

Anticausatives in Sinhala: A View To The Middle*

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1. Introduction

“Middle voice verbs” (hence “middles”) form several well-defined classes, including inherent reflexives (Kemmer 1993), where the sole argument is interpreted as an agent acting upon himself/herself, so-called “middle constructions” (Kemmer’s 1993, 147-149 “Facilitative Middles”; Condoravdi 1989, Fagan 1992, Ackema & Schoorlemmer 1994, 2005, *inter alia*), where the the sole argument is a patient acted upon by an implicit agent on a generic or habitual reading, anticausatives (Kemmer’s 1993: 142-147 “Spontaneous Middles”; Chierchia 2004, Koontz-Garboden 2009, Beavers & Zubair 2013), where the sole argument is a patient not necessarily acted upon by any other entity, and passives (Kemmer’s 1993: 147-149 “Passive Middles”; Siewierska 1984, 162-185, Maldonado Soto 1992, 233-258), where the sole argument is a patient acted upon by an unexpressed agent and the reading is more episodic. These are illustrated for Bahasa Indonesian in (1), where each verb bears the *ber-* middle prefix (see Kemmer 1993, Kardana 2011, Beavers & Udayana 2016), save anticausatives, which bear *ter-*, in contrast with active *meN-* or unmarked forms:¹

- (1) a. *Ali ber-dandan.*
Ali MV-dress
‘Ali dressed (himself).’ (inherent reflexive of transitive (*men-*)*dandan*)
- b. *Mobil itu ber-jual dengan mudah.*
car that MV-sell with easy
‘The car sells easily.’ (middle construction of transitive (*men-*)*jual*)

*We would like to thank Ashwini Deo, Itamar Francez, Andrew Koontz-Garboden, and I Nyoman Udayana, as well as the audience at FASAL 2015, for their feedback.

¹The Indonesian data represents the Balinese dialect spoken in Bali and the Minangkabau dialect spoken in West Sumatra. Our Sinhala speakers speak Kandyan and Colombo dialects. The following abbreviations are used throughout the paper: 1=first person, 3=third person, ACC=accusative, AV=agent voice, CAUS=causative, DAT=dative, DEF=definite, INDF=indefinite, INF=infinitive, INST=instrumental, INV=involution, EMPH=emphatic, MV=middle voice, NEG=negation, NPST=non-past tense, OV=object voice, PASS=passive voice, PL=plural, POST=postpositional case, PRT=participle, PST=past tense, REFL=reflexive, REL=relativizer, SG=singular, VOL=volitive.

- c. *Pintu itu ter-buka.*
 door that MV-open
 ‘The door opened.’ (anticausative of transitive (*mem-*)*buka*)
- d. *Mobil itu ber-jual kemarin.*
 car that MV-sell yesterday
 ‘The car sold yesterday.’ (passive middle of (*men-*)*jual*)

A fundamental question is what unifies all of these middles together. One common approach has focused on the syntactic unity of middles as involving detransitivization (Grimshaw 1982, Keyser & Roeper 1984, Ackema & Schoorlemmer 1994, Doron 2003, Reinhart & Sioni 2005, Alexiadou et al. 2006, Alexiadou 2010, Alexiadou & Doron 2012).² For example, Embick (2004) defines predicates like those in (1) as not projecting a base external argument, and thus the object must raise to subject position, a type of unaccusative syntax. However, there is debate on what the exact syntax of middles is, where some have suggested that inherent reflexive and middle constructions are unergative (see Keyser & Roeper 1984, Stroik 1992, Embick 2004, Ackema & Schoorlemmer 2005, Reinhart & Sioni 2005, Alexiadou & Schäfer 2014 for discussion). Others have suggested that middles are instead a notional category, i.e. a specific reading of independently attested constructions (Condoravdi 1989, Lekakou 2002, Fábregas & Putnam 2014), or a family of constructions (Reinhart 2002, Alexiadou & Doron 2012).

However, nearly all such approaches either ignore the semantics or take it to be heterogeneous (e.g. Alexiadou & Doron 2012). Kemmer offers a unified theory of middle semantics, proposing that the core semantics is “low distinguishability of participants”, e.g. the verb’s agent and patient are not distinguished clearly from one another, giving rise to a type of reflexive reading, which she calls “intrinsic to the lexical semantics of middle verbs” (p. 94). However, low distinguishability of participants does not easily extend to middle constructions and passive middles, which implicate distinct agents and patients, nor to anticausatives, which lack obvious lexical entailment of multiple thematic roles for their subjects. Kemmer thus generalizes low distinguishability of participants to “low elaboration of events” — separate subevents in the verb’s meaning are not differentiated, where the subevent associated with the agent is conflated with that of the patient (inherent reflexives), left unspecified (middle constructions and passive middles), or not present (anticausatives). However, Kemmer is not clear on what types of low elaboration constitute the semantics of middles, nor how middles differ from non-specific expressions (e.g. indefinite pronouns). The question then is whether there is a true semantic or syntactic unity to all middles.

