Anticausativization

Andrew Koontz-Garboden
The University of Manchester
September, 2008; To appear in *Natural Language and Linguistic Theory*

Abstract

This paper provides a comprehensive review and analysis of the facts of anticausativization, the phenomenon whereby an inchoative verb is morphologically derived from its causative counterpart (e.g., Spanish *romper* 'break (trans)' versus *romperse* 'break (intrans)'). It treats the phenomenon as reflexivization (Chierchia, 2004), providing a number of new arguments for this kind of treatment, and showing how it, as opposed to alternatives in the literature, accounts for the wide range of data reviewed. In addition, the facts laid out show that inchoatives derived from causatives retain the CAUSE operator present in the lexical semantic representation of the causative verb from which they are derived, contrary to the widely held view of anticausativization as a process that deletes a CAUSE operator. In this way, it is shown that anticausativization does not provide an argument against the Monotonicity Hypothesis, the idea that word formation operations do not delete operators from lexical semantic representations.

1 Introduction

The causative/inchoative alternation, illustrated by the English data in (1), has long been fertile ground for the study of the interface between lexical semantics, morphology, and syntax from a broad range of theoretical perspectives (Lakoff, 1965; Hall, 1965; Fillmore, 1970; Smith, 1970; Nedjalkov and Silnitsky, 1973; Perlmutter, 1978; Dowty, 1979; Guerssel et al., 1985; Pinker, 1989; Croft, 1990; Jackendoff, 1990; Haspelmath, 1993; Levin and Rappaport Hovav, 1995; Wunderlich, 1997; Hale and Keyser, 2002; Baker, 2003; Chierchia, 2004; Nichols et al., 2004).

(1) a. Kim broke the vase.
b. The vase broke.

A perhaps well-noted, but still underappreciated fact, is that there are a number of ways in which a causative lexeme and an inchoative lexeme can share a stem with morphological material disambiguating one from the other (Nedjalkov and Silnitsky, 1973; Haspelmath, 1993; Hale and Keyser, 1998; Piñón, 2001a; Nichols et al., 2004). While some languages like English generally fail to show any morphological mark that would distinguish causative or inchoative as morphologically derived from the other (or some other lexeme), many other languages do show such morphology, and all possible patterns of variation seem to be observed.[1] In Warlpiri, for example, both inchoative (2a) and causative (2b) are morphologically derived by separate derivations from a simpler adjectival root (2c).

(2) Warlpiri (Hale and Keyser, 1998, 93)
a. wiri-jarri-
'become large'
b. wiri-ma-
'cause to become large'
c. wiri
'large'

[1]This actually oversimplifies the situation significantly. As shown by Nedjalkov and Silnitsky (1973), Croft (1990), Haspelmath (1993), and Levin and Rappaport Hovav (1995, Chapter 3) among others, the morphological pattern used is sensitive to the kind of event named by the verbs in question. This fact receives some attention below.

By contrast, O'odham and Cuzco Quechua, for at least some kinds of events, exhibit *causativization*, whereby causative is morphologically derived from inchoative, as illustrated by the data in (3) and (4).

(3) O'odham (Hale and Keyser, 1998, 92)

a. weg-i-(ji)d
'cause to become red'

b. weg-i
'become red'

(4) Cuzco Quechua (Cusihuaman, 1976, 230)

a. wirayay
'become fat'

b. wiraya-chi-y
'cause to become fat'

At the same time, both O'odham (5) and Cuzco Quechua (6), for certain other kinds of events, exhibit *anticausativization*, a direction of morphological derivation whereby inchoative is derived from causative. The situation is similar in Romance, where there is a general preference for this direction of derivation with many kinds of events, as illustrated by the Spanish data in (7).[2]

(5) O'odham (Hale and Keyser, 1998, 97)

a. mul
'cause to become broken'

b. 'e-mul
'become broken'

(6) Cuzco Quechua (Cusihuaman, 1976, 166)

a. wisq'ay
'cause become closed'

b. wisq'a-ku-y
'become closed'

(7) Spanish

a. romper
'cause to become broken'

b. romperse
'become broken'

Given these differences in the direction of morphological derivation, a natural question to ask is what semantic operations underlie each of these morphological operations. More specifically, what exactly do these morphological operations do to the meanings of the lexemes they operate on?[3] While causativization has received a good deal of attention going back to Lakoff (1965)

[2] As shown by Nichols et al. (2004), this direction of derivation is quite widespread among Indo-European languages more generally.

[3] To be more specific, morphological operations like *causativization* and *anticausativization* are, in this paper, in the words of an anonymous reviewer "analysis-independent [morphological] phenomena" not names for semantic analyses of them. When it is clear from surrounding context, I occasionally use these terms as shorthand to talk about the lexical semantic analysis of the phenomenon in question. What is in question in this paper is the nature of the analysis, particularly of anticausativization. The existence of the phenomena themselves is taken as given and uncontroversial, a position I think is justified by the body of typological literature cited above.

and McCawley (1968) (though on the basis of English data with the assumption that English should be analyzed as if it had this direction of derivation), the opposite direction of derivation, anticausativization, has received much less systematic attention as a phenomenon in its own right, on a par with causativization as one of several methods of morphologically relating causative and inchoative lexemes. The primary goal of this paper is to demystify anticausativization, bringing together in one place both new and previously known facts about the phenomenon. I do this in the context of an analysis, building on work by Chierchia (2004), that treats anticausativization as a reflexivization operation. It has not been at all uncommon in previous work to informally suggest that anticausativization might be treated as reflexivization (Lakoff, 1971; Garcia, 1975; Siewierska, 1984; Faltz, 1985; Haspelmath, 1990; Reinhart, 1996; Wunderlich, 1997), most likely owing to the fact that, as is seen below, the two seem almost always to be marked in a morphologically identical fashion. What is novel in the present paper is that I lay out in a formally precise manner what this means, not only by formally specifying what reflexivization is (drawing on Chierchia 2004), but also by doing so in the context of a thorough understanding of the lexical semantics of verbs that do and do not anticausativize. As I show, reflexivization and verb specific lexical semantics interact in an intimate way that has not previously been understood. From this analysis follow a wide range of morphological, syntactic, and semantic facts, which I outline in detail. I do so largely on the basis of data from Spanish, though supporting this with data from a number of other languages. The analysis is intended not simply as one of a particular language, but as one that covers anticausativization in general. The totality of the evidence, I believe, supports this analysis, to the exclusion of others that have been proposed in the literature.

At the same time, the facts have direct consequences for a broader, secondary goal, which is to understand anticausativization in the context of the Monotonicity Hypothesis (MH; Koontz-Garboden 2008a; 2007b), the frequently assumed idea that the semantic impact of word formation operations, in terms of decompositional lexical semantics, is never to remove an operator, as stated in (8).

With this in mind, it is worth pointing out that in the sense under discussion here, English does not display *anticausativization* in the causative/inchoative alternation. It has, nevertheless, been analyzed in this way, most notably by Levin and Rappaport Hovav (1995, Chapter 3). At the same time, though, there are many analyses of English (in fact, most—see §5.4) that treat it as having causativization, dating back to Lakoff (1965). Others treat it as having neither anticausativization nor causativization, but instead as deriving both causative and inchoative from a root (e.g., Piñon 2001a). It is my view that in developing an analysis of anticausativization, it makes most sense to deal with data in which this phenomenon uncontroversially manifests itself. Because of this, and because many argue that English doesn't have anticausativization in the first place, I do not believe that facts from English should play a role in the development of a theory of anticausativization. It may well make sense to try to extend such a theory to English, but in the first instance, I think if one's goal is to develop a theory of anticausativization, then one should focus on coverage of data that unambiguously manifest that phenomenon.

Related to this, although I think it should be obvious from the data presented above, there are many ways crosslinguistically of effecting the causative/inchoative alternation morphologically and in light of this, I do not assume that there is a single analysis of it. Instead, it seems clear to me, in light of the morphology, that in some instances it is effected with causativization, in others with anticausativization, and with yet others methods in other cases (see Haspelmath 1993 for a comprehensive overview). Each of these needs to be investigated in detail; I do not assume, for example, that a morphologically simple inchoative lexeme glossed as e.g., *break* will have the same denotation as a morphologically complex inchoative lexeme glossed as *break* in another language. Maybe it does, but this is an empirical issue that requires further investigation of lexical semantics at a level of detail that has not generally been undertaken for crosslinguistic studies. The presumption that two such lexemes should have the same denotation falls under the fallacy of translation discussed by Levin and Rappaport Hovav (1995, 159,179).

In short, then, the analysis presented below is intended as one of the semantics of the causative/inchoative alternation when effected morphologically by anticausativization. It may well extend to languages that effect the alternation in morphologically different ways (e.g., the labile in English), but I leave that as an open question, and do not rule out the possibility that the semantics of the causative/inchoative alternation are different in different languages, in accordance with the morphological direction of derivation.

(8) The Monotonicity Hypothesis
Word formation operations do not remove operators from lexical semantic representations.

Given the widely held view that the semantic representation of inchoatives lacks a CAUSE operator present in the decompositional representation of causatives, as illustrated for *break* in (9), the semantic impact of anticausativization is to delete a CAUSE operator, an analysis that is widely assumed, and explicitly proposed (in some form or another) by Grimshaw (1982), Reinhart (2002), Härtl (2003), Reinhart and Siloni (2005), Kallulli (2006a).

(9) Standard lexical semantic representations for causative and inchoative *break*
a. inchoative *break*
$\lambda x[BECOME\ \textit{not-whole}(x)]$
b. causative *break*
$\lambda x \lambda y[y\ CAUSE\ BECOME\ \textit{not-whole}(x)]$

Anticausativization is perhaps the phenomenon for which it is most widely accepted that its analysis requires access to deletion operations on lexical semantic representations. It thus poses a very serious challenge to the MH. What the data and analysis in this paper show is that this widely held view is incorrect—inchoatives derived from causatives by anticausativization do not have a lexical semantic representation like that in (9a). Instead, they retain the CAUSE operator present in the decompositional representation of the causatives from which they are derived, consistent with the MH.[4] Insofar as anticausativization can be seen as consistent with the MH, the MH itself gains greater plausibility as a universal of the semantic component of word formation operations, particularly since anticausativization is, perhaps the single greatest challenge to the hypothesis. In this way, this paper not only sheds light on the poorly understood phenomenon of anticausativization on a local level, but more broadly contributes to a better understanding of the semantics of word formation operations, itself a neglected area of study, as noted by Scalise (1986, 40), Carstairs-McCarthy (1992, 47ff.), Levin and Rappaport Hovav (1998), and Lieber (1980, 2004).

I begin the discussion by laying the analysis out in brief, following this by examination of a broad range of syntactic, morphological, and semantic data and how the proposed analysis captures them. A consequence of this analysis is that derived inchoatives actually retain the CAUSE operator present in the lexical semantic representation of the causative verbs they are derived from. In light of this, I go on to offer some independent arguments that derived inchoatives do indeed have this CAUSE operator as part of their lexical semantic representation. Next, I turn to comparison of the proposed reflexivization analysis with other analyses of anticausativization that have been proposed in the literature, discussing for each general kind where it fails empirically. Finally, I turn to some concluding remarks.

2 Anticausativization as reflexivization

2.1 Assumptions

The core assumptions underlying the discussion are those of decompositional lexical semantics (Lakoff, 1965; Dowty, 1979; Foley and Van Valin, 1984; Bierwisch, 1986; Hale and Keyser, 1987; Pinker, 1989; Jackendoff, 1990; Parsons, 1990; Levin and Rappaport Hovav, 1995; Wunderlich, 1997;

[4]The MH makes no prediction about whether inchoatives that are *not* derived by anticausativization should or should not have a CAUSE operator, as the MH is a hypothesis about word formation operations, not about lexicalization. See §5.5 for further discussion of the lexicalization issue.

Piñón, 2001a; Rothstein, 2004). Of particular concern is the idea that the meanings of change of state verbs can be decomposed into representations that factor out their causative and change of state semantics. For this, I draw on CAUSE and BECOME, operators that have a long history dating to the early days of generative semantics (Lakoff, 1965), but which are also widely accepted in some form or another by modern syntacticians and semanticists of quite diverse theoretical persuasions, whether these are treated as semantic or as syntactic primitives (Pesetsky, 1995; Hale and Keyser, 2002; Embick, 2004; Arad, 2005) possibly with different names like little v, FIENT (Embick, 2004), etc.

The analysis is developed in the context of a neo-Davidsonian event semantics (Parsons, 1990). As is standard in this tradition, I assume thematic relations relating participants to eventualities (Parsons, 1990).[5] Eventualities v come in two different sorts, events e and states s (cf. Bach 1986). CAUSE, the operator responsible for causative semantics, I treat as a relation between events, such that one causes the other (Dowty, 1979; Parsons, 1990; Levin and Rappaport Hovav, 1995; Pustejovsky, 1995; Piñón, 2001a; Chierchia, 2004). BECOME, the change of state operator, is here treated as a relation between an event and a state, along the lines of work by Parsons (1990), Piñón (2001a), and Rothstein (2004). The thematic relations used in the representations are to be taken simply as a shorthand for proto-role entailments (Dowty, 1991). A root can specify of its arguments more or less entailments, from highly articulated specification to rather serious underspecification. Some verbs are highly specified and take only an agentive causer, while others are underspecified and can take agents, instruments, natural forces, etc. For the theta-role relation that is underspecified in this way, I use the label EFFECTOR, following Van Valin and Wilkins (1996), so that the basic starting point for the representations of inchoative verbs is as in (10a), with that of causative verbs in (10b) (where ϕ stands for a random stative predicate).[6]

(10) a. $\lambda x \lambda s \lambda e[BECOME(e, s) \wedge THEME(s, x) \wedge \phi(s)]$
b. $\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v, e) \wedge EFFECTOR(v, y) \wedge BECOME(e, s) \wedge THEME(s, x) \wedge \phi(s)]$

Of course, as I have hinted above, the representation for inchoatives in (10b) is an oversimplification.[7] These representations, however, serve as a good point of departure for the discussion.

With this as background, I now turn to the reflexivization analysis, showing along the way how it accounts for the facts of anticausativization.

2.2 Reflexivization

Reflexivization, quite simply, is an operation that takes a relation as an argument, setting both arguments of the relation to be the same (Chierchia, 2004, 29). In set-theoretic terms, if a relation is conceived of as a set of pairs, what reflexivization does is to restrict the denotation of the relation to those sets of pairs each of whose members is identical to the other. The reflexivization operator,

[5] Although I use a formal representation typical of neo-Davidsonian theories, I do not adopt neo-Davidsonian assumptions about argument composition.

[6] The same idea of an EFFECTOR role is also found in Parsons (1990, 78) and Piñón (2001a, 6), under the title PERFORMER, though with less discussion of the linguistic motivations for it than in Van Valin and Wilkins (1996). Still, the idea is clearly the same.

[7] Strictly speaking, I assume, in the spirit of Montague (1973), that representations like those in (10) are objects of an intepreted translation language, so that it is these, rather than the words themselves, that have denotations in a set-theoretic language. In this way, the MH is a constraint on the derivation of representations from representations, not a constraint on denotations (Koontz-Garboden, 2007a). For simplicity, however, and because it is of no consequence in the discussion below, in this paper I speak of such representations as denotations of words, despite the fact that the representations are really to be taken as translations.

then, can be formalized as in (11), where $\Re$ is a variable ranging over arguments of the type of transitive verb.

(11) The reflexivization operator
$\lambda\Re\lambda x[\Re(x, x)]$

I take (11) to be the denotation of reflexive clitics, like Spanish *se*, as discussed further below.

Reflexive pronouns, like English *himself*, etc., are somewhat more complicated, as these often have agentivity inferences associated with them. Indeed, it seems to be the case in the literature that reflexivization is typically taken to involve agentivity, such that the single argument of a reflexive construction agentively acts upon him/herself (discussion in e.g., Piñón 2001b and Härtl 2003, for example, suggests this as their view of reflexives). The reflexivization operator in (11), however, says nothing about whether the argument is agentive or not. This confusion may come about as a result of the fact that much discussion centers on English, in which reflexive markers are pronominal, and therefore often animate. Following tradition, then, I use the term "reflexive-type interpretation" as the label for a reading of a reflexive construction in which it is entailed that an agent acts upon him/herself, as in (12).

(12) Kim dressed herself.

I will have more to say in §3.3 about the denotation of reflexive pronouns and how it differs from (11). First, however, I turn to the role of reflexivization as laid out in (11) in anticausativization.

3 Arguments for the reflexivization analysis

3.1 The core of the analysis: alternating change of state verbs

I begin by laying out how the reflexivization analysis treats the core class of alternating verbs that undergo anticausativization, what Levin (1993) calls the *break* verbs, and what Levin and Rappaport Hovav (1995) call externally caused change of state (COS) verbs. I use Spanish as the language for much of the analysis.

The core observation, as already discussed above, is that alternating verbs have in their morphologically unmarked form a causative use as illustrated in (13). In addition, when appearing with a reflexive clitic, they also have an inchoative use, as illustrated in (14).

(13) a. *Juan rompió el vaso.*
Juan broke the cup
'Juan broke the cup.'
b. *Juana abrió la puerta.*
Juana opened the door
'Juana opened the door.'
c. *Kim quemó el papel.*
Kim burned the paper
'Kim burned the paper.'

(14) a. *El vaso se rompió.*
the cup REFL broke
'The cup broke.'
b. *La puerta se abrió.*
the door REFL opened

'The door opened.'

c. *El papel se quemó.*
the paper REFL burned
'The paper burned.'

According to Guerssel et al. (1985), Hale and Keyser (1987), and Levin and Rappaport Hovav (1995, 85), what is special about the transitive variant of an alternating verb is that it names a COS event without specifying how the change comes about. According to Levin and Rappaport Hovav (1995, 85) and Reinhart (1996, 17), this is responsible for the fact that there are very few restrictions on the possible subject of transitive *break*. This is also true in languages with anticausativization, like Spanish (Mendikoetxea, 1999, 1589), German (Alexiadou et al., 2006), and Greek (Alexiadou et al., 2006). The Spanish data in (15) from Mendikoetxea (1999), for example, show that the subject of a causative verb like *romper* 'break' in Spanish can be not only an agent (15a), but also an instrument (15b), a natural force (15c), or a stative eventuality (15d).

(15) a. *Juan rompió la mesa.*
Juan broke the table
'Juan broke the table.'

b. *El hacha rompió la mesa.*
the axe broke the table
'The axe broke the table.'

c. *El huracán rompió la mesa.*
the hurricane broke the table
'The hurricane broke the table.'

d. *El peso de los libros rompió la mesa.*
the weight of the books broke the table
'The weight of the books broke the table.' (Mendikoetxea, 1999, 1589)

In addition, events can also be found as the subjects of causative verbs like *romper* 'break', as shown by the naturally occurring example in (16).

(16) *La explosión rompió ventanillas de automóbiles y las ventanas de edificios vecinos.*
the explosion broke windows of automobiles and the windows of buildings adjacent
'The explosion broke the windows of automobiles and the windows of adjacent buildings.' (Google)

These facts motivate a representation of the causative variant of anticausativizing verbs like *romper* as in (17).

(17) $[\![romper]\!] =$
$\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge \textit{not-whole}(s)]]$

The idea encapsulated by (17) is that *romper* 'break (trans)' names an event e of a participant x coming to be in a state s of not being whole, with that COS event being caused by an eventuality v in which another entity y is a participant. While the verb *romper* 'break (trans)' lexically specifies that the entity undergoing the COS event is a theme participant in some stative eventuality, as evidenced by the data in (15) little is known about the nature of the participant in the causing eventuality—it may be an agent, an instrument, a natural force, etc. Its underspecification is

represented in (17) by use of Van Valin and Wilkins' (1996) EFFECTOR role, a kind of generalized thematic role.

Recall, now, that the inchoative verb in Spanish is derived from the causative by an operation resulting in the addition of the reflexive clitic *se*, used elsewhere as a reflexive, as in (18), for example.

(18) *Kim se pegó (a sí mismo).*
Kim REFL hit to self only
'Kim hit herself.'

I take the reflexive clitic *se* to be a marker of reflexivization in the sense of (11). As already discussed, what a marker of reflexivization like *se* does is to take a two argument predicate and reflexivize it, giving *se* the denotation in (19) (cf. (11)).

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

The result of applying this function to the denotation of a causative verb like *romper* 'cause to become broken' in (17) is given in (20).

(20) $[\![se]\!]([\![romper]\!]) =$
$\lambda\Re\lambda x[\Re(x,x)](\lambda x\lambda y\lambda s\lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge$
$BECOME(e,s) \wedge THEME(s,x) \wedge not\text{–}whole(s)]])$
$= \lambda x[\lambda x\lambda y\lambda s\lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge not\text{–}whole(s)]](x,x)]$
$= \lambda x\lambda s\lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge not\text{–}whole(s)]]$

That is, the denotation of the anticausative *romperse* 'break (intrans)' is a function from ordinary individuals to states to COS events in which the individual undergoing the change is also the EFFECTOR participant in the event that causes the change of state event.

