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Anticausatives in Sinhala: Involitivity and Causer Suppression

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Abstract Many recent theories of causative/inchoative alternations adopt an anti-causativization analysis, wherein the inchoative is derived from the causative via some operation that eliminates the causer argument from a verb's argument structure, provided the causer is semantically unspecified for agentivity (Levin and Rappaport Hovav 1995; Chierchia 2004; Koontz-Garboden 2009). We explore the properties of such an analysis for causative/inchoative alternations in Colloquial Sinhala, which are overtly indicated via a volitive/involitive stem contrast on the verb. We argue that the alternation arises from a causer suppression operation that deletes the causer syntactically but preserves it semantically, albeit formally marking it as unresolvable for agentivity. This prevents the verb from occurring in certain contexts requiring agentivity of a syntactically active argument, including the volitive stem, although such a reading may be derived pragmatically. The patient in turn shows a case alternation that we argue reflects two ways the suppressed causer can be interpreted — via reflexivization or existential binding. These data, we argue, support an anticausative analysis as elimination of causers unspecified for agentivity. They also expand the typology of ways agentivity is encoded and left unspecified, how causer elimination can occur, and what types of overt morphology can indicate the alternation.

1 Introduction

Diathesis alternations have been a key component in investigations of lexical meaning and how lexical meaning is projected grammatically dating back to at least Fillmore (1968, 1970). One of the most discussed alternations is the causative/inchoative alternation (Hall (Partee) 1965; Lakoff 1965; Fillmore 1970; Smith 1970; Nedyalkov

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and Silnitsky 1973; Perlmutter 1978; Dowty 1979; Guerssel et al. 1985; Croft 1990; Jackendoff 1990; Haspelmath 1987, 1990, 1993; Levin and Rappaport Hovav 1995; Reinhart 2000, 2002; Piñón 2001a,b; Hale and Keyser 2002; Doron 2003; Chierchia 2004; Alexiadou et al. 2006; Koontz-Garboden 2009; Schäfer 2008; Alexiadou 2010; *inter alia*; see Schäfer 2009 for an overview), wherein two identical or related change-of-state verb forms may occur transitively or intransitively as in (1).

(1) a. John broke the vase. (causative)

b. The vase broke. (inchoative)

In the causative (1a), *break* takes a causer subject and a patient object, while in the inchoative (1b) it takes only a patient subject. The meaning difference between the two uses of *break* involves the implied presence of external causation: although both variants entail change-of-state, (1a) also entails the existence of an external causer, while (1b) does not (though it is compatible with a context of external causation).

Levin and Rappaport Hovav (1995: Ch.3) have argued that English causative/inchoative alternations represent anticausativization, where the inchoative is derived from the causative via some operation that suppresses the external causer argument, but does not delete it from the meaning of the inchoative. A key motivation for this analysis is that the verbs that undergo this alternation are those for which the causer argument in the causative form is unspecified for any particular type of volitionality or specific manner. Causative verbs that require volitionality or specific actions on the part of their subjects generally do not have inchoative forms (e.g. **The bread cut/*the senator murdered*; see also Haspelmath 1993; Reinhart 2000, 2002). Thus stating the appropriate constraints on such pairs involves reference to the causative form, suggesting an anticausative analysis. Chierchia (2004) and Koontz-Garboden (2009) also argue for anticausative analyses for Italian and Spanish respectively, where there is additional morphological evidence: the inchoative is overtly marked (in these cases by a reflexive clitic). The mechanics of the various analyses differ, but they share the insight that causers unspecified for agentivity may be suppressed in some way.

We explore an extension of such an analysis to an apparent causative/inchoative alternation in Colloquial Sinhala, which, like Italian and Spanish alternations, also corresponds to an overt shift in the verbal morphology. In particular, all Sinhala verbs occur in one or two stem classes, the volitive and involitive, generally indicating volitional and non-volitional action respectively (Gair 1970; Kahr 1989; Gair and Paolillo 1997; Inman 1993). The volitive form of the verb meaning 'drown' is given in (2a), with the involitive variant given in (2b). In addition to the stem alternation there is also a difference in case-marking on the subject, with the subject of the volitive being nominative and the subject of the involitive marked by the postposition *atiŋ*.[1]

(2) a. *Aruni Nimal-wə giluwa.*
Aruni Nimal-ACC drown.VOL.PST
'Aruni drowned Nimal (deliberately).' (intentional agent, by default)

[1] The following abbreviations are used: ACC=accusative, CAUS=cause, DAT=dative, DEF=definite, EMPH=emphatic, GEN=genitive, INF=infinitive, INST=instrumental, INV=involitive, LOC=locative, NEG=negation, PL=plural, PRS=present, PRT=participle, POST=postposition, PST=past, QUES=question, REFL=reflexive, SG=singular, VOL=volitive.

b. *Aruni atiŋ Nimal-wə giluna.*
Aruni POST Nimal-ACC drown.INV.PST
'Aruni drowned Nimal (accidentally).' (non-intentional agent, by default)

Crucially, some volitive transitives also have involitive intransitive counterparts, with the causer absent and the patient as the subject, marked nominative. The intransitive variant of (2a) is (3) (which we gloss as inchoative, anticipating our analysis).

(3) *Nimal giluna/*giluwa.*
Nimal drown.INV.PST/drown.VOL.PST
'Nimal drowned.'

We argue that (2a) and (3) represent a causative/inchoative alternation.

However, these data raise several questions for a theory of such alternations. First, although we assume an anticausative analysis (for the same reasons that motivate one for English), as discussed by Nedyalkov and Silnitsky (1973) and Haspelmath (1987, 1990), overt marking of anticausatives across languages usually shows syncretism with passive, inceptive, resultative, fientive, and most especially reflexive morphology, i.e. morphology broadly associated with argument reduction or change-of-state. But in Sinhala a stem alternation that normally encodes a volitional/non-volitional contrast serves as a causative/inchoative marker. Why should this be?

Second, Sinhala shows a case alternation for inchoative verbs, where the nominative subject in (3) may optionally be marked accusative, as in (4). However, there is a crucial difference in interpretation between (3) and (4): the accusative variant entails the presence of an external causer, i.e. the reading is more like a passive.

(4) *Nimal-wə giluna/*giluwa.*
Nimal-ACC drown.INV.PST/drown.VOL.PST
'Nimal was drowned (by someone).'

Nonetheless, we show that accusative variants are also formally inchoative (there is no syntactically active causer, unlike passives). Thus there are two types of anticausatives, one of which *does* encode external causation, contra the standard understanding of inchoatives as not indicating this. How do these two possibilities arise?

We provide an analysis of these facts that answers these questions and also offers new insights into the semantic nature of inchoative clauses. We argue that anticausativization in Sinhala is in fact technically independent of the volitive/involitive stem contrast. Rather, it is the result of a process of causer suppression by which a causer argument unspecified for agentivity is deleted from the verb's argument structure, but is left present in the underlying event representation. The suppressed causer may in turn be interpreted in one of two ways: (a) coreferential with an argument still on the verb's argument structure, yielding a true inchoative reading or (b) external to the argument structure, giving rise to a passive-type reading, and this is what is reflected in the subject case alternation. These options in fact reflect two different previous proposals on how causers may be suppressed — via reflexivization (as in Chierchia 2004; Koontz-Garboden 2009 for Spanish and Italian) or via existential binding (a slight revision of the analysis of Levin and Rappaport Hovav 1995: 108 for English) — so that both types are attested and exist in a single language.

That inchoatives are always involitive follows from an incompatibility with the meaning of the volitive. As noted, causatives that anticausativize are compatible with both agentive and non-agentive causer readings. Inchoatives, we argue, are also unspecified for agentivity, and thus may occur in real world contexts where it does or does not obtain. However, unlike causatives, they may not occur in any *grammatical constructions* that require agentivity, and this, we demonstrate, includes the volitive stem. But how can a verb simultaneously be unspecified for agentivity and also resist constructions that resolve this? To explain how, we first propose a simple, intuitive semantic definition of agentive vs. non-agentive causation as causation by an action (event) on the part of the causer vs. causation by some property (state) of the causer respectively. By requiring agentivity of a causative, volitive stems require causation by an event, a formal fact about the type of the causing eventuality. Causatives that anticausativize are compatible with eventive or stative causation, but crucially, we propose, causer suppression fixes the causation for inchoatives as formally unresolvable. This precludes linguistic contexts such as the volitive stem that formally require agentive readings (but does not preclude this reading from obtaining due to real world context). The involitive imposes no such constraints, leaving it as the only way to realize an inchoative. In other words, agentive, non-agentive, and unspecified causation are distinguished in truth conditional terms that have formal consequences, and in Sinhala these formal consequences are reified in ways that have grammatical effects. This is distinct from Spanish, where agentivity can always be resolved contextually or grammatically, even with inchoatives. This analysis supports a view of anticausatives as arising from elimination of a causer unspecified for agentivity, but also suggests that languages may differ in how this is encoded — just truth conditionally or also grammatically — predicting different cross-linguistic behavior for inchoatives.

In §2 we review some relevant aspects of Sinhala grammar, including the distinction between volitive and involitive stems. In §3 we argue that clauses such as (3) are inchoative (arguing against alternative analyses). In §4 we outline an initial analysis of causative/inchoative alternations as reflexivization on causatives unspecified for agentivity, following Chierchia (2004) and Koontz-Garboden (2009). We then turn to two problems for this analysis for Sinhala. In §5 we argue that while inchoatives are semantically unspecified for agentivity, they resist constructions requiring it, including volitive stem and purposives. In §6 we show that accusative subject inchoatives cannot be derived via reflexivization. In §7 we outline a revised analysis for Sinhala based on a more general notion of causer suppression, and a theory that distinguishes different types of causation and non-specification for agentivity. In §8 we conclude by placing involitive stems within a larger typology of causative/inchoative markers.

Finally, Spoken Sinhala is not a single dialect. Rather, it consists of a diglossic linguistic system with two related but contrastively defined varieties referred to as Colloquial and Formal Sinhala (De Silva 1974; Fairbanks et al. 1986; Paolillo 1992, 1997), which are lexically and grammatically quite distinct, and used prescriptively in different social domains. While our data draw on Colloquial Sinhala, subject case and the interpretation of involitives is subject to cross-varietal and cross-regional variation. Our own (nine) primary informants speak Kandyan and Colombo dialects, and range from 26-30 years of age. We also draw on previously published data, noting that additional constraints may apply on an item by item or speaker by speaker basis.

2 Volitive and Involitive Verbs

We first review the key morphological and semantic distinctions between volitive and involitive stems, recapping Inman (1993) and Beavers and Zubair (2010). All Sinhala verb roots are found in one of the two stems, and many roots admit both. The volitive/involitive contrast can be distinguished through a combination of features. First, involitive stems invariably have front root vowels and a thematic vowel *-e-* in the present tense, while volitive stems have no place restrictions on their root vowels, and have thematic vowels *-a-* or *-i-* in the present tense. Past stems for both have front root vowels, where the thematic vowel for the involitive is *-un-* and either *-u(w)-* or *-i(y)-* (with additional final consonant gemination) for the volitive. The involitive is thus formally marked relative to the volitive since it is the form that shows neutralization of the thematic vowel (following Haspelmath 1993: 97–98). Finally, the actual tense inflected forms are derived by appending *-nəwa* (simple present), *-a(a)* (simple past), or *-nnə/ṇḍə* (infinitive). Example paradigms for roots meaning 'wash', 'suck', 'make', and 'open' are given in (5) (taken from Inman 1993: 24–25, (1), (2)).[2]

(5)

		Present Stem Formation		**Past Stem Formation**	
gloss	*root*	*volitive stem*	*involitive stem*	*volitive stem*	*involitive stem*
'wash'	*hood-*	*hood-a-nəwa*	*heed-e-nəwa*	*heed-u(w)-a*	*heed-un-a*
'suck'	*ur-*	*ur-a-nəwa*	*ir-e-nəwa*	*ir-u(w)-a*	*ir-un-a*
'make'	*had-*	*had-a-nəwa*	*hæd-e-nəwa*	*hæd-u(w)-a*	*hæd-un-a*
'open'	*ar-*	*ar-i-nəwa*	*ær-e-nəwa*	*ær-i(y)-a*	*ær-un-a*

Another difference between volitive and involitive verbs is in subject case-marking. Volitive verbs typically take nominative subjects, as in (6) (showing intransitive, transitive, and ditransitive roots). Direct objects may be accusative, as in (6b), or dative, as in (6c). However, Sinhala is a differential object marking language, wherein inanimates do not show overt accusative, as in (6d), and animates do so only optionally.[3] Indirect objects occur in the dative case, as in (6e) (data from Gair 1970: 64).

(6) a. *Malini Dalada Maaligawə-ṭə diuwwa.*
Malini Temple Tooth-DAT run.VOL.PST
'Malini (deliberately) ran to the Temple of the Tooth.'

b. *Aruni Nimal(-wə) mæruwa.*
Aruni Nimal(-ACC) kill.VOL.PST
'Aruni (deliberately) drowned/killed Nimal.'

c. *Aliyaa Joon-ṭə hondawæl-eŋ gæhuwa.*
elephant John-DAT trunk-INST hit.VOL.PST

[2] Sinhala also has various compound verbs, including those formed from a nominal, adjectival, or verbal root suffixed with *-we-* 'do/become' or *-kərə-* 'do', which themselves may surface as volitive or involitive (as discussed by Henadeerage 2002: 55). Furthermore, volitive *-kərə-* vs. involitive *-we-* forms often mark causative/inchoative pairs. We do not distinguish these from non-compound pairs, since as far as we know this distinction is irrelevant to any claims we make regarding the association of involitivity to inchoatives.

[3] Differential object marking patterns vary across speakers. The pattern outlined here is that noted by Gair (1970: 61–62), though our speakers tend to use accusative more or less obligatorily with animates and optionally with some inanimates. Kahr (1989: 113–124) provides some additional discussion of which DPs may be considered animate (though our speakers find some of her data formal). The details of the pattern will not matter, as we are ultimately interested in what accusative case means when it does arise.

‘The elephant hit John with his trunk.’

d. *Aliyaa nestomalt(-*wə) biuwwa.*
Elephant nestomalt(-ACC) drink.VOL.PST
‘The elephant drank nestomalt (chocolate milk).’

e. *Eyaa ma-ṭə mee sumaa-ŋe salli dunna*
3SG 1SG-DAT this week-GEN money give.VOL.PST
‘He gave me this week’s money.’

Conversely, involitive stems take subjects in a range of mostly quirky cases. By and large, transitive caused change-of-state verbs (e.g. *issennə* ‘lift’; *kædennə* ‘break’, *ærennə* ‘open’; *ellennə* ‘hang’; *hellennə* ‘shake’; *kærəkennə* ‘turn’; *pælennə* ‘split’ (as in wood); *weelennə* ‘twine’; see Wijayawardhana et al. 1991: 113–122), take subjects obligatorily marked by the postposition *atiŋ* as in (7a).

(7) a. *Siri atiŋ piŋgaanəyə kæduna.*
Siri POST plate break.INV.PST
‘Siri broke the plate (accidentally).’

b. *Laməya atiŋ dorə æruna.*
child POST door open.INV.PST
‘The child opened the door (accidentally).’

c. *Joon atiŋ pan kæpuna.*
John POST bread cut.INV.PST
‘John cut the bread (accidentally).’

