefore, a surface string such as (4b) can, in principle, receive the reading in (8b), but only under very specific circumstances. The RAoAC, on the other hand, wrongly predicts meaning (2b) to be generally unavailable for SE-marked anticausatives.

For practical reasons, we restrict our discussion to Indo-European languages with a SE-morpheme/SE-reflexive element. In fact, we will mainly use examples from German and Spanish, but in order to reach some cross-linguistic significance, we will set out at least some of our empirical tests in two Romance languages (Spanish, Italian), two Germanic languages (German, Norwegian) and two Slavic languages (Russian and Czech). The semantic and pragmatic tests presented below should, however, be applicable to languages from other language families using different morphological devices, too.[6]

Before we turn to a discussion of the semantic predictions of the RAoAC, we will first look in the next section at some conceptual arguments that might speak in favor of the RAoAC as this allows us to characterize a bit more this proposal as well as some linguistic issues against which this proposal should be evaluated.

2 Conceptual evaluation of the RAoAC

In this section, we survey three conceptual arguments brought forward in favor of the RAoAC.

One main argument concerns the puzzle about the multifunctionality of reflexive morphology. If SE acts as a reflexivizer both in canonical reflexive verbs and in marked anticausatives, then the puzzle why SE shows up with anticausatives is solved. It applies to causative verbs to derive, in a well-defined and fully compositional way, what received the descriptive term 'marked anticausative' in the literature. Under the standard analysis, the semantic impact of the SE-morpheme in anticausatives remains unclear; in any case, it cannot be reduced to the canonical use of the SE-morpheme.

As is well known, SE-reflexive morphemes can be used for a wider range of constructions than just canonically reflexive verbs and marked anticausatives; in many languages, they are also used in generic middles, passives or even in impersonal constructions (cf. Spanish (10a-c)) (see also Koontz-Garboden 2009: 92 fn. 11; Horvath & Siloni 2013: 218).

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[6] A reviewer finds it implausible that there should be no languages that mark anticausative verbs with canonically reflexive morphology but do not interpret them as being semantically reflexive. Our conclusions are meant to hold minimally for the synchronic state of the above-mentioned six Indo-European languages but we believe them to actually be true for all other Indo-European languages using SE-morphemes as markers of anticausatives and we hypothesize that they are true even beyond this language family. However, we agree with the reviewer that the question has to be investigated for every language and every (formally) reflexive morpheme again, and one goal of this paper is it to augment the list of conceptual considerations and empirical tests in order to do so. We also find plausible the reviewer's suggestion that the diachronic development of anticausative markers out of reflexive markers points to a diachronic state where reflexively marked anticausatives are, indeed, interpreted reflexively. However, we find it rather implausible that speakers of different Indo-European languages, which use SE-morphemes in a fully gramaticalized fashion as a marker of anticausatives (and further Voices which arguably do not involve reflexivization) should conceptualize anticausative change-of-state events fundamentally different, some as inchoative one-place predicates, others as semantically reflexivized two-place predicates.

We agree with Horvath & Siloni (2013) that it is impossible to account for the semantics of these constructions in terms of reflexivization. If true, morphological identity does not necessarily reflect semantic identity and this particular conceptual advantage of the RAoAC vanishes. However, the data in (10a-c) do by no means invalidate the RAoAC. In any case, the question remains significant: how do we correctly divide the space marked with SE-morphemes into a semantically reflexive part and one with different semantics.[7]

(10)   a. Estas patatas se cortan fácilmente.
           these potatoes SE cut   easily
           'These potatoes cut easily.'

       b. Se venden   pisos.
           SE sell   flats
           'Flats are sold', i.e. 'flats for sale.'

       c. Se vive bien en Madrid.
           SE live well in Madrid
           'One lives well in Madrid.'

Second, Koontz-Garboden (2007; 2009) points out that the RAoAC avoids the violation of the monotonicity hypothesis in (11):

(11)   **Monotonicity Hypothesis** (Koontz-Garboden 2007; 2009; 2012; cf. Kiparsky 1982): Word formation operations add, but do not remove, meaning.

Many accounts that assume the standard semantics of (marked) anticausatives in (5b), on the other hand, violate monotonicity. This is so if they assume that verbs forming marked anticausatives are basically stored with their transitive lexical entry (i.e. 5a) and the SE-marked anticausative use of the verb with the semantics in (5b) is derived from the transitive entry. Under such a view, adding the SE-morpheme to the entry in (5a) leads to a *deletion* of the CAUSE predicate (cf. (5b)), and this clearly violates monotonicity. However, the problem arises only if SE-marked anticausatives are literally derived from their transitive counterpart. There are, however, theories of word formation that technically do not *derive* marked anticausatives from their causative variants (e.g. Piñón 2001; Doron 2003; Schäfer 2008; Alexiadou et al. 2015); these do not violate monotonicity (as already pointed out by Horvath & Siloni 2013: 218). The latter authors argue that the lexical derivation of anticausatives from causatives as it is executed in the Theta System (Reinhart 2000; 2002; Reinhart & Siloni 2005 et seq.) should not be seen as a violation of monotonicity. In this framework, decausativization applies at a lexical level that is assumed to lack event decomposition; consequently, it does not delete a causative event but only the thematic information about a verb's external argument/causer (see Horvath & Siloni 2013: 218 for details).

We conclude that the above conceptual arguments in favor of the RAoAC are not decisive. Whether SE-marked anticausatives should be subsumed under the semantics of canonically reflexive verbs seems to remain then a purely empirical question. When we turn to a third conceptual argument, however, brought forward in favor of the RAoAC, we will see that under closer scrutiny, this argument not only turns against the RAoAC under conceptual reasoning, but it also brings about a first set of empirical problems for the RAoAC.

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[7] We therefore do not want to deny that the basic function of SE-reflexive elements is reflexivization (or anaphoric binding) as this is suggested by the fact that this use comes first both diachronically as well as typologically (pace Horvath & Siloni 2013: 218, who claim that "it is not at all desirable to relate the relevant morpheme specifically with reflexivization"). Under our view, the question then is how a reflexivizer (or actually an anaphor; see fn. 4) can turn into a marker for Voice phenomena that do not involve reflexive semantics; see Schäfer (2008), Alexiadou et al. (2015) or Beavers & Koontz-Garboden (2013b) for proposals.

Koontz-Garboden (2009) argues that only the RAoAC can derive the so-called 'underspecified external argument generalization' on anticausative formation given in (12), which was first discussed in the work by Levin & Rappaport Hovav (1995) and Reinhart (2000). Other theories, he argues, in particular those building on detransitivization, must stipulate the existence of (12).[8]

(12)   **Underspecified External Argument Generalization:**
Only transitive verbs that do not restrict the θ-role of their external argument to agents enter the (anti-)causative alternation.

The Spanish examples in (13) and (14) illustrate the generalization in (12). A verb like *desmontar* ('dismantle') selects a human agent as its external argument; non-human causers and instruments are not allowed (13a). (12) correctly predicts that this verb does not form an anticausative (13b). The verb *romper* ('break'), on the other hand, selects an underspecified effector as its external argument since agents, non-human causers as well as instruments can appear (14a), and in accordance with (12) the verb allows an anticausative use (14b).

(13)   a.   Juan / * el accidente / * el destornillador desmontó el   coche.
John /   the accident /   the screwdriver   dismantled the car
'John/*the accident/*the screwdriver dismantled the car.'

b.   *El   coche se desmontó   (por sí solo).
the car   SE dismantled by SE self
'The car got dismantled.'

(14)   a.   El vándalo / la tormenta / la piedra rompió la   ventana.
the vandal / the storm   / the rock broke   the window
'The vandal/the storm/the rock broke the window.'

b.   La ventana se rompió (por sí sola).
the window SE broke   by SE self
'The window broke (by itself).'

Recall that the thematic underspecification of the external argument of verbs like *romper* is at the core of the RAoAC. Since *romper* selects an underspecified effector lacking any agent entailments, the non-human theme *the window* can also be assigned this external effector role in (14b) under reflexivization. The ungrammaticality of (13b) on the other hand follows because the verb involved selects for an agent external argument and since the theme is non-human and lacks agentive properties, this selectional restriction is not fulfilled if (13b) involves reflexivization.

Explaining the generalization in (12) via the RAoAC raises, however, a problem. To see this, note that Koontz-Garboden (2009) assumes that only SE-marked anticausatives are semantically reflexive (cf. (9b)). Unmarked anticausatives such as (3b) on the other hand are assumed to have the standard semantics in (2b/4b) expressing simple one-place inchoative events. Unmarked anticausatives must then be lexically stored and the causative version must be derived by causativization.[9] However, the generalization in (12) holds for marked as well as unmarked anticausatives. While the RAoAC seems to account

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[8] We leave aside here whether this claim is correct or not; see Horvath & Siloni (2013) for a defense of detransitivization accounts; see Rappaport Hovav (2014) for a way to let (12) follow under an approach that derives causatives from anticausatives.

[9] Koontz-Garboden (2009) and Beavers & Koontz-Garboden (2013a; b) leave open the possibility that individual unmarked anticausative verbs might be derived from their transitive variants via a *covert* reflexivizer. We will discuss the option of a covert reflexivizer immediately below.

for the fact that marked anticausatives are subject to (12), it has nothing to say as to why all verbs forming unmarked anticausatives also allow non-agentive external arguments in their transitive use, i.e. why they are subject to (12), too. Assuming that SE-marked and unmarked anticausatives have fundamentally different semantics forces to come up with two different explanations of what seems to be a unitary phenomenon.

It should be noted that this problem does not exist under a version of the RAoAC as Chierchia (2004) suggests it (cf. also Lundquist et al. to appear for Norwegian). He proposes that both marked and unmarked anticausatives are derived by reflexivization from a transitive lexical entry; reflexivization is just not always reflected by surface morphology. The idea is that unmarked anticausatives such as (3b) are similar to English *John washed* which is arguably semantically reflexive (*John washed himself*) even though no reflexivizing morphology is present. This idea is not as innocent as suggested, however. While English *John washed* receives a reflexive interpretation, this option seems to crucially depend on the fact that English lacks a SE-reflexive morpheme. All other Indo-European languages that have a SE-reflexive morpheme lack zero-derived reflexive verbs of the English type with human subjects (see Alexiadou et al. 2014). That is, in all these languages, strings similar to English *John washed, John dressed* or *John and Mary kissed* can only get an interpretation involving object drop (*John washed something*) but not a reflexive or reciprocal interpretation.[10]

Turning back to (12), note that this generalization is strong but not perfect. Basically all languages have individual transitive, causative verbs with an underspecified external argument that do actually not form an anticausative. This is illustrated in (15) with a German example (see Rappaport Hovav 2014 for English verbs of destruction and killing showing the same behavior, see Alexiadou et al. 2015 for further discussion and further German examples).