(21) $[\![romperse]\!] =$
$\lambda x\lambda s\lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge not\text{–}whole(s)]]$

On this analysis, then, anticausativization is semantically a reflexivization operation, and is completely consistent with the MH—the CAUSE operator is not removed. Rather the relation denoted by the causative verb is simply reflexivized so that the participants in both the causing and caused eventualities are specified to be identical. Further, because the lexical specification of alternating verbs like *romper* 'break' is such that the participant in the causing event is thematically underspecified, there is no prediction that the single argument of the anticausative verb should have agent entailments, since neither the verb's semantics nor the semantics of the reflexivization operator specify agent entailments for their arguments (see §3.2 and §3.3).

In this section, I have shown how it could be that the anticausative under a reflexive analysis could at once have a CAUSE operator as part of its denotation and lack agent entailments, one of the typical criticisms raised of Chierchia's (2004) reflexivization approach to anticausativization (Piñón, 2001b). As discussed above, this follows from the lexical semantics of the verbs that reflexivization operates on—since the participant in the causing subevent need not be an agent, under reflexivization there is no entailment that the undergoer of the COS event (also the EFFECTOR participant in the causing subevent) have agent entailments.

3.2 Non-alternation: *Assassinate*-type verbs

As has been noted by Guerssel et al. (1985), Hale and Keyser (1987), and Levin and Rappaport Hovav (1995), not all COS verbs are like *break* in having a thematically underspecified causer argument. Indeed, there are verbs like *assassinate*, which seem to specify that the causer of the COS event is an agent. As a consequence, while sentences like (22a) are acceptable, sentences in which the causer of the cutting event is an event (22b), natural force (22c), or stative eventuality (22d), are generally judged unacceptable in English.

(22) a. Kim assassinated the senator.
b. *The explosion assassinated the senator.
c. *The hurricane assassinated the senator.
d. *Age assassinated the senator.

Interestingly, such verbs fail to have inchoative alternates, as shown in (23).[8]

(23) *The senator assassinated.

This observation carries over to Spanish, where the causative/inchoative alternation is accomplished with clear overt anticausativization. In Spanish, verbs naming events in which the thematic

[8] An anonymous reviewer notes some counterexamples to this generalization in English. In particular, as she notes, *kill* and *destroy* do not require agentive subjects, as shown in (i), yet they do not have inchoative alternates, as shown in (ii).

(i) a. Kim/the earthquake/the explosion killed Sandy.
b. Kim/the earthquake/the explosion destroyed the village.

(ii) a. *Sandy killed.
b. *The village destroyed.

In the case of *kill*, I think the non-existence of an inchoative alternate is most likely simply a blocking effect, due to the existence of *die*. That this might be the case is supported by the alternation of *kill* in other languages, e.g., Greek, as shown by Alexiadou et al. (2006, 15). As for English *destroy*, it seems like a genuine counterexample to this generalization, at least if English is properly analyzed as if it had anticausativization. This verb, however, often alternates in languages that have unambiguous anticausativization, e.g., Spanish, as evidenced by the naturally occurring example in (iii), which shows *destruirse* cooccurring with *por sí solo* 'by itself', which, as discussed in §3.4, is evidence of an unambiguous anticausative (as opposed to passive) use of a *se*-derived verb.

(iii) . . . me recuerdo del Imperio Romano, en la época de su decadencia y recuerdo la manera como se destruyó por sí solo, por sus propias contradicciones . . .
`http://www.liberacion.press.se/anteriores/anteriores2/031128/notas/comas.htm`

The same is claimed for the Hebrew and French counterparts of *destroy* by Reinhart (2002) and also for the Greek equivalent by Alexiadou et al. (2006, 15). (The Greek claim is called into question, however, by Alexiadou *et al.*'s (2006:20) own judgement that the derived (non-active form) of the Greek counterpart of *destroy* is unacceptable with the Greek equivalent of *by itself*, suggesting that what they are dealing with is not really an anticausative use of the non-active form of the equivalent of *destroy*, but rather a passive use. See §3.4.)

As is seen below, the link between an underspecified causer and alternation is a direct prediction of the reflexivization analysis of anticausativization. As previously discussed, however, it is not at all obvious that whatever the right analysis of anticausativization is is the right analysis of the causative/inchoative alternation in English, which does not have anticausative morphology, and has been analyzed in a number of different ways by a number of different people. Because of this, I am not particularly worried about English *destroy*, since it may well be the case that anticausativization is not the right analysis of the English causative/inchoative alternation anyway. The discussion of English here is intended in part as a review of previous claims, but mostly as a way of setting up the generalization about what is going on in a language with anticausativization, like Spanish. The analysis of the English causative/inchoative alternation remains an open question.

nature of the participant in the causing event is specified to be an agent lack anticausative variants, as shown by Mendikoetxea (1999, 1592).Verbs like *asesinar* 'assassinate', for example, have causative variants that admit only of agentive causers, as shown by the data in (24).

(24) a. *Kim asesinó a la senadora.*
Kim assassinated to the senator
'Kim assassinated the senator.'
b. **El hacha asesinó a la senadora.*
the axe assassinated to the senator
'*The axe assassinated the senator.'
c. * *El bombardeo asesinó a la senadora.*
the bombing assassinated to the senator
'*The bombing assassinated the senator.'

While such verbs have causative variants, they do not anticausativize, as shown by the data in (25) and (26) for the verbs *asesinar* 'assassinate' and *cortar* 'cut', both of which require of their subjects that they be agentive.[9]

(25) a. *Los terroristas asesinaron al senador.*
the terrorists assassinated the senator
'The terrorists assassinated the senator.'
b. **El senador se asesinó (por sí solo).*
the senator REFL assassinated (by self only)
'*The senator assassinated/was assassinated by herself.' (Mendikoetxea, 1999, 1592)

(26) a. *El panadero cortó el pan.*
the baker cut the break
'The baker cut the bread.'
b. **El pan se cortó (por sí solo).*
the bread REFL cut (by self only)
'*The bread cut/was cut by itself.' (Mendikoetxea, 1999, 1592)

[9]The data in (i) show that transitive *cortar* 'cut' can appear with an agentive subject (ia), but not with an instrument subject (ib) or an eventive subject (ic).

(i) a. *Hace un minuto, Kim cortó el pan (con la navaja).*
since one minute Kim cut the bread with the knife
'A minute ago, Kim cut the bread (with the knife).'
b. **Hace un minuto, la navaja cortó el pan.*
since one minute the knife cut the bread
'(*)A minute ago, the knife cut the bread.'
c. **Hace un minuto, la vuelta de la luz cortó el pan.*
since one minute, the return of the light cut the bread
'A minute ago, the return of the light cut the bread.' (context: person was cutting bread with electric knife and there was a power outage. Person leaves knife stuck in bread, light comes on, and then bread gets cut)

The adverbial modifier *hace un minuto* 'a minute ago' is included in the sentences in (i) to force an eventive interpretation. Without *hace un minuto* the sentence in (ib) particularly seems to be somewhat acceptable, but with an irrelevant interpretation. Rather than having an eventive interpretation, it has, according to my consultant, a (stative) middle-type of interpretation that might be glossed into English more like "the knife was able to cut the bread" or "the knife cut the bread easily". Why *cortar* 'cut' should allow this more readily than *asesinar* 'assassinate' is an interesting question, but one for a theory of middle constructions and not one that bears on anything I saw below.

When continued by *por sí solo* 'by itself', which picks out the anticausative interpretation of *se* marked verbs as distinct from the passive (see §3.4), (25b) and (26b) are unacceptable. It is not the case, however, that *asesinar* 'assassinate' and *cortar* 'cut' cannot appear with the reflexive *se* marker. They can, but simply have a different kind of meaning; as shown by the data in (27) *se* derived versions of verbs with these kinds of meanings, while they do not have anticausative meanings, have true reflexive-type meanings (Mendikoetxea, 1999, 1591).

(27) *El senador se asesinó.*
the senator REFL killed
'The senator killed herself.'

(28) *Kim se cortó.*
Kim REFL cut
'Kim cut himself.'

This is exactly what is predicted by the semantics given to *se* in (19), combined with the semantics of such verbs, independently motivated by the facts in (24). The causative verb *asesinar* 'assassinate', as previously discussed, as part of its lexical meaning specifies that the participant in the event that causes the COS event must be agentive. This is made explicit in (29).

(29) $[\![asesinar]\!] =$
$\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge AGENT(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge$*not-alive*$(s)]]$

The main difference between a causative verb like *romper* 'break' and one like *asesinar* 'assassinate' is in the fact that while the denotation of the former is underspecified in the thematic nature of the participant in the causing eventuality, *asesinar* 'assassinate' is not. This is made clear by the lexical semantics given to the two verbs—while the participant in the causing eventuality of *asesinar* 'assassinate' is specified to have AGENT entailments, as shown in (29), the participant in the causing eventuality in the denotation of *romper* 'break' is underspecified, as represented by the EFFECTOR relation in its denotation in (17), repeated in (30).

(30) $[\![romper]\!] =$
$\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge$*not-whole*$(s)]]$

It is this difference that is responsible for the contrast between the two types of verbs in ability of the causative to take a thematically diverse range of subjects. Additionally, this difference has a significant impact on the denotations of the two verbs when the reflexivization operator is applied to them. As already highlighted in (17) for *romper* 'break', because the causative variant does not have agent entailments, the reflexivized version also does not necessarily have agent entailments. For *asesinar* 'assassinate', however, the situation is different—when verbs with this kind of specification undergo reflexivization, they can only have reflexive-type meanings, as illustrated by the data in (27) and (28). Why this should be is made clear in (31), which shows the result of composing the meaning of *se*, as formalized in (19), with the meaning of *asesinar* 'assassinate', as formalized in (29).

(31) $[\![se]\!]([\![asesinar]\!]) =$
$\lambda \Re \lambda x[\Re(x,x)](\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge AGENT(v,y) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge$*not-alive*$(s)]])$

$= \lambda x[\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge AGENT(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge \textit{not-alive}(s)]](x,x)]$
$= \lambda x \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge AGENT(v,x) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge \textit{not-alive}(s)]]$

The result of applying the reflexivization operator to a verb like *asesinar* is predicted to be what is generally known as a reflexive interpretation, i.e., an event in which a single agentive argument acts upon him or herself. As was shown by the data in (27) and (28), this is indeed the kind of meaning that verbs like *asesinarse* 'assassinate self' and *cortarse* 'cut self' have. Further, given the fact that these verbs subcategorize for agentive causers, it is also predicted that they cannot have true anticausative meanings in which the single argument is a non-agentive undergoer of a COS event, as with e.g., the single argument of intransitive *break*. On my analysis this is a direct result of the lexical semantics of such verbs—because they subcategorize for an agentive participant, under reflexivization, the theme undergoer of the COS event must also be an agentive participant in the causing subevent, a kind of meaning not typically considered "anticausative" because, among other reasons, it is inconsistent with the *por sí solo* 'by itself' modifier. In §3.4, I explain what it is about *por sí solo* 'by itself' that leads to the behavior observed in (25) and (26).

The explanation for non-alternation with verbs like *asesinar* 'assassinate' applies also to non-alternation with certain idiomatic senses of verbs that otherwise alternate. Brousseau and Ritter (1991, 60), Levin and Rappaport Hovav (1995, 85,105), and Van Voorst (1995) observe facts like those in (32) and (33) for English and (34) for French, which like Spanish has unambiguous anticausativization marked by the clitic *se*.

(32) a. She broke the vase/the window/the glass.
b. The vase/the window/the glass broke.

(33) a. He broke his promise/the contract/the world record.
b. *His promise/The contract/The world record broke.

(34) a. Jean a brisé sa promesse/l'accord/le record du monde/la routine.
'John broke his promise/the agreement/the world record/the routine.'
b. *Sa promesse/l'accord/le record du monde/la routine s'est brisé(e).
'His promise/the agreement/the world record/the routine broke.'
c. La fenêtre/la branche/sa montre s'est brisée.
'The window/the branch/her watch broke.' (Brousseau and Ritter, 1991, 60)

The observation is that while objects like vases, windows, branches, watches and glass can undergo a breaking event both as the object of a causative, as shown for English in (32a), and as the subject of an inchoative, as shown for English in (32b) and French in (34c), objects like promises, contracts, and world records cannot undergo a *breaking*-type COS event as the subject of an inchoative, as shown by the facts in (33b) and (34c). The generalization, according to Brousseau and Ritter (1991, 60), Levin and Rappaport Hovav (1995), and Van Voorst (1995) is that promises, contracts, and world records can only be broken by agents—they cannot be broken by instruments, natural forces, etc. Under the proposed analysis, the sense of *break* in (33) and (34a,b), unlike the one in (32) and (34c), is one that requires an agentive causer. Because of this, for the same reasons that a verb like *asesinar* 'assassinate' cannot anticausativize, idiomatic senses of *break* like the ones in (33) and (34a) cannot.

What has previously been only a descriptive observation, that only causative verbs with thematically underspecified subjects have inchoative variants, follows directly from the reflexivization

analysis.[10] The reflexivization operation can apply to both kinds of verbs—alternating and non-alternating transitives—but for verbs that specify of the participant of the causing eventuality that it be an agent, it can only be the case that the theme undergoer in the intransitive COS variant also has agent entailments, as was shown to be the case for verbs like *asesinar* 'assassinate'. Because of this, reflexivized variants of fully specified verbs (e.g., *cut* and *assassinate*) have only reflexive interpretations available to them, while reflexivized versions of underspecified verbs (e.g., *break*) have anticausative interpretations available to them.

3.3 Morphology

A compelling argument for the reflexivization approach to anticausativization comes from the fact that anticausativization and reflexivization are very commonly marked identically to one another crosslinguistically, as shown by the table in (35) from Haspelmath (1990).[11]

[10] An anonymous reviewer makes the following remark:

> ...the deletion analysis also explains this observation if one rephrases it slightly: It is only verbs that lack causation-related manner components that have inchoative variants. Verbs with causation-related manner components such as 'assassinate' cannot have inchoative variants because deleting the CAUSE component would mean that the manner meaning components would have to be deleted along with it, or would be "stranded", and this is not allowed. So the reflexivization account is not the only one that has a plausible story here.

I do not mean to imply that the empirical observation has not been made in the context of deletion analyses. It has, e.g., by Reinhart (2002) and Reinhart and Siloni (2005). Nevertheless, as discussed further in §5.2, an analysis like that of the reviewer requires the existence of deletion operations but with the stipulation that manner components cannot be deleted, while CAUSE can. Absent any independent motivation for this difference in the possibility of deletion, this amounts to a restatement of the empirical generalization—CAUSE can delete when the subject is underspecified, but not otherwise.

[11] An anonymous reviewer observes that (35) also suggests a widespread syncretism between anticausative and passive. The reviewer suggests that "a reflexive analysis is surely not an option for passives" and wonders whether (35), then, doesn't actually undermine the argument for reflexivization, rather than strengthening it. This is a fair point, and I certainly agree that the ultimate goal of any analysis of the morphology in question should be not to account only for the anticausative/reflexive syncretism, but for their shared marking with passive as well. To the best of my knowledge, no analysis successfully achieves this at present, at least in a non-stipulative way where the formal details of the analysis are clear. (Deletion analyses, like Reinhart (2002) and Reinhart and Siloni (2005) do not meet this criterion, for reasons discussed in §5.2.) Embick (1997, 1998) would appear to come reasonably close, but as discussed in §5.3, his analysis is restricted to a very particular subcase of the problem and is not broadly generalizeable. Thus, while I agree that this is a fact in need of explanation, I don't believe that there is at present any analysis on offer that deals with it adequately.

Additionally, I believe that it is easy to read too much into (35), particularly as concerns the anticausative/passive syncretism. As is shown in §3.4, and as is discussed in further detail in Siewierska (1984, 78), Keenan (1985, 254), and Koontz-Garboden (2007b, Chapter 7), it is not at all easy to distinguish between anticausative and passive. Even in a well-studied language like Spanish, there is a single diagnostic that can distinguish between the two (the *by itself* diagnostic). Because of this, I believe there are serious reasons to doubt that all of the languages in (35) genuinely have both anticausative and passive and that further work on many of these would show that they have only either passive or anticausative. This is not to say that some wouldn't have both—indeed, Spanish clearly does—but rather that I think it likely that the strength of the anticausative/passive syncretism generalization is very likely to be overstated owing to the fact that the two are much more difficult to distinguish than is generally appreciated. Because of this, it is not obvious to me that the passive/anticausative syncretism is more common than the anticausative/reflexive syncretism. This remains, I believe, an outstanding empirical question. Regardless of its outcome, however, I agree with the presumptions of the reviewer's question, which are that (a) reflexive and anticausative are commonly syncretic with passive, (b) this is something that should be accounted for, and (c) the present analysis has little to say about this. I do not agree, however, that the (likely) fact that a reflexive analysis will not capture passive facts means that the reflexive analysis is wrong. It could well be that there is some distinct, yet related (i.e., polysemous) meaning that will account for passive uses of the same morphology. And indeed, given the diversity of uses of morphology also used for anticausativization and reflexive observed by e.g., Kemmer (1993), it

(35) Other uses of anticausativizing morphology (Haspelmath, 1990, 36)

	reflexive	anticausative	passive	potential passive	fientive
Tigre	x	x	x		
Motu	(x)	x	x		
O'odham	x	x	x		
Mod. Greek	x	x	x	x	
Kanuri	x	x	x	x	
Margi	x	x	x	x	
Uigur		x	x	?x	?(x)
Udmurt	x	x	x		
Nimboran		x	x		x
Danish (*–s*)		x	x	x	
Latin (*r*)	x	x	x		(x)
Latin (*esse*)	x	x	x		
Mwera (*–k*)		x		x	x

As shown by Haspelmath's table in (35), it is not the case that all languages that have anticausative markers have uses of that marker also as a reflexive. It is, nevertheless, the most common state of affairs—of the thirteen languages listed in Haspelmath's eighty language sample that have anticausative markers, in nine of these languages the marker also has reflexive functions according to Haspelmath. This seems extremely unlikely to be an accident, and is the expected state of affairs on the analysis developed here.

Of course, something more must be said about the four languages in which anticausativization is marked by a morpheme that does not also synchronically serve as a marker of reflexivity. Can the analysis be extended to these languages as well? In order to say for sure, much more detailed information would be needed about these languages, and such investigation is beyond the scope of the current work. Some speculation, however, does seem warranted. First, of course, it must be shown that in these languages anticausativization is indeed productive. It could well be that in these languages, there is simply a morphological residue from what used to be productive anticausativization/reflexivization that has since simply been lexicalized as part of the lexeme's phonological shape. Additionally, as I show below in §3.4, the criteria for differentiating between anticausative and passive are subtle, and it could be that in these languages there is no motivation for distinguishing between the two—indeed, in three of the four languages there is also said to be a passive that is marked identically to anticausative, with the fourth having what Haspelmath calls a "potential passive" marked in the same way. So, it might be that once these languages are examined in more detail there is, in fact, no evidence for distinguishing between passive and anticausative. In short, more work would be needed to fully understand the nature of anticausativization in those languages.

Perhaps the most curious kind of language from the perspective of this paper would be one in which anticausativization and reflexivization are marked differently, and where the language either does not have a passive or has a passive morphologically marked in a different way, so that it is clear that anticausativization and passive functions of the same morphology are not simply being confused. I consider here some data from one such language I have first-hand knowledge of and data on. Ulwa, an endangered Misumalpan language spoken by approximately 350 adults in the village of Karawala on Nicaragua's Atlantic coast seems to meet both criteria. First, the language

seems a near certainty that this morphology will, in many languages, have more than one distinct, if related, meaning. Obviously this remains an area in need of further research.

has no passive.[12] Second, as shown by Koontz-Garboden (2007b:Chapter 4, 2008b) the Ulwa *–da–* and *–wa–* markers serve the function, among other things, of marking an anticausative operation, as illustrated by the data in (36) for the *–wa–* suffix.[13]

(36) a. *Il-w-ing kau atak ya bah-**w**-ida.*
ascend-WA-1SING.PRFCT when stairway DEF break-WA-3SING.PAST
'When I climbed up the stairway, it broke.' (dict.)
b. *Arak-ki-bus bah-**t**-ikda.*
gun-<1SING> break-TA-1SING.PAST
'I broke my gun.' (dict.)

Reflexivity in Ulwa, however, is marked with a completely different marker, *kal* 'self' (Green, 1999, 114), illustrated by the examples in (37).