Inman (1993: 32–35) calls *atiŋ* a “generalized ergative” case following Kiparsky (1992), where “ergative” is intended to convey that it is the structural case for A arguments in involitive clauses. Beavers and Zubair (2010: 83–89) refine this analysis, arguing that *atiŋ* more specifically marks causers that act upon other entities.

Although *atiŋ* is the most common subject-marker of transitive involitives, subjects of certain involitive transitives are instead marked dative, including subjects of transitive performance verbs (*kiyəwennə*, ‘read’, *pæwennə* ‘perform’, *kiyennə* ‘speak, say, recite’), receiving verbs (*læbennə*, ‘receive’), and experiencer-subject verbs (*dænennə*, ‘feel’; *peennə*, ‘see’; *æhennə*, ‘hear’; *teerennə*, ‘understand’). Subjects of intransitives typically classified as unergative also take dative subjects (*æṇḍennə* ‘cry’; *hinaawennə* ‘laugh’; *wewulennə* ‘shiver’; *æænumak ærennə* ‘yawn’; *næṭennə* ‘dance’; *æwidennə* ‘walk’; Henadeerage 2002: 137–140). Beavers and Zubair argue that these facts follow from various independent semantic uses of the dative to mark recipients and experiencers. As dative subjects are not relevant here, we set them aside.

Finally, subjects of involitives typically classified as unaccusative show one of two cases. Unaccusatives as in (8a) that fall into the class of what Levin and Rappaport Hovav (1995: 90ff.) call “externally caused change of state” (ECOS) (e.g. *mærennə* ‘die’; *wæṭennə* ‘fall’; *gilennə* ‘drown’; *hirəwennə* ‘get stuck’; *lissennə* ‘slip’) show an alternation between nominative (Henadeerage 2002) and accusative (Inman

1993) case, while those Levin and Rappaport Hovav classify as "internally caused change of state" (ICOS) (e.g. *pipennə* 'bloom') show only nominative, as in (8b).[4]

(8) a. *Laməya/Laməya-wə giluna/mæruna.*
child/child-ACC drown.INV.PST/die.INV.PST
'The child drowned/died (accidentally).'

b. *Aruni-ge ratu rosa(-*wə) pipuna.*
Aruni-GEN red rose(-ACC) bloom.INV.PST
'Aruni's red rose bloomed.'

We return to the difference in the case-marking of unaccusatives in §§6-7.[5]

The final difference between the two stems is that subjects of volitive verbs tend to be interpreted as volitional, while subjects of involitives tend to be interpreted as non-volitional (Kahr 1989; Inman 1993). This is exemplified by the fact that subjects of volitives are compatible with volitional adverbs, but not subjects of involitives:

(9) a. *Aruni Nimal-wə hitəla giluwa/kæpuwa.*
Aruni Nimal-ACC intentionally drown.VOL.PST/cut.VOL.PST
'Aruni deliberately drowned/cut Nimal.'

b. *#Aruni atiŋ Nimal-wə hitəla giluna/kæpuna.*
Aruni POST Nimal-ACC intentionally drown.INV.PST/cut.INV.PST
#'Aruni accidentally deliberately drowned/cut Nimal.'

However, as Beavers and Zubair (2010: 77–82) discuss in detail, these associations are not categorical. First, both stems admit inanimate subjects, including natural forces as in (10a) and instruments as in (10b), though presumably (non-)volitionality is not a relevant category for such entities. (Not all verbs allow inanimate subjects of all types, e.g. involitives do not take instrument subjects, as shown in (10b). What determines when inanimates are or are not possible is irrelevant here.)

(10) a. *Suləŋə hamənəwa/hæmenəwa*
wind blow.VOL.PRS/blow.INV.PRS
'The wind blows.'

b. *Mitiyə piŋgaanəyə kæduwa/*kæduna.*
hammer plate break.VOL.PST/break.INV.PST
'The hammer broke the plate.'

[4] We use the ECOS/ICOS labels here as gross descriptive terms, though they were intended by Levin and Rappaport Hovav to distinguish verbs that describe change-of-state events that require a causer vs. those that do not. (See Alexiadou et al. 2006 and Alexiadou 2010 for a more nuanced classification of verb types building on this.) We later outline a notion of internal vs. external causation for ECOS verbs that distinguishes (self) causation by the patient vs. causation by some entity other than the patient respectively.

[5] In some dialects transitive involitives also allow instrumental subjects:

(i) *Ee laməya-geŋ demawpiyaŋ-wə rækenəwa.*
that child-INST parent.PL-ACC support.INV.PRS
'That child supports his parents.' (Inman 1993: 60)

However, our informants did not find these acceptable (likewise for Jany 2005); we set them aside for now.

Second, while some volitive verbs do require volitionality, such as *minimarannə* 'murder' in (11a), most in fact do not, as illustrated in (11b) for *kadannə* 'break'.

(11) a. *#Siri Gunee-wə minimæruwa, eet hitəla nemeyi.*
Siri Gunee-ACC murder.VOL.PST but intention without
#'Siri murdered Gunee unintentionally.'

b. *Laməya piŋgaanəyə kæduwa, eet hitəla nemeyi.*
child plate broke.VOL.PST but intention without
'The child broke the plate unintentionally.' (Inman 1993: 98, (39))

This suggests that the volitive is generally unspecified for volitionality, though specific roots may lexically require it. Third, even with animate subjects, not all involitives are strictly non-volitional either. Inman (1993) notes some uses of the involitive that do not indicate non-volitionality, but rather unexpectedness of the event from the point of view of the speaker, which he refers to as the "doxastic" use.[6] This is illustrated in (12), where the girl may have acted deliberately in cooking the food well, but the speaker did not expect it (though our informants do not accept Inman's data).

(12) *Kellə atiŋ maalu ageeṭə pihenəwa.*
girl POST fish very.well cook.INV.PRS
'The girl can cook fish very well.' (despite expectations)
(Inman 1993: 100, (41), who cites Coates 1972, who cites DeSilva 1960)

Zubair (2008) and Beavers and Zubair (2010: 78–79) describe another use of the involitive as marking ironic denial during "smack talk" (playful taunting and insulting):

(13) *((B shows A pictures of Nuwara Eliya; A asks if B went there))*

B: *Ehe giye? Næ, machang. Mamə atiŋ par-e*
there go.VOL.PST NEG dude 1SG POST street-LOC
hinganna-geŋ eewa horəkən-keruna.
beggar-INST 3PL steal-do.INV.PST
'Go there? No, dude. I stole them from a beggar on the street.'

Thus volitives as a class do not require volitionality, though it often arises in context (we return to additional aspects of the meaning of the volitive in §5.2). Conversely, involitives always indicate either non-volitionality, unexpectedness to the speaker, or ironic denial. Beavers and Zubair (2010: 77–82) offer a unified analysis of the relevant meanings, revising and updating Inman's (1993) intensional analysis of the intentions/expectations of speech act or event participants as sets of possible worlds. The details are irrelevant here; all that matters is that these meaning contrasts exist.

Finally, the question of which roots occur in which stems has a partly semantic explanation. Verbs such as *minimarannə* 'murder' that absolutely require volitional readings do not have involitive stems, and psych-verbs such as *ridennə* 'ache' that

[6] Literature on mirativity (DeLancey 1997, 2001; Dickinson 2000), the grammatical encoding of incongruency between an event and a speaker's expectation of that event, suggests a similar overlap of volition and speaker expectation. A comparison of volitives and miratives, however, would take us too far afield.

deny volitionality do not have volitive stems. However, we do not rule out the possibility that some roots occur in only one stem or the other for purely historical or accidental reasons (see Inman 1993: 180–198 for a list and discussion of reponent and deponent forms). For this reason we assume that verb stems are ultimately lexicalized, but regularities can be explained via lexical redundancy rules. For convenience, though, we assume the existence of a pre-stem lexical root for each verb in order to capture commonalities across alternating stems, and also across roots modulo the stems they occur in. Operations on argument structure, such as the lexical rule relating causatives and inchoatives, we assume apply to roots prior to stem formation.

3 Detransitive Verbs with Nominative Subjects

3.1 Grammatical Function Shifts in Volitive/Involitive Pairs

We now turn to the correspondence between transitive volitive and intransitive involitive variants and argue that the contrast is that of a causative/inchoative alternation of the sort discussed in §1, drawing heavily on Henadeerage (2002) (as well as Gair 1990; Inman 1993). We focus first on nominative subject involitives (which Henadeerage but not Inman discusses), returning in §6 to accusative variants (which Inman but not Henadeerage discusses). The basic contrast is illustrated again in (14).[7]

(14) a. *Siri lamǝya-wǝ giluwa/mæruwa/kærǝkuwa.*
Siri child-ACC drown.VOL.PST/kill.VOL.PST/turn.VOL.PST
'Siri (deliberately) drowned/killed/turned the child.' (Volitive transitive)

b. *Lamǝya giluna/mæruna/kærǝkuna.*
child drown.INV.PST/die.INV.PST/turn.INV.PST
'The child drowned/died/turned (accidentally).' (Involitive intransitive)

We refer to the involitive member as "detransitive" (borrowing the term of Gair 1990: 16ff.) to remain neutral (for the moment) as to how this correspondence is derived. Detransitive uses are not possible with volitive stems, as shown in (15) (cp. (14b)).[8]

(15) *#Lamǝya giluwa/mæruwa/kærǝkuwa.*
child drown.VOL.PST/kill.VOL.PST/turn.VOL.PST
'The child drowned/died/turned (deliberately).'

Before showing that clauses such as those in (14) reflect a causative/inchoative alternation, we first eliminate another possible analysis of (14b), namely that it represents a transitive verb with subject *pro*-drop. *Pro*-drop is generally possible in Sinhala, not just with subjects but other grammatical functions as well. In (16), the subject in A is unexpressed and in B both the subject and object are unexpressed.

[7] We take the volitive to be the causative form, though most, but not all, volitive causatives also have involitive causative counterparts, so that the causative may properly speaking be thought of as a root that may occur in at least the volitive and possibly the involitive. Conversely, inchoatives are always involitive. Sinhala also has a productive morphological causative *-(w)ǝ-* that can apply to any verb; we set this aside.

[8] The data in (15), as well as those in (14b), do have acceptable but irrelevant *pro*-drop readings, where there is a separate null causer and the verbs are technically transitive; see below.

(16) A: *Pot gatta də?*
book.PL take.VOL.PST QUES
'Did (you) take (the) books?'

B: *Ow, gatta.*
yes take.VOL.PST
'Yes, (I) took (them).' (Inman 1993: 45, (36))

Given that objects in Sinhala may be nominative (due to differential object marking), then it could be that detransitives are actually transitive with the subject *pro*-dropped. However, there are reasons to rule this analysis out. First, it predicts that for each detransitive there should be a corresponding transitive involitive with an overt subject. However, this is not always the case. *Mara-* 'kill' has a transitive volitive form (17a), and an intransitive involitive form (17c), but no transitive involitive form, as in (17b).

(17) a. *Aruni Nimal-wə mæruwa.*
Aruni Nimal-ACC kill.VOL.PST
'Aruni killed Nimal.'

b. **Aruni atiŋ Nimal-wə mæruna.*
Aruni POST Nimal-ACC kill.INV.PST
'Aruni accidentally killed Nimal.'

c. *Nimal mæruna.*
Nimal die.INV.PST
'Nimal died.'

The lack of a transitive involitive form would be surprising on a *pro*-drop analysis.

Furthermore, the sole argument of detransitives also shows properties of subjecthood. To establish this, we outline two independently motivated subjecthood tests for Sinhala, adapted from Inman (1993: 54–56) and Henadeerage (2002: Ch.3), taking nominative A and S arguments of volitive verbs as the core case.[9] First, in volitive clauses, only nominative A and S arguments can control into participial adjunct *gamaŋ* 'while' clauses. This is shown in (18), where only nominative *Gunee* and *Wimale* can control into the *gamaŋ* clause, not accusative *Siri-wə* or dative *Siri-ṭə.*

(18) a. *[PRO$_{i/*j}$ wæḍə-kərənə gamaŋ], Gunee$_i$ Siri-wə$_j$*
work-do.VOL.PRS.PRT while Gunee Siri-ACC
wiweecənee-kəraa.
criticism-do.VOL.PST
'Gunee$_i$ criticized Siri$_j$ while PRO$_{i/*j}$ working.' (Inman 1993: 54, (51))

[9] Arguing for a subject grammatical function in Sinhala is problematic. Henadeerage (2002: Ch.3) (see also Gair 1976, 1990; Kahr 1989: 36) makes a detailed argument that many otherwise cross-linguistically viable subjecthood diagnostics are inapplicable to Sinhala, because they either do not exist, are restricted to some property other than grammatical function, or pick out multiple DPs in a clause, not isolating one single class of DPs one could call "subjects". Nonetheless, the diagnostics we discuss do seem to converge on one class of DPs, nominative A and S arguments of volitive clauses, that could be argued to be subjects.

b. *[PRO$_{i/*j}$ kœæmə kanə gamaŋ], Wimale$_i$ Siri-ṭə$_j$*
food eat.VOL.PRS.PRT while Wimale Siri-DAT
kataa-kəraa.
speech-do.VOL.PST
'While PRO$_{i/*j}$ eating, Wimale$_i$ spoke to Siri$_j$.'
(Henadeerage 2002: 89, (71))

Second, Sinhala anaphors, such as the reflexive focus marker *taman* 'self', are subject-oriented.[10] This is shown in (19a) for a transitive verb, where genitive *taman-ge* can only refer to Nimal, not Siri, and similarly for the intransitive verb in (19b).

(19) a. *Nimal$_i$ Siri-wə$_j$ taman-ge$_{i/*j}$ gedərə-di tallu-kəraa.*
Nimal Siri-ACC self-GEN house-while_at push-do.VOL.PST
'Nimal$_i$ pushed Siri$_j$ at self$_{i/*j}$'s house.'

b. *Nimal$_i$ Siri-ṭə$_j$ taman-ge$_{i/*j}$ gedərə-di kataa-kəraa.*
Nimal Siri-DAT self-GEN house-while_at talk-do.VOL.PST
'Nimal$_i$ spoke to Siri$_j$ at self$_{i/*j}$'s house.'
(Henadeerage 2002: 65, (35b,a))

Subjecthood properties are maintained in non-detransitive involitives as well, wherein *atiŋ*-marked and dative A and S arguments may control into *gamaŋ* clauses as in (20a) and (21a) respectively, and may bind reflexive anaphors as in (20b) and (21b) respectively (and once again accusative and dative complements may not).

(20) a. *[PRO$_{i/*j}$ wæḍə-kərənə gamaŋ], Gunee$_i$ atiŋ Siri-wə$_j$*
work-do.VOL.PRS.PRT while Gunee POST Siri-ACC
wiweecənee keruna.
criticism do.INV.PST
Gunee$_i$ (accidentally) criticized Siri$_j$ while PRO$_{i/*j}$ working.

b. *Nimal atiŋ$_i$ Siri-wə$_j$ taman-ge$_{i/*j}$ gedərə-di tallu-keruna.*
Nimal POST Siri-ACC self-GEN house-while_at push-do.INV.PST
'Nimal$_i$ (accidentally) pushed Siri$_j$ at self$_{i/*j}$'s house.'
(Inman 1993: 54-56, (52), (57))

(21) a. *[PRO$_i$ wæḍə kərənə gamaŋ], minihaa-ṭə$_i$ æṇḍuna.*
work do.VOL.PRS.PRT while man-DAT cry.INV.PST
'The man$_i$ (involuntarily) cried while PRO$_i$ working.'

b. *Shameela-ṭə$_i$ taman-ge$_i$ gedərə-di riduna.*
Shameela-DAT self-GEN house-while_at felt_pain.INV.PST
'Shameela$_i$ felt pain at self's$_i$ house.'