Colloquial Sinhala presents an extreme challenge in this regard: unlike relatively well-behaved Indonesian, *none* of the middles illustrated above are formally identical. As discussed by Beavers & Zubair (2013), anticausatives in Sinhala are overtly coded not by valence changing morphology of any sort, but by a morphological contrast in the verb stem that indicates volitive vs. involitive mood, otherwise indicating roughly volitional vs. non-

²In at least some middles, such as Kemmer’s cognition middles, the base form takes three arguments and the middle form takes two, suggesting that the operation is more generally reduction of valence by one argument. We set these more general cases aside and focus on detransitivization here, though in principle a simple generalization of the analysis discussed here can extend to higher valences as well.

volitional action. In particular, in (2a,b) the same transitive verb can occur transitively in either the volitive or involitive form respectively, but the involitive (and not the volitive) also has an intransitive form with a nominative subject corresponding to an anticausative, as in (3) (Beavers & Zubair 2013, 3, (2)-(3)).³

- (2) a. *Aruni Nimal-wə gilūwa.*
 Aruni Nimal-ACC drown.VOL.PST
 ‘Aruni intentionally drowned Nimal.’ (volitive transitive)
- b. *Aruni atiy Nimal-wə giluna.*
 Aruni POST Nimal-ACC drown.INV.PST
 ‘Aruni accidentally drowned Nimal.’ (involitive transitive)
- (3) *Nimal giluna/*gilūwa.*
 Nimal drown.INV.PST/drown.VOL.PST
 ‘Nimal drowned.’ (involitive intransitive qua anticausative)

Furthermore, the form in (3) can take an accusative rather than nominative subject on a passive reading, thus realizing another type of middle, albeit indicated by subject case:⁴

- (4) *Nimal-wə giluna/*gilūwa.*
 Nimal-ACC drown.INV.PST/drown.VOL.PST
 ‘Nimal was drowned (by someone).’ (passive middle; Beavers & Zubair 2013, 3, (4))

This might suggest that the involitive is the middle form in Sinhala. However, this does not extend directly to other middle types. Inherent reflexives are realized primarily by a combination of a participial verb form plus a volitivity-neutral light verb *gannə* ‘take’:

- (5) *Mamə naa gatta.*
 1 SG bathe.PRT take.PST
 ‘I bathed/had a shower.’ (inherent reflexive; Chandralal 2010, 138, (62))

Finally, middle constructions are found in both volitive and involitive forms, as well as in the *gannə* light verb construction:

- (6) *Meeka kaar-eka pahasuven vikunenəwa/vikunanəwa/viku gannəwa.*
 These cars-INDF easily sell.INV.NPST/sell.VOL.NPST/sell.PRT take.NPST
 ‘These cars sell easily.’ (middle construction; see also Gair 1970, 70-71, 76)

The formal diversity of middle types (plus the semantic heterogeneity) argues against even a family of constructions analysis, since there is little family resemblance across subtypes.

³The morphological distinction between volitive and involitive verbs has to do with a combination of the place of articulation of the vowels of the verbal root plus the choice of thematic vowel (conditioned also by tense). Furthermore, while volitive verbs typically take nominative subjects, involitives assign a range of quirky cases to their subjects, contingent largely on verb class and semantics. The details are irrelevant here save where noted; see Beavers & Zubair (2010) for discussion.

⁴Sinhala is a *pro*-drop language and as such (4) has a reading as with an unexpressed subject and with the accusative DP as the object. However, as Beavers & Zubair (2013, 27-30) discuss, a passive middle reading is also possible and there is grammatical evidence that the accusative DP is the subject in this case. Here and below all such examples are intended only on this reading.

Nonetheless, we suggest that there is a unity to middles in Sinhala, building on the analysis of Sinhala anticausatives of Beavers & Zubair (2013) and its extension to Indonesian middles in Beavers & Udayana (2016). Following Beavers & Udayana, we suggest that middles represent a mismatch between the syntactic and semantic properties of the middle form: a semantically dyadic predicate (i.e. describing a relation between two individuals) is realized as syntactically monadic (taking just a surface subject argument) through syntactic valence reduction. While one of the two semantic arguments can be directly realized as the sole syntactic argument, the unrealized participant must be interpreted through some other means: either coreferential with the expressed argument, yielding a reflexive reading, or with disjoint reference, receiving an existential interpretation. However, while this operation can account for all Indonesian middles, in Sinhala there is a significant interaction between argument suppression and volitive mood that rules out certain middles being formed by this operation. In particular, as argued by Beavers & Zubair (2013), Sinhala volitive mood stems have grammaticalized a notion of agentivity of their subjects that forces verbs that undergo middle formation into the involitive mood since their sole arguments cannot be agents in the appropriate sense. But involitive mood is semantically incompatible with some middle interpretations, and in exactly these cases alternative forms in the language instead express the relevant meanings. Thus while there is little overt resemblance across Sinhala middles, there is a principled explanation for why the overt diversity exists.