(37) a. **Kal** *makun-t-i tung man bahangh man yul-ma amat-da-yang.*
REFL pathetic-TA-SS walk 2SING so 2SING word-2SING mourn-DA-1SING.PRES
'I feel sorry for you walking around suffering. (= lit. You are walking around feeling sorry for yourself, so I feel bad for you.)' (dict.)
b. *Mâdi dislah yau waya îr-i* **kal** *daih-t-ing kau ...*
now morning then little run-SS REFL hot-TA-1SING.PERF when
'This morning, when I went out running exercising (lit: warming self up) ...' (dict.)
c. *Mâdi âka ripka yâ yam-t-ai, asna ahai-t-i*
now this cold-ADJ 1SING.NON-NOM do-TA-3SING.PRES cloth bring-TA-SS
ya-a-tah; **kal** *balak-d-uting.*
1SING.NON-NOM-give-2IMP REFL wrap-DA-1SING.FUT
'This morning I'm cold. Give me a blanket and I'll wrap myself up.' (dict.)

Despite the fact that the marker of reflexivity, *kal*, is not the same as the marker of anticausativization, *–da/wa–*, I do not believe this actually argues against the reflexivization analysis of anticausativization for Ulwa. As it turns out the reflexive marker *kal* seems to be restricted to agentive environments, as evidenced by the (non-exhaustive) list of verbs in (38) with which it is attested in the Ulwa dictionary (Green, 1999).

(38) *kal* verbs in the Ulwa dictionary
kal auhnaka 'adjust one's appearance so as to make a particular attribute obvious'; kal amangnaka 'take care of oneself'; kal ânaka 'take a break, catch one's breath'; kal arandanaka 'curl up (of animate beings)'; kal âwanaka 'get married'; kal bahnaka 'compete'; kal balakdanaka/kal balaknaka/kal biriknaka 'wrap oneself up'; kal balisnaka 'embrace'; kal baunaka 'fight'; kal bilnaka 'quarrel'; kal buhnaka 'dry oneself off'; kal bulnaka 'go crazy'; kal dahnaka 'rest, relax'; kal dahnaka 'feel, to notice'; kal dahnaka 'recover from illness'; kal daihnaka 'exercise'; kal daknaka 'cut oneself'; kal dânaka 'break up; leave one another'; kal dasinaka 'engage in a dual of strength'; kal dimdanaka 'stretch one's limbs'; kal dimnaka 'stretch oneself to full length'; kal duluknaka 'soak oneself or each other'; kal kahwanaka

[12] I make this conclusion on the basis of the fact that there is no "by-phrase" that appears, even optionally, with *–da/wa–* verbs, illustrated below. And other than *–da/wa–* verbs, there is no plausible candidate for passive in the language.

[13] The *–pa–* and *–ta–* verb class suffixes, the latter of which is illustrated in (36b), have no lexical semantic effect on the root. Their sole function is to derive a verbal stem from a precategorial root (Koontz-Garboden 2007b:Chapter 4, 2008b).

The Ulwa dictionary (dict.), where the data below are taken from, is in an appendix to Green (1999).

'smear on self' ...

What seems to be going on in Ulwa, then, is that *kal* has agentive entailments, which would preclude its use as a marker of anticausativization under the reflexivization analysis laid out above.[14] The *–da/wa–* markers, for their part, do not have agent entailments and can therefore serve as markers of anticausativization. More explicitly, what I believe to be the case is that while the denotation of *kal* in (39a) is just like the denotation of the anticausative *–da/wa–* markers in (40) in being a reflexivization operation, there is in addition a meaning postulate, something like (39b), which imposes the additional constraint that the single argument of a *kal* marked verb is always agentive.[15]

(39) a. $[\![kal]\!] = \lambda\Re\lambda x\lambda e[\Re(e, x, x)]$
b. meaning postulate: $\forall\Re\forall e\forall x[kal'(\Re, x, e) \rightarrow AGENT(e, x)]$

(40) $[\![da/wa]\!] = \lambda\Re\lambda x[\Re(x, x)]$

According to Haspelmath (1987; 1990) anticausative markers often develop diachronically from reflexive markers via bleaching of agent entailments. If this is true, it may well be that *–da/wa–* at one point were markers of reflexivity whose reflexive function has since been overtaken by another marker, *kal*, with agent entailments. Indeed, the set of *–da/wa–* verbs is not completely without verbs naming reflexive events, as shown e.g., by the verbs in (41).

(41) Some reflexive *–wa–* verbs
kahwanaka 'paint/anoint self'; nakawanaka 'wound self'; purawanaka 'wet self'

Further, it is worth noting that the Ulwa reflexive marker *kal*, the reflex of which is also a marker of reflexivity in its sister language Mayangna according to Norwood (1997, 46), aside from its reflexive meaning can be glossed in both Ulwa and Mayangna as 'foot/leg.' This sense of *kal* is illustrated by the data in (42).

(42) *Yang kal-ki kau pilau as bung-p-ida.*
1SING foot/leg-1SING at bay.sore INDEF emerge-PA-3SING.PAST
'A bay sore has emerged on my foot.' (dict.)

Faltz (1985) and Schladt (2000) note that words that become reflexive pronouns often begin life as words with body-part denotations (see also Beavers and Koontz-Garboden 2006). The fact that the Ulwa reflexive marker *kal* still has such a meaning suggests that this word may have only relatively recently taken on a reflexive meaning. Further evidence for this conjecture is the fact that in Miskitu, a somewhat more distant Misumalpan relative of Ulwa and Mayangna (both members of the Sumu sub-family), the reflexive markers are *wina* 'meat/body' in the objective case and *silp* 'self', neither of which appears to be cognate with the Sumu counterpart. The fact that the reflexive markers are different in the Miskitu and Sumu sub-branches of Misumalpan suggests that in the relatively recent history of Misumalpan, for whatever reason, the languages have each acquired new reflexives. Further support for this claim comes from the nature of the reflexive markers in Miskitu, where *wina* 'meat/body' also names a kind of body part, namely the whole body, and where *silp*

[14] To see why this is the case, consider why agentive COS verbs like *cut* cannot anticausativize on the reflexivization analysis. For the same reason, a reflexive marker with agent entailments also could not have anticausativizing functions on this analysis. See §3.2 for further discussion.

[15] As evidenced by the data in Koontz-Garboden (2007b:Chapter 4, 2008b), (40) is most likely not the only function of *–da/wa–* given the large number of deponents, i.e., marked intransitives lacking an unmarked transitive counterpart. This is almost always the case for what Kemmer (1993) calls "middle markers", other characteristics of which *–da/wa–* also display.

'self' is a borrowing from English Creole, showing that this latter marker is no more than a few hundred years old, given the history of contact between the English, English Creole speakers, and the Miskitu since colonization (Holm, 1978; Green, 1999; Benedicto and Hale, 2000).

Thus, the preliminary evidence seems to point in the direction of the agent-oriented reflexive markers in the Misumalpan languages being relatively new, suggesting that the functions that they serve may have replaced agent-oriented reflexive uses of some other marker, by hypothesis *–da/wa–* and their reflexes. In Ulwa, then, even though reflexive and anticausative are marked differently, this seems to be the result of understandable diachronic processes that are entirely consistent with the reflexivization analysis of anticausativization.

Summing up this section, then, I have shown that morphologically, the reflexivization analysis of anticausativization is extremely plausible. On this analysis it is obvious why the morphological markers of anticausativization are indeed the ones that they are—anticausativization is a reflexivization operation, and it therefore makes sense that the operation should be marked by morphology serving the function of reflexive marking elsewhere in the language.

3.4 On the differences between anticausative and passive

Among the major facts that any analysis of inchoative verbs needs to deal with, whether derived via anticausativization or not, is that they behave differently from passives of their causative counterparts in certain well-known ways. The two big contrasts are in (a) the ability to take agentive modifiers and (b) the ability to take *by itself* modification.[16] These contrasts are illustrated for English by the data in (43) and (44) respectively.

(43) a. *The boat sank to collect the insurance.
b. The boat was sunk to collect the insurance (Roeper 1987:268, attributed to Manzini 1983)

(44) a. The boat sank by itself.
b. *The boat was sunk by itself. (Chierchia, 2004, 43)

The data in (43) show that while an inchoative verb (43a) cannot control into a purpose clause, a passive verb (43b) can. The *by itself* diagnostic also demonstrates a contrast between the two kinds of verbs—while *by itself* can be bound by the single argument of the inchoative verb (44a), it cannot be bound by the single argument of the passive verb (44b) (Siewierska 1984:79; Chierchia 2004:43). The same contrasts hold between passives and inchoatives overtly derived via anticausativization, as shown by the Spanish data in (45) and (46).[17]

(45) a. **La puerta se abrió por sí sola para airear la habitación.*
the door REFL opened by REFL only to air the room
'*The door opened by itself to air out the room.'
b. *La puerta fue abierta para airear la habitación.*
the door was opened to air the room
'The door was opened to air out the room.' (Mendikoetxea, 1999, 1592)

(46) a. **El barco fue hundido por sí solo.*
the boat was sunk by SELF only

[16] Use with oblique arguments is also often thought to distinguish inchoatives and passives (Roeper, 1987). This is, however, not a good diagnostic, for reasons discussed by Alexiadou et al. (2006).

[17] In (45a) Mendikoetxea (1999) includes the adverbial *por sí sola* 'by itself' in order to distinguish the passive interpretation of the *se* derived verb, for which it seems that it must be possible to control into a purpose clause, from the anticausative, for which it is not.

'*The boat was sunk by itself.'

b. *El barco se hundió por sí solo.*
the boat REFL sank by SELF only
'The boat sank by itself.' (Mendikoetxea, 1999, 1594)

In the following paragraphs, I offer an explanation for these contrasts in the context of the reflexivization analysis of anticausativization.

Concerning control into purpose clauses, I start by clarifying what I believe the nature of passives is. Here, my assumptions are rather standard, I believe, at least within lexicalist frameworks.[18] Following Grimshaw (1990), Levin and Rappaport Hovav (1995, 1998), Sadler and Spencer (1998) and others, I assume a distinction between a word's lexical semantic representation (LSR) and its argument structure (AS). The lexical semantic representation includes syntactically relevant thematic information, which on my analysis comes in the form of a decompositional representation. The argument structure is projected from the lexical semantic representation and includes no thematic information, instead having only information about how many arguments the word takes and whether they are external or internal and if internal, direct or indirect (Levin and Rappaport Hovav, 1995, 20ff). While I take anticausativization to be an operation on the lexical semantic representation of a verb, as developed in detail above, passive I take to be an operation at the level of argument structure that suppresses the external argument, with the result that its projection into the syntax is no longer obligatory. When it does appear, it is no longer case marked by the verb, but must be case marked by an oblique marker (Grimshaw, 1990, Chapter 4).

With this much as background, consider now how the contrast between passive and derived inchoative arises in Spanish for a verb like *abrir* 'open' as illustrated in (45). This verb in its morphologically simple active form is a causative, and as such its lexical semantic representation and argument structure are as in (47).

(47) Lexical semantics and argument structure for active *abrir* 'open'

LSR $\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge open(s)]]$

AS $< y < x >>$
Kim (y) opened the door (x).

As illustrated in (47), *abrir* 'open' in its morphologically basic active transitive form has two arguments in its LSR. One is the theme undergoer of the COS event. The other is thematically underspecified (as represented by the label EFFECTOR). In this way, then, the actual thematic nature of the causer argument is in large measure a result of the semantic nature of the NP filling this (thematically underspecified) role—if it is human, for instance, it is likely to give rise to an agent interpretation, but will not give rise to an agent interpretation if the argument is not animate (as with natural forces).

The passive of *abrir* 'open' has exactly the same LSR as the active. The difference between active and passive is, as described above, in the argument structure—in the passive, the external argument is suppressed, being usable only as an oblique, but not as a direct argument. This operation, however, has no impact on the LSR of the verb, which, as already mentioned, remains identical to that of the active, as illustrated in (48).[19]

(48) Lexical semantics and argument structure for passive *fue abierto* 'was opened'

[18] That I lay out my assumptions within a lexicalist framework here should not be taken as a sign that a non-lexicalist approach could not equally well capture the difference. I simply don't develop such an analysis here.

[19] I assume that the same state of affairs holds for the passive interpretation of *se* derived verbs.

LSR $\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge open(s)]]$

AS $< (y) < x >>$

The door (x) was opened (by Kim (y)).

The important point for the purpose of dealing with data like those in (45) is that the passive, like the active, has two distinct arguments in its LSR, one the undergoer of the COS event, the other the causer. These are both projected to the argument structure, with the passive operation suppressing the external argument, so that its appearance is only optional, and as an oblique when it does appear. Nevertheless, even if the external argument is not overtly present, it is semantically present as an argument distinct from the undergoer argument. Returning now to the data in (45), the observation is that a purpose clause is acceptable with a passive verb, the oblique (or null) argument controlling into the purpose clause with an agentive interpretation. Purpose clauses like the ones in (45) require an agentive controller. As already discussed, the LSR for both active and passive verbs has a thematically underspecified causer that permits agentive interpretations. Because of this, the suppressed external argument in passives, which is the causer in the LSR, can control into purpose clauses, i.e., because it allows for an agent interpretation, required by the controller of the purpose clause.

In anticausativization, by contrast with passivization, the reflexive operator *se* in (19) takes the causative lexical semantic representation of the causative verb as an argument to yield a derived inchoative with the lexical semantic representation in (49). This representation has a single argument which is a participant in both the causing and the COS subeventualities, and it is therefore only one argument projected to the argument structure.

(49) Lexical semantics and argument structure for anticausativized *abrirse* 'opened'

LSR $\lambda x \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge open(s)]]$

AS $< x >$

The door (x) opened.

Just as with the active verb, where the semantic nature of the NP determines what the thematic nature of the causer participant will be, the same is true in the anticausative, since the causer participant is still partially underspecified. Since the causer participant and the undergoer of the COS event are specified by the LSR to be the *same participant*, this participant must at least have the THEME properties, specified by the LSR of the verb, of the undergoer of the COS event. To the extent, though, that the verb names an event of a kind that the theme undergoer could actually be animate, and thus potentially agentive, it is predicted that this single argument could have not only the theme entailments specified of the undergoer of the COS event, but also agent entailments. As a consequence, such an argument would be predicted to be able to control into purpose clauses (cf. Chierchia 2004:39). Because most COS verbs are such that the undergoer of the COS is almost always inanimate, and therefore not a possible agent, this is rarely found. There are, however, some alternating COS verbs, like *ahogar* 'drown', that take animate undergoers, as exemplified by the naturally occurring causative and derived inchoative examples in (50) and (51).

(50) a. *Un hombre ahogó a su hija de seis meses de edad.*
one man drowned to his daughter of six months of age
'A man drowned his six year old daughter.' (Google)

b. *La madre acusada de ahogar a sus dos hijos ...*
the mother accused of drowning to her two children
'The mother accused of drowning her two children ...'(Google)

(51) a. *Un chico de 13 años se ahogó cuando nadaba en una cava*
one kid of 13 years REFL drowned when was swimming in a cave
'A 13 year old boy drowned while swimming in a cave . . . ' (Google)

b. *Se ahogó un nene de tres años al caer a un desagüe.*
REFL drowned one baby of three years the falling into a sewer drain
'A three year old baby drowned when s/he fell into a sewer drain.' (Google)

As illustrated by the derived inchoative examples in (51), the single argument of a drowning event is animate, usually human, and therefore of a kind that could be agentive, and therefore a possible controller of a purpose clause. The present analysis, then, predicts that derived inchoatives of such verbs should, in fact, be acceptable with the single argument controlling into the purpose clause, to the extent that it is agentive. This is, of course, very different from the implicit argument of the passive verb controlling into the purpose clause, since (a) that argument is covert, and (b) it is completely distinct from the undergoer of the COS event named by the passive verb. Nevertheless, this prediction is worth highlighting, and such examples, while rare, presumably because theme undergoers of most COS verbs are such that they cannot typically be agentive, can indeed be found with anticausativized verbs like *ahogarse* 'drown (intrans).[20] This is shown by the data in (52).

(52) a. *Y aquel día, hace tres años, cuando Phil se ahogó para salvarle la vida*
and that day from three years when Phil REFL drowned to save-3SING the life
a Jim . . .
to Jim
'And on that day, three years ago, when Phil drowned (himself) to save Jim's life . . . ' (Google)

b. *. . . casi se ahogó para que no pudieran ver-la, y así pudo*
almost REFL drowned to that no able see-3SING.FEM and like able
salvar-se.
save-REFL
'. . . she almost drowned herself in order that they not be able to see her, and in this way, she was able to save herself.' (Google)

c. *. . . como el joven que se ahogó para salvar a una desconocid-a . . .*
like the youngster who REFL drowned to save to an unknown-FEM
'. . . like the youngster who drowned (self) to save an unknown woman . . . ' (Google)

An anonymous reviewer remarks on a feeling "about *drown* in (52) that this is really a reflexive *drown*, i.e., the subject is an agent." This is, in the end, precisely the point—there is no distinction semantically between anticausativization and reflexivization.[21] The former is semantically the same operation as the latter, or, stated another way, the latter is the former in the context of a verb whose lexical semantics allow for (or, for some verbs, require) an agentive causer. The semantic nature of most derived inchoatives is such that the single argument is inanimate, and therefore not possibly an agent, leading to the impossibility of a pure "reflexive" reading. Verbs like *drown*

[20] See also relevant discussion of English inchoatives like *die* in examples involving religious martyrdom (Van Valin and Wilkins 1996:312–313; Levin and Rappaport Hovav 2005:178).

[21] This is not to say that there is no *syntactic* difference between what are typically called anticausatives and what are typically called reflexives. Indeed, it has been argued that the former are unaccusative, the latter unergative (see Reinhart and Siloni 2005:395ff. for an overview). Although my own suspicion is that this difference most likely follows from the lexical semantic nature of the verbs in question and from the mapping between lexical semantics and syntax, the issue is tangential to the matters under discussion here, so I don't discuss it further.

are special, however, in that the undergoer can be animate. Under reflexivization, then, the single argument, now not only a THEME undergoer but an underspecified EFFECTOR as well, can take on an agentive interpretation, a possible interpretation of an EFFECTOR argument. This is forced, in particular, in the examples in (52) in the context of purpose clauses, which must be controlled by an agent; if the single argument of the anticausative were *not* interpreted agentively, the sentences in (52) would be anomalous. The observation, then, is that indeed, the readings in (52) are "reflexive", but this is nothing more than a special case of the anticausative—an interpretation in which the EFFECTOR, rather than being interpreted non-agentively as is the case in so-called "inchoative" readings, is interpreted agentively, as in so-called "reflexive" readings. Control into purpose clauses, then, in the context of distinguishing inchoatives from passives, is really not a diagnostic for anything other than the possibility of the matrix verb having an agentive causer, since only agents can control into purpose clauses. The reason control into purpose clauses serves most of the time (with the exception of verbs like *drown*) to distinguish inchoatives from passives is because the former, by contrast with the latter, tend not to allow agentive causers, owing to the fact that the THEME undergoer is specified to be identical to the EFFECTOR and to the fact that the THEME undergoers of most verbs are by necessity inanimate, and therefore not possibly agentive, and therefore not possible controllers of purpose clauses.

Turning now to the facts in (46), repeated in (53), what is special about reflexive modifiers like *por sí solo* 'by itself', according to Chierchia (2004, 43), is that they must be bound in the syntax by an argument that is the sole cause of the COS event.

(53) a. **El barco fue hundido por sí solo.*
the boat was sunk by SELF only
'*The boat was sunk by itself.'
b. *El barco se hundió por sí solo.*
the boat REFL sank by SELF only
'The boat sank by itself.' (Mendikoetxea, 1999, 1594)

Semantically, this means that *por sí solo* 'by itself' must have a denotation something like (54).

(54) $[\![\text{ por sí solo }]\!] = \lambda P \lambda x \lambda s \lambda e [\exists e' \forall y [P(x,s,e) \wedge CAUSE(e',e) \wedge EFFECTOR(e',x) \wedge EFFECTOR(e',y) \rightarrow y = x]]$

The idea expressed by (54) is that *por sí solo* 'by itself' has as part of its denotation that there is a sole causer, i.e., that an event *e'* causes an event *e* of Ping (P a variable ranging over the meaning of intransitive verbs) in which *x* is the sole EFFECTOR participant in the causing event *e'*. In addition, *por sí solo* 'by itself' must have syntactic constraints that are independent of the lexical semantic representation in (54); specifically, it must be locally bound by a subject (cf. Chierchia's 2004:43 discussion of Italian *da sé* 'by itself'). The syntax and LSR of a passive verb, however, are inconsistent with these constraints—the subject binding it is not the sole cause of the subevent. Indeed, it is not a cause at all, and sentences such as (53a) are therefore unacceptable. In the denotation of the derived inchoative in (53b), similar to that given in (21) for *romperse* 'break', by contrast, the undergoer of the COS event is also the EFFECTOR in the causing subevent. Further, in sentences where a derived inchoative is used, like (53b), the NP naming both the THEME and the EFFECTOR is a subject and locally binds *por sí solo* 'by itself'. Derived inchoatives, thus, meet both the semantic and syntactic constraints on use with *por sí solo* 'by itself', while passives do not, the latter specifically being in violation of the binding theoretic properties of *por sí solo* 'by itself', which must be locally bound by a subject NP naming the EFFECTOR participant in the causing subevent.

In this way, then, the reflexivization analysis of anticausativization accounts for widely observed differences between passives and anticausatives.