Thus the A and S arguments of volitive and involitive clauses appear to have unique grammatical properties in the clause, and we take these as subjecthood diagnostics.

[10] Gair and Karunatillake (1998: 130) suggest that for some speakers *taman* may not be subject-oriented, though it appears to be for our informants and Inman's.

As expected, in clauses with *pro*-drop — which is the favored interpretation if a discourse context is established wherein some individual is the discourse topic — the null subject is still the subject. This can be seen in the following examples, where the null subject still controls into the *gamaŋ* clause and binds a reflexive:

(22) *((What did John$_i$ do?))*

a. *[PRO$_{i/*j}$ wæḍə-kərənə gamaŋ], pro$_i$ Siri-wə$_j$ wiweecənee*
work-do.VOL.PRS.PRT while Siri-ACC criticism
kəraa.
do.VOL.PST
'He$_i$ criticized Siri$_j$ while PRO$_{i/*j}$ working.' (Inman 1993: 54, (51))

b. *pro$_i$ Siri-wə$_j$ taman-ge$_{i/*j}$ gedərə-di dækka.*
Siri-ACC self-GEN house-while_at see.VOL.PST
'He$_i$ saw Siri$_j$ at self$_{i/*j}$'s house. (based on Inman 1993: 56, (56))

However, the single argument of a detransitive *also* shows subjecthood properties as in (23), where it may control into a *gamaŋ* clause and bind a reflexive.

(23) a. *[PRO$_i$ wæḍə kərənə gamaŋ], laməya$_i$ wæṭuna.*
work do.VOL.PRS.PRT while child fall.INV.PST
'The child$_i$ fell while PRO$_i$ working.'

b. *Siri$_i$ taman-ge$_i$ gedərə-di wæṭuna.*
Siri self-GEN house-while_at fall.INV.PST
'Siri$_i$ fell at her$_i$ own house.' (based on Inman 1993: 52-54, (55), (60))

This suggests that there is no null subject, and the single overt argument has become the subject. Of course, (23a,b) *also* have *pro*-drop readings, in which case the anaphors are bound instead by *pro*. However, this reading is not obligatory, and thus these clauses have readings where the overt DP is the subject, suggesting a grammatical function shift and not *pro*-drop. The next question is how this shift is derived.

3.2 Detransitives as Inchoatives

While we ultimately argue that the grammatical function shift in (14) represents a causative/inchoative alternation, an alternative analysis that has been argued in prior literature is that it represents a passivization operation, i.e. a purely grammatical demotion of the A argument and promotion of the O argument with no particular semantic consequence. In general, Colloquial Sinhala (unlike Formal and Literary Sinhala) has no analytic or synthetic passive. Yet Wijayawardhana et al. (1991) suggest that the involitive represents a passive-type process (see also Gunasinghe 1985; Gunasinghe and Kess 1989; Kahr 1989). On such an analysis the subject is either demoted to oblique status (as with *atiŋ*-marked and dative subjects), or left unexpressed (as with detransitives), and the object becomes the subject. A passive analysis of the involitive, however, is generally precluded by the subjecthood diagnostics with non-detransitive involitives in (20) and (21): the correspondents of the volitive A and S arguments

maintain subject properties in the involitive, meaning no grammatical function shift has occurred (see also Inman 1993: 85–92 and Henadeerage 2002: 127–129 for further discussion). Thus the involitive does not in general serve a passive function.

However, could detransitives represent a separate use of the involitive that *is* a passive? There are reasons to reject this analysis as well. First, the roots that show detransitivization are limited to exactly those that in other languages are classified as ECOS, including *marannə*/*mærennə* 'kill/die', *waṭannə*/*wæṭennə* 'drop/fall', *gilannə*/*gilennə* 'drown', *kadannə*/*kædennə*, 'break', *arinnə*/*ærennə*, 'open', *hirəwannə*/*hirəwennə* 'tighten/get stuck', and *lissannə*/*lissennə* 'slip', among others (see e.g. Henadeerage 2002: 137, Table 4-2 for a list of additional verbs). These verbs are furthermore unique among change-of-state verbs in lacking agentivity entailments for their subjects in the causative variants (Haspelmath 1993: 94). Evidence (as discussed for English and Spanish by Levin and Rappaport Hovav 1995: 85; 102–106 and Koontz-Garboden 2009: 84–85 respectively; see also Guerssel et al. 1985; Reinhart 2000, 2002) is that these verbs allow instrument and natural force subjects, commensurate with not requiring specific (human) actions or intentions of their subjects:

(24) a. *Mitiyə piŋgaanəyə kæduwa.*
hammer plate break.VOL.PST
'The hammer broke the plate'

b. *Suləŋə dorə æriya.*
wind door open.VOL.PST
'The wind opened the door.'

c. *Dædi rælə vaiyəsə minihaa-wə giluwa.*
intense wave old man-ACC drown.VOL.PST
'The intense wave drowned the old man.'

Conversely, *kapannə* 'cut' and *minimarannə* 'murder' verbs impose more specific constraints: 'cut' verbs require the subject to perform some specific action (manipulating a sharp instrument), and 'murder' verbs require explicit intentions on the part of the subject. As such, these verbs disallow instrument or natural force subjects:

(25) a. *#Suləŋə/pihiyə pan kæpuwa.*
wind/knife bread cut.VOL.PST
#'The wind/the knife cut the bread.'

b. *#Suləŋə/pihiyə Nimal minimæruwa.*
wind/knife Nimal murder.VOL.PST
#'The wind/the knife murdered Nimal.'

Likewise, these verbs lack detransitive variants (as do *kannə* 'eat', *liyannə* 'write', *gilinnə* 'swallow', *hadannə* 'make', *garanə* 'cleanse grain, sift', *allannə* 'catch', *baninnə* 'scold', among others; see Henadeerage 2002: 140, Table 4-3):[11]

[11] In the case of *minimarannə* 'murder' the fact that it has no detransitive counterpart is also independently predicated by the fact that it allows no involitive at all, due to its inherently volitional nature.

(26) **John kæpuna/minimæruna.*
John cut.INV.PST/murder.INV.PST
*'John cut/murdered.' (On intended readings)

For convenience, we use the term "agent" to subsume both being the performer of a certain type of action (an actor) and being volitional, i.e. animate and inanimate participants that act, and also animates that are volitional.[12] On this definition, detransitives have corresponding causatives that do not require their subjects to be agents. Were detransitives simply passive, we would expect them to be possible for any transitive verb, rather than having a semantically restricted distribution. Furthermore, this distribution — to ECOS verbs unspecified for agentivity — is equivalent to the core class of causative/inchoative alternating verbs in other languages.[13]

Three other pieces of evidence for an inchoative analysis of Sinhala detransitives have to do with certain semantic and syntactic properties cross-linguistically that distinguish them from passives. The key insight is that passives of caused change-of-state verbs are still causative semantically and syntactically (with an oblique or unexpressed causer), while inchoatives are more neutral to a causative interpretation, and have no syntactically active causer argument (leaving aside how this comes about formally; see e.g. Jaeggli 1986; Roeper 1987; Grimshaw 1990; Levin and Rappaport Hovav 1995; Koontz-Garboden 2009; *inter alia*). As noted, Sinhala has no passive to compare detransitives to, but a comparison can be made with *pro*-drop. We outline the data here, giving also English passive translations for illustrative purposes.

First, inchoatives, unlike passives or *pro*-drop clauses with change-of-state verbs, do not necessarily implicate external causation (though they are not incompatible with this in context). By "external" causation we mean causation by some participant not expressed overtly in the clause.[14] This is illustrated in (27).

(27) a. *Siri giluna, eet kawuruwat eyaa-wə*
Siri drown.INV.PST but somebody 3SG-ACC
gileuwe nææ.
drown.CAUS.VOL.PST.EMPH NEG
'Siri drowned, but nobody caused him to drown.'

b. *((What did Nimal$_i$ do to Siri?))*

[12] Although we use "agent" as a convenient cover term for these two notions, DeLancey (1985) in fact reifies a prototype notion of agentivity involving at least these two categories (see also Cruse 1973; Lakoff 1977; DeLancey 1984; Dowty 1991; Van Valin and Wilkins 1996; Kittilä 2005; *inter alia*).

[13] Languages do vary in which ECOS verbs alternate in causative/inchoative alternations, and some non-ECOS verbs show similar alternations in some languages (see e.g. Reinhart 2000 on ICOS verbs in Hebrew and McKoon and Macfarland 2000 on ICOS verbs in English, which do not alternate in Sinhala). However, Levin and Rappaport Hovav (1995: Ch.3) argue extensively that such so-called "causative pairs" with non-ECOS verbs do not represent the same causative/inchoative relationship found with ECOS verbs. Nonetheless, that Sinhala detransitives are lexically restricted argues against a general passive analysis.

[14] This is different from the ECOS label adopted above to indicate verbs that describe changes-of-state that by default require a causer. The notion of "external" causation defined here is a subset of this where the causer is explicitly entailed to be a participant distinct from those expressed overtly in the clause. From here on out we use "external" causation in this sense, and ECOS as a descriptive label for a class of verbs.

#pro$_i$ Siri giluna, eet kawuruwat eyaa-wə
Siri drown.INV.PST but somebody 3SG-ACC
gileuwe nææ.
drown.CAUS.VOL.PST.EMPH NEG

#'He$_i$ drowned Siri, but nobody caused him to drown.'
#'Siri was drowned (by him$_i$), but nobody caused him to drown.'

Second, and related, is the fact pointed out by Siewierska (1984: 78–79), Chierchia (2004: 42–44), and Koontz-Garboden (2009: 106–110) that inchoatives but not passives are compatible with modifiers meaning 'by itself', on the reading that the event occurred without external causation (ignoring the separate 'alone' reading of such modifiers). The Sinhala equivalent is *ibeemə*, which is compatible with detransitives but not *pro*-drop, as in (28) (based on Henadeerage 2002: 133, (27), (28)):

(28) a. *Eewa okkomə ibeemə kædenəwa.*
3PL all by SELF break.INV.PRS
'They all just break by themselves.'

b. *((What did Nimal$_i$ do to them?))*
#pro$_i$ eewa okkomə ibeemə kædenəwa.
3PL all by SELF break.INV.PRS
#'He$_i$ just broke them by themselves.'
#'They just were broken (by him$_i$) all by themselves.'

This is explained again if the inchoative encodes no external causer, but passive and *pro*-drop clauses do. Third, passives but not inchoatives permit purposive clause modifiers, with the demoted subject as controller (Roeper 1987; Levin and Rappaport Hovav 1995: 109, though see §4). Gair (1990: 35–36) and Henadeerage (2002: 133–135) discuss this for Sinhala, where detransitives cannot take purposives, as in (29a). This should be compared to a causative verb where a purposive clause can be controlled into by a *pro*-dropped null subject as in (29b) (based on Gair 1990: 35–36).[15]

(29) a. **[PRO$_i$ kaarekə harigassannə] dæŋ plooṭərekə$_i$ issenəwa.*
car.DEF repair.VOL.INF now carburetor raise.INV.PRS
*'The carburetor$_i$ rises now [PRO$_i$ to repair the car].'

b. *((What did the mechanic$_i$ do to the carburetor?))*
[PRO$_{i/*j}$ kaarekə harigassannə] pro$_i$ plooṭərekə$_j$ ussənəwa.
car.DEF repair.VOL.INF carburetor raise.VOL.PRS
'He$_i$ raised the carburetor$_j$ [PRO$_{i/*j}$ to repair the car].'
'The carburetor$_j$ was raised (by him$_i$) [PRO$_{i/*j}$ to repair the car].'

This is explained if we assume that purposives require a syntactically active (if unexpressed) volitional subject to serve as the antecedent of the null subject PRO, and that passives/*pro*-drop clauses but not inchoatives supply this (see e.g. Roeper 1987).

[15] We use the volitive transitive in (29b) for comparison, since the involitive is ruled out with purposives on its canonical non-volitional reading, for obvious reasons. We return to the issue in more detail in §5.1.

Thus the data discussed here argue against an analysis of detransitives as passives or transitives with *pro*-drop, and support an analysis as inchoatives. The next question is how these inchoatives are related to their corresponding causatives. Henadeerage (2002: 147–148) proposes that causative/inchoative pairs are lexicalized correspondences between two forms of a verb root with two different argument structures, each realized in a different stem (we return to this in §7.3). He suggests that such pairs are restricted to verbs that describe events that could potentially be agentless (pp. 137–138). This echoes a suggestion by Inman (1993: 153–154) that causer arguments may be left unexpressed if "typical" instances of an event of a certain type do not require a causer.[16] For example, not all typical instances of breaking involve an agent, thus permitting agent omission with 'break' verbs. All typical instances of cutting do involve an agent, disallowing agent omission with 'cut' verbs. However, neither author defines in detail how one establishes what a "typical" event of a certain type is, nor do they discuss the more directly observable correspondence to non-specification of agentivity. Thus we might ask if there is a more principled relationship between the variants in the alternation based on selectional restrictions, and we turn to this next.

4 Anticausativization

4.1 Anticausative Analyses

In this section we address the relationship between causatives and inchoatives, which we assume is a type of anticausativization by which a causative root is mapped onto an inchoative root (which is then mapped to a stem) (building on Levin and Rappaport Hovav 1995; Chierchia 2004 and Koontz-Garboden 2009; see also Grimshaw 1982; Reinhart 2000, 2002; Härtl 2003). We do not assume that this is the only possible relationship between apparent causative and inchoative variants in languages, especially for non-ECOS verbs (see Levin and Rappaport Hovav 1995: Ch.3 on other "causative pairs" which they argue do not reflect anticausativization; see also Haspelmath 1993; *inter alia*). However, our goal is to explore some consequences of the Sinhala data for anticausative analyses of ECOS verbs, and so we briefly recap some of the primary motivations for assuming such an analysis for this class of verbs.

As noted in §1, a key motivation for anticausative analyses is the deficiency of causative analyses in delimiting the verb class that undergoes the alternation. As discussed in §3.2, ECOS verbs that consistently undergo causative/inchoative alternations cross-linguistically are those that have subjects in their causative variants not specified for agentivity (exactly the class that alternates in Sinhala). An analysis where the causative is derived from the inchoative would require a causativization operation that adds such a causer to a change-of-state verb. However, this incorrectly predicts that any inchoative should allow a causative variant, including ICOS verbs, and it is not obvious what would rule this out. Conversely, on an anticausative analy-

[16] Non-expression of arguments follows from his Minimal Argument Constraint (p. 153), though Inman leaves open what non-expression means syntactically or semantically. He also assumes that this principle operates solely within the domain of involitives, so that detransitives are derived from transitive involitives. This does not predict that some detransitives will not have involitive transitive counterparts as in (17).

sis, which causatives have inchoative variants is predictable based on the selectional restrictions imposed on the subject of the causative. Furthermore, in many languages verbs that do alternate in general may have particular causative senses that do not (e.g. *He broke the vase/his promise* vs. *The vase/*his promise broke*; the direct translations are the same in Sinhala, though see fn. 29), so that there is a wider set of senses of the causative forms than their corresponding inchoatives, suggesting that causative forms are semantically unmarked. Finally, although which of the two forms is formally marked varies across languages and across verb meanings, among ECOS verbs formal marking of the inchoative form is most common (Haspelmath 1993). (In Sinhala, we argue, there is no overt marking of either variant, but all inchoatives are involitive, the marked stem; see §2.) These facts suggest an anticausative analysis.