Before we continue, a brief comment is in order on the nature of volitive and involitive mood in Sinhala that will be relevant below. Semantically, volitive verbs typically indicate volitional action, whereas involitive verbs indicate non-volitional action. However, these are only default readings. Volitionality *per se* is sometimes cancelable with volitives verbs:

- (7) *Laməya piŋgaanəyə kəḍuwa, eet hitəla nemeyi.*
 child plate broke.VOL.PST but intention without
 ‘The child broke the plate unintentionally.’ (Inman 1993, 98, (39))

However, as Beavers & Zubair (2013) discuss, if volitionality does not obtain there is a requirement that the subject have acted in some way, i.e. in (7) it cannot be that the child broke the vase through accidental neglect. The only non-action reading must be volitional non-action, e.g. in the (8) the causing action of not watering must have been deliberate:

- (8) *Joon mal watərə nokərə nisaa, mal vinaashə-kəraa.*
 John flower.PL water do.NEG because flower.PL destroy-do.VOL.PST
 ‘Because John deliberately didn’t water the flowers, he destroyed them.’

Thus the volitive requires action, volition, or both of its subject, a disjunction Beavers & Zubair (2013, 14) call “agentivity”.

Similarly, involitives do not always require non-volitionality of their subjects. One case of a volitional reading is when the involitive is used to express ironic denial for interlocutors engaging in playful taunting, as in (9) where speaker B is saying something clearly false in response to what s/he perceives to be a stupid question by hearer A (Zubair 2008, Beavers & Zubair 2010), but is describing an action that is clearly volitional.

- (9) ((*B shows A pictures of Nuwara Eliya; A asks if B went there; B responds.*))

Ehe giye? Nææ, machang. Mamə atij par-e hinganna-gen ewaa
 there go.VOL.PST NEG dude 1SG POST street-LOC beggar-INSTR 3PL

horəkən keruna.

steal do.INV.PST

‘Go there? No, dude. I stole [the pictures] from a beggar on the street.’

In sum, volitives require agent subjects, while involitives allow non-agents (see Inman 1993 and Beavers & Zubair 2010 for further discussion of the meaning of (non-)volitionality). In the following we first review basic properties of the various middles, and then outline Beavers & Zubair’s (2013) analysis of anticausatives and volitives, which serves as a background for our analysis of other middles.

2. A Overview of Middle Constructions

The middles illustrated in (1) have various semantic and grammatical properties that distinguish them, and these tend to be relatively similar across languages. We illustrate some such properties with Indonesian. Indonesian has a distinction between two types of active voice — agent voice *meN-* and unmarked object voice forms — and passive *di-* forms:

- (10) a. *Tono men-dandan Ali.*
 Tono AV-dress Ali
 ‘Tono dressed Ali.’ (agent voice)
- b. *Ali Tono dandan.*
 Ali Tono OV.dress
 ‘Tono dressed Ali.’ (object voice)
- c. *Ali di-dandan (oleh Tono).*
 Ali PASS-dress by Tono
 ‘Ali was dressed by Tono.’ (passive)

That the middles in (1) are distinct from canonical actives in (10a,b) is evident from the fact that they take one core argument rather than two. That they are distinct from canonical passives in (10c) — and from each other — is motivated by their interpretation and modificational properties. Middle constructions and passive middles do not license *dengan sendirinya* ‘by itself’ modifiers, nor purposive modifiers, but they do entail that there was some external, unexpressed causer in the event, consistent with the subject being a patient but not a causer and there being an unexpressed (and syntactically inert) causer in the event:

- (11) a. #*Mobil itu ber-jual dengan sendirinya*
 car that MV-sell with REFL
 #‘The car sells by itself’
- b. *[*Wanita itu*]_i *ber-jual* [*PRO*_{j/i} *untuk men-(t)erima komisi 10%*]
 woman that MV-sell to AV-receive commission 10%
 *‘The woman sold to receive a 10% commission.’

- c. #*Mobil itu ber-jua tapi tidak ada orang yang men-jual=nya.*
 car that MV-sell but NEG exist man REL AV-sell=3SG
 #‘The car sold, but nobody sold it.’

The difference between middle constructions and passive middles is the modal vs. episodic interpretation. Inherent reflexives license *dengan sendirinya* and purposives, but do not entail external causation, consistent with the subject being both the causer and patient:

- (12) a. *Gadis itu ber-dandan dengan sendirinya.*
 girl that MV-dress with REFL
 ‘The girl dressed by herself.’
- b. [*Gadis itu*]_i *ber-dandan* [PRO_i *untuk meng-ikuti kontes kecantikan*].
 girl that MV-dress to AV-join contest beauty
 ‘The girl dressed (herself) to join the beauty contest.’
- c. *Gadis itu ber-dandan tapi tidak ada orang yang men-dandan=nya*
 girl that MV-dressed but NEG exist man REL AV-dress=3SG
 ‘She dressed, but nobody dressed her.’