(15)   a.   Hans/ der Sturm zerstörte   das Gemälde.
              John/ the storm destroyed the painting
              'John/the storm destroyed the painting.'

       b.   *Das   Gemälde zerstörte   (sich)   plötzlich.
              the   painting destroyed   SE   suddenly
              'The painting got (suddenly) destroyed.'

In the worst case, every theory has to stipulate something (e.g. in a lexical entry) to capture the ungrammaticality of (15b) and similar cases. The problem for the RAoAC is that it would have to stipulate that reflexivization is blocked. However, this move seems too strong as reflexivization is arguably not blocked with such a verb whether the external argument is a human or a non-human entity (cf. 16a, b):

(16)   a.   Hans hat sich durch   seine Sauferei (selbst) zerstört.
              John has SE   through his   drinking (self)   destroyed
              'John destroyed himself with his drinking.'

       b.   Die Rakete hat sich (selbst) zerstört   als   sie vom   korrekten Kurs   abkam.
              the missile has SE (self)   destroyed when she from.the right   course off.came
              'The missile destroyed itself when it got off from the right course.'

Since reflexivization of transitive predicates cannot be blocked in any reasonable way, the proposal makes the even worse prediction that all unmarked anticausatives, e.g. (17a),

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[10] The strings *John showered* or *John bathed* are possible in some Indo-European languages, but they are not reflexive but denominal, as the version *John took a bath/a shower* is always possible.

should optionally allow SE-marking as in (17d). This is so as these verbs allow non-human subjects (17b) and they allow reflexivization (17c). In order to avoid (17d), the RAoAC would have to stipulate that such verbs reflexivize only if the subject is a human agent.[11]

(17)   a.   Die Oberfläche verdreckte.
            the surface   dirtied
            'The surface got dirty.'

        b.   Das Kind/Der Regen verdreckte die Oberfläche.
            the child/the rain   dirtied   the surface
            'The child/the rain dirtied the surface.'

        c.   Der Junge verdreckte sich (beim Spielen mit Schlamm).
            the boy   dirtied   SE   (at.the playing with mud)
            'The boy dirtied himself while playing with mud.'

        d.   *Die Oberfläche verdreckte sich.
            the surface   dirtied   SE
            'The surface got dirty.'

Finally, it remains unclear why we find reflexively marked anticausatives only in languages with a SE-reflexive element. English is a case in point. As the example in (18a) shows, the English SELF-reflexive pronoun is not restricted to human (or anthropomorphic) antecedents (pace Beavers & Koontz-Garboden 2013a: 214; see also many examples in Stevens 2006); but then, why can't English use its SELF-reflexive pronoun to derive anticausatives (18b-e)?

(18)   a.   This electronic door can open/opens (itself)
        b.   His mouth/eye opened (#itself)
        c.   A gap opened (#itself)
        d.   The glass broke (#itself)
        e.   His heart broke (#itself)

Note that (18b-e) are not formally ungrammatical. Arguably, speakers reject these examples because their semantics are incompatible with the way they conceive the world. For example, (18c) without the reflexive pronoun expresses that a gap came into existence, but with reflexive pronoun, it expresses that a gap caused itself to come into existence. But gaps cannot open themselves for conceptual reasons (cf. fn. 11) because this would amount to a world where a causer causes its own existence (see Doron 2003; Alexiadou et al. 2015 for similar examples). Note next that the RAoAC proposes exactly such fallacious semantics for similar examples in languages with SE-reflexives. In German, for example, the anticausative version of *open* is obligatorily expressed with the SE-reflexive pronoun (*Ein Spalt öffnete sich* ('a gap opened SE')). To conclude, while it is well known that only SE-reflexives but never SELF-reflexives are used across languages to form marked anti-

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[11] Such a stipulation would not work either, because in a negative context, actually every transitive verb (including verbs "selecting" for human agents) easily reflexivizes with a non-human subject. Consider the English examples in (i) and (ii):

 (i) Of course, your trousers did not dirty themselves, boy! Trousers cannot dirty themselves. I think you dirtied them!
 (ii) Of course, your trousers did not wash themselves, boy! Trousers cannot wash themselves. I think your mother washed them!

 (i) and (ii) show that reflexivization is conceptually restricted, not by thematic or grammatical considerations (see also section 4).

causatives (e.g. Faltz 1985; Kemmer 1993), the RAoAC has no way to integrate this fact, because the semantic outcome of the two reflexivization strategies is identical.[12]

3 Entailment in the causative alternation

Recall that the semantic relation between a SE-marked anticausative and its causative alternate is fundamentally different under the RAoAC and under the standard account. As discussed in detail in Koontz-Garboden (2009), the standard account in (4a, b) predicts a clause headed by a causative verb to entail a clause headed by its anticausative counterpart, while under the RAoAC in (9a, b) no such entailment relation should hold. Koontz-Garboden (2009: 103) sees the prediction of the RAoAC confirmed by examples such as the Spanish one in (19), where a clause headed by a SE-marked anticausative is negated while its transitive counterpart is asserted. Examples corresponding to (19) are acceptable in many, if not all languages.

(19)   El   vaso no se rompió, lo rompiste tú.
            the glass no SE broke, it broke   you
            'The vase didn't break, you broke it.'

Negation is a downward entailing operator licensing inferences from supersets to subsets. Informally speaking, if an expression A is entailed by B, while the reverse does not hold, then A is semantically weaker than B. And if a weaker semantic expression is not satisfied (or false), any corresponding stronger expression is thereby not satisfied (or false), too. Since the standard theory of the causative alternation repeated in (20) characterizes the meaning of a causative verb and its anticausative alternate as strong and weak expressions, it predicts that the negation of an anticausative event should necessarily make the corresponding causative event false, too. And the example in (19) seems to prove this to be empirically wrong.

(20)   a. $\lambda x \lambda y [(y)$ CAUSE [BECOME [(x) *broken*]]]
            b. λx [BECOME [(x) *broken*]]

The argument goes through, however, only if the negation in (19) is a truth-functional statement about the proposition expressed by the first clause, i.e. if it is a 'logical' (or 'descriptive') use of negation. Alternatively, (19) might involve the so-called 'metalinguistic' use of negation, which does not negate the truth-value of a proposition but objects to a pragmatic aspect of the utterance (Horn 1985, and many others before and since). The different uses of negation are illustrated in (21a-c) and (22a-c) respectively:

(21)   a. John does not have four children. He has three dogs.
            b. The soup was not cold. The main dish was salty.
            c. Mary does not hate spiders. She simply doesn't care about spiders.

(22)   a. John does not have four children. He has five children.
            b. The soup is not warm. It is hot.
            c. Mary does not hate spiders. She loathes spiders.

The propositions in the first clauses of (21a-c) are logically negated, and the following clauses express that, in fact, something different holds true. In (22a-c), however, the negation does not apply to the propositions expressed by the first clauses. If John has five children, as asserted in the second clause of (22a), it is logically true that he has four children,

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[12] Finally, the RAoAC is hardly compatible with the syntactic differences between SE-marked anticausatives and canonically reflexive verbs: Schäfer (2008) and Pitteroff & Schäfer (2014) show on the basis of German that the nominative DP is merged as an internal argument only with the latter class of verbs, but it is merged in the canonical external argument position (Spec,VoiceP) with the former.

and if the soup is hot, as asserted in the second clause of (22b), it is also warm. Instead, here the negation objects to a scalar implicature that puts an upper bound to the scalar expressions used in the first clauses, the numeral *four* with its scalar implicature 'not more than four', the adjective *warm* with its scalar implicature 'not more than warm, i.e. not hot' and the verb *hate* with its scalar implicature 'not more than hate, i.e. not loathe'. In general, scalar implicatures may arise if a speaker uses a weak scalar expression instead of a stronger alternative. In such a context, the hearer may compute that the stronger alternative does not hold true, because otherwise the speaker would have used this stronger alternative (Maxim of quantity: "make your contribution as informative as required (for the current purposes of exchange)"; Horn 1985; Grice 1989: 26).[13/14] Since the standard analysis in (20a, b) assigns a stronger meaning to the causative verb than to the anticausative counterpart, the causative-anticausative pair makes up a scale under such an account. The negation in (19) might then simply express that the use of the weaker scale member as in the first clause is not appropriate and should, instead be replaced by the stronger scale member, as in the second clause.

We chose the term 'appropriate' instead of 'true' for the following reason (see e.g. Higginbotham 1997). Arguably, every inchoative change-of-state event has some cause in the actual world. However, a speaker that utters a clause headed by an anticausative either does not want to or cannot identify the cause of this event. Under such a speaker's perspective, the use of an anticausative is appropriate, while the use of the corresponding causative verb (be it in the active or in the passive Voice) would not be (cf. also Rappaport Hovav 2014). Whether it is appropriate or not is, however, a question of perspective and context; if one disagrees with the speaker in considering the use of the causative verb appropriate, 'metalinguistic' negation can be applied to the clause headed by the anticausative verb in order to object to and remove the upper bounding scalar implicature associated with this verb.

3.1 *Spanish* ningún

The decision between the RAoAC and the standard account boils down then to the question whether examples such as (19) involve a logical or a 'metalinguistic' use of negation (though actually every downward entailing context would be decisive; see section 3.6). Koontz-Garboden (2009) argues that (19) involves the logical (descriptive) use of negation. His argument builds on the well-known fact illustrated in (23a, b) that 'metalinguistic' negation does not license negative polarity items (NPIs) such as English *any*; instead, the positive polarity item *some* must be used (Fauconnier 1975; Ladusaw 1979; Horn 1985).

(23) a. John didn't manage to solve *some* of the problems, he solved them all.
      b. *John didn't manage to solve *any* of the problems, he solved them all.

Koontz-Garboden suggests on the basis of the examples in (24) that the Spanish quantifier *ningún* is the counterpart of English *any*. And since *ningún* is licensed in contexts such as (19), as shown by his example in (25) (cf. Koontz-Garboden 2009: 116; example (82a, b)), he concludes that the RAoAC is empirically correct; (25), and in turn (19), should involve

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[13] Different mechanisms have been proposed to underly (quantity) implicatures (see e.g. Chierchia et al. 2008; Geurts 2010; Chemla & Singh 2014 for discussion). For simplicity, we stay with the traditional, Gricean approach.