However, as a reviewer notes, Alexiadou et al. (2006) in particular have argued against anticausative analyses, instead proposing that both forms are derived equipollently from some more basic root. We do not find Alexiadou et al.'s arguments convincing. One argument concerns the marking asymmetries noted by Haspelmath (1993). However, such cross-linguistic variation is a problem for *any* approach that treats all "causative pairs" as involving a single analysis, including equipollent analyses. Rather, what this variation suggests is that different verb classes may vary in the marking they get, and as noted above, among ECOS verbs anticausative morphology is most common (and languages may also vary as to how different change-of-state meanings are lexicalized, as noted by Levin and Rappaport Hovav 1995: 98–101). Second, Alexiadou et al. argue that anticausative analyses cannot explain causatives that lack agent entailments for their subjects yet lack inchoative forms, nor inchoatives that lack causative variants more generally. For the latter case this argument carries no force since nothing precludes lexicalized as well as derived inchoatives. For the former case, we reiterate (see §2) that our analysis is not technically derivational, but rather assumes lexical redundancy rules, predicting that causative/inchoative pairs will show systematic relationships when they exist, but there may be arbitrary gaps. Alexiadou et al.'s third argument is that the form corresponding to **The promise broke* is grammatical in Greek, although they do not give a detailed discussion of its semantics. But all this suggests is that languages may vary in which senses of a causative show the alternation.[17] Nonetheless, the key fact about causative/inchoative alternations with ECOS verbs is that there is a semantic markedness asymmetry — the causative is semantically unmarked compared to the inchoative and is the form upon which conditions for appearing in the alternation are statable. An anticausative analysis captures this naturally, while an equipollent analysis does not (though one could be modified to do so; see e.g. Alexiadou 2010). Thus we continue to maintain an anticausativization analysis since it is more perspicuous.[18] (See Koontz-Garboden 2009: 125–132 for an extensive critique of equipollent approaches.)

[17] A fourth argument given by Alexiadou et al. is that inchoatives show evidence of having causal semantics, in terms of taking PPs that express causers. However, this is not an argument against anticausativization, just an argument against analyses of inchoatives that do not suppose that they are underlyingly causative. The anticausative analysis we adopt (following Levin and Rappaport Hovav 1995, Chierchia 2004, and Koontz-Garboden 2009), assumes they are causative, so this argument does not apply.

[18] Doron (2003: 11–14) argues against an anticausative analysis for ECOS verbs only as an operation on verbs per se, suggesting instead that markedness asymmetries arise instead because roots that are realized as unmarked causative verbs are those that typically require instigators à la Croft (1990) or Haspelmath

4.2 Anticausatives as Reflexives in Spanish

Stating rules for anticausativization across languages has proved difficult for various reasons. A seemingly straightforward analysis is that the anticausative has the same meaning as the causative, save that the causative semantics (and causer argument) has been deleted (see e.g. Grimshaw 1982; Härtl 2003; Reinhart 2000, 2002; Bohnemeyer 2007). Taking for expository purposes the event structural notation of Rappaport Hovav and Levin (1998: 108), we could then say that (30b) is derived from (30a) simply by deleting the causal portion of the semantics and leaving the change-of-state. Independent principles of argument realization ensure that the sole remaining argument becomes the subject in the absence of a causer.

(30) a. John broke the vase. [[x ACT] CAUSE [y BECOME $<$ broken $>$]]

b. The vase broke. [y BECOME $<$ broken $>$]

This analysis neatly explains the properties of inchoatives in §3: there is no entailment of external causation (though nothing precludes it from obtaining in context), nor a causer to project syntactically that could be the controller for a purposive.

However, as Koontz-Garboden (2009: 123–125) discusses, such an analysis is problematic. First, it does not straightforwardly capture the fact that only causation unspecified for agentivity can be deleted. This must be stipulated, and it is a difficult constraint to state since it requires defining a rule that applies to predicates unspecified for a certain meaning. Second, such an analysis is at odds with the fact that in languages that have overtly-marked anticausatives, the marker is most commonly some type of reflexive marking (see Haspelmath 1990: 36). For example, in Spanish anticausatives are derived from the causative by the reflexive clitic *se* as in (31).

(31) a. *Juan rompió el vaso.*
Juan broke the cup
'Juan broke the cup.'

b. *El vaso se rompió.*
the cup REFL broke
'The cup broke.' (Koontz-Garboden 2009: 84, (13a), (14a))

It is not at all obvious why a morpheme that normally marks reflexivization would also happen, in language after language, to mark causer deletion. (That said, non-reflexive passive morphology also marks anticausatives in some languages, a fact also unexplained on a deletion analysis; we return to this briefly in fn. §7.1.)[19]

Koontz-Garboden (following Chierchia 2004) instead argues in detail for an analysis of anticausatives in Spanish and other languages where the operations that derive

(1993). We concur, but do not see that this observation argues against treating the marked form as derived from the unmarked form (verbs or roots) when such an asymmetry exists.

[19] Additional arguments Koontz-Garboden (2009: 124) makes against causer deletion is that such an operation would be non-compositional, deleting a certain not well-defined subset of the truth conditions associated with the causative form while preserving others. Furthermore, it would violate the Monotonicity Hypothesis of Kiparsky (1982), Rappaport Hovav and Levin (1998), and Koontz-Garboden (2007), by which lexical semantic operations only ever add meaning, but never subtract it.

anticausatives and reflexives are the same, namely co-identification of the subject and object (and the elimination of the subject from the verb's argument structure). On this analysis, anticausatives and reflexives are just notionally different categories that arise when this one operation applies to different sorts of ECOS verbs. If the base verb is an ECOS verb with an agent causer, the resultant reading is that the single argument of the output of *se* is both an agent and a patient, yielding an "agent act on self" reading, i.e. a true reflexive reading like English *self* reflexives. This is shown in (32) for causatives with subjects that are either volitional (*asesinar* 'assassinate') or actors (*cortar* 'cut') (data with *asesinar* from Koontz-Garboden 2009: 88–89, (25)).

(32) a. *Los terroristas asesinaron/cortaron a la senadora.*
the terrorists assassinated.3PL/cut.3PL ACC the senator
'The terrorists assassinated/cut the senator.' (subject is agent)

b. *El senador se asesinó/cortó.*
the senator REFL assassinated.3SG/cut.3SG
'The senator assassinated/cut #(himself).'

Conversely, if the verb selects a causer unspecified for agentivity — which Koontz-Garboden calls an "effector" (following Holisky 1987; Van Valin and Wilkins 1996) — then coidentification yields a single argument that is both an effector and a patient, but not necessarily an agent. Koontz-Garboden equates this interpretation with the inchoative. This is shown in (31), repeated here, where the reading corresponds to the English inchoative but not to the (infelicitous) reflexive *#The cup broke itself*.

(33) a. *Juan rompió el vaso.*
Juan broke the cup
'Juan broke the cup.' (subject is causer but not agent)

b. *El vaso se rompió.*
the cup REFL broke
'The cup broke (#itself).' (default interpretation; see below)

On this analysis, causation is preserved in the inchoative — albeit a very unspecified form of it — thus avoiding the pitfalls of the deletion analysis. The difference between a reflexive and an inchoative falls out from the lexical semantics of the verb, whether its causer subject is also an agent or merely an effector respectively. Thus which causative verbs have inchoatives need not be stipulated, as it would have to be on a deletion analysis, but instead follows directly from the meaning of the verb. As far as we are aware, this is the only anticausative analysis that has this property.

This analysis also correctly predicts most of the other properties of inchoatives in §3.2. First, it predicts that they lack an entailment of external causation, since the only causer in the verb's semantic representation is the effector-patient. Second, this in turn predicts acceptability of *by itself* modifiers, which rule out any external causation. Indeed, according to Chierchia (2004: 41–42) and Koontz-Garboden (2009: 102) the *by itself* facts not only follow, but crucially support a reflexivization analysis over a deletion analysis. Both authors argue that *by itself* modifiers not only indicate that the subject is the only causer, but also that there is already causation in the meaning of

the modified verb. Evidence for this comes from the fact that such modifiers are not acceptable with verbs that clearly lack causal semantics, such as statives.

(34) **Juan sabe inglés por sí solo.*
Juan knows English by REFL self
*'Juan knows English by himself.' (Koontz-Garboden 2009: 107, (63b))

If *by itself*-type modifiers require the verbs they modify to have causal semantics, then the fact that they occur with anticausatives means anticausatives must be underlyingly causative, supporting a reflexivization analysis over causation deletion. In fact, *by itself*-modifiers in Sinhala also resist verbs that lack causal semantics such as statives, suggesting that the same analysis is applicable here as well:[20]

(35) **Cala-ṭə gedərə yannə widiyə ibeemə dhannəwe nææ.*
Cala-DAT home go.INF way by SELF know.VOL.PRS.EMPH NEG
*'Cala doesn't know the way home by herself.'

Finally, whether this analysis predicts the unacceptability of purposives with inchoatives is more complicated, and we return to it in §5. Otherwise, it could easily be applied to Sinhala as well, explaining the data in §3.2 plus the distribution of *ibeemə*, where the difference between Spanish and Sinhala is just that the reflexive in Sinhala is not overt (ignoring for now the involitive morphology, which we return to below).[21]

4.3 Anticausatives as Reflexives in Sinhala - A Preliminary Sketch

We now briefly sketch a modified version of Koontz-Garboden's formal analysis applied to Sinhala (our representations differ from his, though not in any essential details). We assume a domain of discourse U that consists of two major types (or sorts) in type-theoretic terms: the set U_I of individuals and the set U_V of eventualities. The latter is further subdivided into true events (actions) U_E and states U_S, also two different types. For eventualities v and e, $cause'(v, e)$ means v is the causal portion of e. The causer $x \in U_I$ of v is either its effector or agent, represented for convenience via Parsons (1990)-style thematic relations $effector'$ and $agent'$. Since our focus is largely on causation, the details of the representation of change-of-state are not relevant; for simplicity we simply notate event e of property α coming to obtain for patient $y \in U_I$ as $result'(y, e, \alpha)$. Example representations for effector and agent subject verbs are given in (36a,b) respectively.

(36) a. $[\![$*kada-*$]\!] :=$
$\lambda y \lambda x \lambda e \exists v[effector'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

[20] One interesting difference between Sinhala and Spanish is that ICOS verbs in Spanish (according to Koontz-Garboden 2009: 108) are generally unacceptable with *por sí solo*, suggesting that they lack causal semantics, while in Sinhala *ibeemə* is acceptable with these verbs, suggesting that they have causal semantics (see also Alexiadou et al. 2006). Since we are only concerned with derived inchoatives we ignore this issue, and leave an analysis of lexical inchoatives for future work.

[21] An alternative anticausativization analysis to both deletion and reflexivization is an analysis where causation is preserved but the causer is existentially bound, a variant of the analysis of Levin and Rappaport Hovav (1995). We in fact assume this is possible in Sinhala as well, and discuss it in more detail in §7.1.

b. ⟦*minimara-*⟧ :=
$\lambda y \lambda x \lambda e \exists v[agent'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{dead}')]$

The Sinhala null reflexive morpheme takes as its input a transitive predicate $\mathcal{R}$ and outputs an intransitive predicate, coidentifying the two individual arguments of $\mathcal{R}$.

(37) ⟦$+\emptyset_{refl}$⟧ := $\lambda \mathcal{R} \lambda x \lambda e[\mathcal{R}(x, x, e)]$

Composing (37) with (36) produces (38), where in one case we have a single argument that is an effector-patient and in the other one that is an agent-patient.

(38) a. ⟦*kada*$+\emptyset_{refl}$⟧ :=
$\lambda x \lambda e \exists v[effector'(x, v) \wedge cause'(v, e) \wedge result'(x, e, \mathbf{broken}')]$

b. ⟦*minimana*$+\emptyset_{refl}$⟧ :=
$\lambda x \lambda e \exists v[agent'(x, v) \wedge cause'(v, e) \wedge result'(x, s, \mathbf{dead}')]$

Thus on this analysis, as in Spanish, an inchoative as in (38a) arises from the combination of two components: (a) an effector subject and (b) reflexivization.[22]

However, several facts will require us to revise this analysis. First, more generally, this analysis predicts that in an inchoative the patient is also an effector. But Koontz-Garboden never specifies in positive terms what exactly it means for the patient to also be an effector. Without this, the equation of an effector-patient with an inchoative interpretation is just a stipulation. We address this issue in detail in §7.2. Second, several facts about Sinhala will also prove problematic for the analysis sketched here. First is the fact that, unlike Spanish, the operation that produces anticausative forms in Sinhala does not apply to agent-subject verbs like *minimara-* 'murder', so that (38b) is not in fact possible. Still further problems arise regarding the behavior of verbs that do allow anticausatives, and we discuss these in detail next. We first examine problems the notion of an effector subject has regarding the distribution of purposives and the volitive/involitive stem alternation in §5. In §6 we examine accusative subjects in Sinhala and the problems they present for a purely reflexive analysis of inchoatives.

5 Problems for an Effector-Based Analysis of Sinhala Anticausatives

5.1 Purposives in Spanish vs. Sinhala

The distribution of purposives with inchoatives is in fact more complex than suggested in §3.2. In general, purposives are dispreferred with Spanish inchoatives:

(39) **La puerta$_i$ se abrió por sí sola [para PRO$_i$ airear la habitación].*
the door REFL opened by REFL only for air the room

[22] Koontz-Garboden does not discuss exactly how his λ-terms relate to syntactic argument structure, e.g. how the arguments of dyadic and monadic predicates are realized. The details are not necessarily important here, save that we assume that by virtue of taking two individual arguments the verbs in (36) are transitive, while those with one individual argument as in (38) are intransitive, regardless of whether that single argument is the subject or an object that raises to subject position. For present purposes there is no need to appeal to a level of syntactic argument structure above and beyond the argument structure of the typed λ-theoretic denotations we give, and thus we set that aside here, though we do assume it exists.

*‘The door opened by itself to air out the room.’
(based on Mendikoetxea 1999b: 1592)

This putatively follows from the analysis sketched in §4, since inchoatives do not take agent subjects. However, technically, the reflexive analysis only predicts that inchoatives are unspecified for agentivity, not that agentivity is precluded altogether. This in fact predicts that if pragmatic context supports it, the effector can be interpreted as an agent. In this case the reading becomes “agent act on self”, in which case a purposive should be possible. This prediction is borne out, as shown in (40).

(40) *Y aquel día, hace tres años, cuando Phil$_i$ se ahogó [para PRO$_i$*
and that day from three years when Phil REFL drowned for
salvar-le la vida a Jim] ...
save-3SG the life DAT Jim
‘And on that day, three years ago, when Phil drowned (himself) to save Jim’s life...’ (based on Koontz-Garboden 2009: 100, (52a))

Indeed, (39) is likely unacceptable since the subject is inanimate and thus incapable of volition. This supports a single operation underlying both inchoatives and reflexives, with the meaning of the overall predicate and context filling in which reading arises.