Anticausatives license *dengan sendirinya* ‘by itself’ (which we discuss further below) but not purposives, and do not entail external causation, thus describing changes-of-state of their subjects but making no commitment that there is any separate causer participant:⁵

- (13) a. *Pasukan itu ter-pecah dengan sendirinya*
 troop that MV-break with REFL
 ‘The troop broke by itself.’
- b. *[*Pintu itu*]_i *ter-buka* [PRO_{i/j} *untuk men-dapatkan hawa segar*].
 door that MV-open to AV-get air fresh
 ‘The door opened to allow fresh air.’
- c. *Pasukan itu ter-pecah dua tapi tidak ada yang mem-ecah=nya.*
 troop that MV-break two but NEG exist REL AV-break=3SG
 ‘The troop broke into two but nobody/nothing broke them.’

(On intended reading)

Di- passives differ from all of these in not taking *dengan sendirinya* ‘by itself’, but entailing external causation and taking purposives, with the unexpressed causer as the controller:

- (14) a. #*Kapal itu di-tambat dengan sendirinya*
 boat that PASS-moor with REFL
 #‘The boat was moored by itself’
- b. [*Orang itu*]_i *di-jual* [PRO_{j/*i} *untuk men-erima komisi 10%*].
 man that PASS-sell to AV-receive commission 10%
 ‘The man was sold to receive a 10% commission.’ (e.g. sold into slavery)

⁵*Ter-* has a separate use marking a type of involitive passive, but we leave this interpretation aside here. Note that Indonesian is generally a causativizing language; and inchoatives are more often unmarked.

- c. #*Mobil itu di-jual tapi tidak ada orang yang men-jual=nya.*
 car that PASS-sell but NEG exist man REL AV-sell=3SG
 #‘The car (was) sold, but nobody sold it

Another difference between middles and canonical passives is verb class restrictions. Middle constructions are usually assumed to be restricted to verbs that entail a change-of-state (e.g. the Affectedness Constraint of Anderson 1979, Jaeggli 1986, Tenny 1992, Beavers 2008, *inter alia*) or to verbs with (potentially) agentive subjects (Ackema & Schoorlemmer 1994). Anticausatives on the other hand are typically limited to those caused change-of-state verbs that lack agentive entailments of their subjects, i.e. they take “effector” subjects neutral to agentivity (Guerssel et al. 1985, Haspelmath 1993, Levin & Rappaport Hovav 1995, Van Valin & Wilkins 1996, Reinhart 2000, 2002, Koontz-Garboden 2009). Inherent reflexive middles are usually found with specific subclasses of verbs that describe actions that are canonically or often performed on the self, such as bodily care and grooming verbs (Kemmer 1993, 53-70). Finally, while we are not aware of explicit claims of the limits of passive middles, consistent with Indonesian and the data discussed in Siewierska (1984, 162-185), Maldonado Soto (1992, 233-258), and Kemmer (1993, 147-149) these typically (though perhaps not exclusively) occur with change-of-state verbs. Canonical passives are typically unrestricted lexically. These distinctions justify that each class is grammatically and semantically distinct from the others, and from canonical passives. We now turn to Sinhala, starting with our earlier analysis of anticausatives and volitive mood.

3. The Semantic Nature of Anticausativization in Sinhala

Sinhala anticausatives pattern like those in Indonesian. First, the relevant roots are limited to effector subject verbs as in (15), which lack agentivity entailments for the subjects of their corresponding causative variants, e.g. allowing not just animate causers but also natural forces and instruments, something not true e.g. of *minimarannə* ‘murder’, as in (16).

- (15) *marannə/mærennə* ‘kill/die’, *waṭannə/waṭennə* ‘drop/fall’, *gilannə/gilennə* ‘drown’,
kaḍannə/kaḍennə, ‘break’, *arannə/ærennə*, *lissannə/lissennə* ‘slip’

- (16) *Gaṅgə pusaa-wə mæruwa/*minimæruwa.*
 river cat-ACC kill.VOL.PST/murder.VOL.PST
 ‘The river killed/*murdered the cat.’

They also do not entail an external causer, or allow *ibeemə* ‘by itself’ or purposives:

- (17) a. *Siri giluna, eet kawuruwat/kisivat eyaa-wə*
 Siri drown.INV.PST but nobody/nothing 3SG-ACC
gileuwe nææ.
 drown.VOL.CAUS.PST.EMPH NEG
 ‘Siri drowned, but nobody/nothing caused him to drown.’
 b. *Eewa okkomə ibeemə kəḍenəwa.*
 3PL all by REFL break.INV.NPST
 ‘They_i all just break by themselves_i.’ (Henadeerage 2002, 133, (27)-(28))

- c. * $[\text{PRO}_i \text{ kaarekə harigassannə }] \text{ dəŋ plootərekə}_i \text{ issenəwa.}$
 car.DEF repair.VOL.INF now carburetor raise.INV.NPST
 *‘The carburetor_i rises now [PRO_i to repair the car].’ (Gair 1990, 35–36)

Thus Sinhala anticausatives share the same essential properties as those in Indonesian.