[14] We restrict our exemplification of 'metalinguistic' negation to predicates involving scalar implicatures because only these are relevant for our discussion of anticausatives. Metalinguistic negation can, of course, be applied in many further context (cf. Horn 1985).

the logical use of negation, and this is possible only if the causative clause does not entail its anticausative counterpart, as predicted by the RAoAC.[15]

(24) a. ¡No consiguió resolver *algún* problema, consiguió resolverlos   todos!
          no managed to.solve some problem, managed to.solve.them all
          '(S)he didn't manage to solve some problem, (s)he managed to solve them all!'

      b. * No consiguió resolver *ningún* problema, consiguió resolverlos   todos.
          no managed to.solve any   problem, managed to.solve.them all

(25) No se rompió *ningún* vaso, los   rompiste todos tú.
      no SE broke   any   glass, them broke   all   you
      'There didn't break any glass, you broke them all.'

However, the ungrammaticality of (24b) cannot be derived along the lines of English (23b). Unlike English *any*, Spanish *ningún* is not an NPI. While the sentence pair in (24b) is indeed plainly unacceptable, other examples involving clear cases of 'metalinguistic' negation such as (26a) are fully compatible with *ningún* as shown in (26b):[16]

(26) a. Luisa no odia a   los niños,   los   aborrece.
          Luisa no hates to_ACC the children, them loathe
          'Luisa doesn't hate children, she loathes them.'

      b. Luisa no odia a   *ningún* niño, los   aborrece a   todos.
          Luisa no hates to_ACC no   child, them loathes to_ACC all
          'Luisa doesn't hate any child, she loathes them all.'

(26b) shows that *ningún* is not an NPI. Rather, it is a negative quantifier denoting the empty set (as English *no*), which, in addition, triggers negative concord in its clause (e.g. Bosque 1980; Penka 2007; de Swart 2010). This assumption can account both for the unacceptability of (24b) as well as for the acceptability of (26b). To see how, consider the source of 'metalinguistic' negation in (23a) and in (26a, b). In (23a), the indefinite quantifier *some* triggers the scalar implicature 'not all'. This implicature is negated 'metalinguistically' in the first clause and corrected in the second clause. The scalar expression in (26a, b) is the verb *odiar* ('hate'), which triggers the implicature 'Luisa does not loathe children', and this implicature is first overtly negated and then corrected. But in (24b) there is simply no scalar expression available that could trigger any implicature. Exactly the same predicate is used in both clauses (*manage to solve*); there is therefore no scalar relation between the two occurences of this predicate. Besides, *ningún*, being a negative quantifier denoting the empty set, does not form a scale with *todos* ('all') either. As a consequence, the negation in (24b) must be interpreted as 'logical' negation. But then, the second clause in (24b) amounts to a plain contradiction of the first clause, hence the unacceptability.

The effect can roughly be replicated in English. The clausal pair in (27a) involving the negative quantifier *no* in the first clause and the universal quantifier *all* in the second clause amounts to a contradiction; since *no* and *all* are in an exclusive relation rather than in a scalar relation and since there are also no other elements involved which license

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[15] We want to stress here that examples like (25) are indeed fully grammatical, contrary to some speaker intuitions reported in Horvath & Siloni (2011: 2180). However, accepting such sentence pairs demands to come up with some particular context; out of the blue this might be difficult to retrieve for some speakers (see fn. 17).

[16] (ia, b) show that *odiar* (hate) and *aborrecer* (loathe) are in a scalar relationship with the former the weaker and the latter the stronger scale member.

   (i) a. Víctor odia a Rocío, pero no la aborrece. ('Víctor hates Rocío, but he doesn't loathe her')
       b. #Víctor aborrece a Rocío, pero no la odia. ('Víctor loathes Rocío, but he doesn't hate her')

'metalinguistic' negation, the negation has to be interpreted 'logically'; this explains the contradiction. The indefinite quantifier *some* in (27b), on the other hand, is in a (weak) scalar relation with the quantifier *all,* and this allows for a 'metalinguistic' use of negation. In (27c), finally, the two verbs are in a scalar relation. 'Metalinguistic' negation is licensed, and the quantifiers *no* and *all* can now be used in the first and the second clause, respectively.

(27)   a.   For no problem is it the case that John managed to solve it.
             #John actually managed to solve all of them.

        b.   For some problems, it is the case that John managed to solve them.
             John actually managed to solve all of them.

        c.   For no child is it the case that John hates it.
             John actually loathes all of them.

(24b) and (25) are then compatible with the standard account of the causative alternation after all. The verbs in the two clauses in (25) are in a scalar relationship. The SE-marked anticausative in the first clause triggers the implicature that the corresponding lexical causative is too strong. This implicature is negated 'metalinguistically' so that the second clause can correct the first clause without leading to a contradiction.[17]

However, we have not yet seen empirical support that examples such as (19) and (25) indeed involve 'metalinguistic' negation. Since *ningún* is not an NPI, we would like to see how real NPIs behave in such examples. (Horvath & Siloni 2011 argue on the bases of real negative polarity items in Spanish and Hebrew as well as the placement of verbal particles in Hungarian negated sentences that examples such as (19) involve 'metalinguistic' negation; their arguments were disputed in Beavers and Koontz-Garboden 2013a.) As we will see in the next section, the judgments on NPIs are often not as clear-cut as one would like them to be. Therefore, we will turn to other tests to determine the semantic relation between causative and anticausative pairs.[18]

3.2 Real NPIs in Spanish and beyond

The Spanish scalar particle *siquiera* (even) has a use as an NPI (e.g. Alonso-Ovalle 2009). As such, it is not licensed in the context of 'metalinguistic' negation as shown in (28).

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[17] As reported in fn. 15, some speakers have problems with such clauses. If speakers do not detect the implicature associated with the anticausative verb (e.g. in out-of-the-blue contexts), the negation cannot be interpreted 'metalinguistically' and the clausal pairs amount to a contradiction because the first clause is entailed by the second clause.

[18] Lundquist et al. (ms.) argue to have found experimental evidence that SE-marked anticausatives (and even unmarked anticausatives) in Norwegian are interpreted as semantically reflexive (at least by some speakers). For reasons of space we must direct the reader directly to this paper. While their experimental results are interesting, we do not agree with their interpretation of these results. In our opinion, their data show that i) although yes-no questions are downward entailing contexts, answering a yes-no question with the assertion of an anticausative clause allows the computation of a scalar implicature, which can be 'metalinguistically' negated and ii) SE-marked anticausatives trigger much stronger (or much more often) scalar implicatures than unmarked anticausatives. The latter would follow from the theory of scalar alternatives in Katzir (2010) (scalar alternatives can be morpho-syntactically activated) and a view on the syntax of SE-marked anticausatives in Schäfer (2008) and Alexiadou et al. (2015) (SE-marked anticausatives, although semantically inchoative, are syntactically transitive in that SE acts as an expletive external argument). The fact that even unmarked anticausatives triggered (however weaker) scalar implicatures in Norwegian (but almost none in English) is, we would suggest at this point, a priming effect; all Norwegian subjects were exposed to unmarked anticausatives and SE-marked anticausatives in the same experimental session (including a number of SE-marked semantically reflexive verbs). That is, all subjects were exposed to many SE-marked structures which primed the accessibility of a transitive syntax, and in turn a transitive, causative alternative. Since English lacks marked anticausatives, a transitive syntax for anticausatives cannot be primed and in turn a strong anticausative implicature cannot be morpho-syntactically triggered.

(28)   #Luisa no odia siquiera a   los niños, los   aborrece.
        Luisa no hates even   to_ACC the children them loathes
        'Luisa doesn't (even) hate children (at all), she loathes them.'

Below, we apply *siquiera* to our test case example (19), cf. (29). As (29a) shows, this NPI does not combine with the SE-marked anticausative in such a setup. Crucially, exactly the same holds for other inchoative predicates such as unmarked anticausatives in (29b) as well as pure, i.e. non-alternating unaccusatives (29c) and combinations of an eventive copula with an adjective (29d). Since the latter two predicates do not have lexical causative counterparts, we use a periphrastic causative construction in the second clause of (29c) and an alternative causative verb in the second clause of (29d).

(29)   a. #El   vaso no se rompió siquiera, tú   lo rompiste.
            the glass no SE broke   even   you it broke
            'The glass didn't (even) break, you broke it.'

        b. #Los   precios no aumentaron siquiera, tú   los   aumentaste.
            the   prices   no increased   even,   you   them   increased
            'The prices didn't (even) increase, you increased them.'

        c. #El   rosal   no floreció   siquiera, el   jardinero lo hizo   florecer.
            the rosebush no blossomed even,   the gardener   it made blossom
            'The rosebush didn't (even) blossom, the gardener made it blossom.'

        d. #El   niño no se puso enfermo siquiera, tú   lo infectaste.
            the child no SE get sick   even,   you him infected
            'The child didn't (even) get sick, you infected him.'

(29a–d) suggest that all the predicates in the first clause including SE-marked anticausatives denote one-place change-of-state events that are entailed by their causative counterparts in the second clause. This follows under the standard account of the causative alternation, but not under the RAoAC. The latter predicts that SE-marked anticausatives should behave like canonically reflexive verbs. However, these verbs behave differently, as exemplified in (30) for *lavarse* ('wash oneself'); they are compatible with the NPI, as predicted by (8a, b) (and wrongly by (9a, b) for marked anticausatives), since the negation can, and in fact must be interpreted 'logically'.

(30)   El niño no se lavó   siquiera, lo lavó   la niñera.
        the kid   no SE washed even   him washed the nanny
        'The kid didn't even wash, the nanny washed him.'

The evidence from NPI licensing then argues against the RAoAC and in favor of the standard analysis of the causative alternation. However, we must also mention that, in practice, this test often leads to much less clear results than one would hope. To start with, it turns out to be quite difficult to identify NPIs that actually combine in a meaningful way with change-of-state predicates as well as with canonically reflexive verbs; we failed to identify such NPIs for Russian, Czech and Italian. Further, once such an NPI is identified, speakers often do not give fully consistent judgments. The problem has already popped up in the earlier literature discussing NPIs as a test case for the RAoAC. Horvath & Siloni (2011: 2180) report judgments that suggest that the Spanish NPI *en absoluto* ('at all') and its Hebrew counterpart cannot appear in examples such as (29) but can in examples such as (30), while Beavers & Koontz-Garboden (2013a: 207) report opposite judgments for Spanish examples such as (29). Similarly, Lundquist et al. (ms.) report problems to identify Norwegian NPIs that make a clear difference between SE-marked anticausatives and canonically reflexive verbs.