However, Sinhala differs from Spanish on this point. In Sinhala, unlike Spanish, purposives are not acceptable with inchoatives, as discussed in §3.2. Arguably, this could be due to the independent semantics of the involitive stem. If the interpretation of an involitive is non-volitionality, as discussed in §2, then a purposive should always be ruled out on the assumption that it requires volitionality. However, as also discussed in §2, not all involitives indicate non-volitionality, including doxastic or ironic denial involitives, and in these cases there should be no independent incompatibility with purposives. Nonetheless, even on these uses of the involitive purposives are ruled out. For example, in (41), even if A responds to what s/he perceives as a ridiculous question from B with a ironic denial use of an inchoative involitive, a purposive is still not allowed, and similarly for the discourse in (42).

(41) A: *Meeri-ge ammaa riyə anəthurə-kin mæruna.*
Mary-GEN mother vehicle accident-from die.INV.PST
‘Mary’s mother died in a car wreck.’

B: *Ee riyə anəthurə wunee athəpəsuwimə-kin-də?*
that vehicle accident happen.PST.EMPH negligence-from-QUES
‘Was the car wreck an accident?’

A: **Næ, machang. [PRO$_i$ minihaa-geŋ gæləwennə], eyaa$_i$*
no dude husband-INST escape.VOL.INF 3SG
mæruna.
die.INV.PST
‘No, dude. She died to escape her husband.’

(42) A: *Mamə asai Jeff Buckley.*
1SG like.VOL.PRS Jeff Buckley
‘I like Jeff Buckley.’

A: *Oyaa dhannəwa-də eyaa gililaa mæruna*
2SG know.VOL.PRS-QUES 3SG drown.INV.PST.PRT die.INV.PST
kiyələ?
say.VOL.PST.PRT
'Do you know (it is said/others say) he died by drowning?'

B: *Ee kohomə-də? athəpəsuwimək-in-də?*
that how-QUES negligence-INST-QUES
'How (did it happen)? Was it an accident?'

A: **Næ, machang. [PRO$_i$ thəwə saŋgithə thæti wikunəgandə*
no dude more song discs sell.VOL.INF
wendə], eyaa$_i$ giluna.
make happen.VOL.INF 3SG drown.INV.PST
'No, dude. He drowned to sell more CDs.'

Thus inchoatives in Sinhala, unlike Spanish, do not take on "agent act on self" readings. Rather, to express this reading one would use a full reflexive pronoun as in (43) for both volitive and involitive forms for 'drown', where *eyaa-wə-mə* 'herself' obligatorily has a reading where the causer took some specific action in the event, even if that action was accidental (this is consistent with observations by Chierchia 2004: 30, 37 for English and Koontz-Garboden 2009: 83, 95 for English and Ulwa that full reflexive pronouns in contrast with anticausatives give rise to agentivity entailments).

(43) a. *Meeri eyaa-wə-mə giluwa.*
Mary 3SG-ACC-REFL drown.VOL.PST
'Mary drowned herself (deliberately).'

b. *Meeri atiŋ eyaa-wə-mə giluna.*
Mary POST 3SG-ACC-REFL drown.INV.PST
'Mary drowned herself (accidentally).'

A reflexive analysis as in §4.3 does not capture this — it incorrectly predicts that inchoatives should accept purposives on an agentive (i.e. true reflexive) reading. We turn now to another Sinhala-specific fact that we argue exemplifies the same issue.

5.2 The Involitive Restriction on Inchoatives in Sinhala

Recall that inchoatives in Sinhala are only possible in the involitive, and not the volitive. Why should this be? We suggest that the explanation is exactly the same as the ban on purposive clause modifiers. In particular, our informants have a strong intuition that the subject of a volitive verb must be an agent — i.e. an actor, volitional, or both. For example, *vinaashə-kərannə* 'destroy' does not necessarily encode a specific type of action on the part of its subject, nor any kind of volitionality. One can be said to have destroyed something through either action or perhaps (non-willful) neglect.[23] The latter reading is exemplified in (44), which crucially involves the involitive stem.

[23] See Koontz-Garboden and Beavers (2011) for some discussion of negligence readings, building on Talmy (2000), Wolff (2003, 2007), Wolff and Song (2003), and Wolff et al. (2010).

(44) *Joon mal watərə nokərə nisaa, eyaa atiŋ mal*
John flower.PL water do.NEG because 3SG POST flower.PL
vinaashə-wuna.
destroy-do.INV.PST
'Because John didn't water the flowers, he accidentally destroyed them.'

However, in the volitive stem a neglect reading is impossible, as in (45).

(45) *#Joon mal watərə nokərə nisaa, eyaa mal vinaashə-kəraa.*
John flower.PL water do.NEG because 3SG flower.PL destroy-do.VOL.PST
'Because John didn't water the flowers, he destroyed them.'

A similar example is given in (46) for *udau-kərannə* 'help'. The volitive form for 'help' is not possible on a neglectful reading of John forgetting to assign homework in the *nisaa* 'because' clause in (46a), but the involitive form is, as in (46b).

(46) a. *#Joon gədərə wæḍə dunne næti nisaa, eyaa*
John home work give.VOL.PST.EMPH NEG because 3SG
shishyəyan-wə udau-kəraa.
student.PL-ACC help-do.VOL.PST
'Because John didn't give homework, he helped the students.'

b. *Joon gədərə wæḍə dunne næti nisaa, eyaa atiŋ*
John home work give.VOL.PST.EMPH NEG because 3SG POST
shishyəyan-wə udau-wuna.
student.PL-ACC help-do.INV.PST
'Because John didn't give homework, he accidentally helped the students.'

However, acceptable readings of (45) and (46a) are possible if John *deliberately* neglected to perform the action in question. This suggests that there is a requirement on volitive stems for agentivity — either action, volitionality, or both.[24]

Further evidence that the subject of a volitive must be an agent comes from inanimate subjects. Recall that we consider agents as either volitional or actors. Inanimates cannot be volitional, but they can be actors: wind that blows is doing something (even if not volitionally), and a hammer that breaks a window must be in motion (even if initiated or under the control of something else). However, they need not be active, e.g. a hammer may just lie there (though perhaps some natural forces such as wind are defined solely by their action). Nonetheless, when occurring as the subject of a volitive stem, inanimates must take on an action reading, as in (10) (repeated here).

[24] That a certain verb form might have such a requirement is not unheard of; Doron (2003: 18–19) notes that for certain verb roots in Hebrew the intensive transitive template can have a similar effect in requiring an action reading. An alternative to the disjunctive requirement we have posited for the Sinhala volitive could be that what the volitive requires of its subject is simply action, but deliberate non-action constitutes a type of action in some possible world but not the real world, i.e. an action embedded under a sublexical modality in the sense of Koenig and Davis (2001) (cf. also Dowty 1979: 176 on agentive states as in *John deliberately stood still*). Either analysis would work just as well here.

(47) a. *Suləŋə hamənəwa.*
wind blow.VOL.PRS
'The wind blows.'

b. *Mitiyə piŋgaanəyə kæduwa.*
hammer plate break.VOL.PST
'The hammer broke the plate.'

Inanimate subject are not allowed if there is no action:

(48) *??Pilimayə nischalawa sitiya.*
statue not_moving/still stand.VOL.PST
'The statue stood still (unmovingly).'

Crucially, though, there *is* a possible reading for (48), wherein the statue is anthropomorphized. In this case the reading is that the statue is deliberately not acting, as would be the case with a human subject (see e.g. Dowty 1979: 184). This supports the idea that agentivity — volition, action, or both — is required for a volitive subject.

Still further, experiencer object verbs show a stem alternation that highlights the fact that volitive stems indicate agentivity on the part of the subject, but involitive stems do not. In (49) the volitive form of *bia-kərannə* 'frighten' is not compatible with a context in which Siri happened to be in a state that caused fright, but the involitive is. This is also the case for the volitive vs. involitive stems of *taraha-kərannə* 'anger' in terms of neglecting non-willfully to perform some action.

(49) a. *#Siri helluweŋ hitiyə nisaa, eyaa lameya-wə bia-kəraa.*
Siri naked state because, 3SG child-ACC frighten-do.VOL.PST
Because Siri was naked, he frightened the child.

b. *Siri helluweŋ hitiyə nisaa, eyaa atiŋ lameya-wə bia-wuna.*
Siri naked state because, 3SG POST child-ACC frighten-do.INV.PST
Because Siri was naked, he accidentally frightened the child.

(50) a. *#Siri eyaa-ge ammaa-ṭə kol-kəre næti nisaa, eyaa ammaa-wə taraha-kəraa.*
Siri 3SG-GEN mother-DAT call-do.VOL.PST.EMPH NEG because 3SG mother-ACC anger-do.VOL.PST
Because Siri didn't call his mother, he angered her.

b. *Siri eyaa-ge ammaa-ṭə kol-kəre næti nisaa, eyaa atiŋ ammaa-wə taraha-wuna.*
Siri 3SG-GEN mother-DAT call-do.VOL.PST.EMPH NEG because 3SG POST mother-ACC anger-do.INV.PST
Because Siri didn't call his mother, he accidentally angered her.

Again, acceptable readings of (49a) and (50a) are possible if Siri deliberately got naked in order to frighten the child or deliberately did not call his mother respectively. This is expected if volitives require agentivity of their subjects.

Finally, as noted in §2, there are some verbs that have only involitive stems, and as expected, these are the ones that have meanings that require non-agentive subjects, including psych-predicates such as *ridennə* 'ache' (although many psych or stative notions in Sinhala are expressed non-verbally and thus are not relevant for the volitive/involitive distinction). Thus these data further support an analysis of subjects of volitives as agents, on our disjunctive definition subsuming action or volitionality.[25]

5.3 Summary

The pattern that emerges is that Sinhala inchoatives do not permit true reflexive readings, nor do they occur in contexts like volitive stem or purposives that require agentivity of the subject, and verbs that require agent subjects do not have inchoative forms. This is unlike Spanish, in which an inchoative can occur with a purposive, albeit on a true reflexive reading (there is no volitive/involitive stem contrast in Spanish to compare to Sinhala), and agent-subject verbs have forms identical to inchoatives, albeit on "agent act on self" readings. Furthermore, this pattern is also the opposite of what occurs with causatives, which are not specified for agentivity, but can be resolved as such by a purposive modifier or volitive stem. Why do these patterns hold?

An intuitive answer that maintains the same basic reflexivization analysis across languages is that there is simply one additional constraint on anticausativization in Sinhala but not Spanish: it not only co-identifies the causer and patient, but also stipulates *non*-agentivity of this argument (setting aside for now what non-agentive causation is). This predicts that anticausatives should be incompatible with contexts that require agentive readings. Indeed, in comparison with a full reflexive pronoun, we could say that reflexivization in Sinhala is split into two types: a general set of full, overt reflexives that specify agentivity, and a null reflexive that more narrowly derives inchoatives from transitive roots and specifies non-agentivity. This explains how anticausatives and full reflexives differ. Spanish *se* instead covers both notions.

However, there is a major problem with this analysis, namely that inchoatives may be judged true in contexts in which agentivity obtains, meaning they do not encode non-agentivity truth conditionally. In particular, an agentive causative and an inchoative can be true simultaneously, on either a reflexive or external agent reading, e.g.

[25] These conclusions are also supported by the verbs Henadeerage (2002: 137) non-exhaustively lists as having volitive stems, which includes many externally caused-change-of-state verbs that alternate with inchoatives. Our speakers have informally felt that such verbs require agentivity; non-deliberate neglect, if possible at all, requires involitive variants. However, we have found three exceptions, namely the word for 'know' in (35), the word for 'like' in (42), and the word for 'exist' used to indicate possession as in (i), which (a) take quirky dative subjects (also rare for a volitive verb) and (b) have non-actor readings.

(i) *Laməya-ṭə sellaŋbaduwak tiyənəwa.*
child-DAT toy exists.VOL.PRS
'The child has a toy.' (Gair and Paolillo 1997: 66)

For the moment, we simply treat these as lexical exceptions.

our speakers judge the inchoative to be true by implication from an agentive causative (see also Inman 1993: 155, and Lakoff 1965; Dowty 1979 more generally).[26]

(51) *Joon eyaa-wə-mə giluwa.* ⇒ *Joon giluna.*
John 3SG-ACC-REFL drown.VOL.PST John drown.INV.PST
'John drowned himself.' ⇒ 'John drowned.'

Likewise, it is contradictory to assert an agentive causative and deny the inchoative:

(52) *#Joon eyaa-wə-mə giluwa, hæbai eyaa gilune*
John 3SG-ACC-REFL drown.VOL.PST but 3SG drown.INV.PST.EMPH
nææ.
NEG
'John drowned himself, but he didn't drown.'

Finally, an agentive causative can be asserted after the inchoative to clarify the cause:

(53) A: *John giluna.*
John drown.INV.PST
'John drowned.'
B: *Kohomə-de wune?*
how-QUES happen.INV.PST.EMPH
'What happened?'
A: *Mee, John eyaa-wə-mə giluwa.*
well John 3SG-ACC-REFL drown.VOL.PST
'Well, he (actually) drowned himself.'

Thus the explanation for why inchoatives resist purposives and volitive stems cannot be truth-conditional in nature, i.e. due to inchoatives encoding non-agentivity. If this were the case, it would incorrectly predict that the two sentences in (51) cannot be true simultaneously, and that the discourse in (53) should yield a contradiction. The constraint against purposives and volitive stems must therefore be non-truth conditional in nature. Before we address this issue, though, we turn to a problem with the reflexive part of the analysis in §4.3, namely accusative subjects.

6 Problems for a Reflexive Analysis of Anticausatives - Accusative Subjects

The class of anticausatives with accusative subjects is illustrated again in (54), where a causative volitive verb alternates with an apparently inchoative involitive, though in this case the subject is marked in the accusative case.[27]

[26] Koontz-Garboden argues that the supposed implicational relationship in (51) is not an entailment as commonly assumed, but might be some weaker sort of inference. For us this is beside the point. All that matters is that the inchoative is judged as true at the same time as an agentive causative.

[27] Recall that accusative only occurs on animates, and usually only optionally. Thus all of our patient arguments here are human, and the relevant class of verbs are those that take human patient arguments. Note that this pattern in general is less acceptable to some of our speakers, especially younger speakers, and may represent an older pattern that is dying out in the language.

(54) a. *Siri ləmə́ya-wə giluwa/mæruwa/kærəkuwa.*
Siri child-ACC drown.VOL.PST/kill.VOL.PST/turn.VOL.PST
'Siri (deliberately) drowned/killed/spun the child.' (Volitive transitive)

b. *Ləmə́ya-wə giluna/mæruna/kærəkuna.*
child-ACC drown.INV.PST/die.INV.PST/turn.INV.PST
'The child drowned/died/turned (accidentally).' (Involitive intransitive)

Once again, this is impossible in the volitive (ignoring irrelevant *pro*-drop readings):

(55) *#Ləmə́ya-wə giluwa/mæruwa/kærəkuwa.*
child-ACC drown.VOL.PST/kill.VOL.PST/turn.VOL.PST
'The child drowned/died/turned (deliberately).'

Furthermore, as with nominative arguments of intransitives, accusatives are also subjects, e.g. they can control into *gamaŋ* clauses, and can bind the reflexive *taman*.