Koontz-Garboden (2009), examining Spanish anticausatives formed by “reflexive” *se*, argues for a unified analysis of anticausatives and reflexives that explains these facts, whereby both are derived by coidentifying the subject and object of a base transitive verb:

$$(18) \llbracket se \rrbracket = \lambda \mathcal{R} \lambda x [\mathcal{R}(x, x)]$$

Crucially, (18) has different outputs for different verb classes. Verbs like Spanish *asesinar* ‘assassinate’ take agent subjects while verbs like *romper* ‘break’ take an effector subject:

- (19) a. $\llbracket asesinar \rrbracket = \lambda y \lambda x \lambda e \exists v [agent'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{dead}')]]$
 b. $\llbracket romper \rrbracket = \lambda y \lambda x \lambda e \exists v [effector'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]]$

With *se* (19a) forms a canonical “agent act on self” reflexive and (19b) an anticausative:

- (20) a. *El senador se asesinó.*
 the senator REFL assassinated.3SG
 ‘The senator assassinated himself.’ $\exists e \exists v [agent'(s, v) \wedge cause'(v, e) \wedge result'(s, e, \mathbf{dead}')]]$
 b. *El vaso se rompió.*
 the cup REFL broke
 ‘The cup broke.’ $\exists e \exists v [effector'(c, v) \wedge cause'(v, e) \wedge result'(c, e, \mathbf{broken}')]]$

This analysis explains the lack of external causer entailments (since the patient is the causer), the non-agentive causer restriction (since the relevant reading only arises with effector-subject verbs), and why anticausatives take *by itself* type modifiers, which generally only occur with verbs with explicit causer subjects (as per Chierchia 2004, Koontz-Garboden 2009) but not statives or unergatives, since on a reflexive analysis of anticausatives the subject is a causer.⁶ Finally, since effectors in context could be interpreted as agents, this analysis predicts that anticausatives could license a purposive modifier on an “agent act on self” reading, something possible in Spanish (Koontz-Garboden 2009, 100, (52a)):

- (21) *aquel día ... cuando Phil_i se ahogó [para PRO_i salvar-le la vida a Jim]*
 that day when Phil REFL drowned for save-3SG the life DAT Jim
 ‘And on that day ... when Phil drowned himself to save Jim’s life...’

Thus the reflexivization analysis of anticausatives accounts for all of the relevant properties.

But as Beavers & Zubair (2013) point out, this analysis cannot be extended to Sinhala directly. First, unlike Spanish, agent-subject verbs comparable to Spanish *asesinarse* in (20a) have no detransitivized forms, even on an “agent act on self” reading. Second, Sinhala purposives are categorically ruled out with anticausatives, even when volitionality is not at issue, unlike Spanish. This is illustrated by the fact that even on uses of the involitive that can have a volitional subject — such as ironic denial uses — purposives are unacceptable (data based on Beavers & Zubair 2013, 23, (41)):

⁶The degree to which *by itself* modifiers do occur with non-causative verbs a sufficiently rich context is required to establish that the subject is also a causer; see Beavers & Koontz-Garboden (2013).

(22) ((*Mary's mother dies in a car wreck; A asks if it was an accident; B responds.*))

**Nææ, machang.* [PRO_i *minihageŋ gæləwennə*], *eyaa_i mæruna.*
 no dude husband.INST escape.VOL.INF 3SG die.INV.PST
 ‘No, dude. She died to escape her husband.’

Third, as noted in §1, anticausatives cannot occur in the volitive mood, even on an “agent act on self” reading. Nothing about a reflexive analysis explains these facts. Intuitively, the problem is that the forms that do not permit anticausatives — volitive stems, ‘murder’ verbs, and clauses with purposive modifiers — all require their subjects to be agents. Perhaps there is an additional constraint on Sinhala anticausativization that requires the subject to *not* be an agent. However, nothing precludes agentivity semantically, e.g. if it is clearly established that someone agentively acted upon themselves, then a clause headed by an anticausative verb is still necessarily true (Beavers & Zubair 2013, 27, (52)):

(23) #*Joon eyaa-wə-mə gilūwa, hæbai eyaa gilūne nææ.*
 John 3SG-ACC-REFL drown.VOL.PST, but 3SG drown.INV.PST.EMPH NEG
 ‘John drowned himself, but he didn’t drown.’

Thus anticausatives are not *semantically* non-agentive. They just reject *grammatical, morphological, or lexical* contexts explicitly encoding agentivity.