   In order to empirically check how our test environment (cf. 19) behaves in the context of NPIs, we set up two questionnaires. In particular, we tested the German NPI *überhaupt* ('at all') and the Norwegian NPI *engang* ('even') in the context of one SE-marked anticausative and one SE-marked reflexive verb.[19] Our questionnaires first presented an instruction for the judgment task including some comments about possible stress patterns, because we recognized that the test dialogues might appear strange without any intonational contour. The instructions were given in English (31a). Then a dialogue with our test sentences appeared in German and Norwegian respectively (31b). After that, the subjects had to judge the acceptability of the answer by speaker B, which involved the NPI (31c). We present the two German verbs and the results in (31) and (32) and the two Norwegian verbs in (33) and (34):

(31)   a.   Consider the following short dialogue between speaker A and speaker B.
              Do you find the answer of speaker B acceptable in this context?
              (Please try whether you can make it acceptable by manipulating its stress pattern, e.g. by putting stress on 'DU'.)

        b.   *Speaker A*: Die Tür hat sich geöffnet.
                          the door has SE   opened
                          'The door opened.'
              Speaker B: Die Tür hat sich überhaupt nicht geöffnet. DU hast die Tür geöffnet!
                          the door has SE at.all   not   opened you have the door opened
                          'The door did not open at all. YOU opened the door!'

        c.   Yes, acceptable in this context: 19
              No, not acceptable in this context: 9

(32)   a.   (. . . e.g. by putting stress on 'TAGESMUTTER'.)

        b.   *Speaker A*: Annegret hat   sich gewaschen.
                           Annegret has   SE   washed
                           'Annegret washed.'
              Speaker B: Annegret hat sich überhaupt nicht gewaschen. Die TAGESMUTTER hat
                           Annegret has SE   at.all   not   washed   the nanny   has
                           sie   gewaschen!
                           her   washed
                           'Annegret did not wash (herself) at all. The nanny washed her!'

        c.   Yes, acceptable in this context: 27
              No, not acceptable in this context: 1

(33)   a.   ([. . .] e.g. by putting stress on 'DU'.)

        b.   *Speaker A*: Vinduet   åpna   seg.
                           window.DEF   opened   SE
                           'The window opened'

              Speaker B: Vinduet   åpna   seg ikke engang, DU åpna   det!
                           window.DEF opened SE   not even   you opened it
                           'The window did not open. You opened it!'

        c.   Yes, acceptable in this context: 1
              No, not acceptable in this context: 19

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[19] Many thanks to Kjell Johan Sæbø, who suggested this Norwegian NPI to us (p.c.).

(34)   a.   ([. . .] e.g. by putting stress on 'FAREN'.)

      b.   *Speaker A*: Jenta   har vaska   seg.
                         girl.DEF has washed SE
                         'The girl washed (herself)'
          Speaker B: Jenta   har ikke engang vaska   seg, FAREN   har vaska   henne!
                         girl.DEF has not even   washed SE father.DEF has washed her
                         'The girl did not wash (herself). The father washed her!'

      c.   Yes, acceptable in this context: 6
          No, not acceptable in this context: 14

The above results are surprising in so far, as the licensing of NPIs is typically characterized as a categorical phenomenon in the theoretical literature. Furthermore, the differences between the German and the Norwegian NPI are unexpected.[20] Nevertheless, there is a clear tendency in the above results: both NPIs are accepted more often with the canonically reflexive verbs than with the SE-marked anticausatives. This runs counter to the predictions made by the RAoAC (the two verb classes should both license the NPI equally) while they go into the direction predicted by the standard analysis of the causative alternation (only canonically reflexive verbs should license the NPI).

However, we would like to see further tests to show that the negation of anticausative clauses followed by the assertion of causative clauses is 'metalinguistically' interpreted. We turn to two such tests in the next sections. (For a further test besides the (non-)licensing of NPIs that shows, in our view convincingly, that the negation under consideration is indeed 'metalinguistic' negation, see Horvath & Siloni 2013: 223ff).

3.3 'Just'

Adverbs like English *just* or *only* are compatible with 'metalinguistic' negation, as we see in (35a) (e.g. Horn 1985: 142), where they make reference to the upper boundary of the scalar implicature by negating any stronger alternatives to the scalar expression used. Such adverbs are weird in the context of logical negation as in (35b) where no scalar element/upper boundary is available.

(35)   a.   John does not (just) hate dogs. He loathes them.
      b.   John does not (#just) hate dogs. He loves them/He hates cats.

The Spanish counterpart of 'just' is *solo*, the German counterpart is *einfach (nur)*. As predicted by the standard analysis of the causative alternation, these adverbs are possible only in the context of SE-marked anticausatives (and other inchoative one-place predicates of the type already tested in (29b-d) above), but not in the context of canonically reflexive verbs. We illustrate this in (36a, b) for German (see Schäfer & Vivanco 2015 for the corresponding Spanish data). Note that the English translations show the very same effect.

(36)   a.   Die Tür hat sich nicht (einfach (nur)) geöffnet. DU   hast sie geöffnet.
          the door has SE not   simply only opened. you have her opened
          'The door did not (just) open. You opened it.'

      b.   Das Kind hat sich nicht (#einfach (nur)) gewaschen. DU hast es gewaschen.
          the child has SE not   simply only   washed.   you have it washed
          'The child didn't (#just) wash, you washed him.'

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[20] A reviewer correctly observes that (33) and (34) are not perfect minimal pairs because speaker B uses the perfect in (33) and the past tense in (34). The reviewer reports own experience according to which Norwegian speakers rate examples with *engang* (even) generally relatively low but accept them more in the perfect. Consequently, the reviewer suggests that chosing the same time specification would narrow the gap between (33) and (34).

In our experience, this test gives very clear results for all Spanish and German speakers. Furthermore, the test can be transferred to other languages, too. Italian *semplicemente* ('simply') or *solo* ('only, just') provide the same results (p.c. Chiara Gianollo), and so does the counterpart of English *just* in Norwegian (p.c. Terje Lohndal) and Czech (p.c. Ivona Kucerova and Petr Biskup). Russian, on the other hand, lacks a direct counterpart of English *just* so that the test cannot be applied (p.c. Ljudmila Geist).

3.4 Concessive conjunctions

Conjunctions like English *but* also allow diagnosing 'metalinguistic' negation (e.g. Horn 1985: 166f.; König & Benndorf 1998).

English *but* or French *mais* have a *concessive* use (*but1*) and a *corrective* use (*but2*) (Anscombre & Ducrot 1977; Horn 1985; Merin 1996; König & Benndorf 1998) and these two uses are overtly distinguished in Spanish (*pero* vs. *sino que*) and German (*aber* vs. *sondern*).[21] We present the two uses with German data below (all German examples can be fully replicated in Spanish; see Schäfer & Vivanco 2015).

Corrective *but2* adds a correction to a previously negated clause, where the negation either denies an assertion or an implicature (typically introduced by an earlier utterance). If, as in (37), the negation in the first clause denies an assertion ('logical' use of negation), *but2* introduces an alternative assertion held to be true instead. If, as in (38), the negation in the first clause is 'metalinguistic' in that it negates a scalar implicature, *but2* introduces this stronger statement. Note finally that *but2* can easily be elided without any change in meaning.

(37)   Hans ist nicht reich, (sondern) er ist arm.
        Hans is not   rich, but2   he is poor
        'Pepe is not rich, but he is poor.'

(38)   Das Wasser ist nicht heiß, (sondern) es ist kochend heiß.
        the water is not hot but2   it is scalding hot
        'The water is not hot, it is scalding.'

Concessive *but1* provides a very different conversational function. It contrasts two opposed arguments and states that the second argument weights stronger than the first (or at least as strong as the first; e.g. Winterstein 2013). More abstractly, the use of concessive *but* in 'X but Y' presupposes a certain question under discussion, such that X is an argument for one way of resolving the question, Y is an argument for an opposite way of resolving the question, and Y has more weight than (or at least equal weight as) X. The question under discussion is contextually determined. In the example in (39), a reasonable question could be whether one should buy the ring or not. The first conjunct provides an argument for a positive answer, the second conjunct provides an argument for a negative answer, and the second argument is considered stronger. In (40) the question under discussion might be whether it is a good decision to marry John, with an argument against and an argument in favor of this decision contrasted in the two conjuncts.

(39)   Der Ring ist schön, aber (er ist) teuer.
        the ring is nice, but1 it is expensive
        'The ring is nice, but it is expensive.'

(40)   Hans ist nicht schön,   aber er ist intelligent.
        Hans is not beautiful, but he is intelligent
        'John is not beautiful but he is intelligent.'

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[21] Izutsu (2008) adds Swedish, Romanian and Hebrew to the list of languages with two different forms.

While 'logical' negation in the first conjunct licenses concessive *but1* and corrective *but2* (cf. 41), 'metalinguistic' negation only licenses corrective *but2* (cf. 42).[22]

(41)   Hans ist nicht schön   {aber / sondern} er ist intelligent.
         Hans is not   beautiful, but1 / but2   he is intelligent
         'Hans is not beautiful but1/but2 he is intelligent'.

(42) a. Das Wasser ist nicht heiß, #aber / sondern es ist kochend heiß.
         the water is not hot but1 / but2   it is scalding hot
         'The water is not hot, it is scalding.'

      b. Hans hat nicht einige Probleme gelöst, #aber/sondern er hat alle gelöst
         John has not some problems solved but1/but2   he has all solved
         'John did not solve some problems, he solved all of them.'

The availability of concessive *but1* can then be used as a diagnostic as to whether a sentence involves the 'logical' use or the 'metalinguistic' use of negation.

   This test reconfirms our earlier findings. The examples with SE-marked anticausatives in (43a, b) behave like other inchoative predicates, unmarked anticausatives (44a, b), pure unaccusatives (45a) and combinations of the eventive copula *werden* ('become') with an adjective (45b). They do not license concessive *but1*, i.e. they involve a 'metalinguistic' use of negation. All these verbs differ thereby from canonical reflexive verbs (46a, b), which license concessive *but1*, as they involve 'logical' negation in our test set-up.

(43) a. Das Fenster hat sich nicht geöffnet, #aber/sondern du hast es geöffnet.
         the window has SE not opened but1/but2   you have it opened
         'The window did not open, you opened it.'

      b. Das Klima hat sich nicht verändert, #aber/sondern die Menscheit hat es verändert.
         the climate has SE not change but1/but 2   the mankind has it changed
         'The climate did not change, the mankind changed the climate.'