3.5 Inferential relationship between causative and inchoative

The received wisdom on the semantic relationship of causative to inchoative (going back to Lakoff 1965), which has gone almost entirely unchallenged in the literature (though see Wierzbicka 1980:172 for suggestive English data) is that there is an entailment relationship from causative to inchoative, such that, for example, if a sentence with a causative like (55a) is true, then the sentence with the corresponding inchoative, e.g., (55b), will also always be true.

(55) a. Kim broke the vase.
b. The vase broke.

Without laying any claim to exactly what the facts of English are, I believe that in languages with overt unambiguous anticausativization, they are significantly more complicated than has been presumed. In fact, the bulk of work on the causative/inchoative alternation, I believe, has simply assumed that the entailment relationship between causative and inchoative presumed to hold in English also holds in cases of anticausativization. In this section I show that this is not the case and then that this fact is captured by the reflexivization analysis.

It turns out that contexts can be found in which the causative can be asserted while the derived inchoative is denied, precisely the state of affairs which should be impossible if there really is an entailment relationship between the two.[22] This is illustrated by the naturally occurring data in (56).

(56) `es.charla.moteros`, Nov. 4, 2003, posted by "Wanchuzri"
> menos mal que la wanchu no puede leer esto ...
'thank goodness that Wanchu(zri) can't read this ...'
> el otro dia se le rompió el ordenador ...:-/
'the other day her computer broke on her ...'
Oye, niñato, que ya si te leo y el ordenador **no se rompió** sino que me lo rompiste TU!
'Listen, Niñato, now I do read your message, and the computer didn't *break*, but rather you broke it on me!'

What the writer is asserting in (56) is that the computer was not the cause of its own breaking; instead, there was a cause external to the computer, namely the previous poster. Thus, the writer is denying the truth of the sentence with the derived inchoative while asserting the truth of the one with the corresponding causative.

A related constructed example is given in (57).

(57) Father: ¿Que pasó, hijo?
'What happened, child?'
Son: El vaso se rompió.
'The glass broke.'
Father: **No se rompió** sino que lo rompiste tú!
'The glass didn't *break*—you broke it!'
→ **The glass broke.**

[22] Of course, what I really intend here is that the proposition named by a sentence headed by a causative can be asserted while a proposition named by a sentence headed by a derived inchoative can be denied. I use the above terminology instead for perspicuity.

Like the example in (56), in (57) the truth of the sentence headed by the derived inchoative is explicitly denied, at the same time that the truth of a sentence headed by a causative is asserted, showing that contrary to what is widely assumed, it is not the case that a sentence headed by a causative entails a sentence headed by the corresponding inchoative.[23]

The reflexivization analysis of anticausativization developed above actually predicts precisely this kind of relationship between causative and inchoative. This can be seen simply by considering the decompositional representations assigned by this analysis to causative *break* in (58) and to its derived inchoative counterpart in (59).

(58) $[\![romper]\!] =$
$\lambda x \lambda y \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,y) \wedge BECOME(e,s) \wedge$
$THEME(s,x) \wedge not\text{-}whole(s)]]$

(59) $[\![romper\ se]\!] = \lambda z \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,z) \wedge BECOME(e,s)$
$\wedge THEME(s,z) \wedge not\text{-}whole(s)]]$

According to the reflexivization analysis of anticausativization laid out above, every COS event named by a derived inchoative verb is one in which the entity undergoing the COS event is also a participant in the causing eventuality. This is distinctly *not* the case for COS events named by underived causative verbs. These events are ones in which the undergoer of the COS event and the participant in the causing COS event can be distinct. Thus, it follows from the representations assigned to causatives and derived inchoatives that one should be able to find contexts in which a sentence headed by a derived inchoative verb is true even though a sentence headed by the corresponding underived causative is false. This is precisely the kind of context illustrated by the data in (56).

At least for cases of anticausativization, then, the proposed analysis predicts, contrary to orthodoxy, *that sentences headed by a causative do not entail sentences headed by a corresponding inchoative*. The data in (56) bear this prediction out. In light of this observation, however, it might also be expected that a sentence headed by a derived inchoative could not be followed by another sentence headed by the corresponding causative verb with a distinct effector. A discourse like that in (60), then, might be expected to be contradictory, since on the reflexivization analysis, *el vaso* 'the glass' is the effector of the first inchoative-headed sentence, while it is also asserted in the second causative-headed sentence that Juan is an effector participant in the causative event.[24]

(60) *Se rompió el vaso. De hecho, Juan lo rompió.*
REFL broke the glass in truth Juan it broke
'The glass broke. In fact, Juan broke it.'

[23]It has been suggested that the negation in (56) and (57) might be metalinguistic, and that what is thus being denied is not that the single argument was the cause of its own change of state, but rather that the previous utterance is an adequate description. In §4.3, I show that this is not the case.

[24]It is worth noting that it should not be at all surprising on the proposed analysis that (60) should be acceptable on a passive interpretation, which all *se* marked verbs have, as previously discussed. Assuming that the *se*-derived verb in (60) can actually have an inchoative interpretation, however (something which can't be shown definitively without the aid of *por sí solo* 'by itself', which would lead to contradiction for the wrong reasons), then the datum needs some explanation in the context of the reflexivization analysis. One reason to believe that there is an inchoative interpretation for (60) comes from the observation of an anonymous reviewer that "In my native language ... (56) is fine but (60) is also ok. In addition, there is no possibility of interpreting (60) as passive (no passive with the verb *break* and yet (60) is ok."

The discourse in (60), however, is only expected to be contradictory on the reflexivization analysis on the assumption that a causing event can have only a single effector, an assumption that has neither been made above nor follows as a consequence of the proposed analysis. And, there are reasons to believe such an assumption to be unwarranted. The strongest of these comes from the meaning of adverbial modifiers like *por sí solo* 'by itself'. As discussed by Chierchia (2004:42) and in the previous section, these modifiers, as embodied in the denotation assigned to *por sí solo* in (54), add to the meaning of a sentence the specification that the causing event named by the verb that is modified has no more than a single EFFECTOR. The fact that there exists such a modifier (not only in Spanish, but in all languages I am aware of), suggests that it is not the case that in the absence of this modifier there is any entailment that a causing eventuality has a single EFFECTOR—what *por sí solo* and its crosslinguistic kin do is to explicitly encode this information. It is for this reason that a discourse such as (61), by contrast with (60), is judged contradictory.

(61) *#Se rompió el vaso por sí solo. De hecho, Juan lo rompió.*
REFL broke the glass by SELF only in truth Juan it broke
'The glass broke by itself. In fact, Juan broke it.'

While the first sentence in (61) does not explicitly encode that there is a single EFFECTOR (though perhaps generates an implicature that there is), (61) does, making the claim of the second sentence in (61) generate a contradiction, while it does not in (60).

Further, it is not necessarily assumed in the literature that an event must have a single EFFECTOR, at least by those who make their assumptions about such matters explicit. Piñón (2001a, 18, fn. 9), for example, explicitly assumes that an event can have more than one EFFECTOR (which he calls PERFORMER) under certain circumstances, since EFFECTOR participants can, as discussed in §2.1, be of a variety of different thematic types. Piñón's (2001a) assumption, instead, is that a single event cannot have two of the same type of EFFECTOR—i.e., it may not have more than one agent, more than one instrument, etc., but can indeed have one of each. In this way, what is going on in (60), as also suggested by an anonymous reviewer, is that there is simply more than one EFFECTOR—one non-agentive EFFECTOR (the glass) and one agentive EFFECTOR (Juan), made explicit in the second sentence of the discourse.

More explicitly, this plays out as follows. Alternating verbs like *romper* 'break' lexically subcategorize for a single EFFECTOR, which as has been argued, can be equated with the verb's subcategorized undergoer argument by the reflexivization operation, as is the case in *romperse* 'break'. In the absence of anything in the sentential/discourse context to the contrary, the lexical specification that there is an EFFECTOR gives rise to an implicature that there is a *single* EFFECTOR, namely, the single EFFECTOR provided by the lexical semantic representation of the verb in question. Other information in the sentential/discourse context, however, can cancel this implicature, allowing for multiple EFFECTORs, so long as there is nothing else in the context that explicitly entails the existence of a single, unique EFFECTOR (e.g., *por sí solo* 'by itself'). This is precisely what happens in the discourse in (60), which contains nothing that precludes the possibility of more than one EFFECTOR participant in the event causing the breaking event. Not only is *el vaso* 'the glass' an EFFECTOR (as well as undergoer), by virtue of the lexical semantics of reflexivized *romperse* 'break', but *Juan* also is, by virtue of the lexical semantics of *romper* 'break' in the following sentence. Because the second sentence refers (with the pronoun *lo* 'it') back to the same glass denoted by *el vaso* 'the glass', and because (by pragmatic real-world knowledge) a glass can only break once, it has to be that the breaking event described in the first sentence is the same as the one described in the second sentence. It therefore follows that both *el vaso* 'the glass' and *Juan* must be EFFECTORs of the event that caused the change of state, on this analysis. And,

because they are both of thematically different types, the former a non-agentive EFFECTOR the latter an agentive EFFECTOR, consistent with Piñón's conjecture discussed above, there is no contradiction in both of them being EFFECTOR arguments (since they are thematically different types of EFFECTOR). In (61), by contrast, the presence of *por sí solo* 'by itself' gives rise to an entailment that there is a single EFFECTOR. But because both *romperse* 'break' in the first sentence and *romper* 'break' in the second sentence subcategorize for an EFFECTOR, and because *el vaso* 'the glass' must be an EFFECTOR in the sentence headed by *romperse* 'break', while *Juan* must be an EFFECTOR in the sentence headed by *romper* 'break', and because (by real world knowledge) the entity denoted by *Juan* cannot possibly also be in the denotation of *vaso* 'glass', a contradiction is generated, since the two verbs entail the existence of EFFECTOR arguments that must be distinct from one another, but cannot be, by virtue of the lexical semantics of *por sí solo.*

What the data in this section show, then, is that the facts are indeed consistent with the reflexivization analysis, and that at least in cases of clear unambiguous anticausativization, contrary to what is generally presumed in the literature, causative does not entail inchoative.[25] Instead, in cases of anticausativization at least, the reverse seems to be the case—inchoative entails a special kind of causative, namely one in which a single entity acts upon itself to cause a change of state in itself.

4 Independent arguments for a CAUSE in derived inchoatives

In the preceding sections, I have developed a reflexivization analysis of anticausativization on which inchoative verbs derived by anticausativization retain in their lexical semantic representation the CAUSE operator present in the representation of the causative verb from which they were derived. Not only is this a core part of the reflexivization analysis, but it also has consequences for the MH, a secondary concern of this paper. Traditional analyses of anticausativization have it that the semantic effect of the operation is to delete a CAUSE operator. If this is true, then not only is the reflexivization analysis wrong, but the MH is falsified. It is important, then, not only for the analysis of anticausativization I have presented here, but for the MH more broadly that there are a number of arguments independent of any particular analysis that lead directly to the opposite conclusion. Derived inchoatives *do* have a CAUSE as part of their lexical semantic representation, as I show in the sections that follow.

4.1 The Spanish *por sí solo*

As discussed in §3.4, the Spanish adverbial modifier *por sí solo* 'by itself' distinguishes anticausative interpretations of *se* derived verbs from passive interpretations of the same verbs. It turns out, however, that this diagnostic does more than distinguish passive from anticausative. As first noted by Chierchia (2004, 42ff.) for the Italian equivalent *da sé*, this diagnostic also distinguishes verbs with a CAUSE as part of their denotation from those lacking a CAUSE.

The *por sí solo* 'by itself' modifier, as discussed in §3.4, is an anaphor that gives rise to the meaning that the NP that antecedes it is the sole agent or cause of the event named by the clause in which it appears (Chierchia, 2004, 42ff.), as illustrated by the data in (62).

[25] In this way, then, I believe that Chierchia's (2004:54ff.) efforts at revising his reflexivization analysis to predict an entailment from sentences headed by a causative to sentences headed by an inchoative is misguided, at least for languages with overt anticausativization (unlike English, his language of primary analysis). As shown here, the facts are more complicated than has generally been recognized.

(62) *no se puede decir que ninguno de los golpes haya matado por sí solo a la*
no REFL can say that none of the hits has killed by self only to the
víctima
victim
'it cannot be said that no hit has by itself killed the victim.' (Google)

In (62), *por sí solo* is bound by *ninguno de los golpes* 'none of the hits', the cause of the event named by the verb in the clause in which both appear.

Because the NP binding *por sí solo* 'by itself' must be the sole agent or cause of the event named by the verb heading the clause in which it appears, it is judged unacceptable in clauses headed by verbs that lack either agentive or causer subjects. So, stative predicates (63), which lack both an agentive subject and a CAUSE operator as part of their denotation are judged unacceptable with *da sé* 'by itself'.[26]

(63) a. **Juan sabe inglés por sí solo.*
Juan knows English by REFL self
'*Juan knows English by himself.'
b. **El carro es rojo por sí solo.*
the car is red by REFL only
'*The car is red by itself.'

Similarly, because the subject of a passive is not the causer of the event named by the verb, *por sí solo* 'by itself' cannot be bound by it, as shown by the data in (64).

(64) **El barco fue hundido por sí solo.*
the boat was sunk by REFL only
'*The boat was sunk by itself.' (Mendikoetxea, 1999, 1594)

Additionally, there are a number of *underived* inchoative verbs in Spanish with which *por sí solo* 'by itself' is reportedly unacceptable, according to Mendikoetxea (1999, 1598). Examples are given in (65).

(65) a. ??*Juan empeoró por sí solo.*
Juan worsened by REFL only
'Juan worsened by himself.'
b. ??*La leche hirvió por sí sola.*
the milk boiled by REFL only
'The milk boiled by itself.'
c. ??*El niño creció por sí solo.*
the child grew by REFL only

[26] The same holds for Italian, as shown by the data in (i).

(i) a. * Gianni conosce il latino da sé.
'Gianni knows Latin by himself.' (Chierchia, 2004, 42)
b. ?è felice da sé
'... is happy by him/her/itself.' (zero Google hits)

The data in (i) (as well as those in (63), for Spanish) argue against the claim of Folli (2001, Chapter 2) that *da sé* 'by itself' adds agent/cause entailments, rather than modifying agent/cause entailments lexically specified by the verb. Were Folli's (2001) claim correct, sentences like those in (i) and (63) would be expected to be acceptable, since the verbs in these sentences lack both agent and cause entailments at the lexical level.

'The child grew up by itself.' (Mendikoetxea, 1999, 1598)

The events named by the verbs in (65) correspond to the internally caused COS events argued by Rappaport Hovav and Levin (1998) to lack a CAUSE operator, which would explain why they are unacceptable with *por sí solo* 'by itself'—these verbs lack a causative LSR. Rather than having the LSR of derived inchoatives like *abrirse* in (49), repeated in (66), they instead have an LSR more like (67), crucially lacking a causing event (Rappaport Hovav and Levin, 1998).

(66) $\lambda x \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge open(s)]]$

(67) $\lambda x \lambda s \lambda e[BECOME(e,s) \wedge THEME(s,x) \wedge in\text{–}blossom(s)]$

On the representation in (67), the single argument of the internally caused verb is not a participant in a causing event, and is therefore not a causer in the sense that the single participant of a derived inchoative is. From this, the unacceptability of internally caused verbs with *por sí solo* 'by itself' follows.[27]

By contrast, *por sí solo* is acceptable with derived inchoatives, as illustrated by the data in (68).

(68) a. *El barco se hundió por sí solo.*
the boat REFL sank by REFL only
' The boat sank by itself.' (Mendikoetxea, 1999, 1594)

b. *La puerta se abrió por sí sola.*
the door REFL opened by REFL only
'The door opened by itself.' (Mendikoetxea, 1999, 1593)

c. *La ruptura continuó alrededor de esta barrera, pero treinta segundos después, cuando había avanzado 200 km, el duro bloque de la barrera se rompió por sí solo.*
the rupture continued aroud of this barrier but thirty seconds after when had advanced 200 km the tough block of the barrier REFL broke by self only

[27]It must be stressed at this point that it does not follow, nor does the MH predict it to follow, that all underived inchoative verbs name internally caused COS events. Although this seems to be the implicit, if not explicit, claim in the literature (Labelle, 1992; Haspelmath, 1993; Centineo, 1995; Levin and Rappaport Hovav, 1995), the theory laid out here has nothing to say about lexicalization—recall that the MH is a claim about word formation operations—and both the LSR in (i) and (ii) as semantic representations for inchoative verbs (where ϕ stands in for a random stative predicate) are consistent with the MH.

(i) $\lambda x \lambda s \lambda e[\exists v[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge \phi(s)]]$

(ii) $\lambda x \lambda s \lambda e[BECOME(e,s) \wedge THEME(s,x) \wedge \phi(s)]$

What the MH is a claim about is how one lexical semantic representation is derived from another. If it is not derived at all, but simply lexicalized, the MH has nothing to say about the nature of the representation.

A reviewer points out that were it the case that there were morphologically simple inchoatives with the representation in (i), it would mean "that morphology is not always telling us the direction of the alternation, i.e., whether it is anticausativization/reflexivization or causativization." I believe this is basically correct. While the causative/inchoative operation is not always signalled by overt morphology, an overt anticausative morpheme necessarily signals an anticausative derivation. That is, what is predicted never to happen is that a derived inchoative would have a representation like (ii); the representation in (ii) is available only to underived inchoatives. By contrast, I have nothing to say about lexicalization, allowing that a lexeme could be lexicalized in either way. As I said above, however, I do not at present have arguments one way or another whether both lexicalizations of morphologically simple inchoatives are attested. That they could be with morphologically simple inchoatives, but not with derived inchoatives is a consequence of the MH combined with the view of the semantic significance of morphology outlined in Koontz-Garboden (2007a).

'The rupture continued around the barrier, but after thirty seconds, when it (the rupture) had advanced another 200 km, the tough block(?) of the barrier broke by itself.'(Google)

d. *No te preocupes, que se murió por sí solo.*
no 2SING bother that REFL died by REFL only
'Don't worry; it (= a hot topic of discussion on a discussion list) died by itself.' (Google)

The data in (62) and (63) show that *por sí solo* 'by itself' must be bound by a causer subject. The subjects of anticausatives like those in (68) are not agents. Nevertheless, *por sí solo* 'by itself' is acceptable with anticausatives, leading to the conclusion that the subject must in some sense be the cause of the event named by the verb. The conclusions that are forced on the basis of these data then are (a) that the denotation of anticausatives includes a CAUSE operator, and (b) that the single argument of the anticausative verb must be, in some sense, the cause of the COS event that it undergoes. On the reflexivization analysis of anticausativization presented above both of these conditions hold. In addition to the Spanish data already discussed, similar observations have been made about the equivalent of *por sí solo* 'by itself' in Italian (Chierchia, 2004), German (Alexiadou et al., 2006), Greek (Alexiadou et al., 2006), Slovenian (Grahek, 2002), and Sinhala (Zubair and Beavers, 2008), i.e., that it points to the existence of a CAUSE operator as part of the denotation of derived inchoatives in those languages, consistent both with the reflexivization analysis and with the MH more broadly.[28]

4.2 The "feel like" construction

Another construction showing that derived inchoatives do indeed have a CAUSE operator as part of their lexical semantics is what has been called the "feel like" construction, exemplified by the Albanian data in (69).[29]

(69) a. *Benit i ha-hej (një mollë).*
Ben DAT.CL.3S eat-NACT.P.IMP.3S (an apple-NOM)
'Ben felt like eating (an apple).'

b. *Benit i ndërto-hej (një shtëpi).*
Ben DAT.CL.3S build-NACT.P.IMP.3S (a house-NOM)
'Ben felt like building (a house).' (Kallulli, 2006c, 273)

The essence of this construction is that the verb appears in the non-active voice rather than in the active voice, and the object of the corresponding transitive/active verb appears as the subject of the "feel like" construction, with the verb in the morphologically marked non-active voice. What corresponds to the subject of the transitive/active verb appears in this construction in the dative case, with the entire construction having the "feel like" meaning exemplified by the glosses in (69).

Independent of the "feel like" construction, non-active morphology serves other functions in Albanian. Of particular interest is the fact that the active/non-active distinction serves to mark the causative/inchoative alternation, much in the same way as it does in Greek (Alexiadou and Anagnostopoulou, 2004), with the non-active form being the formally derived one, marking the

[28] Although more work would be needed to thoroughly substantiate the claim, data reported in Fukuda (2008) point to a similar conclusion for Vietnamese.

[29] See Marušič and Žaucer (2006) for detailed discussion of this construction in Slovenian.

inchoative, as illustrated by the data in (70).[30] In this way, then, for verbs like *break*, the causative/inchoative alternation is accomplished in Albanian by anticausativization, since the inchoative verb (70a) is morphologically marked, while the causative (70b) is not.