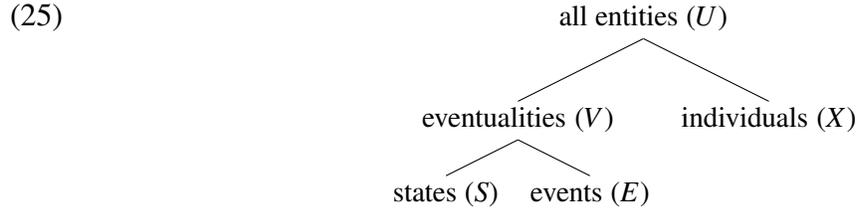
A final problem with a reflexivization analysis is accusative subject anticausatives as in (24a), which occur with the same verbs in (15) but *require* external causation as in (24b), also resisting *ibeemə* ‘by itself’ modification as in (24a) and purposives as in (24c):

- (24) a. *Meeri-wə (#ibeemə) gilūna.*
 Mary-ACC by REFL drown.INV.PST
 ‘Mary drowned.’
- b. #*Eyaa-wə lissuna, eet kawuruwat eyaa-wə lisseuwe*
 3SG-ACC slip.INV.PST but nobody 3SG-ACC push.VOL.CAUS.PST.EMPH
nææ.
 NEG
 ‘She fell, but nobody pushed her.’
- c. *[PRO_{i/j} *Rakshana salli gannə*], *Meeri-wə_i gilūna.*
 insurance money take.VOL.INF Mary-ACC drown.INV.PST
 *‘Mary_i drowned [PRO_{i/j} to collect the insurance money].’

This is clearly not reflexive, being more like a passive. What explains these properties?

The insight of Beavers & Zubair (2013) is that in canonical Sinhala anticausatives — nominative subject anticausatives — the patient is indeed interpreted reflexively as the causer, but it is a property or disposition of the patient that caused the change rather than an event it participated in. For example, in *The vase broke* — assuming no external causers or anthropomorphism — the reading is that something about the vase (e.g. a weakness in its structural integrity) lead to its breaking (see also Levin & Rappaport Hovav’s 1995, 91-92 internal causation, and Prior et al. 1982 and Copley & Wolff 2014 on dispositions as causers). This differs from agentive causation, where some action by the causer lead to the

change (assuming volitional non-action is eventive, consistent with descriptions of such events licensing progressive aspect as in *John/*the statue is standing still* as per Dowty 1979, perhaps due to having stages à la Landman 1992). Thus non-agentive causation involves a causing state and agentive causation a causing event. Beavers & Zubair formalize this via the following sortal typology (building on Chierchia 2004, 37):



Agentive, non-agentive, and effector causers reflect the causing event sort as follows:⁷

- (26)
- a. Agentive causer - *causer'* participant of causing *event* (in *E*).
 - b. Non-agentive causer - *causer'* participant of causing *state* (in *S*).
 - c. Effector - *causer'* participant of causing *eventuality* (in *V*) or *individual* (in *X*).

A key property of this analysis is that event vs. state causation is not just a truth conditional contrast but also a formal one, i.e. encoded in the *sort* of the causing eventuality.

This opens up the possibility that agentivity in some languages is grammaticalized, which Beavers & Zubair (2013) suggest is the case in Sinhala. In particular, they propose that causatives that require agent subjects take subjects representing causing events in *E*, while causatives that take effector subjects take a maximally general individual in *U*:

- (27)
- a. $\llbracket \text{minimara-} \rrbracket = \lambda y \lambda v \in E \lambda e [\text{cause}'(v, e) \wedge \text{result}'(y, e, \mathbf{dead}')]]$
 - b. $\llbracket \text{kada-} \rrbracket = \lambda y \lambda x \in U \lambda e [\text{cause}'(x, e) \wedge \text{result}'(y, e, \mathbf{broken}')]]$

Subject DPs denote Generalized Quantifiers (with event variables), supplying their VP argument with a causing eventuality in *V* with the DP's informal referent as the *causer'*:

- (28) $\llbracket \text{John} \rrbracket = \lambda P \lambda e \exists v \in V [\text{causer}'(\mathbf{j}, v) \wedge P(v, e)]$
 “John is the causer of eventuality *v* that caused event *e* described by *P*.”

Combining this interpretation of *John* with a *minimara-* ‘murder’ VP resolves the eventuality introduced by *John* to an event in *E*, thus requiring agentivity, as in (29a). Combining it with a *kada-* VP resolves the *cause'* introduced by the verb to an eventuality in *V* as in (29b), which could be interpreted in context as reflecting agentive ($v \in E$) or non-agentive ($v \in S$) causation. (The other effects of mood, and tense, are ignored here.)