(44) a. Die Vase ist nicht zerbrochen #aber/sondern du hast sie zerbrochen.
         the vase is not broken   but1/but2   you have it broken
         'The vase did not break, you broke it.'

      b. Das Seil ist nicht zerrissen, #aber/sondern du hast her zerrissen.
         the rope is not torn   but1/but2   you have it torn
         'The rope did not tear, you tore it.'

(45) a. Das Fenster ist nicht aufgegangen #aber/sondern du hast es geöffnet.
         the window is not open-gone   but1/but2   you have it opened
         'The window did not open, you opened it.'

      b. Ich bin nicht krank geworden, #aber/sondern du hast mich angesteckt.
         I am not sick become   but1/but2   you have me infected
         'I did not get sick, you infected me.'

(46) a. Das Kind hat sich nicht gewaschen, aber/sondern die Mutter hat es gewaschen.
         the child has SE not washed   but1/but2   the mother has it washed
         'The child did not wash, but the mother washed her.'

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[22] While it is empirically well established that 'metalinguistic' negation does not license concessive *but1*, we do not know of any formal derivation of this fact. Arguably, it relates to the argumentative frame presupposed by concessive *but1*, i.e. that it presupposes a question and coordinates two opposite suggestions to resolve the question. Since a 'metalinguistically' negated implicature and the explicit correction of the implicature do not point to opposite directions but to the same direction, the use of *but1* would basically suffer from a presupposition failure.

    b. Der Star hat sich nicht angezogen, aber/sondern sein Manager hat ihn angezogen.

       the star has SE not dressed   but1/but2   his manager has him dressed

       'The star did not dress, but his manager dressed him.'

Even though English does not overtly distinguish a corrective and a concessive conjunction (*but* can convey both uses), the above test can nevertheless be applied in this language (as well as in French, Norwegian or Italian). This is so because (as already shown in (37) and (38)) corrective clauses do not need to be introduced by a conjunction; furthermore, the corrective use of English *but* is syntactically restricted in that it cannot occur if *but* combines two full clauses. This is illustrated in (47a–c) from Horn (1985). While the first two examples allow a corrective interpretation where the first conjunct is objected to because its predicate is considered to be too weak, this is not possible in the third example where two full clauses are conjoined. Here only the concessive use of *but* is possible. The negation must then be interpreted 'logically' (cf. fn. 22) and the example is unacceptable; since everything scolding is also (at least) hot, it is contradictory to assert of anything that it is scalding but not hot.

(47)   a.   It isn't hot, but scalding.

        b.   It isn't hot, it's scalding.

        c. #It isn't hot, but it's scalding.

The test then can be applied to English anticausatives and canonically reflexive verbs; as shown in (48a, b), the two verb classes behave exactly the same as in German (or Spanish). The presence vs. absence of the SE-morpheme makes no difference.

(48)   a. The vase did not break, (#but) you broke it.

        b. The child did not wash, (but) the mother washed her.

The same holds in languages with only one conjunction *but* and SE-marked anticausative and canonically reflexive verbs such as Italian in (49a, b)[23] and Norwegian in (50a, b):[24]

(49)   a. Il bicchiere non si è rotto,   (#ma) l'hai   rotto   TU!

        the glass   not SE is broken, (but) it-have broken you

        'The glass did not break, you broke it!'

        b. Il bambino non si è lavato, (ma) l'ha   lavato la BAMBINAIA!

          the child   not SE is washed, (but) him-have washed the baby.sitter

          'The child did not wash, the baby sitter washed him!'

(50)   a. Vinduet   åpna   seg ikke, (#men) DU åpna   det!

        window.DEF opened SE not (but)   you opened it

        'The window did not open, you opened it!'

        b. Jenta   har ikke vaska   seg, (men) FAREN   har vaska   henne!

          girl.DEF has not washed SE but   father.DEF has washed   her

          'The girl did not wash, the father washed her!'

To conclude, the (non-)licensing of concessive *but1* clearly differentiates anticausative verbs (whether marked or unmarked) from canonically reflexive verbs in our test environment. The result shows that the negation in the examples involving the former class of verbs is interpreted as 'metalinguistic' negation, while it is interpreted logically with the latter class of verbs. In turn, this means that causative verbs entail their SE-marked anticausative counterparts, as predicted by the standard analysis. Under the RAoAC,

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[23] p.c. Bianca Ceppolara, Carlo Geraci, Chiara Gianollo.

[24] p.c. Terje Lohndal, Kjell Johan Sæbø. See also Lundquist et al. (ms.).

SE-marked anticausatives are predicted to behave like canonically reflexive verbs, contrary to fact.

We want to add two comments about the test involving concessive *but1*. First, in our experience, judgments about the licensing of concessive and corrective *but* are much easier and much more robust than judgments about the licensing of NPIs. Note, however, that context can have a confusing effect. In particular, one has to make sure that subjects do not manipulate the examples in order to make concessive *but1* acceptable with anticausatives. An easy way would be to add phrases like *by itself*. As will be discussed in section 5, an anticausative modified with *by itself* (and its counterparts in other languages) *entails* that the event denoted is not caused by any entity. That is, the implicature that normally comes with the use of an anticausative verb (instead of its causative counterpart) is turned into an entailment via the use of *by itself*. Consequently, negating an anticausative which is marked with *by itself* can no longer involve 'metalinguistic' negation, and concessive *but* is licensed ('The door did not open by itself, but you opened the door' is well formed across languages).[25]

Second, the test is not applicable in all languages because not all languages lexicalize the concessive and corrective meaning space the same way. So while for example Russian has two conjunctions *no* and *a*, which, on the first view, seem to be very similar to German *aber/sondern* and Spanish *pero/sino (que)*, a closer look shows that they work fundamentally differently. As Jasinskaja & Zeevat (2009) and Jasinskaja (2010; 2012) show, Russian lacks a corrective coordination altogether and the function of English concessive *but* is partly taken over by *no* and partly by *a*, whereby the latter can sometimes also mean 'and'. Without going into details, these Russian conjunctions, then, cannot be used to diagnose any semantic difference between SE-marked anticausatives and canonically reflexive verbs in our test environment.

3.5 Concessive adverbs

The concessive vs. corrective use of conjunctions like *but* can be replayed with adverbials as we exemplify below for Spanish, German (and English; see the translations of the examples).

Languages can use specific adverbs to introduce corrective and concessive clauses; these show the same distributional restrictions as concessive *but1* and corrective *but2* in the previous section. While sentences following logically negated statements allow both adverbs (51a, b), sentences following 'metalinguistically' negated statements allow adverbs introducing corrective clauses only (52a, b).

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[25] Lundquist et al. (ms.) observe another contextual effect and argue that it invalidates the test involving concessive conjunctions. They observe that, in particular contexts, concessive *but1* is bad even with canonically reflexive verbs. That is, under the context given in their example in (i), canonically reflexive verbs behave as SE-marked anticausatives in that they do not license concessive *but1* anymore. From this, they conclude that the test is not valid.

(i) Scene: Juan, who has had a large beard for the last year, steps out of his office, all clean shaven.
   Me and his girlfriend Maria is outside his office:
   Me: Oh, I see Juan has shaved.
   Maria: No, Juan hasn't shaved, (#but) I shaved him.

This criticism is not well founded. The fact that a basically pragmatic test is context dependent does not invalidate the test. Furthermore, the unacceptability of Maria's statement in (i) follows immediately from the characterization given for concessive *but1* in the literature. As mentioned above, concessive *but* presupposes a question under discussion and connects two statements that point to opposite resolvements of the question. The only reasonable question under discussion that can underly the above dialogue between the speaker and Maria is whether Juan still has a beard or not. But the context scene explicitly states that Juan does not have a beard anymore. Therefore, the use of concessive *but* in Maria's statement simply suffers from a presupposition failure.

(51)   a. Pepe no es inteligente. {Más bien /En vez de eso} es rico.
             Pepe not is intelligent more well /in time of that is rich

         b. Peter ist nicht intelligent. Vielmehr   /stattdessen ist er reich.
             Peter is not   intelligent much.more /instead.this is he rich
             'Peter is not intelligent. Rather/Instead he is rich.'

(52)   a. El agua no está templada. {Más bien /#En vez de eso} está caliente.
             the water no is   warm   more well /in   time of that is   hot

         b. Das Wasser ist nicht warm. Vielmehr   /#Stattdessen ist es heiß.
             the water no is   warm much.more /instead.this   is it hot
             'The water is not warm. Rather/#Instead it is hot.'

Applied to the negated test sentences familiar from the last section, we see that the negation qualifies, once again, as 'metalinguistic' negation in the case of SE-marked anticausatives (54a, b), and as 'logical' negation in the case of canonically reflexive verbs (55a, b).

(54)   a. El vaso no se rompió. {Más bien /#En vez de eso} tú   lo rompiste.
             the glass no SE broke   more well /in   time of that you it broke
             'The glass did not break. Rather/#Instead you broke it.'

         b. Die Tür hat sich nicht geöffnet. Vielmehr   /#Stattdessen hast du sie geöffnet.
             the door has SE not   opened. much.more /instead.this   have you her opened
             'The door did not open. Rather/#Instead you opened it.'

(55)   a. El niño no se ha lavado. {Más bien /En vez de eso} lo ha lavado la niñera.
             the child not SE has washed more well /in time of that him has washed the nanny

         b. Das Kind hat sich nicht gewaschen.
             the child has SE   not   washed.
             Vielmehr /Stattdessen hat die Tagesmutter es gewaschen.
             much.more /instead.this has the nanny   it washed
             'The child didn't wash. Rather/Instead the nanny washed him.'

The test provides the same result in other languages. The relevant Italian adverbs are *invece* ('instead') and *piuttosto* ('rather') (p.c. Chiara Gianollo), and the relevant Czech adverbs are *místo toho* ('instead') and *spíš* ('rather') (p.c. Ivona Kucerova and Petr Biskup). Norwegian, however, lacks a good translation of English *rather* (p.c. Terje Lohndal). And similarly to the case of conjunctions, Russian seems to have counterparts of *rather* and *instead* which, however, have a different distribution and cannot be used in our test environment (p.c. Ljudmila Geist).