(56) a. *[PRO$_{i/*j}$ wæḍə-kərənə gamaŋ], ləmə́ya-wə$_i$ wæṭuna.*
work-do.VOL.PRS.PRT while child-ACC fall.INV.PST
'The child$_i$ fell while PRO$_{i/*j}$ working.'

b. *Siri-wə$_i$ taman-ge$_i$ gedərə-di wæṭuna.*
Siri-ACC self-GEN house-while_at fall.INV.PST
'Siri$_i$ fell at her$_i$ own house.' (based on Inman 1993: 52–54, (55), (60))

Finally, accusative subject intransitives also pass many inchoative-hood tests. First, they only occur with verbs whose causative variants lack agentive entailments.[28] Second, accusative subject involitives are not acceptable with purposives:

(57) *#[PRO$_{i/j}$ Rakshənə salli gannə], Meeri-wə$_i$ giluna.*
insurance money take.INF Mary-ACC drown.INV.PST
#'Mary$_i$ drowned [PRO$_{i/j}$ to collect the insurance money].'

These data all suggest that accusative subject detransitives are anticausative.

However, there is one very crucial difference between accusative and nominative subjects in inchoatives. While nominative subjects are acceptable in contexts where there is no external causation — in the sense of the existence of some causer distinct from any participant overtly expressed in the clause — accusative subjects are not. Rather, there is always an interpretation that there *is* some external causer (something not discussed by Inman 1993). This is shown in (58), where in (58a) an accusative subject is not compatible with a context in which there was no external causation, nor in (58b) is it compatible with *ibeemə* 'by itself'. This is exactly the opposite of the pattern with nominative subjects, as also shown in (58) (see also §3.2).

[28] At least one unergative is also acceptable to at least some of our informants with an accusative subject, namely the verb for 'dance', on the reading that the subject was compelled to dance by an outside source:

(i) *Maa-wə nəṭuna.*
1SG-ACC dance.INV.PST
'I danced involuntarily'

We suggest that this may be a lexicalized exception, following a process of implicit causativization cross-linguistically attested for motion verbs (Levin and Rappaport Hovav 1995; Folli and Harley 2006).

(58) a. *Ammaa(-#wə) lissuna, eet kawuruwat eyaa-wə*
Mother(-ACC) slip.INV.PST but somebody 3SG-ACC
lisseuwe nææ.
push.CAUS.VOL.PST.EMPH NEG
'Mother fell, but nobody pushed her.'

b. *Shameela(-#wə) ibeemə hirəwuna/lissuna.*
Shameela(-ACC) by SELF get.stuck.INV.PST/slip.INV.PST
'Shameela got stuck/slipped by herself.'

Thus the reading with an accusative subject is causative, but the causer is necessarily external.[29] Furthermore, our speakers' intuitions are that the external causer must be an agent. For example, specifying that the causation was accidental is odd:

(59) a. *#Aruni atiŋ Siri-ṭə tallu-wuna nisaa, eyaa-wə wætuna.*
Aruni POST Siri-DAT push-do.INV.PST because 3SG-ACC slip.INV.PST
'Because Aruni accidentally pushed Siri, he involuntarily fell.'

b. *Aruni Siri-ṭə tallu-kəraa nisaa, eyaa-wə wætuna.*
Aruni Siri-DAT push-do.VOL.PST because 3SG-ACC slip.INV.PST
'Because Aruni pushed Siri, he involuntarily fell.'

(60) a. *#Aruni atiŋ Siri-ṭə waturə ætulləṭə tallu-wuna nisaa,*
Aruni POST Siri-DAT water into push-do.INV.PST because
eyaa-wə giluna.
3SG-ACC drown.INV.PST
'Because Aruni accidentally pushed Siri into the water, he drowned.'

b. *Aruni Siri-ṭə waturə ætulləṭə tallu-kəraa nisaa, eyaa-wə*
Aruni Siri-DAT water into push-do.VOL.PST because 3SG-ACC
giluna.
drown.INV.PST
'Because Aruni pushed Siri into the water, he drowned.'

Thus the reading is that there was external causation by an agent.[30]

[29] An interesting ramification of this possibility is that technically the inchoative form for **The promise/contract broke* is grammatical in Sinhala, but crucially *only* on a passive-type reading:

(i) *Porənduwa/kontraattuwa kæduna.*
promise/contract break.INV.PST
'The promise/contract was/got broken.'

Although the patient here is overtly nominative, as noted in §2 Sinhala shows differential object marking, so that inanimates rarely show overt accusative. Thus the object in (i) may be underlyingly accusative, and (i) is an accusative-subject inchoative, consistent with its interpretation. That only a passive-type reading is possible is in line with the cross-linguistically attested fact that not every causative use of 'break' verbs has an inchoative reading, suggesting the causative form is unmarked as in §4.1.

[30] A reviewer asks if accusative-subject inchoatives might be underlyingly transitive, as per the analysis of accusative subject inchoatives in various Germanic languages proposed by Schäfer (2008: 291–302), who posits a null, semi-expletive external agent DP (see also Haider 2001 and Sigurðsson 2005). However, there is no evidence for a null argument in accusative-subject anticausatives in Sinhala, and the impossibil-

These facts pose two problems for the analysis in §4.3. First, again we have a distinction between different contexts requiring agentivity. Pragmatically, the external causer with an accusative subject inchoative must be an agent. Yet purposives and volitive stems are still ruled out. Second, that there is *necessarily* an external causer is problematic for a reflexivization analysis, since the causer is thus clearly *not* coidentified with the patient. We summarize the various problems with an effector-based reflexivization analysis next, and propose an updated analysis that addresses them.

7 Causer Suppression and Two Types of Non-Agentivity

To summarize, Sinhala has two types of anticausatives, with the properties in (61).

(61)

	Nominative Subjects	*Accusative Subjects*
Possible with agent-subject verbs	No	No
Acceptable with purposives	No	No
Acceptable in volitive stem	No	No
External (agentive) causation entailed	No	Yes
Acceptable with *ibeemə* 'by itself'	Yes	No
External (agentive) causation possible in context	Yes	Yes

Both types resist purposives and volitive stem inflection, and neither occurs with a verb that requires agentivity (such as the root for 'murder'). Semantically, though, while nominative subjects do not entail external causation nor agentivity (including "agent act on self"), they do not rule it out. Accusative subjects, however, require both. Two questions arise immediately. First, what operation can produce both types of inchoatives? Second, why are some agentive contexts possible (asserting agentivity) and not others (volitive stem, purposives)? We begin with the argument structure.

7.1 A Two Component Analysis of Anticausativization

We propose to capture what is common about the argument structures of both types of anticausatives by factoring the operation that produces them into one shared component and one variable component. The shared component is an operation we refer to as causer suppression, which eliminates the causer from the argument structure of the verb, but preserves it semantically. We analyze this as a covert, pre-stem morpheme (or a lexical rule) that takes a transitive causative verb root and outputs an intransitive root where the causer is saturated by an open variable (indicated by underlining):[31]

ity of purposives argues against positing an agent DP (and in Sinhala the accusative argument is clearly a subject, unlike German, the only Germanic language where an expletive is overtly attested). Furthermore, the Sinhala constructions differ from the Germanic ones in being restricted to the same class of verbs that show regular anticausatives, i.e. those with effector-subject transitive variants. In Germanic the relevant verbs have agent-subject transitive counterparts (Sigurðsson 2005), suggesting that the two constructions are not identical. However, they do share in common entailing external causation, and below we present a truth-conditional analysis of this that does not rely on positing a null argument.

[31] Reinhart (2000, 2002) likewise proposes a type of elimination specifically restricted to causers (arguments bearing the [+c] feature in her Theta System). This is also reminiscent of the analysis of Alexiadou and Anagnostopoulou (2004) of non-active voice morphology in Greek (building on Embick 1998, 2004) as the Spell-Out of a Voice/*v* head in a configuration without an external argument, with different instan-

(62) **Causer Suppression (Preliminary):** $[\![+\emptyset_{CS}]\!] := \lambda P \lambda y \lambda e[P(y, \underline{x}, e)]$
Precondition: $\forall x \forall y \forall e[P(y, x, e) \rightarrow \exists e'[effector'(x, e') \wedge cause'(e', e)]]$

However, assuming that open variables yield infelicity unless bound (Chomsky 1995: 56), the causer must somehow be bound. We propose that the nominative/accusative alternation reflect two logically possible ways of binding off the causer. The causer could be interpreted as coreferential with a participant still on the argument structure of the verb (i.e. formally bound by the same λ). This generates a reflexive reading, essentially replicating that in §4.3. However, we suggest that Sinhala also provides a second possibility, drawing on the analysis of anticausatives in Levin and Rappaport Hovav (1995: Ch.3), where the open variable is instead interpreted as external to the argument structure. We assume for Sinhala that this is done through existential binding (perhaps just reifying a default presupposition that each argument of a predicate must exist). The two possibilities are illustrated as in (63), based on the meaning of *kada-* 'break' given in §4.3. (We return to the case-marking below.)

(63) $[\![\textit{kada}+\emptyset_{CS}]\!] := \lambda y \lambda e \exists v[effector'(\underline{x}, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

a. Causer resolved as internal to verb's argument structure (i.e. reflexivized):
$\lambda y \lambda e \exists v[effector'(y, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

b. Causer resolved as external to verb's argument structure (i.e. $\exists$-bound):
$\lambda y \lambda e \exists v \exists x[effector'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

Thus both types of clauses are formally inchoative (i.e. there is no syntactically active external causer) but differ in the interpretation of the underlying semantic causer between two logically possible types, motivating that both previously proposed analyses of anticausatives are possible, and may even occur in the same language.[32]

Our analysis will also resolve two arguments against an existential binding analysis of anticausatives put forward by Koontz-Garboden (2009: 132–133). First, Koontz-Garboden argues that existential binding cannot explain the restriction on anticausativization to verbs with effector subjects. In §7.3 we propose an additional constraint on causer suppression having to do with the type of the causer argument that will make it compatible only with verbs with effector subjects, even on an existential binding reading. Second, Koontz-Garboden argues that existential binding cannot explain why anticausatives are overwhelmingly marked overtly by reflexive morphemes. We concur, and in languages that clearly mark the anticausative with what is categorically a reflexive marker we would not expect such an analysis to be viable. But this is not a problem for Sinhala: we show in §7.3 that there is no overt anticausative morpheme, save the involitive stem, whose presence we argue is derived indirectly. However, by separating anticausativization into two steps — saturation by an open

tiations (e.g. inchoative, reflexive, and passive) due to different syntactic and thematic features (see also Alexiadou et al. 2006; Alexiadou 2010). We return to this syncretism from a semantic perspective below.

[32] Kaufmann (2007) proposes an analysis of middles (in the sense of Kemmer 1993, 1994) in Fula that also assumes unbound variables in need of binding, which may again be reflexive or existential (among other options). She extends this to anticausatives, but suggests that in this case the effector is disposed of by existentially binding off the entire causing event, although she does not say what the ultimate interpretation of the effector is. For the reasons discussed above the analysis we have proposed, whereby the effector is reflexivized or existentially-bound, seems more appropriate for Sinhala anticausatives.

variable and finding an appropriate interpretation for that variable — this analysis has the potential, unlike Koontz-Garboden's strictly reflexive analysis, of offering a semantic explanation for why reflexive and anticausative morphology is sometimes also syncretism with passive/middle morphology (what Embick 2004 refers to as "u-syncretism"; see also Kemmer 1993, 1994). Passive/middle operations can be viewed as operations that remove or saturate an argument on the argument structure of a verb but preserving that participant semantically, albeit bound by existential or generic quantification. This is similar to our causer suppression operation, suggesting that a generalized, unified analysis might be possible. Indeed, a point not discussed by Koontz-Garboden is the fact that Spanish *se* also marks impersonal passives and middles (see Mendikoetxea 1999a,b), so that *se* itself might in fact be something more like a causer suppression morpheme than strictly a reflexive, where the reflexive and anticausative functions are just one manifestation of a more general operation. We leave the development of such an analysis and its consequences for future work.

Returning to Sinhala, the causer suppression analysis correctly predicts the existence of two types of anticausatives as possible interpretations of one operation. But as stated it does not explain why it cannot apply to causative roots that take agentive subjects, and why inchoatives permit interpretations that support agentive causation, yet resist purposive modification and the volitive stem. We turn to these issues next.

7.2 Positively Defining Agentive and Non-Agentive Causation

To understand how exactly inchoatives are interpreted, we start simply with being more specific about the notion of an effector. Although Koontz-Garboden defines this as a causer that need not be an agent (but could be), the question immediately arises: what constitutes *non*-agentive causation? Is it the negation of agentivity, or does it constitute something more positively defined? To put it more concretely, when one says *The vase broke*, or *John destroyed his new car* in a context of accidental neglect, what is it about the vase or John respectively that can be said to have caused some change of state? Indeed, as noted in §4.3 what exactly is included under effector (other than agents) is a major issue left unaddressed on Koontz-Garboden's analysis.

We suggest that non-agentive causation corresponds to a case where some property or disposition of the causer — rather than an action on its part — led to a change-of-state. Thus the non-agentive reading of *John destroyed his car* is that some property of John (e.g. his negligence) led to the destruction of the car, i.e. something about John destroyed his car.[33] The case for *The vase broke* is similar, but with additional possibilities. Here it is possible that there was an external causer (agentive or non-agentive), or perhaps the vase is anthropomorphized and was the breaker itself (in this case necessarily agentive), though in these cases *Someone broke the vase* or *The vase broke itself* respectively are more informative. But if neither condition obtains, the remaining interpretation is that something about the vase — something internal

[33] Whether a property or disposition causal reading is possible may depend on the choice of subject. As Beth Levin (p.c.) points out, *The lightning destroyed the car* lacks this reading, though as noted in §5.2 at least some natural forces may be defined only in terms of their actions (e.g. lightning is by definition electricity in motion), which may preclude or disprefer non-action readings.

to it — caused it to break, e.g. its molecular or material structure was unstable and it finally gave out. In this case, to say *The vase broke* is to say roughly *Something about the vase directly caused it to become broken*, essentially the same as a non-agentive reading of *destroy*.[34] Thus for both causatives and inchoatives, the non-agentive reading is that some property or disposition of the subject led to the change.

Property causation has also been proposed in other domains. As two reviewers note, this is the semantics sometimes associated with subjects of English middles, which van Oosten (1977) and Fagan (1992: 76–81) argue must have properties that make them "responsible" for events of the sort described by the predicate to be possible. Thus *This car sells easily* is fine because cars can have properties that make them sell, but *#This car buys easily* is out because nothing about a car makes it easy to buy. The difference is that middles are generic and inchoatives episodic, which could follow from existential rather than generic quantification over the event. But otherwise this further supports an analysis where properties can cause events.