(70) a. *U thye dritarja.*
NACT broke.AOR.3S window.NOM
'The window broke.' (Kallulli, 2006a, 5)
b. *Beni theu dritaren.*
Ben.NOM broke.ACT.AOR.3S window.ACC
'Ben broke the window.' (Kallulli, 2006c, 275)

In addition to a simple inchoative use, a non-active anticausative like (70a) can also be used in the "feel like" construction, as exemplified by the data in (71), which gives an example of the verb marked with the aorist aspect, and (72), an example of the verb marked with the imperfective aspect.

(71) *Benit i-u thye dritarja.*
ben.DAT DAT.CL3S-NACT break.AOR.3S window.NOM
a. 'Ben unintentionally/involuntarily broke the window.'
b. '*Ben felt like breaking the window.' (Kallulli, 2006c, 276)

(72) *Benit i thy-hej dritarja.*
Ben.DAT DAT.CL.3S break-NACT.P.IMP.3S window.NOM
a. 'Ben felt like breaking the window.'
b. '*Ben unintentionally/involuntarily broke the window.' (Kallulli, 2006c, 277)

As shown by the glosses in (71) and (72), a verb like *break* has two possible interpretations in the "feel like" construction—when it appears in the aorist aspect, as in (71), it has what Kallulli (2006c) calls the "unintended cause" interpretation, whereby the dative marked argument is interpreted as the unintended cause of the event named by the anticausative verb.[31] When it appears in the imperfective aspect, however, it has the canonical "feel like" interpretation originally illustrated by the data in (69).

As discussed by Kallulli (2006c), while the "feel like" interpretation seems to be widely available for verbs marked with non-active morphology, the unintended cause interpretation is not so widely available. Namely, while it is available to COS verbs like *break*, it is unavailable to non-causative transitive verbs that have been intransitivized by the non-active morphology. For example, the unintended cause interpretation is unavailable with verbs like *eat*, regardless of aspectual marking. When used with imperfective aspect in the "feel like" construction, such verbs have only the "feel like" interpretation (73a), with the unintended cause interpretation (73b) being unavailable.

[30] Like most other languages with an anticausative, Albanian also uses the same morphological marking, the non-active voice, to derive reflexive-type meanings (Newmark et al., 1982, 34), again, an unsurprising fact given the proposed reflexivization analysis of anticausativization.

[31] In the aorist, the non-active is marked by a preverbal clitic, while with the imperfective it is marked inside the verb (Kallulli, 2006b, fn. 5). This is irrelevant here, as is why it should be that the unintended cause interpretation arises with the aorist and the "feel like" interpretation arises with the imperfective. What is important for my purposes is simply that in the non-active voice with *break*-type verbs the unintended cause interpretation is possible, while it is not for verbs lacking a CAUSE operator as part of their lexical semantic representation.

It is also worth noting that as with the data in (60), sentences like those in (71), with both a derived inchoative verb and an oblique cause argument, would be analyzed on the reflexivization analysis as having two EFFECTOR participants in the causing subevent.

(73) *Benit i ha-hej (një mollë).*
Ben.DAT DAT.CL.3S eat-NACT.P.IMP.3S (an apple).NOM
a. 'Ben felt like eating (an apple).'
b. '*Ben unintentionally ate (an apple).' (Kallulli, 2006c, 277)

The same holds when such verbs are used in the "feel like" construction with non-active morphology in the aorist—while the "feel like" interpretation (74a) is available, the unintended cause interpretation (74b) is not.

(74) *Benit i-u hëngër (një molleë).*
Ben.DAT DAT.CL.3S-NACT eat-AOR.P.3S (an apple).NOM
a. 'Ben felt like eating (an apple).'
b. '*Ben unintentionally ate (an apple).' (Kallulli, 2006c, 277)

These facts show that the unintended cause interpretation is available only to verbs that have a CAUSE as part of their lexical semantics to begin with, e.g., verbs like transitive/causative *break*. The "feel like" construction cannot add a CAUSE; if it could, then meanings like (73b) and (74b) would be possible interpretations of the "feel like" construction with verbs like *eat*. The conclusion, then, is that one possible function of the "feel like" construction for non-active intransitive COS verbs is to specify the nature of the underlying CAUSE already present in the lexical semantics of the anticausative, non-active marked COS verb. This is, in fact, the same kind of conclusion reached by Kallulli (2006a; 2006b; 2006c) on the basis of these facts. This construction, then, provides additional independent empirical support for the claim that there is indeed a CAUSE as part of the denotation of derived inchoatives, as predicted both by the reflexivization analysis of anticausativization and the MH.

4.3 Negation

Another argument for a CAUSE in the representation of derived inchoatives, which has not previously appeared in the literature, comes from data already discussed briefly above in §3.5. The observation is that negation of sentences with derived inchoatives is often ambiguous in a way that suggests that they have a CAUSE as part of their lexical semantic representation.

The empirical observation is illustrated by the two contexts in (75) and (76), the latter repeated from (57). In the context in (75), in negating the derived inchoative, the son is denying that the glass entered into a state of brokenness.

(75) Father: ¿Se rompió el vaso?
'Did the glass break?'
Son: No, **no se rompió** el vaso.
'No, the glass did not break.'
→ **The glass did not break.**

By contrast, the same phrase in the contrasting context in (76) has a completely different meaning—the father is not denying in (76) that the vase entered into a state of brokenness. Instead, in (76), the father is denying that the vase was the cause of its own entering into a state of brokenness. Indeed, in the context in (76), the vase *does* enter into a state of brokenness, despite the fact that the verb naming the COS event is negated.

(76) Father: ¿Que pasó, hijo?
'What happened, child?'

Son: El vaso se rompió.
'The glass broke.'
Father: **No se rompió** sino que tú lo rompiste!
'The glass didn't *break*—you broke it!'
→ **The glass broke.**

The same state of affairs holds in the naturally occurring example in (77), repeated from (56), where the writer does not deny that the computer was non-functional, but instead denies that the computer was the cause of its entering into a state of non-functionality.

(77) `es.charla.moteros`, Nov. 4, 2003, posted by "Wanchuzri"
> menos mal que la wanchu no puede leer esto ...
'less bad that Wanchu(zri) can't read this ...'
> el otro dia se le rompió el ordenador ...:-/
'the other day her computer broke on her ...'
Oye, niñato, que ya si te leo y el ordenador **no se rompió** sino que me lo rompiste TU!
'Listen, Niñato, now I do read your message, and the computer didn't *break*, but rather you broke it on me!'
→ **The computer broke.**

What is going on with sentences such as (75), on the one hand, and those in (76) and (77) on the other, is that there are two very different interpretations under negation—one in which it is denied that a COS event was undergone, and another in which something else is denied, namely that the undergoer of the change into the state was also the cause of the COS event. On this second interpretation, crucially, it is not denied that a COS event was undergone; indeed, a COS event *can* have been undergone, as in (76) and (77). The conclusion, then, is that in one case negation has scope, in a sense to be clarified formally below, over a BECOME operator and in the other case over a CAUSE operator, which, of course, entails the existence of the CAUSE operator in the representation of the derived inchoative.

On first blush, it may appear that what is going on in the cases of negation above is that it is actually metalinguistic negation (Horn, 1985), so that the reading in question could actually be generated without admitting a CAUSE in derived inchoatives. Leaving aside what exactly the formal analysis of metalinguistic negation might be that would generate such a reading (which is indeed a non-trivial issue, see e.g., van der Sandt 1991), there are at least two arguments against such an analysis.

The first of these is that there are contexts in which outside of any particular discourse (i.e., in completely unmarked contexts), the favored, and perhaps only reading, is one where negation has scope over the CAUSE. Consider, for example, the data in (78). The most natural interpretation for (78) is a reading in which it is not denied that the glass broke—on the contrary, the glass *did* break. What is denied is that the glass was the cause of the change into the state.

(78) **No se rompió** el vaso por sí solo.
'The glass did not break by itself.'
→**The glass broke.**

Crucially, as argued above, *por sí solo* 'by itself' is not responsible for adding causative semantics to the sentence. Instead, these must come from the meaning of the derived inchoative. And crucially, this reading holds absent any particular discourse context—it cannot be claimed in (78) that the negation is some kind of objection to a previous speaker's way of framing an utterance, showing

that the outscoping of CAUSE by negation holds in contexts where the negation is unambiguously not metalinguistic.[32]

A second argument against a pure metalinguistic negation analysis of negation in (76) and (77) comes from a prediction about acceptability of predicates lacking a CAUSE operator in contexts like those in (76) and (77). If the negation in these examples is metalinguistic, there is a prediction, as an anonymous reviewer observes, that the same types of readings could be generated with predicates that lack a CAUSE as part of their lexical semantic representation. By contrast, if the readings in (76) and (77) that allow change of state inferences to survive in the presence of negation are not due to metalinguistic negation and actually do require access to a CAUSE operator, it should not be possible to generate such a reading in the context of a predicate lacking a CAUSE operator.[33] The judgements of two native speaker consultants (both from Spain) vary on this apparently subtle judgement. While one finds the discourse in (79) with internally caused *empeorar* 'worsen' acceptable, the other finds it marginal at best, and certainly much less acceptable than (76), noting that while (79) sounds like a contradiction to which he would be inclined to ask for clarification

[32]The same kind of behavior is observed in Italian, as illustrated by the naturally occurring data (due to Beth Levin) in (i).

(i) la diatriba l'hai aperta tu, non si e aperta sola, attacando per un tuo infantile capriccio chi non aveva rivolto nemmeno un piccolo accenno alla tua Peloro Truffa
you opened (started) the diatribe; it didn't start by itself ...
`http://www.ngmail.it/forum.nsf/($Messaggi)/F619A60E976C1C8DC125713F003E3BF0?OpenDocument`

Again, the observation is that despite the fact that the derived inchoative *si e aperta* is negated in (i), it is not denied that the diatribe began. What is denied is instead that the diatribe began on its own, the claim being instead, that somebody else started it.

[33]This is a somewhat difficult prediction to test with internally caused COS verbs owing to the fact that they generally lack causative uses (Smith, 1970; Haspelmath, 1993; Levin and Rappaport Hovav, 1995), and a causative continuation is often not possible. As discussed by McKoon and Macfarland (2000, 2002 however, some internally caused COS verbs are acceptable as causatives so long as the subject is non-agentive. For at least some Spanish speakers, this is the case for the verb *empeorar* 'to worsen', as shown by the data in (i).

(i) a. **El Dr. Smith empeoró al paciente.*
the Dr. Smith worsened the patient
'Dr. Smith worsened the patient.'
b. *El tratamiento empeoró al paciente.*
the treatment worsened the patient
'The treatment worsened the patient.'

Why this should be the case and what the implications of these facts are for the lexical semantic representation of internally caused COS verbs is an important outstanding issue in the study of the lexical semantics of COS verbs. It also raises the question how it can be the case, as is claimed by e.g., Levin and Rappaport Hovav (1995, Chapter 3) and Rappaport Hovav and Levin (1998), that internally caused COS verbs can at once fail the *por sí solo* 'by itself' diagnostic, which diagnoses the absence of a CAUSE, but also appear in a (albeit unique) causative frame. What I believe this suggests is that the contrast between internally caused COS and externally caused COS verbs is in whether the intransitive version lacks a CAUSE, not necessarily in whether there is a causative use (contra Levin and Rappaport Hovav 1995). What this would mean, at least in lexicalist terms, for the causative use of internally caused COS verbs would be the addition of a CAUSE operator, by contrast with the externally caused COS verbs, which are lexicalized with the CAUSE operator as part of the lexical semantic representation.

Although these are important issues, they are somewhat tangential to the matters under discussion here, and I leave them for future research. The important issue for the discussion below is the fact that *empeorar* 'worsen' behaves like an internally caused COS verb in being odd with *por sí solo* 'by itself' modification, and in not allowing agentive causatives constructions like (ia). The fact that it allows non-agentive causative constructions, e.g., (ib), makes it possible to test whether it has a non-contradictory reading when a previous sentence headed by an inchoative *empeorar* 'worsen' that is negated is followed by another sentence that asserts the causative.

(e.g., "did it or did it not worsen?"), (76) does not.[34]

(79) A: *El paciente empeoró.*
the patient worsened
'The patient worsened.'
B: ?*No empeoró sino que lo empeoró el tratamiento!*
no worsened but.rather that it worsened the treatment
'She didn't worsen, but rather the treatment worsened her!'

Similarly for the stative predicate *tener miedo* 'be afraid', while one consultant, after some work, found (80) acceptable, for the other consultant no amount of contextual support seems to improve it.

(80) A: *Juancito tiene miedo a los insectos.*
Juancito has fear to the insects
'Juancito fear insects.'
B: ?*No, no tiene miedo a los insectos. Tú se lo haces tener.*
no, no has fear to the insects you REFL it make have
'No, he doesn't fear insects. You make him fear them!'

Although, as mentioned, it is not at all clearly the case that (79) and (80) are fully acceptable, and are certainly not on a par with the acceptability of (76), I assume the worst case scenario—that they are acceptable, and consider the consequences. What this would mean is that because *empeorar* and *tener miedo* lack a CAUSE as part of their decompositional representation, the apparent scope ambiguity in (79) and (80) could not be due to the presence of a CAUSE operator, which would suggest, in turn, that there is no argument from the parallel (76) and (77) for the presence of a CAUSE operator in derived inchoatives. Again, it would suggest that whatever the negation is doing such that it does not lead to the denial that there was a change of state in (76) and (77) is also what would be going on in (79) and (80), assuming that these are acceptable.

While I agree that the data in (79) and (80), assuming they are acceptable, would suggest that there is indeed a metalinguistic reading of negation in the discourses in (76) and (77), additional data suggest that there is also a reading that is unambiguously non-metalinguistic, i.e., that negation in (76) and (77) may be ambiguous between metalinguistic and ordinary negation (with scope over CAUSE), while if (79) and (80) are acceptable at all, it is because the negation in them is unambiguously metalinguistic. These data, then, lead to the conclusion that there is indeed a CAUSE as part of the decompositional representation of derived inchoatives, while there is not one as part of the representation of predicates like *empeorar* 'worsen' and *tener miedo* 'fear', and indeed, that negation can outscope this CAUSE operator.

The argument begins with Horn's (1985:135) observation that metalinguistic negation does not license negative polarity items (NPI), as shown by the English data in (81).

(81) a. John didn't manage to solve SOME of the problems-he managed to solve ALL of them. (Horn, 1985, 132, (17b))
b. *John didn't manage to solve ANY of the problems—he managed to solve ALL of them. (Horn, 1985, 135, (24))

The Spanish counterparts of (81) given in (82), particularly (82b), show that this holds true as well

[34] Also perhaps noteworthy is the fact that by contrast with (76), where I was able to find the naturally occurring example in (77), I have been unable to find a naturally occurring counterpart for (79).

for the Spanish NPI *ningún* 'any.neg'—it is not licensed by metalinguistic negation.[35]

(82) a. *No consiguió resolver* ALGÚN *problema—consiguió solucionar-los todos!*
no managed solve some problem managed 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 solucionarlos todos!*
no managed solve any.neg(NPI) problem managed solve-them all
'*S/he didn't manage to solve ANY of the problems—s/he managed to solve all of them!'

By contrast, the NPI *ningún* is licensed in Spanish in a context like (77), as shown by the data in (83), which both consultants find acceptable.[36]

(83) *No se rompió ningún vaso; los rompió Andrés.*
no se broke any.neg(NPI) glass them broke Andrew
'Any vase didn't break; Andrew broke them.' (lit: Any vase didn't break itself; Andrew broke them all.)

The data in (82b) show that the NPI *ningún* is not licensed by metalinguistic negation. Yet, the negation in (83) *does* license *ningún*. Further, and crucially, what is denied in (83) is not that there was a change in the state of the vases—indeed, there was, as made clear by the continuation—but rather that for none of the vases was it the case that the vase was the cause of its own breaking. That is, what is negated in (83) is something other than the existence of a change of state event. What is negated is the existence of a causing event in which the vases were EFFECTOR participants. This is, then, a context in which negation appears to be taking scope over a CAUSE rather than a BECOME operator (loosely speaking), as the non-contradictory reading cannot be a consequence of the negation being metalinguistic, since such negation would not have licensed the NPI *ningún*.

The upshot of this, then, is that despite the possibility that sentences like the one in (76) and (77) may have a reading under which the negation is metalinguistic, the data in (83) show conclusively that there is indeed a reading where negation is *not* metalinguistic and must have scope over the CAUSE operator in the derived inchoative (otherwise the discourse would be contradictory). If it is correct that the NPI environment is one where there is only ordinary negation, and that it must have scope over a CAUSE operator in order to not derive a contradiction, then there is a prediction that predicates lacking a CAUSE operator should be unacceptable in an environment like (83). This contrasts with the environments in (79) and (80), where metalinguistic negation can arguably survive, at least (with effort) for one consultant, owing to the absence of an NPI that needs to be

[35]One of my two consultants prefers, rather than the constructions in (82), the sentences in (i) with a cleft construction, which illustrate the same contrast.

(i) a. *No es que consiguiese resolver* ALGÚN *problema—consiguió resolverlos todos!*
not is that manage to.resolve some problem—managed to.resolve.them all
'It's not that s/he managed to solve SOME problem—s/he managed to solve all of them!'
b. *No es que consiguiese resolver NINGÚN problema—consiguió resolverlos todos!
not is that manage to.resolve any.neg problem—managed to.solve.them all
'It's not that s/he managed to solve ANY problem—s/he managed to solve all of them!'

[36]The consultant who prefers the cleft constructions in fn. 35 accepts (83) without any problem, as well as (i).

(i) *No es que se rompiese ningún vaso. Los rompió Andres.*
not is that REFL broke any vase them broke Andrew
'It's not that any vase broke. Andrew broke them.'

licensed by negation that is not metalinguistic in nature.

The prediction that predicates lacking a CAUSE operator should generate a contradiction in NPI environments is borne out by the judgements of both consultants. Consider first what happens in this context with the internally caused COS verb *empeorar* 'worsen', as shown by the data in (84).[37]

(84) *#No empeoró ningún paciente. Los empeoró el tratamiento.*
no worsened any.neg patient them worsened the treatment
'Any patient didn't worsen. The treatment worsened them.' (e.g., in context where a doctor asserts that the patients at the hospital worsened on their own, and someone else comes back to deny this).

Although *ningún* is licensed by the negation in (84), what is negated is that there was a change of state in the patients. The second sentence in the discourse then asserts that there was such a change, leading to a clear contradiction. Because *empeorar* lacks a CAUSE component, it is impossible to get a reading of the negation where it is the existence of a causing event that is negated, in which case (84) would not lead to contradiction. And because of the presence of an NPI that must be licensed by ordinary (i.e., non-metalinguistic) negation, there is no possible metalinguistic reading of the negation in (84). For both consultants, then, there is a clear contrast between *empeorar* 'worsen' and *romperse* 'break (inchoative)', precisely as predicted.

Given that stative predicates lack a CAUSE operator, they would be expected to behave like internally caused verbs like *empeorar* 'to worsen' in this frame. In line with this prediction, both consultants agree that the discourse in (85) is odd.[38]

(85) *# No tiene miedo a los insectos ninguna persona de la clase. Tú se las haces*
no have fear to the insects any.neg person of the class you REFL them make
tener!
have
'Any person in the class does not fear insects. You make them all fear insects!'

Again, because *tener miedo* 'be afraid' lacks a CAUSE operator, it is impossible for negation to take scope over the CAUSE in the first sentence, rather than the stative predication. Further, a metalinguistic reading of (85) is precluded by the NPI *ningún*, which must be licensed by negation that is not metalinguistic in nature. Given that the negation must be ordinary in (85), and that there is no CAUSE in the lexical semantic representation of *tener miedo* 'be afraid', negation can only take scope over the stative predication in the first sentence. Because the second sentence in the discourse entails that the stative predication does, contrary to the first sentence, hold true, a contradiction is derived. Again, this contrasts with what happens with a derived inchoative

[37] In addition to (84), the consultant who preferred the cleft constructions in fn. 35 also finds (i) contradictory.

(i) *No es que empeorase ningún paciente. Los empeoró el tratamiento.*
not is that worsened any.neg patient them worsened the treatment
'It's not that any patient worsened. The treatment worsened them.'

[38] The cleft construction in (i) is also found contradictory by the consultant who preferred the clefts in fn. 35.

(i) *#No es que tenga miedo a los insectos ninguna persona de la clase. Tú se las haces tener!*
not is that have fear to the insects any.neg person of the class you REFL them make to.have
'It's not that any person in the class is afraid of insects. You make them afraid of insects!'

This same consultant also finds (85) contradictory.

like *romperse* 'break (intrans)' in this environment, as shown by the data in (83), which both speakers find acceptable. Summing up this argument, then, it was observed that if the negation in (76) and (77) is metalinguistic, then it should be possible to have the same kinds of readings with predicates that lack a CAUSE. Although the data in (79) and (80) showed that speakers vary on this judgement, further data showed that speakers agree that the denial of CAUSE reading is available in the context of NPI-licensing negation only for predicates that have a CAUSE operator in their lexical semantic representation. This shows that even if there is a metalinguistic reading for some speakers for sentences like those in (76) and (77), there is also for all speakers a non-metalinguistic reading in which negation takes scope over the CAUSE operator in derived inchoatives, which, of course, shows that such verbs have a CAUSE operator.