3.6 A further downward entailing context: Conditionals

So far, we have tested the entailment relation between (SE-marked) anticausatives and their causative counterparts via negation. Negation, being a downward entailing operator, licenses inferences from semantically weaker expressions (supersets) to semantically stronger expressions (subsets): From 'John does not run' we can infer 'John does not run fast'. As we have seen, however, the negation test faces a problem, namely the property of natural language negation to allow for a 'metalinguistic' use. Weak scalar predicates can be 'metalinguistically' negated and, at the same time, their stronger alternatives can be asserted in the subsequent discourse ('John does not (just) run, he runs fast'). In the previous sections, we spent quite some time to find ways to distinguish between 'logical' and 'metalinguistic' negation. As we showed, those diagnostics exist and they derive a

consistent and clear picture. However, every other downward entailing expression should make our point. In this section, we apply, as a final diagnostic, conditional clauses, whose antecedent clauses are downward entailing: From 'If I eat a pizza, I get sick' one can infer 'If I eat a pizza with anchovies, I get sick'.[26]

We present the test setup below in Spanish. A test sentence has two parts, cf. (56a, b). The conditional sentence in (56a) states that whenever an event of the type φ-1 denoted by a VP headed by a SE-marked anticausative occurs, then a result of the type ω denoted by the VP in the embedded consequent occurs. This conditional is followed in (56b) by the assertion of an event φ-2 expressed by a VP headed by the causative counterpart of the verb used in the conditional sentence before, and the negation of any episodic event of the type ω. The test question then is whether the episodical clause is logically compatible with the preceding conditional. If yes, there is no entailment relation between the conditional clause headed by the anticausative verb and the expisodic clause headed by the causative verb; if no, there is such an entailment relation. It turns out that (56a) and (56b) are not compatible with each other. (56b) makes sentence (56a) necessarily false (or alternatively, provides a counterexample to the generalization expressed by the conditional). It follows that the sentence headed by the causative verb entails the sentence headed by the corresponding anticausative verb.

(56)   a. Siempre que se hunde un barco, el gobierno envía un helicóptero de rescate.
          always that SE sinks a boat, the goverment sends a helicopter of rescue
          'Whenever a boat sinks, the goverment sends a recue helicopter.'

       b. Hoy, unos terroristas han hundido un barco y el gobierno no ha enviado helicópteros
          today, some terrorists have sunk a ship and the goverment not has sent helicopters
          'Today, some terrorists sank a ship and the goverment hasn't sent any helicopter.'

If we apply the test to canonically reflexive verbs as in (57a) and their transitive-disjoint counterparts as in (57b), we get the opposite result; the episodic sentence in the b-clause and the conditional in the a-clause can both be true in the same context. This shows that there is no entailment relation between the transitive disjoint use and the reflexive use of canonically reflexive verbs.

(57)   a. Siempre que Juan se afeita, María está contenta
          always that Juan SE shaves María is happy
          'Whenever John shaves, Mary is happy.'

       b. Hoy el barbero ha afeitado a Juan, y María no está contenta
          today the barber has shaved to Juan and María not is happy
          'Today the barber shaved John, and Mary is not happy.'

This test should be easily applicable across languages.[27] To substantiate our judgments of the Spanish examples above, we applied it to German, Italian and Norwegian via online questionnaires as well as to Russian and Czech via email correspondence with a number of native speakers. We tested two SE-marked anticausative verbs and two canonically

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[26] We thank Benjamin Spector, who suggested this test to us.
[27] Once again, it is important that the anticausative in the restrictive clause is not (silently or overtly) modified with 'by itself'. Under such a modification, the judgments are reversed for reasons discussed in section 5. The same holds if the SE-marker is combined with an intensifier that enforces a reflexive construal, as discussed in section 4.

reflexive verbs in each language. We present below only one test sentence and its result since the results were basically identical for verbs of the same type.

   All sentences were preceded by the instruction in (58), and were followed by the two answers in (59a, b); speakers had to choose one of the given answers.

(58)   Assume that sentence b) is true. Does b) make a) necessarily false or not?

(59)   i) if b) is true, then a) is necessarily false.
        ii) if b) is true, then a) is not necessarily false.

Test sentence pairs are presented in (60) and (61) for German, in (62) and (63) for Norwegian, in (64) and (65) for Italian, in (66) and (67) for Russian and in (68) and (69) for Czech. We illustrate the test in each language first for a SE-maked anticausative verb, and then for a SE-reflexive verb. In the c-lines, we give the number of speakers that answered with (59i) and (59ii), respectively.

(60)   a. Immer wenn sich der Brotpreis   erhöht, demonstrieren die Leute   auf der Strasse.
            always when SE the bead.prices rise,   demonstrate   the people at the street
            'Whenever the price for bread rises, people demonstrate on the streets.'

        b. Heute hat die Regierung   den Brotpreis   erhöht und niemand hat auf der Strasse demonstriert.
            today has the government the bread.price raised, and no.one   has on the street demonstrated
            'Today the government raised the price for bread and no one demonstrated on the streets.'

        c. *Results: necessarily false: 20; not necessarily false: 8*

(61)   a. Immer wenn Peter sich wäscht, ist seine Mutter glücklich.
            always when Peter SE   washes, is his   mother happy
            'Whenever little Peter washes (himself), his mother his happy.'

        b. Heute hat die Tagesmutter Peter gewaschen und seine Mutter war nicht glücklich.
            today has the nanny   Peter washed   and his   mother was not   happy
            'Today, the nanny washed little Peter, and his mother was not happy.'

        c. *Results: necessarily false: 0; not necessarily false: 28*

(62)   a. Hver gang døren   åpner seg, går   en alarm av.
            each time the.door open SE, goes an alarm off
            'Each time the door opens, an alarm starts.'

        b. I dag   åpnet Peter døren,   og ingen alarm gikk av.
            in today opened Peter the.door, and no   alarm went off
            'Today, Peter opened the door, and no alarm started.'

        c. *Results: necessarily false: 15; not necessarily false: 5*

(63)   a. Når   gutten   vasker seg, er moren   fornøyd.
            when the.boy washes SE, is the.mother happy
            'When the boy washes, the mother is happy.'

        b. I dag   har dagmammaen vasket ham, og moren   var ikke fornøyd.
            in today has the.nanny   washed him and the.mother was not   happy
            'Today, the nanny washed him, and the mother was not happy.'

        c. *Results: necessarily false: 0; not necessarily false: 20*

(64) a. Tutte le   volte che un vetro si rompe, si arrabbia   il   boss.
          all   the times that a glass SE breaks, SE angry.gets the boss
          'Whenever a glass breaks, the boss gets angry.'

      b. Oggi Maria ha rotto   un vetro, e   il boss non si è arrabbiato
          today Maria has broken a glass, and the boss not SE is angry.got
          'Today, Mary broke a glass, and the boss did not get angry.'

      c. *Results: necessarily false: 12; not necessarily false: 5*

(65) a. Tutte le   volte che il bambino si lava,   la mamma è soddisfatta.
          all   the times that the child   SE washes, the mother is happy
          'Whenever the child washes, the mother is happy.'

      b. Oggi il bambino l'ha   lavato la bambinaia, e la mamma non era soddisfatta.
          today the child   him-has washed the baby-sitter and the mama   not was happy
          'Today, the babysitter washed the child, and the mother was not happy.'

      c. *Results: necessarily false: 1; not necessarily false: 16*

(66) a. Esli tseny povyšajuts'a, ljudi vyxodjat   na ulitsy.
          if   prices rise.SE,   people demonstrate on street
          'If the prices rise, people demonstrate on the street.'

      b. Segodnja pravitel'stvo povysilo tseny, no ljudi ne vyšli   na ulitsy.
          today   government raised   prices but people not demonstrated on street
          Today the government raised the prices, but no one demonstrated on the street.

      c. *Results: necessarily false: 9; not necessarily false: 3*

(67) a. Esli Ivan breets'a, Marija sčastliva.
          if   Ivan shave.SE Maria happy
          'If John shaves, Mary is happy.'

      b. Segodnja parikmaxer pobril Ivana,   no   Marija ne   sčastliva.
          today   barber   shaved Ivan   and Maria not happy
          'Today, the barber shaved John and Mary is not happy'

      c. Results: necessarily false: 0; not necessarily false: 12

(68) a. Kdykoli   se zvýší /   zvyšují   ceny, lidé   protestují.
          whenever SE rise.PERF / rise-IMPERF prices people   protest
          'If the prices rise, the people protest.'

      b. Dnes vláda   zvýšila   ceny, a   lidé   neprotestovali.
          today government raised.PERF prices and people non-protested
          'Today, the government raised the prices, and the people did not protest.'

      c. *Results: necessarily false: 3; not necessarily false: 0*

(69) a. Kdykoli   se Petr holí/oholí,,   Marie je šťastná.
          whenever SE Petr IMPERF.shaves/PERF.shaves, Marie is happy
          'Whenever Peter shaves, Mary is happy.'

      b. Dnes Petra   oholil   holič   a   Marie nebyla šťastná.
          today Petr.ACC shaved.PERF barber.NOM and Marie wasn't happy
          'Today, the barber shaved Peter, and Mary was not happy.'

      c. *Results: necessarily false: 0; not necessarily false: 3*

The data show that SE-marked anticausatives are interpreted fundamentally differently than canonically reflexive verbs in all the languages under consideration. The results of the latter class are fully compatible with their reflexive semantics; canonically reflexive verbs are not entailed by their transitive-disjoint counterparts. The results of the SE-marked anticausatives are definitely not compatible with the RAoAC. In fact, 70% of the speakers clearly judge these examples as contradictions, as predicted under the standard analysis.

Does this mean that about 30% of our speakers interpret SE-marked anticausatives as semantically reflexive so that they are not entailed by their causative counterparts? We do not think so. We rather believe that these 30% of 'no' answers are due to an imprecise experimental design; as one German speaker (that we talked to after the online questionnaire) and the three Russian speakers (via email) explained, they were aware of the fact that the b-sentence in (60) and (66b) were not in accordance with the statement in the a-sentences. However, they applied a weaker truth measure and considered the b-sentences as exception to the generalization stated in a-sentence, so that the a-sentence still expresses a true generalization. If this explanation can be generalized, then most, if not all, speakers felt that a- and b-sentences are not compatible in the case of SE-marked anticausatives and their causative counterparts, as predicted by the standard theory.[28]

3.7 SE-marked anticausatives followed by causatives

Since, under the RAoAC, a clause headed by a SE-marked anticausative expresses that the theme of the change-of-state event is also the effector of this event, this analysis seems to predict that a sentence headed by a SE-marked anticausative cannot be followed by a sentence headed by the corresponding causative with a distinct effector subject. However, as observed by Koontz-Garboden (2009) himself, such examples can be found, as e.g. in (70) below.

(70)   Se   rompió el   vaso. De hecho, Juan lo   rompió.
         SE   broke   the   glass of fact   Juan it   broke
         'The glass broke. In fact, Juan broke it.'