The idea that both actions by but also properties of participants can cause changes is also reflected by the fact that at least some verbs can actually take subject DPs that refer directly to actions or properties, as in (64a,b) respectively (cp. the English translations; see Levin and Rappaport Hovav 1995: 84 on event-denoting subjects in English, and Koontz-Garboden 2009: 85 for Spanish; see also Dowty 1979: 91–99):

(64) a. *[Joon poll-en eyaa-ge kaarekə-ṭə gahala] eka*
John stick-INST 3SG-GEN car.DEF-DAT hit.VOL.PRT it
vinaasha-keraa.
destroy-do.VOL.PST
'John's hitting his car with a stick destroyed it.'

b. *[Joon-ge modakəmə] kaarekə vinaashə-wuna.*
John-GEN stupidity car.DEF destroy-do.INV.PST
'John's stupidity destroyed the car.' (e.g. he forgot it was out in acid rain)

The action DP in (64a) reflects agentive causation, and the state DP in (64b) reflects non-agentive causation. Thus the difference between agentive and non-agentive causation can be positively defined at least partly as the difference between causation by action/volition by the subject vs. some stative property or disposition of the subject.[35] These two options thus subsume the possible causation types for causative change-of-state verbs, and being an effector is just being indeterminate between the two.

This analysis can be captured formally with a slight revision of the analysis in §4.3, drawing on a proposal by Chierchia (2004: 37). In particular, we minimally distinguish agentive and non-agentive causation in terms of the type of the causing eventuality: agentive causation corresponds to a reading wherein the causing eventuality is an event (in U_E), while non-agentive causation corresponds to a causing

[34] This is also essentially Levin and Rappaport Hovav's (1995: 91) definition of internal causation, although, consistent with their later discussion (p.92), this interpretation arises with ECOS verbs by coidentifying the external causer with the patient. See also Prior et al. (1982) on the causal basis of dispositions.

[35] DeLancey (1984) also identifies a category of "inactive direct causation", citing in particular diseases and states like hunger (e.g. *Hunger killed him*; p. 204, (67)), that serve as invisible, but less prototypical causers due to a lack of volition. He partly motivates this category on the basis of special types of marked morphosyntactic encoding it receives in Hare and Newari, suggesting its grammatical relevance.

eventuality that is a state (in U_S). Furthermore, to accommodate the fact that subject DPs of causative verbs can in some cases actually denote the causing event or state as in (64), we suggest that causative verbs actually select for the causing event or state itself as their subjects. Finally, roots that are unspecified for agentivity simply select causing eventuality subjects that are unspecified for event vs. state (in U_V). These assumptions yield the denotations for *kada-* 'break' and *minimara-* 'murder' in (65).

(65) a. $[\![$*kada-*$]\!] := \lambda y \lambda v \in U_V \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

b. $[\![$*minimara-*$]\!] := \lambda y \lambda v \in U_E \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{dead}')]$

Thus *kada-* is a relationship between a patient, a causing eventuality, and a change-of-state event, while *minimara-* is a relationship between a patient, a causing event, and a change-of-state event. If (65a) occurs in a context favoring agentivity, then the causing eventuality will be resolved to an event. But if another context (such as a neglect reading) favors a non-agentive reading, then the causing eventuality will resolve instead to a state. Conversely, (65b) already has eventive causation as part of its meaning, and thus should resist non-agentive readings.

However, this predicts that subject DPs should be eventuality denoting. In some cases, as in (64), they are. But what about those that, at least pre-theoretically, denote individuals? We account for these by first assuming that all subject DPs, including those pre-theoretically denoting individuals, have generalized-quantifier denotations as in (66) (as in Barwise and Cooper 1981: 164–166, though with an event argument).

(66) $[\![$*John*$]\!] := \lambda P \lambda e[P(\mathbf{j}, e)]$

When such a DP serves as the subject of a verb that takes an eventuality-denoting subject, we propose that it also permits the alternative denotations in (67) in which it introduces the relevant causing eventuality and thematic role. (We now no longer need to distinguish an effector from an agent — the former is the causer of an unspecified eventuality, the latter of an event; we use the label $effector'$ now for both.)

(67) a. $[\![$*John*$]\!] := \lambda P \lambda e \exists v \in U_E[effector'(\mathbf{j}, v) \wedge P(v, e)]$
"John is the effector of event v that caused event e described by P."

b. $[\![$*John*$]\!] := \lambda P \lambda e \exists v \in U_S[effector'(\mathbf{j}, v) \wedge P(v, e)]$
"John is the effector of state v that caused event e described by P."

Thus (67a) represents the set of ordered pairs of all properties and events caused by an event v of which John is the effector, and (67b) represents the set of ordered pairs of all properties and events caused by a state v of which John is the effector.[36]

Denotations such as these permit *John* to take a VP headed by one of the verbs in (65) as an argument, filling in the causing event/state argument and indicating that John was the effector. Example volitive VPs for 'break the plate' and 'murder Siri' based on (65) are given in (68) (ignoring the effects of verb inflection for now).

(68) a. $[\![$*piŋgaanəyə kæduwa*$]\!] := \lambda v \in U_V \lambda e[cause'(v, e) \wedge result'(\mathbf{p}, e, \mathbf{broken}')]$

b. $[\![$*Siri-wə minimæruwa*$]\!] := \lambda v \in U_E \lambda e[cause'(v, e) \wedge result'(\mathbf{s}, e, \mathbf{dead}')]$

[36] Van Valin and Wilkins (1996: 301) (following Talmy 1996), similarly assume subjects may stand in for causal events by a process of 'metonymic clipping' (see also Levin and Rappaport Hovav 1995: 84).

Composing (67a,b) with (68a) yields (69a,b), resolving the unspecified agentivity to agentive or non-agentive respectively by resolving the causing eventuality type.

(69) a. ⟦*John piŋgaanəyə kæduwa*⟧ (agentive/eventive causation) :=
$\lambda e \exists v \in U_E[effector'(\mathbf{j}, v) \wedge cause'(v, e) \wedge result'(\mathbf{p}, e, \mathbf{broken}')]$

b. ⟦*John piŋgaanəyə kæduwa*⟧ (non-agentive/stative causation) :=
$\lambda e \exists v \in U_S[effector'(\mathbf{j}, v) \wedge cause'(v, e) \wedge result'(\mathbf{p}, e, \mathbf{broken}')]$

Conversely, (67b) is incompatible with (68b), since (67b) specifies a state subject and (68b) specifies an event subject. But (67a) is compatible with (68b), yielding (70).

(70) ⟦*John Siri-wə minimæruwa*⟧ (agentive/eventive causation) :=
$\lambda e \exists v \in U_E[effector'(\mathbf{j}, v) \wedge cause'(v, e) \wedge result'(\mathbf{s}, e, \mathbf{dead}')]$

Thus causative verbs allow event- and/or state-denoting subjects, and individual denoting-subjects may apply via types corresponding to agents vs. non-agents. A reviewer wonders if this will lead to a proliferation of denotations for DPs, one for each possible thematic role. However, this is not the case — for the "basic" denotation in (66), which applies to predicates taking individual subjects, the individual would get its role from the predicate it applied to. Only agent and non-agent effector roles are introduced by generalized quantifiers, only for subject DPs, and only into predicates taking eventuality subjects, thus limiting the "extra" denotations to just two.

We can now define the agentivity constraint for volitive stem inflection and purposives. On our analysis, to stipulate agentivity is to say that the causing eventuality must be an event, which in the case of causative verbs is to say that the denotation of the subject has the semantic type of an event. Thus we can say simply that volitive stem inflection and purposive modifiers require agentivity by virtue of requiring the subjects of the predicates they modify to be event-denoting. For example, we can define the volitive stem as applying to n-ary verb roots, but fixing the subject (the penultimate argument, before the event) as an event, thus forcing an agentive reading (this is in addition to any modal semantics associated with volitionality that may arise in context, which we ignore here; see Beavers and Zubair 2010).

(71) $[\![+\emptyset_{vol}]\!] := \lambda P \lambda x_1 ... \lambda x_n \lambda v \in U_E \lambda e[P(x_1, ...x_n, v, e)]$

When volitive inflection applies to *kada-* in (65a) it resolves the causing eventuality to an event as in (72a), forcing an agentive reading. For *minimara-* in (65b) the causing eventuality is already specified as an event, so there is no semantic effect, as in (72b).

(72) a. $[\![\textit{kada}+\emptyset_{vol}]\!] := \lambda y \lambda v \in U_E \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

b. $[\![\textit{minimara}+\emptyset_{vol}]\!] := \lambda y \lambda v \in U_E \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{dead}')]$

We can give a similar analysis to purposives. There are of course many details to the internal structure of purposives we leave aside here, but we can schematically assume that however they are derived the resultant type is as a modifier of VPs still looking for their subjects, and they output something of the same type but fixing the type of the subject as an event (and also indicating that the event described by that VP was motivated by the one described by the purposive). An example denotation for *PRO rakshənə salli gannə* 'PRO to collect the insurance money' is given in (73)

(73) $[\![$*PRO rakshənə salli gannə*$]\!] := \lambda P \lambda v \in U_E \lambda e \exists e'[P(v,e) \wedge collect'(\mathbf{PRO}, \mathbf{r}, e') \wedge in\_order\_that'(e,e')]$

Composing (73) with (68a) resolves the subject to an event, thus requiring an agentive reading, but applying it to (68b), which already wants an event subject, has no effect:

(74) a. $[\![$*PRO rakshənə salli gannə piŋgaanəyə kæduwa*$]\!] :=$
$\lambda v \in U_E \lambda e[cause'(v,e) \wedge result'(\mathbf{p}, e, \mathbf{broken'}) \wedge collect'(\mathbf{PRO}, \mathbf{r}, e') \wedge in\_order\_that'(e,e')]$

b. $[\![$*PRO rakshənə salli gannə Siri-wə minimæruwa*$]\!] :=$
$\lambda v \in U_E \lambda e[cause'(v,e) \wedge result'(\mathbf{s}, e, \mathbf{dead'}) \wedge collect'(\mathbf{PRO}, \mathbf{r}, e') \wedge in\_order\_that'(e,e')]$

Conversely, as noted in §2 and §5.2, some verbs categorically resist volitive inflection (and other constructions such as purposives), including experiencer-subject verbs such as *dænennə* 'feel' and *ridennə* 'ache'. Intuitively this is because they describe types of eventualities whose experiencer participants are not agents (though presumably nothing precludes deliberate aching or feeling per se). On the analysis presented here this intuition can be encoded straightforwardly by assuming that these roots do not take eventuality-denoting subjects, but rather simply take individual-denoting subjects of which some psychological state is predicated. The lack of volitive stems follows directly: volitive stem inflection would resolve the subject to an event, but these roots want individual subjects, and thus volitive stem inflection will be inapplicable. Thus, crucially, on our analysis, while setting the subject's denotation as an event corresponds to a truth-conditional fact, it is also a formal fact about the subject's and thus the verb's semantic type. In this sense we can say that the volitive stem and purposive modifiers have grammaticalized agentivity; they require it truth conditionally by virtue of (or with the effect of) placing type-theoretic constraints on the roots or VPs they apply to. This will be important below in analyzing inchoatives.

To summarize, we have given agentive vs. non-agentive causation positive definitions as eventive vs. stative causation respectively, building on Chierchia's proposal and answering the unanswered question in Koontz-Garboden's approach of what constitutes non-agentive causation. Underspecification of agentivity is thus simply being indeterminate between event and state causation. Constructions such as volitive stem inflection and purposives that require agentivity do so in Sinhala by imposing a constraint that the causing eventuality of their modifee be an event. We turn next to inchoatives, and in particular why they are not possible with agent-subject verbs. In other words, how is it that inchoatives — like the causatives they are derived from — are unspecified for agentivity and yet resist volitive stem inflection and purposives?

7.3 Causers as Individuals vs. Eventualities

Intuitively, the limited distribution of inchoative forms has to do with the fact that inchoatives do not encode agentivity, and this yields a clash with constructions or verb roots that require it. Yet as we demonstrated in §5.3, inchoatives are not *truth conditionally* incompatible with agentivity — it is possible to use one to describe a

situation in which agentivity obtains. But if inchoatives are not truth-conditionally incompatible with agentivity, then they must be *formally* incompatibility with constructions that require it — they are formally marked in some way indicating that agentivity cannot be resolved, which clashes with some other formal marking on constructions requiring it. Crucially, the analysis of agentivity vs. non-agentivity in §7.2 in fact already makes resolution of agentivity a partly formal operation having to do with the type of the causing eventuality. We show that the unique properties of inchoatives follow from this analysis with only minimal additional assumptions.

Recall that volitive stem/purposives impose agentivity on a causative predicate with a causer subject by saying that the subject must have a denotation in U_E, resolving agentivity for a predicate whose subject is lexically an eventuality in U_V. But this would not be possible if the causative predicate instead took a subject whose type, even if truth conditionally equivalent to causation by an eventuality (i.e. not specified for agentivity), cannot be resolved to either a state or an event. In fact, such a type already exists in our model: we suggest that some verb roots may select causers typed simply as individuals in U_I, reifying the intuition that when we speak of causation of some event there is a sense in which both the causing eventuality and the effector of that eventuality are conceived of as causers. We define causation of event e by individual x, $cause'(x, e)$, as truth-conditionally equivalent to causation by an eventuality via the meaning postulate in (75) (see also Chierchia 2004: 57):

(75) $[cause'(x, e) \wedge ...] \leftrightarrow \exists v \in U_V[effector'(x, v) \wedge cause'(v, e) \wedge ...]$

In other words, $cause'(x, e)$ means that x was responsible for the coming about of e, though no commitment is made as to whether an event or state links x to e (but one must exist, so that causation is still ultimately viewed as a relation between eventualities). A revised denotation for a *break*-type verb is given in (76).

(76) $[\![$*kada*-$]\!] := \lambda y \lambda v \in U \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{broken'})]$
(Cause may be event, state, or individual)

If v in (76) is resolved to an eventuality in some context, the analysis reduces to the one in §7.2. If v is instead resolved to an individual, by (75) there is still an entailment of a causing eventuality that could be eventive or stative. However, the root will have different combinatoric properties that we show capture the Sinhala inchoative.

We first revise the causer suppression operator as in (77), wherein it eliminates the causer argument from the verb, but also fixes it as an individual.

(77) **Causer Suppression (Final):** $[\![+\emptyset_{CS}]\!] := \lambda P \lambda y \lambda e[P(y, \underline{x}, e) \wedge \underline{x} \in U_I]$
Precondition: $\forall x' \forall y' \forall e'[P(y', x', e') \rightarrow cause'(x', e')]$

This morpheme thus requires that the root it applies to allows resolution of its subject to an individual. Crucially, (77) therefore cannot compose with a *murder*-type verb as in (65b), since those require an event causer, predicting that such roots will not have inchoatives. Thus (77) solves one of the issues with the purely reflexive analysis outlined in §4.3 — anticausatives are restricted to verbs that permit resolution of their causer to an individual, which rules out those verbs that require agents.

But (77) can of course compose with a *break*-type verb as in (76), producing the denotation in (78), which resolves to one of the readings in (78a,b).

(78) $[\![\textit{kada}{+}\emptyset_{CS}]\!] := \lambda y \lambda e[cause'(\underline{x}, e) \wedge result'(y, e, \textbf{broken}') \wedge \underline{x} \in U_I]$

a. Reflexive: $\lambda y \lambda e[cause'(y, e) \wedge result'(y, e, \textbf{broken}') \wedge y \in U_I]$

b. $\exists$-bound: $\lambda y \lambda e \exists x[cause'(x, e) \wedge result'(y, e, \textbf{broken}') \wedge x \in U_I]$

While the causative variant of *kada-* allows resolution of its subject to an event, state, or individual, the subject of its anticausative variants are set as individuals. In both cases, the subject is the patient, which in (78a) is also the causer, while in (78b) the causer is instead existentially bound. In either case, though, by the postulate in (75), there still exists some causing eventuality of which the causer is an effector, and that eventuality may be either a state or an event, leading to truth conditional indeterminacy in agentivity (we discuss the agentivity required with accusative subjects below). However, any construction that explicitly requires agentivity for (78) by virtue of requiring the subject to be an eventive causer will now no longer be possible.