The contrast between the two (non-metalinguistic) interpretations of a sentence with a negated derived inchoative in Spanish (i.e., the scope ambiguity illustrated by the data in (75) and (76)) can be seen more clearly by considering the formal representation assigned to such sentences on the reflexivization analysis. This is laid out in (86).

(86) $\neg\exists v\exists s\exists e[CAUSE(v,e) \wedge EFFECTOR(v,x) \wedge BECOME(e,s) \wedge THEME(s,x) \wedge \textit{not-whole}(s)]]$

What (86) says is that there does not exist an eventuality v that caused a change event e into a state s in which x was both the undergoer of the change event and the effector participant in the causing eventuality v. Now, consider the kinds of situations that satisfy this logical representation. First, note that (86) is consistent with a situation in which there exists no COS event e or stative eventuality s, since if these do not exist there can exist no eventuality v that caused the change e into the state s, since these do not exist. This is the interpretation generated in (75), where it is denied that there was a change of state. Additionally, however, (86) is also consistent with a situation in which there *does* exist a change e into a specified state s. More specifically, (86) would be satisfied by a situation in which the change e into the state s exists, but in which there exists no eventuality v with an EFFECTOR participant x that is also the THEME of the change e. This is precisely what happens with the data in (76), (77), and (85).

The important point in the context of the proposed analysis and of the MH is that a theory on which derived inchoatives lack a CAUSE operator cannot capture these facts, since negation of a derived inchoative will always entail the non-existence of the specified COS event. To see this more clearly, consider the representation of the same negated sentences with derived inchoatives on a theory in which the CAUSE is absent from the lexical representation of the derived inchoative. Such a representation is given in (87).

(87) $\neg\exists e\exists s[BECOME(e,s) \wedge THEME(s,x) \wedge \textit{not-whole}(s)]]$

The representation in (87) will be satisfied only in a situation in which there does not exist a change event e into a state s. But, as shown by the data in (76) and (77), this is not universally the case for sentences with negated derived inchoatives—in certain environments, sentences with negated derived inchoatives can be used when some entity has indeed undergone a COS event. In this way, then, any analysis that has it that the representation of derived inchoatives lacks a CAUSE operator cannot capture facts like those in (76) and (77). By contrast, if there is indeed a CAUSE as part of the representation of derived inchoatives, these facts are expected.

4.4 Additional arguments

There are various other sets of data from the literature that point to the conclusion that derived inchoatives have a CAUSE operator as part of their denotations. Some of these arguments are less well-developed than the arguments presented in the previous section, but they point to the same conclusion, and so I briefly discuss them here.

The ability to take an adverbial modifier is one of the additional diagnostics that has not uncommonly been used in support of a distinction between inchoatives and passives. For example, Härtl (2003, 892) observes the contrast in (88) between passives (88a) and inchoatives (88b) in their ability to take agent-oriented adverbials.

(88) a. Die schüssel wurde absichtlich/leichtsinnigerweise/gerne zerbrochen.
'The bowl was broken on purpose/carelessly/willingly.'
b. *Die schüssel zerbrach absichtlich/leichtsihnnigerweise/gerne.
'The bowl broke on purpose/carelessly/willingly.' (Härtl, 2003, 892)

The claim is that in (88a), the adverbials say something about the nature of the causing event. Because inchoatives cannot occur with such adverbials (88b), it is argued that they lack a causing event.

It is important to note, however, as Härtl (2003, 892) himself does, that the adverbials in (88) are *agent* oriented. Because agentivity and causation are separate notions (DeLancey, 1984), it is possible to have causation, without agentivity, as shown, e.g., by the fact already discussed above that verbs that participate in the causative alternation can take non-agentive causers, as shown by the data in (89).

(89) The hammer/the explosion/the wind/Kim broke the vase.

Given this observation, it might be expected that if non-agentive adverbial modifiers could be found, they might be acceptable with derived inchoative verbs, to the extent that they have a CAUSE operator as part of their denotation. In fact, such behavior has indeed been observed by Centineo (1995) for the Italian adverb *violentemente* 'violently'. She observes that for derived inchoatives, which she argues have a CAUSE operator as part of their lexical semantic representation, *violentemente* 'violently' is an acceptable modifier, as shown by the data in (90a). In contrast, for the inchoative verb *affondare* 'sink', which is morphologically simple, i.e., not derived via anticausativization, she argues that its lexical semantic representation lacks a CAUSE operator, and as a consequence cannot be modified by *violentemente* 'violently', as shown in (90b).

(90) a. *La porta si è chiusa violentemente.*
the door REFL is closed violently
'The door closed violently.'
b. **La nave è affondata violentemente.*
the boat is sunk violently
'The boat sunk violently.' (Centineo, 1995, 63)

Naturally occurring examples collected with Google seem to confirm Centineo's (1995) intuitions—while I have been able to find no examples of *è affondata violentemente* 'sank (fem) violently' or *è affondato violentemente* 'sank (masc) violently', examples of *violentemente* 'violently' with derived inchoatives as in (90a) can be found, as shown in (91).

(91) a. La nostra parentesi si è chiusa violentemente ...

'Our parenthesis closed violently ...'
http://www.raccontinellarete.it/wordpress/?p=646

b. ... il gran muro si ruppe violentemente ...
'... the big wall broke violently ...
http://www.ribollastory.net/grottanelli.html

c. ... là dove si è rotta violentemente ...
'... over there, where it broke violently ...'
http://www.macro.roma.museum/italiano/press/tesi/eccher_tesi.pdf

d. La macchina è andata in testa coda e si è fermata violentemente contro il guard rail.
'The car went into a tailspin and it stopped violently against the guard rail.'
http://www.repubblica.it/2006/07/sezioni/cronaca/moglie-mastella/moglie-mastella/moglie-mastella.html?ref=hpsez

Additionally, it is worth noting, that naturally occurring examples cannot be found with Google for stative predicates like **conosce violentemente* 'know violently' and *è felice violentemente* 'is happy violently.' This is noteworthy, since stative predicates, in most cases, lack a CAUSE operator (though see Pylkkänen 2000 for some notable exceptions). Similar data has been observed for Greek by Alexiadou and Anagnostopoulou (2004, 131ff.). These facts tentatively offer, then, an additional argument in favor of derived inchoatives having a CAUSE operator as part of their lexical semantic representation, as is independently predicted both by the proposed reflexivization analysis laid out above and by the MH.

Another argument for a CAUSE in the lexical semantic representation of derived inchoatives comes from prepositional phrase modifiers. Recent work by Alexiadou et al. (2006) and Kallulli (2006a; 2006b; 2006c) suggests that certain prepositional phrases, much like *por sí solo* 'by itself' are sensitive to the presence of a CAUSE operator in the lexical semantic representation. The first observation is that inchoatives, in particular derived inchoatives, can appear in the presence of such phrases, as illustrated by the Greek data in (92), where *apo* 'by/from' specifies the cause of the COS event named by the derived inchoative.

(92) a. *O sismos skotose ti Maria.*
the earthquake killed the Mary
'The earthquake killed Mary.'

b. *I Maria skotothike apo ton sismo.*
the Mary killed.NACT by/from the earthquake
'Mary died from the earthquake.' (Alexiadou et al., 2006, 15)

Interestingly, according to Alexiadou (p.c.), it is also not the case that *apo* 'by/from' phrases are acceptable with stative verbs, suggesting that they do indeed modify a CAUSE in the lexical semantic representation of the derived inchoative, rather than adding a CAUSE—if they could simply add a CAUSE, then it would be expected that they would be acceptable with stative predicates, contrary to fact, as shown by the data in (93).[39]

(93) a. **To edafos itan kokino apo tis diarkus drastiriotitas tu ifestiu.*
the ground was red because the constant volcanic the activity
'The ground was red from the constant volcanic activity.'

[39]The sentences in (93) are judged acceptable by Alexiadou and the other speakers she consulted with *eksetias* 'because' in place of *apo* 'by/from'.

b. *I iholipsia itan kaki apo tin hamili piotita ton dedomenon
The recording was bad from the low quality the data.GEN
'The recording was bad from the low quality of the data.' (Artemis Alexiadou, p.c., 8/30/2006)

Internally caused COS verbs, often believed to lack a CAUSE component as part of their lexical semantic representation (Centineo, 1995; Levin and Rappaport Hovav, 1995), are also judged unacceptable with *apo* 'by/from' phrases specifying the cause of the COS event.[40]

(94) *Ta luludia anthisan apo ti kalokeria
The flowers blossomed from the weather
'The flowers blossomed from the good weather.' (Alexiadou, p.c., 8/30/2006)

The conclusion is that *apo* 'by/from', and adpositions like it, seems to be sensitive to the presence/absence of a CAUSE in the lexical semantic representation of the verbs in the clauses it appears with. The fact that it can appear with derived inchoatives, then, has been taken as an argument in favor of inchoatives derived by anticausativization having a CAUSE as part of their lexical semantic representation (Alexiadou *et al.* 2006; Kallulli 2006a; 2006b; 2006c).

Summarizing this section, I have shown that consistent with both the reflexivization analysis of anticausativization and with the MH more broadly, a range of data point to the conclusion that derived inchoatives have a CAUSE as part of their lexical semantic representation. Data from the Spanish *por sí solo* 'by itself' modifier, the Albanian "feel like" construction, the scope of negation with derived inchoatives, and the behavior of various adverbial modifiers, independent of any particular analysis, all point to this conclusion. Further, as discussed in previous sections, these facts are predicted not only by the MH more broadly, but more specifically by the reflexivization analysis of anticausativization.

5 Comparison with previous approaches

In this section, I consider different kinds of analyses of anticausativization that have appeared in previous literature, while also comparing the extent to which they can or cannot capture the wide range of facts accounted for by the reflexivization analysis proposed above. At the same time, I consider the extent to which each alternative would have it that anticausativization violates the MH.

5.1 Denial

One approach to anticausativization is to simply deny that it exists at all as a productive word formation operation. This is the claim of Marantz (1984, 181ff.) who argues that COS-denoting lexemes are systematically ambiguous between causative and inchoative senses in the lexicon. Any semblance of productivity that there might be in anticausativization, according to Marantz, is accomplished via analogy. Marantz (1984, 181) cites as evidence for his polysemy approach the fact that "unlike passivization, for example, the anticausative alternation is limited cross-linguistically to a restricted class of verbs with some semantic coherence" and the fact that not all causative verbs undergo anticausativization (e.g., *assassinate*).

[40] Alexiadou (p.c.) reports that in contrast to *apo* 'by/from', which is unacceptable in a sentence like (94), *me* 'by/from', is acceptable. She conjectures that the difference between *me* and *apo* may have to do with specification of a direct (*apo*) versus an indirect (*me*) cause.

Research that has been carried out in lexical semantics subsequent to Marantz's (1984) work, I believe, makes his conclusion less plausible than it may have seemed at the time.[41] Hale and Keyser (1987; 2002), Pinker (1989), Jackendoff (1990), Levin (1993), and Levin and Rappaport Hovav (1995) in particular have shown that once the lexical semantics of verbs are looked at in much more detail than was typical at the time of Marantz's (1984) research, behavior that initially may appear as idiosyncrasy, appears to have much more rule-governed behavior. That is, lexical semantics is rule governed in a way not entirely unlike syntax. It has been shown, for example, that contrary to the suggestions of Marantz (1984, 182) there are systematic reasons that not all verbs with causative components have inchoative alternates, one of Marantz's main justifications in making his non-productivity claim. Specifically, as seen in §3.1 and §3.2, it is only causative verbs whose causer is somehow underspecified that alternate (Guerssel et al., 1985; Hale and Keyser, 1987; Levin and Rappaport Hovav, 1995; Reinhart, 1996). With this in mind, a better, more exceptionless rule of anticausativization can be formulated, as done above, making the process look more productive, if semantically constrained.

Additionally, denial fails to explain Haspelmath's (1990) observation that in language after language it is a morphological marker used to mark a reflexive operation that is also used to mark anticausativization. This approach, then, fails to capture a number of systematic facts about the phenomenon. Thus, despite the fact that it would be entirely consistent with the MH (since there would, in fact, be no deletion operation), I reject the idea that anticausativization simply be analyzed as polysemy.

5.2 Deletion

Perhaps the most obvious and commonly assumed analysis of anticausativization is to derive the meaning of the derived inchoative from the causative via deletion of the CAUSE operator and the associated causing subevent. Precisely an analysis along these lines has been proposed at various times since at least Grimshaw (1982), if not before. Though the details of the statement of anticausativization differ, analyses in this spirit have been proposed not only by Grimshaw (1982), but also by Reinhart (2002), Reinhart and Siloni (2005), Kallulli (2006a), and Härtl (2003). Grimshaw's (1982) "inchoativization rule" in (95), developed in the context of an analysis of anticausativization in French, captures the essence of these kinds of analysis.

(95) Grimshaw's (1982:103ff.) inchoativization rule
Pred$_{cause}$: CAUSE (x, BECOME (Predicate (y))) ⟶
Pred$_{inch}$: BECOME (Predicate (y))

The idea is simply that anticausativization (or *inchoativization*, as Grimshaw calls it) takes a causative COS lexeme, strips it of its CAUSE operator and causer argument (or causing subevent on a more Davidsonian view) leaving behind only the COS meaning.

Deletion analyses, however, fail on several other counts. First, they do not capture the fact that the morphological marker of anticausativization is so commonly used for reflexivization operations. There is, on such an analysis, no obvious link between deletion of a CAUSE operator and the semantic nature of reflexivization, thereby begging the question why reflexive markers should so commonly be used to also mark anticausativization.

Going beyond this morphosemantic problem, these analyses generally do not handle non-alternation well—that is, they fail to adequately explain why it is that only COS verbs with underspecified causers undergo anticausativization. Of course, this observation can be stipulated

[41] See also Haspelmath (1987, 17ff.) who disputes the non-productivity claim.

as part of the rule of anticausativization, as it is in Reinhart's (2002) and Reinhart and Siloni's (2005) analysis, but on such an analysis there is nothing about the nature of anticausativization such that this kind of behavior is expected. On the reflexivization analysis, by contrast, non-alternation (of e.g., *assassinate* verbs, for instance) follows as a consequence of the nature of reflexivization itself combined with verb-specific lexical semantics.

Additionally, as already discussed above at some length, there is overwhelming evidence that shows that inchoatives derived from causatives by a rule of anticausativization *retain the CAUSE operator of the causative verb from which they are derived.* The deletion analysis has it that there is, in fact, no such CAUSE operator present in the lexical semantic representation of derived inchoatives, a position which is at odds with the evidence laid out above, particularly in §4. Thus, the central empirical claim of the deletion analysis, that there is no CAUSE in the lexical semantic representation of derived inchoatives, is not supported by the evidence.

A final problem with deletion analyses is that, as discussed in Koontz-Garboden (2007a, 2007b:Chapter 2), rules that delete decompositional operators cannot be formalized within standard systems of function-argument application, like the typed lambda calculus, and indeed no attempt has been made in the literature to ever formalize a deletion analysis of anticausativization. Of course, I do not believe that an analysis is inherently bad because it cannot be formalized. I do believe, however, that it is perhaps cause for concern. When combined with the empirical problems discussed above, I believe the weight of the evidence argues strongly against a deletion analysis of anticausativization. As regards the MH, this is a welcome finding, as its central claim is that word formation operations do not delete decompositional operators.

5.3 Least common denominator approaches

A family of approaches treats both causative and inchoative variants as derived from a more abstract root. In this section I discuss the attributes of a sample of them and the extent to which they can capture the facts observed above.

Another approach to anticausativization treats both the causative and the inchoative variants as derived from a more abstract root. This is the approach of Doron (2003).[42] Doron adopts a "little v" analysis of external arguments, so that external arguments are not part of the lexical entry of verbal lexemes, but are instead merged with roots in the syntax (Kratzer, 1996; Pesetsky, 1995; Marantz, 1997; Arad, 2003). Her analysis of middle morphology in Hebrew, the language she focuses on, is then that it precludes the licensing of little v by the root. Doron's idea is that the meaning of the root upon which causative and inchoative *break* are built has (presumably) the core COS semantics of *break* alongside the specification that it takes an internal argument. The causative variant arises via merger of this root with little v, which adds an agentive causer to the structure.[43] The inchoative version, for its part, is derived from this root via merger with the middle morpheme, whose sole function on Doron's analysis is to prevent merger of the root with little v, thereby preventing the structure from having an agentive external argument.

This kind of analysis is entirely consistent with the MH as it involves no deletion of decompositional operators. Because the denotation of the root does not include CAUSE semantics in the first place, anticausativization need not remove any CAUSE related operators. Instead, the anticausative morphology, on an analysis like Doron's, simply prevents little v, the element with

[42] Juarros (2003) takes a somewhat similar approach to anticausativization.

[43] I ignore here what I believe to be well-founded concerns (dating at least to DeLancey 1984) expressed by Alexiadou et al. (2006) regarding the conflation of agentivity and causation in little v analyses. They propose remedying this by creating different types of little v heads. While I believe an adequate little v analysis would require this, it is tangential to the matters under discussion here.

CAUSE semantics, from being merged with the root in the first place. Thus, one can adopt an analysis like Doron's without running into problems with the MH.

Despite this, I believe there are empirical considerations militating against an analysis like Doron's (2003) and favoring a reflexivization analysis, like the one developed above. Ignoring any problems that Doron's proposal inherits from the adoption of the not uncontroversial little *v* hypothesis (Horvath and Siloni, 2002; Wechsler, 2005), her analysis encounters problems with the morphological, syntactic, and semantic facts. First, this analysis, like others adopting the Root Hypothesis (Arad 2005; Koontz-Garboden 2007a, 2007b:Chapter 2 for critical assessment) fails to account for the most basic of morphological facts, namely the morphological markedness asymmetry in anticausativization. Anticausativization is characterized by a morphologically marked inchoative variant corresponding to a morphologically unmarked causative variant. On Doron's analysis, both causative *and* inchoative are derived from a more abstract root. Now, there are clearly certain predicates in certain languages for which an analysis like this seems well motivated. Consider, for example, the derivation of words naming changes into property concept states in Warlpiri as laid out by the data in (96).

(96) Warlpiri (Hale and Keyser, 1998, 93)

	Property concept	Non-causative COS	Causative COS	
a.	wiri	wiri-jarri-	wiri-ma-	'big'
b.	maju	maju-jarri-	maju-ma-	'bad'

Although the particular analysis given by Doron whereby anticausativizing morphology has no direct impact on the lexical semantics of the root is probably not correct for Warlpiri *–jarri*, the data illustrate the basic point that the morphology motivates the separate derivation of causative and inchoative from a more abstract root in Warlpiri. The morphology in Hebrew, however, does not motivate this kind of indirect relationship between causative and inchoative, at least for the verbs she analyzes, like *break*, where the inchoative is morphologically marked (in the so-called *nif'al* template) and the causative unmarked (in the *simple* template).[44] The problem, on Doron's account, can be placed on the little-*v* analysis for *break*-type verbs, namely on the fact that causative is derived with little *v*, which lacks morphological exponence. One might not worry about this were it just one null morpheme in one particular language. Generalizing this approach to an analysis of anticausativization more broadly, however, means that adherents of such analyses are forced to posit phonologically null little *v*'s for the causative variants of verbs naming *break*-type events in language after language. In this way, such analyses fail to capture Haspelmath's (1993) generalization that certain kinds of events (externally caused events) favor anticausative derivations in the causative/inchoative alternation, while others (internally caused COS events) favor causativization. On an analysis like Doron's, everything is causativization. It just so happens that for certain kinds of events, in language after language as revealed by Haspelmath's (1993) survey, the causativizing

[44]Deadjectival verbs in Hebrew behave differently, as shown by the data in Doron (2003, 61ff.). This is not surprising—crosslinguistically COS verbs based on property concept states commonly are encoded differently from *break*-type COS verbs, as shown by Koontz-Garboden (2006).

morphology has zero exponence.[45] This would be a spectacular coincidence.[46]

Moving beyond the markedness asymmetry, this analysis has additional morphological and semantic problems in that it fails to explain why it is that the same morphemes used for anti-causativization also get used for reflexivization. Indeed, according to data due to Itamar Francez (p.c.), this is true also, at least on occasion, in Hebrew, Doron's language of analysis, as shown by the examples in (97) and (98).