Koontz-Garboden (2009: 104f.) correctly points out that this prediction only holds under the assumption that one causing event cannot have more than one single effector. He argues that this is not necessarily the case. In particular, he proposes that one event can have more than one effector as long as the two effectors are sufficiently different, i.e. if they are not both agents, causers, or instruments.[29] In (70), the breaking event is then related to two effectors, the first being a non-agentive one (the glass) and the second an agentive one (Juan).

As stated, this hypothesis makes wrong predictions. On the one hand, SE-anticausatives can very well be followed by causative clauses with non-agentive subjects as in (71a, b); in order to account for these examples, one would have to say that 'the glass' in (70) is an ontologically different effector than the natural forces in (71a, b).

(71)   a. Se rompió el   vaso. De hecho, el   terremoto lo rompió.
             SE broke   the   glass of fact   the   earthquake it broke
             'The glass broke. In fact, the earthquake broke it.'

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[28] As Benjamin Spector (p.c.) pointed out to us, some speakers might also have computed a scalar implicature in the antecedent of the conditional even though this is a downward entailing context.

[29] Koontz-Garboden (2009) cites Piñón (2001: fn. 9) as a source for this idea. However, Piñón actually restricts his proposal to agents and instruments.

b. La puerta se abrió. De hecho, el (golpe de) viento abrió   la puerta.
    the door SE opened of fact   the gust of wind opened the door
    'The door opened. In fact, the (gust of) wind opened the door.'

But the idea also leaves without an explanation why the following examples are rather bad:[30]

(72) a. #La bomba destruyó el edificio. De hecho, el ejército destruyó el edificio.
          the bomb destroyed the building of fact   the army   destroyed the building
          'The bomb destroyed the building. In fact, the army destroyed the building'.

      b. #La bala lo mató. De hecho, el policía   lo   mató.
          the bullet him killed of fact   the policeman him killed
          'The bullet killed him. In fact, the policeman killed him'.

      c. #El hombre se mató. De hecho, la bala   lo   mató.
          the man   SE killed of fact   the bullet him killed
          'The man killed himself. In fact, the bullet killed him'.

Once we consider that anticausatives form a scale with their corresponding causative verb, an alternative explanation for examples such as (70) comes to mind. Spanish adverbial phrases such as *de hecho*, English *in fact* or German *genau genommen* introduce continuing sentences which enrich the first sentence with further information. The example in (70) works quite similarly to the corresponding example involving 'metalinguistic' negation in (19) above. While 'metalinguistic' negation in (19) cancels the scalar implicature associated with the anticausative verb, so that the following causative clause can be asserted without leading to a contradiction, a similar job is done by *de hecho* in (70) (Winterstein 2008 calls phrases like *in fact* 'reformulative connectives'). This connective allows adding to the weak anticausative predication the stronger causative variant. This view fits with the observation that these phrases play the same role as 'metalinguistic' negation (cf. 73) rather than the one of 'logical' negation (cf. 74):

(73) Luisa odia a los niños.   De hecho, los   aborrece.
      Luisa hates to the children of fact   them loathes
      'Luisa hates children. In fact, she loathes them.

(74) #Pepe es rico. De hecho, es inteligente.
      Pepe is rich of fact   is intelligent
      'Pepe is rich. In fact, he is intelligent.'

3.8 Further entailments

The RAoAC in (8a, b) makes the prediction that there should be no synonymous pairs of SE-marked anticausative verbs on the one hand and bare unaccusative verbs (i.e. those lacking a causative version) or combinations of an eventive copula ('become') with an

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[30] As a reviewer correctly points out, this idea also predicts pairs of sentences such as in (i) to be acceptable. Under the standard semantics of the causative alternation and the observation that adverbials such as *de hecho* need to add further information, the unacceptability of (i) follows because the clause headed by the anticausative verb carries less information than the clause headed by the causative verb.

(i) #Juan/ el terremoto   rompió el cristal. De hecho, el cristal se rompió.
     Juan/ the earthquake broke the glass of fact,   the glass SE broke
     '#Juan/the earthquake broke the glass. In fact the glass broke.'

adjective on the other hand. For practical reasons, we illustrate both phenomena with German examples, showing that the prediction is wrong.[31]

The two verbs *sich öffnen* and *aufgehen* mean basically the same ('to go open'). They differ, however, in that the former has a causative counterpart while the latter lacks a lexical causative variant.

(75)   a. Die Tür   öffnete sich.
          the door opened SE
          'The door opened.'

       b. Die   Tür   ging auf.
          the   door went open
          'The door went open.'

As the unacceptability of concessive *aber* (*but1*) in (76) shows, both verbs are entailed by the causative verb *öffnen* (to open):

(76)   Die Tür {hat sich   nicht geöffnet/ist nicht aufgegangen},
       the door has SE   not   opened/is not   open.gone
       #aber/sondern Peter hat   sie   geöffnet.
       but1/but2   Peter has she   opened
       'The door did not open, (*but) Peter opened it.'

Crucially, the two verbs are fully synonymous; however, the version of the RAoAC proposed by Koontz-Garboden (2009) would predict that the SE-marked anticausative denotes a reflexive causative event and the simple unaccusative verb denotes a one-place inchoative event such that the former should entail the latter. Consequently, corrective *but1* ('sondern') should be licensed in (77), which is not the case.

(77)   #Die Tür ist nicht aufgegangen, aber/sondern sie hat sich geöffnet.
          the door is not   open.gone   but1/but2   she has SE   opened
          'The door did not go open, (but) it opened.'

Combinations of an eventive copula with an adjective as in (78a) clearly express a one-place change of state event. The very same adjectival root can, however, also form the SE-marked anticausative verb in (78b). As (79) shows, the two constructions are synonymous; since the former arguably expresses a simple one-place change of state event, we can conclude that the SE-marked anticausative does so, too.

(78)   a. Das Klima   wurde   anders.
          the climate became different

       b. Das Klima   änderte sich.
          the climate   changed SE
          'The climate changed.'

(79)   #Das Klima   ist nicht anders   geworden, aber/sondern es hat sich verändert.
          the climate is not   different become,   but1/but2   it has SE   changed
          'The climate did not get different, (but) it changed.'

_____

[31] Note that there are more German verbal pairs of the first type, and almost every deadjectival change-of-state verb has a corresponding 'become + adjective' variant in German. However, in other languages, the combination 'become + adjective' is often, though not always, blocked by the corresponding deadjectival verbs. The reason for this difference between German and many other languages is unknown to us. Note finally that optionally marked anticausatives available in many languages make the same point if we reject the option of zero-reflexivization (cf. fn. 9 and the main text following this footnote).

4 Is a reflexive reading impossible for SE-marked anticausatives?

We have argued against the reflexivization analysis of SE-marked anticausatives, proposing that they have inchoative semantics along the lines in (5b). But can't strings such as (4b), at least optionally, have a reflexive construal derived from (5a) via reflexivization/a bound anaphor in object position?

  This option cannot be blocked by formal grammar because reflexivization is a productive process formally available for all transitive verbs (cf. already Horvath & Siloni 2011: 218, who point out that reflexive verb formation is productive, at least in Romance languages). Instead, we think that it is blocked by conceptual considerations: such a construal is as odd as the English *The glass broke itself* (see the discussion in section 2). But in specific contexts, if the nonsensical construal is negated (cf. fn. 11) and/or enforced by an intensifier (e.g. Spanish *sí mismo* 'itself'), it becomes available as the licensing of *but1* and *but2* in (80) shows. Note that (80) has nothing to do with anticausativization, since unmarked anticausatives as in (3b) enter the reflexive construal under such conditions, too, cf. (81).

(80)   El   vaso no se rompió a *sí mismo,* lógicamente, {pero /sino que} tú   lo   rompiste.
       the glass no SE broke to himself logically   but1 /but2 that you him broke
       'The glass didn't break itself, logically, but1/but2 you broke it.'

(81)   Los precios no se aumentaron a   *sí mismos*,   lógicamente,
       the prices no SE increased   to themselves logically
       {pero/sino que} Ana los   aumentó.
       but1/but2 that Ana them   increased
       'The prices didn't increase themselves, logically, but1/but2 Ana increased them.'

The judgments in (80) and (81) hold in other languages, too (e.g. in German and Italian).[32] Note further that all other diagnostics discussed above such as the licensing of NPIs, the licensing of concessive vs. corrective conjunctions and adverbs or conditionals also lead to the opposite result if the SE-reflexive is combinbed with an intensifier. We exemplify this with one further Spanish sentence pair involving the corrective vs. concessive adverbs 'rather' vs. 'instead'.

(82)   a. El   vaso no se rompió. {Más bien / *En vez de eso} tú   lo rompiste.
           the glass no SE broke   more well/ in   time of that you it broke
           'The glass did not break. Rather/*Instead you broke it.'

       b. El   vaso no se rompió a sí mismo. {Más bien / En vez de eso} tú   lo rompiste.
           the glass no SE broke   to itself   more well/ in time of that you it broke
           'The glass did not break itself. Rather/Instead you broke it.'

Note, finally, that we do not claim that adding an intensifier is *the only way* how a semantically reflexive construal can emerge with a SE-marked anticausative. Intensifiers are just one way to enforce a semantically reflexive construal. Other options are devices which, indeed, can act on themselves and, thereby, cause a change in one of their properties; with an automatic door, designed to cause itself to go open, or a computer program that can shut down itself, the intensifier is not necessary to receive a semantically reflexive construal.[33] The same holds for human DPs as in (83b).[34]

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[32] Norwegian intensifiers do not trigger the same effect (at least not obligatorily). There seem to be restrictions on the Norwegian intensifier related to non-human antecedents that we have not further investigated.

[33] This holds for Romance languages and German, where the simple SE-reflexive pronoun is not restricted to inherently or naturally reflexive verbs but appears with naturally disjoint verbs in a reflexive construal, too.

[34] As mentioned in Horvath & Siloni (2013), the need/desire to integrate an NPI can also enforce a semantically reflexive reading of SE-marked anticausatives in the absence of an intensifier; this is possible because the reflexive reading is negated, and, therefore, not in conflict with world knowledge.

(83)   a. Las tostadas se quemaron.
              the toasts   SE burnt (inchoative)
              'The toasts got burned.'

          b. El niño se quemó.
              the child SE burnt
              'The kid got burnt/burnt itself.'