- (29)
- a. $\llbracket \text{John Siri-wə miniməruwa} \rrbracket$ (‘John murdered Siri’)
 $= \lambda e \exists v \in E [\text{causer}'(\mathbf{j}, v) \wedge \text{cause}'(v, e) \wedge \text{result}'(\mathbf{s}, e, \mathbf{dead}')]]$
 - b. $\llbracket \text{John piḡgaanəyə kaḍuwa} \rrbracket$ (‘John broke the plate.’)
 $= \lambda e \exists v \in V [\text{causer}'(\mathbf{j}, v) \wedge \text{cause}'(v, e) \wedge \text{result}'(\mathbf{p}, e, \mathbf{broken}')]]$

⁷Since agentivity is analyzed via causing eventuality sort, the role *causer'* is hence used for all causers.

On the basis of this, the agent-restriction of volitive stems can be stated as follows: they require the subject of the predicate they occur with to be an event, as in (30), which has no effect on ‘murder’-type verbs but will have an effect on ‘break’-type verbs.

- (30) $\llbracket +\theta_{vol} \rrbracket = \lambda P \lambda x_1 \dots \lambda x_n \lambda v \in E \lambda e [P(x_1, \dots x_n, v, e)]$
 a. $\llbracket minimara + \theta_{vol} \rrbracket = \lambda y \lambda v \in E \lambda e [cause'(v, e) \wedge result'(y, e, \mathbf{dead}')]]$
 b. $\llbracket kada + \theta_{vol} \rrbracket = \lambda y \lambda v \in E \lambda e [cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]]$

Purposives can be given a similar analysis, applying to VPs and requiring an event subject:

- (31) $\llbracket \text{PRO } rakshana \text{ salli } gann\emptyset \rrbracket$ (‘PRO to collect the insurance money’)
 $= \lambda P \lambda v \in U_E \lambda e \exists e' [P(v, e) \wedge collect'(\text{PRO}, \mathbf{r}, e') \wedge in_order_that'(e, e')]$

Thus agentivity is partly a formal, grammaticalized property in Sinhala.

This offers an explanation for the properties of Sinhala anticausatives. Beavers & Zubair (2013, 31, (62)) suggest that Sinhala anticausativization is more general than reflexivization, representing an operation which strips a causer from the verb’s argument structure but preserves it as part of its truth conditional content, analyzed as saturation by an open variable in X , underlined for expository purposives (see also Kaufmann 2007, Piñón 2012):

- (32) **Causer Suppression:** $\llbracket +\theta_{CS} \rrbracket = \lambda P \lambda y \lambda e [P(y, \underline{x}, e) \wedge \underline{x} \in X]$
 Precondition: $\forall x' \forall y' \forall e' [P(y', x', e') \rightarrow cause'(x', e')]$

There are two ways of interpreting the open variable vis-a-vis the expressed argument:⁸

- (33) $\llbracket kada + \theta_{CS} \rrbracket = \lambda y \lambda e [cause'(\underline{x}, e) \wedge result'(y, e, \mathbf{broken}')] \wedge \underline{x} \in X]$
 a. Causer is **co-referential** with the patient:
 $\lambda y \lambda e [cause'(y, e) \wedge result'(y, e, \mathbf{broken}')] \wedge y \in X]$
 b. Causer is **not co-referential** with the patient (i.e. \exists -bound):
 $\lambda y \lambda e \exists x [cause'(x, e) \wedge result'(y, e, \mathbf{broken}')] \wedge x \in X]$

The two interpretations correspond to nominative and accusative subject anticausatives respectively.⁹ Crucially, the resulting verb forms take patient subjects, which are typed as individuals in X . This means Sinhala anticausatives are incompatible with any constructions such as volitive mood or purposives that require the subject to be in E , as well as deriving that ‘murder’-type verbs will not permit anticausativization since their subjects are also in E . Conversely, the involitive *does* allow individual causers (since it imposes no constraints on its subjects). This crucially predicts that anticausatives will only allow

⁸The causer is typed as an individual in X , which Beavers & Zubair (2013, 37, (75)) assume is compatible with an analysis of causation as a relation between events by the meaning postulate in (i) that equates it with a causing event in V , thus ensuring neutrality to agentivity.

(i) $\forall x \in X \forall e \in V [[cause'(x, e) \wedge \dots] \leftrightarrow \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge \dots]]$

An alternative would be that the subjects of effector subject verbs are causing eventualities in V . However, this would preclude the reflexive interpretation in (33a).

⁹Following Beavers & Zubair (2010, 2014) we assume accusative has a use as a semantic case indicating a patient acted on by an external causer (cp. the analysis of accusative of Wunderlich 1997), whereas nominative is checked structurally, e.g. in Spec,TP (Chou & Hettiarachchi to appear).

involitive stems. In sum, volitive mood is grammatically and semantically agentive, while anticausatives are semantically unspecified for agentivity (though still causative) but grammatically resistant to agentivity, predicting that they can occur in pragmatic contexts in which agentivity does or does not obtain but not grammatical contexts. We next show how this analysis can in principle be extended to other middles, focusing on Indonesian before returning to the more complex case of Sinhala.