(97) a. šavar
break
'break(trans)'
b. ni-šbar
ni-break
'break(intr.)' (Doron, 2003, 12,41)

(98) a. *dani nirsham la-kurs.*
dani ni-write.PAST.3ms to.the-course
'Dani signed (self) up for the course.' (Itamar Francez, p.c.)
b. *lex tishatef ba-berez.*
go ni-wash.FUT.2ms in.the-faucet

[45]The idea hinted at in fn. 33 that Spanish may have null causativizing morphology with internally caused COS verbs is a language specific conjecture, and is crosslinguistically supported by the fact, observed by Haspelmath (1993), that internally caused verbs are morphologically simple as inchoatives with causative variants morphologically derived. Positing a null causativizer in this particular instance, then, is very different from what would be required by generalizing Doron's little *v* analysis to *break*-type verbs across languages. In the Spanish case, null causativization is being proposed in a case where there is robust crosslinguistic evidence for this direction of derivation with this semantic class of verbs. Generalizing Doron's analysis of externally caused verbs, however, is exactly the opposite kind of situation. She proposes null causativization for a class of verbs for which crosslinguistically this direction of derivation is very rarely attested.

[46]A similar, yet slightly different problem with morphology arises for a generalized version of Hale and Keyser's (1998:98) analysis of anticausativization in O'odham. Like Doron's (2003) analysis, theirs appeals to a severed external argument. Unlike her analysis, on which both causative and inchoative are separately derived from a root (à la Warlpiri in (96)), for them, inchoative is actually derived from (little *v* derived) causative, as can be seen unambiguously in Hale and Keyser (1998, 98). While such an analysis at least predicts a markedness asymmetry whereby inchoative is more morphologically complex than causative, it is still predicted that causative is morphologically complex, just less so. Again, this would be a prediction not necessarily for any particular language, but one would expect, and the rhetoric in Hale and Keyser (1998) indeed suggests, that when null functional heads (like little *v* heads) are posited, they will not rarely have overt exponents. Again, however, Haspelmath's (1993) survey shows the opposite—that it is very rare indeed for the causative variants of externally caused COS verbs to be morphologically complex, contrary to the predictions of an analysis that has it that they are derived.

This is not to say that no causatives are derived and that there is no motivation for positing a little v in some derivations and even in some causatives. In fact, as an anonymous reviewer points out, the fact that some "internally caused" COS verbs can indeed causativize, and do so in many languages with overt morphological marking, suggests that there is a place for little v in the analysis of causative/inchoative alternations. I don't disagree. Though I remain agnostic on the question of whether a syntactic analysis with little v is the right approach, it is clear that there do indeed exist causativization operations with verbs naming particular kinds of events. The point is, though, as is widely recognized thanks to Haspelmath (1993), that the direction of derivation is linked to the lexical semantic nature of the verb. Externally caused verbs (i.e., verbs lexicalized with a CAUSE operator in lexicalist terms) are morphologically simple as causatives and anticausativize; internally caused verbs (i.e., verbs that do not lexicalize a CAUSE operator) do not and are morphologically simple as inchoatives, with the causative derived. What I believe is going on is that there is some confusion as to whether an analysis of the causative/inchoative alternation should account for lexicalization (i.e., the denotations of morphologically simple lexemes), direction of derivation, or both. I believe that a synchronic analysis should take lexicalization as given, providing an analysis of direction of derivation. See §5.5 for further discussion of this point.

'Go wash yourself in the faucet.' (Itamar Francez, p.c.)

c. nidxaf
'push oneself' (Doron, 2003, 8)

What the data in (97) and (98) show is that the *nif'al* template in Hebrew has not only anticausative uses as in (97b), but, at least for some roots, reflexive uses as well, as shown in (98).[47] The observation, again, is that any analysis of anticausativization ought to have something to say about this kind of fact, given how commonly anticausativization and reflexivization are marked in morphologically identical ways crosslinguistically. There is nothing, however, in Doron's analysis which suggests the semantic relatedness of reflexivization and anticausativization. On her analysis, anticausativization is an operation which simply voids the licensing of little v. Reflexivization, however, makes the two arguments of a transitive verb the same. Perhaps there is a way of reconciling these two functions. If there is, however, that remains to be seen.

A final major empirical problem with an analysis like Doron's concerns the lexical semantics of derived inchoatives. Her analysis has it, like the deletion analysis, that derived inchoatives do not have causative semantics, since these come from the addition of little v, and since what the anticausative morphology does is precisely to block merger with little v. In this way, the same criticisms concerning lexical semantics that apply to deletion analyses apply also to a least common denominator approach like Doron's. Independent, then, of the morphological problems identified above, an analysis like Doron's simply does not get the semantic facts right.

Another somewhat different kind of least common denominator approach is that of Embick (1997, 1998), whose explicit goal is to account for the syncretism of anticausative, passive, and (certain restricted uses of) reflexive in Greek. On his analysis, this morphology (the so-called "non-active" form) appears, in a realizational fashion, "...when v is not in a local relationship with an external argument" (Embick, 1998, 62). Embick's analysis is at root an analysis of the syntax and morphology of the forms in question, and thus has no explicit analysis of the kinds of semantic issues addressed above. More importantly, Embick (1997:35ff.) contrasts languages like Greek, in which the morphology used for anticausativization and passive is not the same morphology used productively for reflexivization, with languages like French, in which this is indeed the case.[48] In Greek, much like in Ulwa, as discussed in §3.3, productive reflexivization, according to Embick, is effected with morphosyntax different from that used for anticausativization (Embick, 1997, 37), anticausative morphology showing only reflexes of reflexivity. His goal is explicitly to deal with languages like Greek, by contrast with languages like Spanish and French (Embick 1997:35, fn. 26). As I discussed in §3.3, I believe that the facts of such languages, or at least the facts of Ulwa, one exemplar of such languages, are not necessarily inconsistent with the reflexivization analysis of anticausativization, once the facts are understood. Be that as it may, the point is that Embick's analysis is not meant to generalize; it is intended for a special type of language in which the morphology used in anticausativization is not the only morphology used for reflexivization. That is, his analysis is meant for languages in which there is separate morphology used for productive reflexivization, as in Ulwa, as discussed in §3.3.

For these reasons, it is difficult, and perhaps not fair, to evaluate his analysis against the facts discussed above. Still, there are some observations that can be made. First, as already noted,

[47] The situation in Hebrew is more complicated than is possible to go into here. It is worth pointing out, though, as Beth Levin (p.c.) notes, that the nif'al template is not the one normally used for reflexives. Instead, another morphologically marked template, the so-called "hitpa'el" generally serves this function (Simons, 1995, 144). Still, in accordance with the general claim of this paper that anticausativization is reflexivization, it is worth noting that not only reflexives but inchoatives can be found in hitpa'el, a fact noted by Simons (1995, 144ff.).

[48] According to an anonymous reviewer, Russian is also like Greek in that there is a (more) productive reflexive different in morphological shape from the reflexive used for anticausativization.

Embick's analysis is not meant to deal with languages in which the productive form of reflexivization is also the way in which anticausativization is effected. It cannot, then, deal with the most general type of anticausative/reflexive syncretism, like the one observed above in Spanish. Setting this fact aside, however, there is a certain attribute that his analysis has, owing to his adoption of the little *v* hypothesis. If it is assumed that the semantic reflex of little *v* is a CAUSE operator, then one potential attribute, when compared with Doron's approach, is that on his analysis it seems that little *v* would actually be present in the representation of derived inchoatives, a desirable outcome for Greek, given data discussed above suggesting that derived inchoatives in this language are indeed causative.[49] Pending some formalization of a semantic analysis based on his syntactic approach, a non-trivial task to be sure, then it seems possible that his analysis might be able to cope with the facts discussed above that argue for a causative treatment of derived inchoatives, at least in languages of the type he's interested in. This same little *v* approach, however, also carries some morphological baggage with it. Like Doron's analysis, on Embick's analysis, in view of his adoption of the little *v* hypothesis and his particular implementation of it, not only inchoative but also causative variants of externally caused COS verbs are derived. As with Doron's analysis, such an analysis of the causative variant of externally caused COS verbs seems unwarranted in light of Haspelmath's (1993) observations.

Another analysis in this family is that of Alexiadou et al. (2006). Their analysis treats participation versus non-participation in the causative alternation as a property of roots. All stative roots can merge with a CAUSE head to yield an inchoative verb. Whether this construction can merge with a voice head or not is a property of the root itself—roots deriving verbs like *assassinate* obligatorily do, roots like *break* optionally do, while internally caused roots like *blossom* do not, and therefore do not form causatives. As with other analyses like it, this analysis faces several problems, both morphological and semantic. First, as with the others discussed in this section, it has problems capturing Haspelmath's (1993) generalizations about the morphological asymmetry between intransitive *break* verbs and internally caused COS verbs like *blossom*. Again, Haspelmath's observation is that while the former are generally morphologically marked when compared to their causative counterpart, the latter are morphologically simple. In Alexiadou et al.'s (2006) analysis, however, intransitive *break* verbs and *blossom* verbs get the same analysis—the representation of both includes a stative root merged with a CAUSE operator (and no voice head; Alexiadou *et al.* 2006:19). If one is to assume some kind of relationship between their syntactic structures and morphology (the only way they'd be able to make any morphological generalizations at all on this analysis), then they'd predict that the two classes would tend to be the same morphologically, contrary to fact.[50] This similarity in structure between these two classes points to another problem. By giving these two classes of verbs an identical representation, their analysis claims that the intransitive versions of *break* verbs and *blossom* verbs are semantically on a par with one another. This runs counter to evidence like that discussed above and elsewhere in the literature (Labelle, 1992; Haspelmath, 1993; Levin and Rappaport Hovav, 1995; Centineo, 1995) that there are diagnostics distinguishing internally caused and externally caused intransitive COS verbs, e.g., the *por sí solo* 'by itself' diagnostic in §4.1, the scope of negation discussed in §4.3, and use with adverbial modifiers in §4.4.[51] A final problem with this analysis, and those like it

[49]I am hedging here because neither this syntactic detail nor, as previously stated, any of their semantic reflexes are made explicit in Embick's (1998) discussion.

[50]This is at least contrary to fact in languages with anticausativization, i.e., the kinds of languages under analysis in this paper. Again, contrary to many theorists, I do not presume that there is a single correct analysis of the causative/inchoative alternation for all languages; I make no claims here about languages that effect the causative/inchoative alternation with a different direction of derivation. In such languages the lexical semantics may well be different.

[51]To be fair to Alexiadou et al. (2006), they do observe that *by itself* is often unacceptable with internally caused

discussed above, is that no link is made between reflexivization and anticausativization—on this analysis, the anticausative/reflexive syncretism is an accident.

A final approach in this general family of analyses that turns out to be rather different from the others, and I believe more successful, is that of Schäfer (2007). Schäfer's idea is that anticausativization is motivated by the presence of a particular kind of (morphologically null) voice projection (Schäfer, 2007, 218). Under Schäfer's analysis, there is transitive voice ("thematic active voice"), which subcategorizes for a thematic NP as an argument (residing in its specifier). Another kind of voice, so called "non-thematic active voice", requires that an argument be in the specifier (to check "D-features" on Schäfer's minimalist syntactic analysis), but the argument must be non-thematic. For Schäfer, SE-anaphors (in the terminology of Reinhart and Reuland 1993) meet this requirement, and can thus be used in this syntactic position in purely the same anaphoric fashion as they are used in garden-variety reflexive constructions (Schäfer, 2007, 323ff.).

On this analysis, then, Schäfer (2007) captures the morphological markedness asymmetry between causative and derived inchoative; the latter is morphologically marked, since the SE-anaphor must appear in the specifier of voice for formal syntactic reasons (the syntax requires that an argument be there, in EPP fashion). By contrast, in the causative variant a full NP (denoting the causer) appears in this position. Additionally, in treating the anticausative morphology identically to a reflexive, Schäfer successfully captures the anticausative/reflexive syncretism, at least in languages in which SE-anaphors are the markers of anticausativization.

Herein, however, lies one drawback of Schäfer's analysis. Much like Embick's (1997,1998) analysis of anticausativization, Schäfer's is not meant to be comprehensive. His analysis, by his own admission, is meant to cover languages in which anticausativization is, as in Spanish and German, marked by SE-anaphors, but not languages in which it is marked by non-active morphology, as in Greek and Albanian (Schäfer, 2007, 308). In this way, although it accounts for the anticausative/reflexive syncretism in languages like German, it does not generalize to languages like Albanian or Greek (or Ulwa, for that matter), languages in which reflexivization and anticausativization are marked, at least in part, by morphology that is not a SE-anaphor. I'm not sure that I see this necessarily as a serious flaw, however. What I think Schäfer's analysis points to is potentially multiple morphosyntactic sources for the anticausative/reflexive syncretism. In all cases, to the best of my knowledge, the right semantic analysis of anticausativization is as reflexivization. It seems obvious, however, that morphosyntactically, the mechanisms of achieving this semantic effect in the various cases are different, since, as Schäfer points out, in some languages it is achieved with morphology that is not also used as a SE-anaphor. What Schäfer does, in my view, is to provide a seemingly plausible analysis of the morphosyntax of anticausativization in languages where it is marked with SE-anaphors. What he does not do is to provide an analysis of the morphosyntax of the Greek/Albanian/Ulwa-type language. Most likely, as he implies, the morphosyntactic analysis will look rather different for such languages. Additionally, and perhaps most noteworthy in the context of the present paper, is the fact that he also does not provide a compositional semantics (even if one can imagine what the broad outlines might look like, given the semantic motivations of the various syntactic projections). The semantics his analysis points toward, however, is obvious—a treatment of anticausativization as reflexivization, precisely as detailed in the present paper. I suspect, then, that the semantics provided here could be coupled with the morphosyntax provided by Schäfer with relative ease (and success).

The only genuine problem I see with Schäfer's analysis is one inherited from Alexiadou et al. (2006) concerning the treatment of the difference between the *break*-type (externally caused) inchoa-

COS verbs like *blossom*, claiming that "with predicates that are internally caused they are marginal [with *by itself*] because they are redundant" (Alexiadou et al., 2006, 20). This same kind of pragmatic explanation might extend also to the adverbial modification facts. I do not see, however, how it could extend to the scope of negation facts.

tives and the *blossom*-type (internally caused) inchoatives. As discussed above, on their analysis not only derived inchoatives have causative semantics, but all underived, internally caused inchoatives, like *blossom* verbs, also have causative semantics. As discussed for Alexiadou et al. (2006), however, evidence discussed in §4.1–§4.4 points to the conclusion that there is a contrast, i.e., that some morphologically simple inchoative verbs lack causative semantics. As discussed above, the problem is particularly acute for Alexiadou et al. (2006), since they give identical syntactic (and presumably semantic) representations to these two classes of verbs, giving rise to the prediction that the two classes will be not only semantically, but morphologically identical, contrary to fact. Schäfer (2007), however, does not—externally caused inchoatives have a voice projection that internally caused inchoatives lack. It is in this way that he can capture the morphological contrast between the two classes. And, it is at least conceivable that there may be some way of harnessing this difference to capture the semantic facts discussed above.[52] It seems to me that this would be a question worth exploring in future work in this tradition, perhaps in the context of the formalization of a compositional semantics for the syntactic representations provided by the analysis.

To conclude this section, I believe the totality of evidence strongly favors the reflexivization analysis over most of the analyses discussed in this section. My concerns with these analyses have nothing to do with the MH—they are all consistent with it, as they entail no deletion of operators. Instead, my concern with these kinds of analysis has to do with the fact that they fail, with the exception of Schäfer (2007) to a large degree, to capture a relatively wide range of data that are, in fact, captured by the competing reflexivization analysis.

5.4 Existential binding

Levin and Rappaport Hovav (1995, Chapter 3) develop an analysis of anticausativization on the basis of data from English, which they believe to have a causative/inchoative alternation characterized by anticausativization, rather than causativization, contrary to most analyses of English (Lakoff, 1965; Pinker, 1989; Jackendoff, 1990; Hale and Keyser, 2002; Baker, 2003; Embick, 2004). Regardless of whether an anticausativization analysis is right for the facts of English or not, their analysis of anticausativization is worth considering in the context of languages that unambiguously show the anticausative direction of derivation from causative to inchoative.

Drawing on the work of Smith (1970), Labelle (1992), and Haspelmath (1993), among Levin and Rappaport Hovav's (1995) more important innovations is the observation that there exist not one, but two semantic classes of inchoative verbs. The distinction they make is between verbs naming what they call "internally caused" and "externally caused" eventualities. The idea in the context of COS verbs, further elaborated in Rappaport Hovav and Levin (1998), is that while some COS events are brought about by a force external to the entity undergoing the COS event, other COS events are brought about by the entity undergoing the change itself. The decompositional representations they propose for the lexical semantics of these two kinds of inchoative verbs are given in (99), with their representation for causative COS verbs given in (100) (Levin and Rappaport Hovav, 1995; Rappaport Hovav and Levin, 1998).[53]

[52] It is somewhat difficult to see how this might be the case, however, given that the "non-thematic active voice" is meant to not alter the thematic structure. It would seem, then, that it does nothing to alter the lexical semantics of the configuration.

[53] The representation given in (99b) for externally caused intransitive COS verbs is not precisely what is given by Levin and Rappaport Hovav in their writings. In fact, they do not give an explicit event structure representation for these. The representation in (99b) is, however, what I believe is suggested by their discussion in e.g., Levin and Rappaport Hovav (1995, 108), with an existentially bound causing subeventuality. See also Marcotte's (2005:11) exegesis of their analysis.

(99) The lexical semantics of two kinds of intransitive COS verb (Rappaport Hovav and Levin, 1998)

a. "internally caused": [BECOME [x <STATE>]]

b. "externally caused": $\exists e$[e CAUSE [BECOME [x <STATE>]]]

(100) The lexical semantics of causative COS verbs (Levin and Rappaport Hovav, 1995, 108)
[[x do something] CAUSE [BECOME [x <STATE>]]]

Levin and Rappaport Hovav's idea is that externally caused intransitive COS verbs, with denotations as in (99b), are derived from causative verbs via some kind of existential binding operation (which is left unformalized, see Koontz-Garboden 2007b:215, fn. 16). The intransitive COS verb resulting from this operation is left with its CAUSE operator intact, so that its lexical semantics specify that the COS event denoted by such a verb came about via some kind of cause external to the entity undergoing the COS event.

The claim that there is not one kind of inchoative verb, as previously believed, but instead two has serious implications for the MH, since differences in lexical semantic representations lead to different predictions about derivational relationships. More specifically, while the derivation of an inchoative verb with a meaning like (99a) from a causative verb with a meaning like (100) is predicted by the MH to be unattested, since it involves the deletion of a CAUSE operator, the derivation of an inchoative verb with a meaning like that in (99b) from a causative verb does not violate the MH. No operators would be removed in such a derivation. Data supporting this kind of prediction were reviewed in §4.

Further, the Levin and Rappaport Hovav analysis, unlike some analyses discussed up to this point, fares well on certain of the core criteria imposed above on analyses of anticausativization. First, concerning morphology, on their analysis there is a straightforward explanation of the morphological asymmetry in anticausative alternations. On their analysis, morphologically marked inchoative lexemes are derived directly from causative lexemes. Stated another way, for Levin and Rappaport Hovav, there is a significant set of COS events that are lexicalized as causative verbs. Inchoatives that come about via anticausativization are derived from these, providing an explanation for why the inchoative, in such instances, is morphologically marked and the causative is not. Further, unlike other analyses, this analysis also has it that derived inchoatives actually have a CAUSE operator as part of their lexical semantic representation, as suggested by the range of facts discussed in §4. In this way, then, the existential binding analysis fares better than most, and is a plausible competitor to the reflexivization analysis.

There are, nevertheless, still facts that the reflexivization analysis captures better than the existential binding analysis, at least as laid out in Levin and Rappaport Hovav (1995). First, like all other competing analyses, Levin and Rappaport Hovav have no natural explanation for the reflexivization/anticausativization syncretism. Secondly, although Levin and Rappaport Hovav (1995) are among the first to clearly show that it is causative verbs with fully specified causers, verbs like *assassinate*, that fail to have inchoative counterparts, how this follows from their existential binding analysis is not clear. The claim is that the existential binding operation can apply only to lexical semantic representations with unspecified causers (Levin and Rappaport Hovav, 1995, 107). Absent formalization of this operation, however, it is difficult to view this as much more than a stipulation to their analysis.

As with the least common denominator approaches, my concerns with existential binding have nothing to do with the MH—the existential binding analysis is indeed consistent with it. So, again, one could completely reject the criticisms levelled at the existential binding analysis in this section and still accept the MH. What I have suggested instead is that there are facts surrounding

the phenomenon of anticausativization that the existential binding analysis does not seem fully equipped to handle.

5.5 Frequency

Haspelmath (2005) argues that the morphological complexity of a causative or inchoative lexeme mirrors the frequency of use of that lexeme in discourse. His idea is that given a morphologically marked/unmarked pair, the marked variant will always be more frequent in discourse than the unmarked variant. In the domain of the causative/inchoative alternation, the idea, then, is that if, for example, causative *break* is morphologically marked relative to inchoative *break*, then it is the case that in discourse causative *break* is more frequent than inchoative *break*. Although Haspelmath (2005) does not present frequency data to support this hypothesis, it seems at least initially plausible. I do not believe, however, that this constitutes an explanation of anticausativization. Instead, I believe what Haspelmath (2005) explains, assuming his claims are borne out by further investigation, are facts of *lexicalization*, which in turn determines what is basic in the lexicon, and in turn indirectly determines, what will be derived from what. That is, if causative is lexically basic, then inchoative will be derived from it by one kind of rule (anticausativization), while if inchoative is lexically basic, causative will be derived from it by a different kind of rule (causativization).