5 The licensing of *by-itself*

In this last section, we address a final prominent argument brought up in favor of the RAoAC and originally due to Chierchia (2004), namely the licensing of *by itself* and its counterparts in other languages (e.g. Italian *da sé,* Spanish *sí mismo,* German *von selbst*)

Chierchia's argument runs as follows (see also Koontz-Garboden 2009). In (84), *da sé* is successfully bound by an agent subject. In (85), the subject is not an agent, and modification with *da sé* is claimed to be bad. Finally, in passives such as (86) the derived theme subject cannot license *da sé.*

(84)   Gianni mi ha picchiato da sé.
           Gianni me has hit   by himself
           'Gianni hit me by himself.'

(85) (*) Gianni conosce il   latino/ ha sudato   da sé.
           Gianni knows   the Latin/ has sweated by himself
           'Gianni knows Latin/sweat by himself.'

(86)   * La porta è stata aperta da sé.
             the door is been opened by itself
             'The door was opened by itself.'

Chierchia concludes from this set of data that *da sé* must be bound by a structural subject, and that this subject must have the theta role agent or causer. Furthermore, he proposes that this phrase expresses that its antecedent is the *sole causer/only agent* of the event expressed by the lexical verb. Crucially, anticausatives are compatible with *da sé,* cf. (87). Chierchia takes this as a confirmation for the RAoAC: since (87) is good, *la porta,* the antecedent of *da sé,* must be a causer (in addition of being a theme).

(87)   La porta si è aperta da sé.
           the door SE is opened by itself
           'The door opened by itself.'

Why should the antecedent of *da sé* be the *sole* causer? This would follow from the observation that a simple anticausative clause can be followed by a clause introducing a (further) causer for the inchoative event, while this is impossible if the anticausative is modified with *da sé,* as illustrated for English in (88a, b).

(88)   a. The door opened. In fact, I opened the door.
          b. The door opened by itself. #In fact, I opened the door.

A number of authors have argued against the idea that the distribution of *da sé* and its counterparts in other languages should be taken as an argument in favor of the RAoAC, in particular that it can be used to diagnose the presence of an agent or causer (see Reinhart 2000: 28; Schäfer 2007; Horvath & Siloni 2011; 2013). Recently, Alexiadou et al. (2015) explicitly argued that neither the distribution nor the interpretation of these phrases fit the above characterization given by Chierchia (2004); neither is the antecedent of *da sé* necessarily an agent or causer, nor is it necessarily the *sole* causer. Before we turn to some

of their examples showing this, let us first consider how the standard theory of the causative alternation could account for the above data.

Let us start with the contrast in (88a, b). As discussed above, under the standard analysis of the causative alternation the two verbal phrases are ordered on a scale. Furthermore, the anticausative verb, being the weaker scalar item, triggers the implicature that the stronger item is not true. Scalar implicatures (and more generally all conversational implicatures) can be computed on top of an utterance, but they are not asserted and, therefore, not explicitly endorsed by the speaker. We have already seen in section 3.5 that sentences beginning with *in fact* are used to cancel an implicature associated with a scalar expression used in the preceding clause. We suggest then that *in fact* in (88a) cancels the scalar implicature associated with the anticausative verb in the first clause, while *by itself* in (88b) reinforces the effect of this implicature as an entailment. And an entailment, in contrast to an implicature, cannot be cancelled (cf. e.g. Sadock 1978; Grice 1989; Winterstein 2013 about canceling and reinforcing implicatures).

Next, how can a standard theory account for the (non-)licensing of *by itself* in transitive, passive and anticausative clauses, repeated below for English?

(89)   a. *The door was broken by itself.
       b. The door broke by itself.
       c. John broke the door by himself.

As an important remark, note that *by itself* in English (as well as in Italian or Spanish, but not in German, for example) has two interpretations: one is roughly 'alone' (or 'unaccompanied' as in *Yesterday I went to the cinema by myself*). As pointed out by Levin and Rappaport Hovav (1995: 88), this reading is not relevant for the discussion of anticausatives. We follow Alexiadou et al. (2015) who label the second reading of *by itself* (the one relevant for the discussion of anticausatives) as 'no particular cause'. As these authors propose, by using anaphoric *by itself* under this second reading, a speaker asserts that nobody and nothing can be identified that (directly or indirectly) caused the formal antecedent of *by itself* to participate in the event expressed by the predicate. (89c) expresses then that *no one and nothing can be identified by the speaker to have forced or caused John to break the door.* (89b) expresses that *nothing can be identified as responsible for the breaking of the door.* A speaker uttering (89b) indicates that she rejects the possibility that there is any particular causer or agent that brought about the opening of the door. In other words, modifying the anticausative in (89b) with *by itself* stresses that the use of the anticausative is the strongest statement the speaker is willing to make and that a causative use (passive or active, i.e. involving an external argument) of the same predicate is, in the opinion of the speaker, not justified. Under this view, *by itself* does not identify a causer but rejects the participation of a causer. Furthermore, *by itself* asserts what the plain use of an anticausative verb implicates. In (89a), finally, *by itself* has the same semantic contribution as in (89b), but now a contradiction arises because of the presence of the implicit external argument that denotes exactly what *by itself* denies, i.e. the passive semantics contain an implicit agent or causer, while *by itself* denies the presence of such an entity.[35]

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[35] This view is reconfirmed by the following particularity in German. German *von selbst* does not involve a reflexive pronoun such as Italian *sé* or English *itself* but just an intensifier *selbst* ('self'), and, therefore, does not formally agree with its antecedent. German passives as in (i) license then *von selbst,* because this phrase can take the implicit external argument as its semantic antecedent, or better, as its associate. In other languages, this is impossible, because the implicit argument of passives cannot antecede a reflexive pronoun (Schäfer 2012).

(i) Das wurde von selbst erkannt,   niemand musste sie   darauf hinweisen.
     This was   by self   recognized, no.one   had   them on.it   indicate
     'People recognized that by themselves, no one had indicate it to them.'

If the use of *by itself* asserts that "no causer can be identified", then, arguably, modification of a predicate with *by itself* is possible only if a causative use of this predicate involving such a causer is a conceptually or contextually motivated option. With anticausatives this precondition is conceptually fulfilled because, by definition, these verbs are "lexically" associated with a stronger scalar item, i.e. the lexical causative alternate. This is so, whether the anticausative predicate is marked or unmarked, and in fact, across languages, both types of causatives license *by itself* smoothly (cf. Alexiadou et al. 2006; Schäfer 2008; Horvath & Siloni 2013).

With predicates that lack a causative transitive counterpart, *by itself* is, as expected, more difficult to use. This is the case with verbs that are already transitive such as the verb in (85) above, which is repeated with such a licensing context in (90) (and note that (84) is actually marked in out-of-the-blue contexts). This is also the case with inchoative structures that lack a lexical causative counterpart, such as so-called internally caused (or pure) unaccusative verbs such as *blossom* or eventive copula constructions, the latter exemplified in (91a, b). However, once it is contextually established that the events expressed by such predicates could, in principle, be caused, then the exclusion of such causation via the use of *by itself* becomes an option (see for this point also Schäfer 2007; Horvath & Siloni 2013: 220). Crucially, these example (and further examples in Alexiadou et al. 2015) make it clear that the antecedent of *by itself* can have other thematic roles than agent or causer.

(90)   Maria ha dovuto suggerire la   risposta? No, Gianni sapeva la risposta da sé.
        Mary has need   suggest   the answer? no, Gianni knew   the answer by SE
        'Did Mary have to suggest the answer? No, Gianni knew the answer by himself.'

(91)   a. Non devi   asciugarli. Diventeranno asciutti da sé.
           no   need.you towel.   become.they   dry   by SE
           "You do not have to dry the dishes with a towel. They become dry by
           themselves.'

        b. Non innervosire   Maria! Diventa   gia'   nervosa da sé!
           not make.nervous Mary! become.she already nervous by SE
           'Do not make Mary nervous! She gets nervous already by herself.'

Finally, Alexiadou et al. (2015) show that even in cases where *by itself* takes an agent or causer as its antecedent, this agent/causer does not have to be the *sole* agent/causer of the event. This is exemplified with the Italian example below which expresses that no one or nothing can be identified that caused Gianni to participate in the carrying event; he did it of his free will.[36]

(92)   Non ho   dovuto pregare troppo Gianni. A dire il   vero,
        not have.1SG must   ask   a.lot   Gianni. to say the truth,
        ha portato il   pianoforte DA SÉ   insieme agli altri al secondo piano.
        has carried the piano   by himself with   others at   the second floor
        'I did not have to beg Gianni a lot. To tell the truth, he carried by himself the
        piano to the second floor together with others.'

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[36] This example can be replicated in German and Spanish. Note that the second reading of *da sé* (alone) would trigger a contradiction in this example. In fact, one of our Italian informants rejected (92); for him, then, this second reading is too prominent. In German, where *von selbst* (by itself) lacks a reading 'alone', this complication does not arise. Note finally that only the nominative subject but not the comitative phrase antecedes *da sé* in (92) as can be seen in the following example, where the 'by itself' phrase agrees with the first person singular subject.

(i)   A dire il   vero, ho   portato il   pianoforte DA ME insieme agli altri   al secondo piano.
      to say the truth, have.1sg carried the piano   by ME together with others at second   floor
      'To say the truth, I carried by myself the piano together with others to the second floor.'

6 Conclusions

We argued on the bases of conceptual and empirical arguments that the reflexivization analysis of anticausatives (whether they are reflexively marked or plain, i.e. unmarked) cannot be upheld, thereby reconfirming a conclusion already defended in Horvath & Siloni (2011; 2013). All these arguments are, on the other hand, compatible with the standard view on the semantics of the causative alternation according to which anticausatives express one-place inchoative events and their lexical causative counterparts introduce a further argument, which causes the anticausative event. In particular, our empirical tests showed that a clause headed by a causative verb entails the clause headed by the corresponding anticausative verb, i.e. that causatives and anticausatives form a scale. This scalar relationship can explain many arguments brought forward in favor of the RAoAC; a clause headed by an anticausative verb can be negated, and a clause headed by the corresponding causative verb can be asserted at the same time, because the negation involved in the former clause necessarily has a 'metalinguistic' use, where the upper scalar implicature associated with anticausative verb is negated. Similarly, *by itself* appears happily with anticausatives, where this phrase expresses as an entailment what is otherwise just implied by an anticausative verb. However, we also stressed that the morphological string of a SE-marked anticausative verb can be forced into a semantically reflexive construal (either by conceptual or by grammatical clues). Our results reinforce the standard view that SE-morphemes used in many Indo-European languages to mark verbal derivations do not always act as an anaphor or reflexivizer.

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