This explains the incompatibility of inchoatives with purposives and volitive stems. In §7.2 volitives and purposives were defined as applying to predicates with subjects that can be resolved as an event. But since Sinhala inchoatives have subjects that are individuals, neither construction can apply. Thus the explanation for why inchoatives do not occur in these constructions is the same as why experiencer-subject verbs do not occur in these constructions: these constructions require agentivity, and this results in a formal incompatibility between these constructions and inchoative verbs.

Conversely, the involitive stem requires neither agentivity nor non-agentivity, thus imposing no requirements on the subjects of the roots it applies to, so that inchoatives can be realized as involitives. Since volitive stems are impossible and involitive stems are not, all anticausatives in Sinhala are forced into the involitive stem. Thus despite outward appearances, the involitive is not an anticausative marker per se. Rather, it is an indirect consequence of the denotations of anticausative roots. Of course, it *does* have a requirement of non-volitionality, unexpectedness, or ironic denial. In fact, such readings are required with inchoatives, the default reading being non-volitionality:[37]

(79) *Laməya(-wə) nohitaa/#hitəla wæṭuna/kærəkuna.*
child(-ACC) unintentionally/intentionally fall.INV.PST/turn.INV.PST
'The child unintentionally/intentionally fell/turned.'

Nonetheless, the involitive is serving here as an overt indicator of anticausativization; we return to a larger question of types of anticausative marking in §8.[38]

The final question is how the nominative/accusative case alternation arises. Here we assume (along with Beavers and Zubair 2010: 91) that in addition to being a structural case for objects that bear a range of different roles, accusative has a special use in Sinhala as a semantic case that indicates a patient that undergoes a change-of-state explicitly caused by some external agent. On this analysis, accusative subjects

[37] Such data preclude the analysis of the stem alternation of Henadeerage (2002). Henadeerage argues that the involitive stem found in inchoatives is a special use of the involitive that does not indicate any non-volitional semantics or anything else otherwise associated with involitives. However, (79) shows this is not the case. Furthermore, this association of the inchoative with the involitive stem is a stipulation on his analysis; on our analysis it follows directly from the meaning of an inchoative and the two stem forms.

[38] ICOS verbs, which have no causative uses in Sinhala, are also all involitive. This follows if we assume they lexically have denotations that do not admit event subjects; see fn. 40.

will only ever occur with anticausatives on the existential-binding reading, and furthermore will force an agentive reading of this causer. The semantic status of the accusative is in line with the rich set of semantic cases Beavers and Zubair argue exist in Sinhala, and is specifically motivated by the fact that accusative-subject anticausatives are syntactically identical to nominative anticausatives (see §6), where the only difference that licenses accusative case is the interpretation of external agentive causation (and furthermore in normal transitive clauses where this semantics obtains the object is also accusative).[39] Again following Beavers and Zubair, we assume that nominative arises as the elsewhere case for all other anticausatives simply by being the default structural case for subjects.

Thus on our analysis, the difference between agentive, non-agentive, and unspecified causation is the difference between causation by an event, a state, or being indifferent between the two respectively. This truth conditional difference in turn has formal consequences for the semantic types of the Sinhala verbs describing these different sorts of causation: so-called effector-subject causatives take causer subjects in U and can anticausativize, agent-subject causatives take causer subjects in U_E and cannot anticausativize, and inchoatives take patient subjects in U_I and encode a "buried" individual causer in U_I not specified for agentivity (by virtue of the postulate in (75)), which may or may not be coidentified with the patient. But in no case can the patient subject (even if coidentified with the causer) be specified for agentivity by resolving it as an event or state. Thus a simple definition of agentive vs. non-agentive causation, plus different ways this can be unspecified, gives rise to formal distinctions in Sinhala that predict that inchoatives cannot occur in stems or constructions requiring agentivity, even if they are compatible with real world contexts requiring it.

However, a reviewer asks if the difference between volitive causatives and involitive inchoatives could instead be captured syntactically as the presence/absence of a Voice head specified for agentivity (e.g. [+AG]), in the spirit of Alexiadou et al. (2006). Although we remain agnostic to the syntactic analysis, our key assumption is that the difference between agentive and non-agentive causation is a semantic one which has consequences for the type of the causing eventuality, i.e. the formal, type-theoretic properties we propose draw directly on an independently-motivated semantic distinction, with few additional assumptions. To additionally posit that the relevant notions are also encoded featurally in the syntax introduces unnecessary redundancy; it is not obvious what translating our approach into this framework would offer.

If our analysis is right, it also makes an interesting additional prediction: we might expect to find verbs that take subjects in U_V, i.e. effector-subject verbs that allow

[39] Lavine (2010) discusses a similar sort of construction in Russian and Ukrainian, the so-called "transitive impersonal", where an accusative subject can occur with an inchoative or passive only on a reading where there was external causation (we thank an anonymous reviewer for pointing this out to us):

(i) *Dom* *sožglo.*
house.ACC burned.down
'The house got burned down.' (Russian; Lavine 2010: 121, (39))

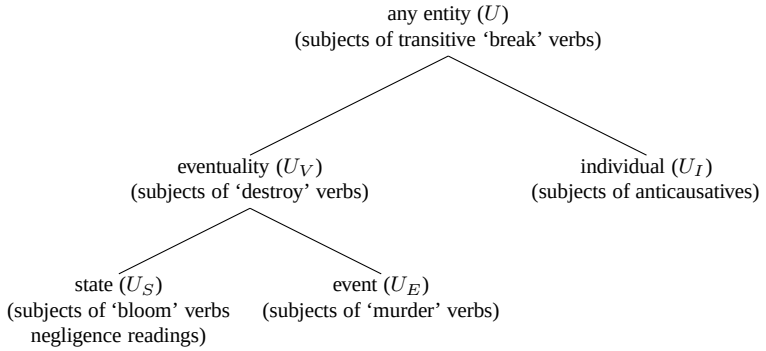
Lavine analyzes this by positing a *v* head that encodes external causation and assigns accusative to the object, but does not itself license an external argument (following Pylkkänen 2008). This analysis has the same semantic intuition as ours, though we remain agnostic as to whether the denotations we give in turn determine different syntactic functional heads, for which we see no particular evidence in Sinhala.

event or state causers but do *not* anticausativize (since an eventuality cannot be resolved to an individual). While we are not aware of any such verbs in Sinhala, it has been noted that there are some verbs in other languages that take subjects unspecified for agentivity but do not permit inchoatives. A key English example is *destroy*, which as noted above does not require an agent but also fails to anticausativize (cp. **The car destroyed*). Though its equivalent does alternate in Sinhala (as do equivalents in Spanish, French, Hebrew, and Greek; cf. Koontz-Garboden 2009: 87–88, fn. 8 for discussion), Härtl (2003) notes German verbs meaning 'destroy', 'mutilate', 'shatter', and 'burn' which do not alternate. Any theory of anticausativization as suppression of a causer unspecified for agentivity would have to treat these as lexical exceptions. On the analysis proposed here, these exceptions are predicted to occur, taking subjects in U_V, the remaining possible type. *Destroy* would then have the analysis in (80).

(80) $[\![$*destroy*$]\!] := \lambda y \lambda v \in U_V \lambda e[cause'(v, e) \wedge result'(y, e, \mathbf{destroyed'})]$
(Cause may be event or state, but not individual)

Assuming a causer suppression operation in English like the one in Sinhala (though see §7.4), (80) will not undergo causer suppression despite the fact that it has a reading that is not specified for agentivity, since causer suppression requires resolving the causer to an individual. These data thus suggest at least a three-way distinction among transitive causative verb meanings: those that are unspecified for the nature of the causing eventuality and can anticausativize, as with 'break' verbs, those that are unspecified but cannot anticausativize, as with 'destroy', and those that are specified for a causing event, as with 'murder'. This is based on the typology of possible causer types summarized in (81), illustrated with verbs that select that type of causer.[40]

(81)



The fact that each of these different types of causers are attested in terms of their interpretation and acceptability with constructions such as purposives and volitive stem supports the formal typology of causers outlined here.

7.4 Summary

We rejected Koontz-Garboden's effector-subject reflexivization analysis of anticausatives for Sinhala on the grounds that it makes incorrect predictions about the interpretation

[40] We have not discussed verbs selecting a state (non-agentive) causer. We leave this for future investigation, though *bloom*-type ICOS verbs may be such a case (cf. Levin and Rappaport Hovav 1995: 97).

of accusative subject inchoatives and the ability of inchoatives to occur in grammatical contexts requiring agentivity, or to be derived from agent-subject roots. We proposed instead that reflexivization is just one possible interpretation of the suppressed causer, the other being existential binding, accounting for accusative subjects. We further developed a typology of causation types that defined agentive and non-agentive causation as event and state causation respectively, and proposed that while 'break'-type causatives take subjects resolvable as events or states, causer suppression fixes the subject as an individual, which is truth conditionally compatible with agentive or non-agentive readings but cannot be resolved as an event, preventing inchoatives of 'murder'-type verbs, volitive inchoatives, and purposive modifiers. This is all distinct from Spanish, where Koontz-Garboden's simpler analysis is applicable.

A reviewer asks if our analysis might also extend to English, in which inchoatives resist purposive modifiers and verbs that require agentivity, just as in Sinhala. It is beyond the scope of this paper to develop such analysis, though we do note here that this extension would not be entirely straightforward, and a quick comparison of English and Sinhala (and Spanish) yields some interesting similarities and divergences. In particular, while English inchoatives are generally unacceptable with purposives (as noted in §3.2), examples of the sort attested in Spanish for inchoatives with animate subjects can occasionally be found (as pointed out to us by Andrew Koontz-Garboden, p.c.; see also Roeper 1987: 299), unlike Sinhala:

(82) a. She had an extremely hard life up to the point of receiving her vision. And then, when **she died to save her friends and the Tribe of Rushing Water**, she showed that they were more important to her than her own life. (`www.the-top-tens.com/lists/saddest-warrior-cat-deaths.asp`)

b. Monaghan's character, Charlie Pace, was written off at the end of season three when **he drowned to save a friend**. (`elilly_jounal.lacoctelera.net/categoria/evangeline-lilly`)

This suggests a Spanish-type reflexive analysis of English anticausatives is possible as well. That said, English is not entirely like Spanish either — unlike Spanish, but like Sinhala, English also has a set of full reflexive pronouns that directly encode an agentive reflexive meaning, and this may be responsible for the dispreference for using anticausatives to convey this meaning, even if this preference is not categorical. Conversely, in Sinhala, such modifiers (or any attempt to overtly coerce an anticausative root into an agentive reflexive reading, including volitive inflection) is not possible. In comparison, then, anticausatives in these three languages have in common non-specification for the nature of causation, with reflexivization as the common core interpretation, but they differ in how that is manifested regarding agentivity. In Spanish the anticausative form is simply vague, and context determines the actual reading. In English there is a dedicated form for agentive reflexive action (reflexive pronouns), leading to a dispreference for anticausatives conveying that meaning, though it is not entirely blocked. Sinhala is unique among these three languages in having not just a separate set of reflexive, agentive pronouns, but also in having independently grammaticalized the agent vs. effector contrast in the contrast between volitive and involitive mood, for which all verbs are obligatorily marked. It is therefore not surprising that Sinhala has gone a step further than English in grammati-

calizing unresolvable (i.e. true) effectorhood for anticausatives, as we have proposed in the previous section. Thus the interpretation and combinatoric possibilities of anticausatives may be constrained by what other forms a language has for expressing agentive (reflexive) causation, and whether agentivity is fully grammaticalized.

8 Conclusion - The Typology of Anticausatives Revisited

The volitive/involitive stem contrast in Sinhala also marks a causative/inchoative alternation: a volitive transitive form represents the causative, and an involitive intransitive form represents the inchoative. Inchoatives in Sinhala furthermore show a case alternation in the patient subject, with nominative representing a true inchoative reading (no entailment of external causation), and accusative representing a formally inchoative clause that bears a passive meaning (an entailment of external causation). We have argued that these two types of inchoatives share the common component that a causer not specified for agentivity has been stripped from the argument structure of the verb via anticausativization. The different interpretations arise from two different ways of interpreting the stranded participant — reflexively (coidentified with another argument on the verb's argument structure), or via existential binding. These facts are significant for a theory of anticausativization, since it argues against a single analysis of anticausatives, although the two types share a common core.

Returning to the larger question of typologies of anticausative marking mentioned in §1, it would thus appear superficially that indicating inchoatives is simply another functionality of the involitive stem. Typologically, however, this would be rather unusual. The generally attested options for encoding anticausatives fall into two rough classes: those that reflect an argument structure shift (reflexive, passive), and those that reflect an event structure shift (resultative, fientive, inceptive), where reflexivization is one of the most common ways (as discussed by Nedyalkov and Silnitsky 1973 and Haspelmath 1987, 1993). These syncretism are of course relatively unsurprising — causative/inchoative alternations involve both an argument structural and event structural shift. But mood marking for involitivity does not serve either of these two functions, so a question arises of why it should mark an inchoative. Our answer is that, despite appearences, the involitive is not technically an anticausative marker in the literal sense — it is a byproduct of anticausativization brought on by an independent fact about Sinhala grammar regarding the non-specification of agentivity that bars inchoative roots from occuring in the volitive stem. However, the involitive stem nonetheless serves the overt function of indicating an inchoative (e.g. ICOS inchoatives also fall into the involitive for the same reasons, and it contrasts overtly with the stem of the causative). Thus it is a fair question to ask how it fits into a larger typology of causative/inchoative morphology.

What we suggest is that Sinhala highlights and thus supports a key factor in the theory outlined here, based on Levin and Rappaport Hovav (1995), Reinhart (2000, 2002), Chierchia (2004), and Koontz-Garboden (2009), that anticausativization is a combination of two features: detransitivization (qua causer elimination) plus an effector interpretation of the causer in the causative form. Thus there are two binary features — transitive vs. detransitive, agent vs. effector — creating four possible types of

caused change-of-state clauses. Assuming it is sufficient and economical to formally mark just one feature overtly and let the other be determined by context, Spanish and Sinhala simply represent two different ways to do this. In Spanish, the transitive/detransitive contrast is overtly grammaticalized (unmarked transitives, marked detransitives with *se*), and an inchoative arises when the subject of a *se*-detransitive is interpreted as an effector. In Sinhala the agent/effector contrast is overtly grammaticalized (the volitive/involitive contrast), and an inchoative arises when an involitive occurs detransitively, i.e. with one argument. Assuming the volitive is formally unmarked (as per in §2), the contrast between the two languages is given in (83).

(83)

	Spanish		**Sinhala**	
	Agent	Effector	Agent	Effector
transitive	∅	∅	∅	INV
detransitive	*se*	*se*	∅	INV

Thus although the correlation of involitivity to anticausativization is not a direct one, it nonetheless supports the general view of anticausatives presented here as marking a combination of lack of agentivity entailments with detransitivization, and also broadens the expected typology of anticausatives: overt detransitivization is important, but there is an alternative avenue for overtly indicating the same function.

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