It is important to point out, however, that this is not an analysis of anticausativization—it is an analysis of certain facts of lexicalization. In the Montagovian view of the lexicon laid out in Dowty's (1978, 1979) work, Haspelmath's results are about the nature of the set of *basic expressions*—namely, what the denotations of the members of that set are and why. This paper, however, is concerned with the nature of the *lexical rules* that operate on this set of basic expressions. Thus, one can accept Haspelmath's results, while still seeking to understand the synchronic grammatical process that is anticausativization, and I believe that the facts I have laid out above suggest that this process is best analyzed, consistent with the MH, as a reflexivization operation.

6 Concluding remarks

As stated at the outset, I have sought to accomplish two goals in this paper. First, I have laid out a wide range of data, some novel and some previously known, that I believe offers overwhelming evidence for the analysis of anticausativization as a reflexivization operation. I discussed a wide range of facts that only this analysis can adequately explain, from the reflexive/anticausative syncretism, to verb specific lexical semantics of alternating and non-alternating change of state verbs. In doing this, I hope to have substantially clarified the nature of anticausativization, which, compared to causativization, has been quite generally poorly studied (and understood).

More broadly, the facts discussed, although captured by the reflexivization analysis, show independent of it that the derivation of an inchoative verb from its causative counterpart via anticausativization, contrary to widely-held views, does not involve the deletion of a CAUSE operator. This has important consequences for the understanding of the semantic nature of word formation operations, an understudied area of linguistics at the interface of lexical semantics and morphosyntax. Specifically, contrary to initial appearances and to orthodoxy, anticausativization does not constitute counterevidence to the Monotonicity Hypothesis, the idea that word formation operations do not remove operators from lexical semantic representations. Other areas remain to be explored, of course, but so far as this phenomenon is concerned, the evidence was shown consistent with the MH, since derived inchoatives do, in fact, retain the CAUSE operator present in the lexical semantic representation of the causative verb from which they are derived.

Acknowledgements

I have benefitted from the comments and help of many in the preparation of (various iterations of) this manuscript, particularly Ricardo Bermúdez-Otero, John Beavers, Beth Levin, Itamar Francez, Judith Tonhauser, Ashwini Deo, Paul Kiparsky, Peter Sells, Cleo Condoravdi, Iván García-Álvarez, Florian Schäfer, Artemis Alexiadou, Steve Wechsler, Martin Haspelmath, the audiences at NELS 37 in Urbana-Champaign, the 2008 *NORMS* Workshop on Argument Structure in Lund, and especially Maria Polinsky and three anonymous NLLT referees. For help with the Spanish data, I'm grateful to Ricardo Bermúdez-Otero, Iván García-Álvarez, and Bruno Estigarribia.

References

Alexiadou, Artemis, and Elena Anagnostopoulou. 2004. Voice morphology in the causative-inchoative alternation: Evidence for a non-unified structural analysis of unaccusatives. In *The unaccusativity puzzle: Explorations of the syntax-lexicon interface*, ed. Artemis Alexiadou, Elena Anagnostopoulou, and Martin Everaert, 114–136. Oxford: Oxford University Press.

Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2006. The properties of anti-causatives crosslinguistically. In *Phases of interpretation*, ed. Mara Frascarelli, 187–211. Berlin: Mouton de Gruyter.

Arad, Maya. 2003. Locality constraints on the interpretation of roots: The case of Hebrew denominal verbs. *Natural Language and Linguistic Theory* 21:737–778.

Arad, Maya. 2005. *Roots and patterns: Hebrew morpho-syntax*. Dordrecht: Springer.

Bach, Emmon. 1986. The algebra of events. *Linguistics and Philosophy* 9:5–16. References to reprint in Paul Portner and Barbara H. Partee (eds.) (2002) *Formal semantics: The essential readings*. Oxford: Blackwell.

Baker, Mark C. 2003. *Lexical categories: Verbs, nouns, and adjectives*. Cambridge: Cambridge University Press.

Beavers, John, and Andrew Koontz-Garboden. 2006. A universal pronoun in English? *Linguistic Inquiry* 37:503–513.

Benedicto, Elena, and Ken Hale. 2000. Mayangna, a Sumu language: Its variants and its status within Misumalpan. In *Indigenous languages*, ed. Elena Benedicto, volume 20. Amherst, MA: University of Massachusetts Occassional Papers in Linguistics.

Bierwisch, Manfred. 1986. On the nature of semantic form in natural language. In *Human memory and cognitive capabilities: Mechanisms and performances*, ed. F. Klix and H. Hagendorf, 765–784. Amsterdam: Elsevier (North-Holland).

Brousseau, Anne-Marie, and Elizabeth Ritter. 1991. A non-unified analysis of agentive verbs. In *Proceedings of the Tenth West Coast Conference on Formal Linguistics*, ed. Dawn Bates, 53–64. Stanford, CA: CSLI Publications.

Carstairs-McCarthy, Andrew. 1992. *Current morphology*. New York: Routledge.

Centineo, Giulia. 1995. The distribution of *si* in Italian transitive/inchoative pairs. In *Proceedings of Semantics and Linguistic Theory 5*, 54–71. Ithaca, NY: Cornell Linguistics Circle.

Chierchia, Gennaro. 2004. A semantics for unaccusatives and its syntactic consequences. In *The unaccusativity puzzle*, ed. Artemis Alexiadou, Elena Anagnostopoulou, and Martin Everaert, 22–59. Oxford: Oxford University Press. Previously circulated as unpublished 1989 Cornell University manuscript.

Croft, William. 1990. Possible verbs and the structure of events. In *Meanings and prototypes*, ed. Savas L. Tsohatzidis, 48–73. London: Routledge.

Cusihuaman, Antonio. 1976. *Gramática Quechua: Cuzco-Collao*. Lima, Perú: Ministerio de Educación, Instituto de Estudios Peruanos.

DeLancey, Scott. 1984. Notes on agentivity and causation. *Studies in Language* 8:181–213.

Doron, Edit. 2003. Agency and voice: The semantics of Semitic templates. *Natural Language Semantics* 11:1–67.

Dowty, David. 1978. Governed transformations as lexical rules in a Montague grammar. *Linguistic Inquiry* 9:393–426.

Dowty, David. 1979. *Word meaning and Montague grammar*. Dordrecht: D. Reidel Publishing.

Dowty, David. 1991. Thematic proto-roles and argument selection. *Language* 67:547–619.

Embick, David. 1997. Voice and the interfaces of syntax. Doctoral Dissertation, University of Pennsylvania, Philadelphia.

Embick, David. 1998. Voice systems and the syntax/morphology interface. In *Papers from the UPenn/MIT roundtable on argument structure and aspect*, volume 32, 41–72. MITWPL.

Embick, David. 2004. On the structure of resultative participles in English. *Linguistic Inquiry* 35:355–392.

Faltz, Leonard M. 1985. *Reflexivization: A study in universal syntax*. New York: Garland Publishing.

Fillmore, Charles. 1970. The grammar of hitting and breaking. In *Readings in English transformational grammar*, ed. Roderick Jacobs and Peter Rosenbaum. Waltham, MA: Ginn.

Foley, William A., and Robert D. Van Valin. 1984. *Functional syntax and universal grammar*. Cambridge: Cambridge University Press.

Folli, Raffaella. 2001. Constructing telicity in English and Italian. Doctoral Dissertation, University of Oxford, Oxford.

Fukuda, Shin. 2008. The projection of telicity in vietnamese. In *Proceedings of the 37th Meeting of the North East Linguistic Society*, ed. Emily Elfner and Martin Walkow, 219–231. Amherst, MA: GLSA.

Garcia, Erica C. 1975. *The role of theory in linguistic analysis: The Spanish pronoun system*. Amsterdam: North-Holland.

Grahek, Sabina. 2002. Alternating unaccusative verbs in Slovene. In *Leeds working papers in linguistics and phonetics*, ed. Diane Nelson, volume 9, 57–72. Leeds, U.K.: University of Leeds, School of Modern Languages and Cultures: Linguistics and Phonetics. `http://www.leeds.ac.uk/linguistics/WPL/WPL9.html`.

Green, Thomas. 1999. A lexicographic study of Ulwa. Doctoral Dissertation, MIT, Cambridge, MA.

Grimshaw, Jane. 1982. On the lexical representation of Romance reflexive clitics. In *The mental representation of grammatical relations*, ed. Joan Bresnan, 87–148. Cambridge, MA: MIT Press.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Guerssel, Mohamed, Kenneth Hale, Mary Laughren, Levin Beth, and Josie White Eagle. 1985. A cross-linguistic study of transitivity alternations. In *Proceedings of the 21st Annual Meeting of the Chicago Linguistic Society*, volume 2: Parasession on Causatives and Agentivity, 48–63. Chicago, IL: Chicago Linguistic Society.

Hale, Kenneth L., and Samuel Jay Keyser. 1987. A view from the middle. Lexicon Project Working Papers 10, Center for Cognitive Science, MIT, Cambridge, MA.

Hale, Kenneth L., and Samuel Jay Keyser. 1998. The basic elements of argument structure. In *Papers from the UPenn/MIT roundtable on argument structure and aspect*, volume 32, 73–118. MITWPL.

Hale, Kenneth L., and Samuel Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, MA: MIT Press.

Hall, Barbara (Partee). 1965. Subject and object in modern English. Doctoral Dissertation, MIT, Cambridge, MA. References to published version, 1979 Garland, New York.

Härtl, Holden. 2003. Conceptual and grammatical characteristics of argument alternations: The case of decausative verbs. *Linguistics* 41:883–916.

Haspelmath, Martin. 1987. Transitivity alternations of the anticausative type. Institut für Sprachwissenschaft, Universität zu Köln.

Haspelmath, Martin. 1990. The grammaticization of passive morphology. *Studies in Language* 14:25–72.

Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In *Causatives and transitivity*, ed. Bernard Comrie and Maria Polinsky, 87–120. Amsterdam: John Benjamins.

Haspelmath, Martin. 2005. Universals of causative verb formation. LSA Institute class handout, August 2, 2005. Cambridge, MA.

Holm, John. 1978. The creole English of Nicaragua's Miskito coast. Doctoral Dissertation, University of London, University College, London.

Horn, Laurence. 1985. Metalinguistic negation and pragmatic ambiguity. *Language* 61:121–174.

Horvath, Julia, and Tal Siloni. 2002. Against the "little-v" hypothesis. *Rivista di Grammatica Generativa* 27:107–122.

Jackendoff, Ray. 1990. *Semantic structures*. Cambridge, MA: MIT Press.

Juarros, Eva. 2003. Argument structure and the lexicon/syntax interface. Doctoral Dissertation, University of Massachusetts, Amherst, MA.

Kallulli, Dalina. 2006a. On unaccusative morphology and argument realization. University of Vienna.

Kallulli, Dalina. 2006b. Rethinking the passive/anticausative distinction. University of Vienna.

Kallulli, Dalina. 2006c. Unaccusatives with dative causers and experiencers: A unified account. In *Datives and other cases: Between argument structure and event structure*, ed. Daniel Hole, André Meinunger, and Werner Abraham, 271–301. Amsterdam: John Benjamins.

Keenan, Edward. 1985. Passive in the world's languages. In *Language typology and syntactic description*, ed. Timothy Shopen, volume 1, 242–281. Cambridge: Cambridge University Press.

Kemmer, Suzanne. 1993. *The middle voice*. Amsterdam: John Benjamins.

Koontz-Garboden, Andrew. 2006. The states in changes of state. In press in *Proceedings of the 32nd annual meeting of the Berkeley Linguistics Society*.

Koontz-Garboden, Andrew. 2007a. The Monotonicity Hypothesis. University of Manchester, ms.

Koontz-Garboden, Andrew. 2007b. States, changes of state, and the Monotonicity Hypothesis. Doctoral Dissertation, Stanford University, Stanford, CA.

Koontz-Garboden, Andrew. 2008a. Monotonicity at the lexical semantics–morphosyntax interface. In *Proceedings of the 37th Meeting of the North East Linguistic Society*, ed. Emily Elfner and Martin Walkow. Amherst, MA: GLSA.

Koontz-Garboden, Andrew. 2008b. Ulwa verb class morphology. In press in *International Journal of American Linguistics 76.2* .

Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, ed. Johan Rooryck and Laurie Zaring, 109–137. Dordrecht: Kluwer.

Labelle, Marie. 1992. Change of state and valency. *Journal of Linguistics* 28:375–414.

Lakoff, George. 1965. On the nature of syntactic irregularity. Doctoral Dissertation, Indiana University, Bloomington, IN. Published 1970 as *Irregularity in syntax*. New York: Holt, Rinehart, and Winston.

Lakoff, Robin. 1971. Passive resistance. In *Proceedings of the Seventh Annual Meeting of the Chicago Linguistic Society*, 149–163. Chicago, IL: Chicago Linguistic Society.

Levin, Beth. 1993. *English verb classes and alternations: A preliminary investigation*. Chicago, IL: University of Chicago Press.

Levin, Beth, and Malka Rappaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press.

Levin, Beth, and Malka Rappaport Hovav. 1998. Morphology and lexical semantics. In *Handbook of morphology*, ed. Arnold Zwicky and Andrew Spencer, 248–271. Oxford: Blackwell.

Levin, Beth, and Malka Rappaport Hovav. 2005. *Argument realization*. Cambridge: Cambridge University Press.

Lieber, Rochelle. 1980. On the organization of the lexicon. Doctoral Dissertation, MIT, Cambridge, MA.

Lieber, Rochelle. 2004. *Morphology and lexical semantics*. Cambridge: Cambridge University Press.

Manzini, Maria Rita. 1983. On control and control theory. *Linguistic Inquiry* 14:421–446.

Marantz, Alec. 1984. *On the nature of grammatical relations*. Cambridge, MA: MIT Press.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st Annual Penn Linguistics Colloquium*, volume 4.2 of *University of Pennsylvania Working Papers in Linguistics*, 201–225.

Marcotte, J.P. 2005. Causative alternation errors in child language acquisition. Doctoral Dissertation, Stanford University, Stanford, CA.

Marušič, Franc, and Rok Žaucer. 2006. On the intensional feel-like construction in slovenian: A case of a phonologically null verb. *Natural Language and Linguistic Theory* 24:1093–1159.

McCawley, James. 1968. Lexical insertion in a transformational grammar without deep structure. In *Proceedings of the Fourth Regional Meeting of the Chicago Linguistic Society*, 71–80. Chicago, IL: Chicago Linguistic Society.

McKoon, Gail, and Talke Macfarland. 2000. Externally and internally caused change of state verbs. *Language* 76:833–858.

McKoon, Gail, and Talke Macfarland. 2002. Event templates in the lexical representation of verbs. *Cognitive Psychology* 45:1–44.

Mendikoetxea, Amaya. 1999. Construcciones inacusativas y pasivas. In *Gramática descriptiva de la lengua Española*, ed. Ignacio Bosque and Violeta Demonte, 1575–1629. Madrid: Editorial Espasa.

Montague, Richard. 1973. The proper treatment of quantification in ordinary English. In *Approaches to natural language*, ed. K.J.J. Hintikka, J.M.E. Moravcsik, and P. Suppes, 221–242. Dordrecht: D. Reidel Publishing. References to reprinted version in Paul Portner and Barbara Partee (eds.) 2002. Formal semantics: The essential readings. Oxford: Blackwell. Pp. 17-34.

Nedjalkov, Vladimir P., and G.G. Silnitsky. 1973. The typology of morphological and lexical causatives. In *Trends in Soviet theoretical linguistics*, ed. Ferenc Kiefer, 1–32. Dordrecht: D. Reidel Publishing.

Newmark, Leonard, Philip Hubbard, and Peter Prifti. 1982. *Standard Albanian: A reference grammar for students*. Stanford, CA: Stanford University Press.

Nichols, Johanna, David Peterson, and Jonathan Barnes. 2004. Transitivizing and detransitivizing languages. *Linguistic Typology* 8:149–212.

Norwood, Susan. 1997. *Gramática de la lengua Sumu*. Managua: CIDCA.

Parsons, Terence. 1990. *Events in the semantics of English: A study in subatomic semantics*. Cambridge, MA: MIT Press.

Perlmutter, David. 1978. Impersonal passives and the Unaccusative Hypothesis. In *Proceedings of the Fourth Annual Meeting of the Berkeley Linguistics Society*, 157–189. Berkeley, CA: Berkeley Linguistics Society.

Pesetsky, David. 1995. *Zero syntax: Experiencer and cascades*. Cambridge, MA: MIT Press.

Piñón, Christopher. 2001a. A finer look at the causative-inchoative alternation. In *Proceedings of Semantics and Linguistic Theory 11*. Ithaca, NY: Cornell Linguistics Circle. References to prepublication manuscript on WWW at: `http://www.phil-fak.uni-duesseldorf.de/~pinon/papers/flcia.html`.

Piñón, Christopher. 2001b. Modelling the causative-inchoative alternation. *Linguistische Arbeitsberichte* 76:273–293.

Pinker, Steven. 1989. *Learnability and cognition: The acquisition of argument structure*. Cambridge, MA: MIT Press.

Pustejovsky, James. 1995. *The generative lexicon*. Cambridge, MA: MIT Press.

Pylkkänen, Liina. 2000. On stativity and causation. In *Events as grammatical objects*, ed. Carol Tenny and James Pustejovsky, 417–445. Stanford, CA: CSLI Publications.

Rappaport Hovav, Malka, and Beth Levin. 1998. Building verb meanings. In *The projection of arguments: Lexical and compositional factors*, ed. Miriam Butt and Wilhelm Geuder, 97–134. Stanford, CA: CSLI Publications.

Reinhart, Tanya. 1996. Syntactic effects of lexical operations: Reflexives and unaccusatives. In *OTS working papers*. Downloaded from author's website: `http://www.let.uu.nl/~tanya.reinhart/personal/`.

Reinhart, Tanya. 2002. The theta system: An overview. *Theoretical Linguistics* 28:229–290.

Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.

Reinhart, Tanya, and Tal Siloni. 2005. The lexicon-syntax parameter: Reflexivization and other arity operations. *Linguistic Inquiry* 36:389–436.

Roeper, Thomas. 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* 18:267–310.

Rothstein, Susan. 2004. *Structuring events*. Oxford: Blackwell.

Sadler, Louisa, and Andrew Spencer. 1998. Morphology and argument structure. In *Handbook of morphology*, ed. Arnold Zwicky and Andrew Spencer, 206–236. Oxford: Blackwell.

van der Sandt, Rob A. 1991. Denial. In *Papers from the Chicago Linguistic Society: The Parasession on Negation*, volume 27, 331–344. Chicago, IL.

Scalise, Sergio. 1986. *Generative morphology*. Dordrecht: Foris.

Schäfer, Florian. 2007. On the nature of anticausative morphology: External arguments in change-of-state contexts. Doctoral Dissertation, Universität Stuttgart, Stuttgart.

Schladt, Matthias. 2000. The typology and grammaticalization of reflexives. In *Reflexives: Forms and functions*, ed. Zygmunt Frajzyngier and Traci S. Curl. Amsterdam: John Benjamins.

Siewierska, Anna. 1984. *The passive: A comparative linguistic analysis*. London: Croom Helm.

Simons, Mandy. 1995. The binyan Hitpa'el decomposed: On the derivation and function of the Hebrew binyan Hitpa'el. In *Proceedings of the Eleventh Annual Conference of the Israel Association for Theoretical Linguistics*, 143–167.

Smith, Carlota. 1970. Jespersen's 'move and change' class and causative verbs in English. In *Linguistic and literary studies in honor of Archibald A. Hill*, ed. Mohammad A. Jazayery, Edgar C. Polomé, and Werner Winter, volume 2: Descriptive Linguistics, 101–109. The Hague: Mouton.

Van Valin, Robert D., and David P. Wilkins. 1996. The case for "effector": Case roles, agents and agency revisited. In *Grammatical constructions: Their form and meaning*, ed. Masayoshi Shibatani and Sandra A. Thompson, 289–322. Oxford: Oxford University Press.

Van Voorst, Jan. 1995. The semantic structure of causative constructions. *Studies in Language* 19:489–523.

Wechsler, Stephen. 2005. More problems for 'little v'—and a lexicalist alternative. Talk presented on October 11, 2005 at the Construction of Meaning Workshop, Stanford University.

Wierzbicka, Anna. 1980. *Lingua mentalis: The semantics of natural language*. Sydney: Academic Press Australia.

Wunderlich, Dieter. 1997. Cause and the structure of verbs. *Linguistic Inquiry* 28:27–68.

Zubair, Cala, and John Beavers. 2008. Non-nominative subjects and the involitive construction in Sinhala. Handout of paper presented at the annual meeting of the Linguistic Society of America, Jan. 4, 2008, Chicago.