4. Analyzing Other Middle Types

The key ingredient of Causer Suppression regarding argument structure is that the underlying verbal predicate is relational but the output is grammatically intransitive, with the suppressed argument interpreted in some other way. If anticausatives are a type of middle, then the question arises of whether this analysis is applicable to other middles as well. Beavers & Udayana (2016) propose exactly this for Indonesian middles. On the simplest extension, *ber/ter-* just reflect overt argument suppression as with Sinhala + \emptyset_{CS} , with *ter-* restricted to effector subject verbs and *ber-* the elsewhere case:¹⁰

$$(34) \quad \llbracket \textit{ter/ber-} \rrbracket = \lambda P \lambda y \lambda e [P(y, \underline{x}, e)]$$

With both inherent reflexives as in (1a)/(12) and anticausatives as in (1c)/(13) the reading is reflexive, with the difference being that anticausatives arise with effector subject verbs and inherent reflexives with certain subclasses of agent subject verbs (those that reflect bodily grooming and other event types whose canonical association is “agent act on self”):

- (35) a. $\llbracket \textit{dandan} \rrbracket = \lambda y \lambda x \lambda e \exists v \in E [causer'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{dressed}')]$
 b. $\llbracket \textit{ber-dandan} \rrbracket = \lambda y \lambda e \exists v \in E [causer'(y, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{dressed}')]$
 (36) a. $\llbracket \textit{pecah} \rrbracket = \lambda y \lambda x \lambda e \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$
 b. $\llbracket \textit{ter-pecah} \rrbracket = \lambda y \lambda e \exists v \in V [causer'(y, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{broken}')]$

Conversely, middle constructions and passive middle interpretations as in (11) arise from binding off the suppressed argument, differing in that passive middles have existential quantification over the suppressed argument and an episodic reading, while middle constructions reflect either a generic binding of the suppressed argument (à la Condoravdi 1989) or existential binding with the entire predicate embedded under a covert generic modal G (roughly in the spirit of Lekakou 2002, 2006), the latter illustrated here for (1b,d):

- (37) a. $\llbracket \textit{jual} \rrbracket = \lambda y \lambda x \lambda e \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{sold}')]$
 b. $\llbracket \textit{ber-jual} \rrbracket = \lambda y \lambda e \exists x \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{sold}')]$
 i. Middle construction: $G(\exists e \exists x \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge result'(\mathbf{car}', e, \mathbf{sold}')])$
 ii. Passive middle: $\exists e \exists x \exists v \in V [causer'(x, v) \wedge cause'(v, e) \wedge result'(\mathbf{car}', e, \mathbf{sold}')]$

¹⁰Given that in Indonesian there appears to be no grammaticalized agentivity, we assume that subjects are individuals related thematically to appropriate causing events (and we ignore conditions on the suppressed argument being a causer, since as Beavers & Udayana (2016) show suppression can apply other arguments as well, though these data are not relevant for present purposes).

Thus all types of middles in (1) are amenable to the same core analysis, with the different subtypes arising from a combination of how the suppressed argument is interpreted, the root class suppression is applied to, and the modal interpretation of the predicate. The question is whether Sinhala middles are amenable to this analysis. As noted above, Sinhala's middles are far more heterogeneous, arguing against a unified analysis as per Indonesian. However, we suggest that the extension to Indonesian middles applies equally well to Sinhala, but there is a significant interaction with (in)volitive mood that predicts where the heterogeneity occurs, suggesting a principled core to middles despite the heterogeneity.

5. Sinhala Inherent Reflexives - Principled Limits on Causer Suppression

We first consider reflexive middles, which include anticausatives and inherent reflexives. As discussed above, of course, anticausatives are derived from the proposed Causer Suppression operation of Sinhala. But what about inherent reflexives? Given that bodily care verbs are generally agentive, the expectation is that Causer Suppression will not apply to them, if agentivity is grammaticalized as a type-theoretic constraint on their subjects as it is with *minimarannə* 'murder'. Surprisingly, however, there is in fact an intransitive involitive form with such verbs which has an agentive, reflexive reading, not entailing external causation, as in (38) (acceptable in a context where the subject is bathing a flailing toddler with water splashing around, and ends up washing himself).

- (38) *Nimal sedhuna/nəwuna, (eet kawuruwat/kisivat eyaa-wə*
 Nimal wash.INV.PST/bathe.INV.PST but nobody/nothing 3.SG-ACC
sedheuwe/nəweuwe nəə).
 washed.VOL.CAUS.PST.EMPH/bathed.VOL.CAUS.PST.EMPH NEG
 'Nimal accidentally washed/bathed, but nobody/nothing washed/bathed him.'

This suggests that Causer Suppression is possible with at least some agent subject verbs. These forms also allow *ibeemə* 'by itself', as expected if they are reflexive causatives (however, purposive modification is out since these are semantically non-volitional; see below):

- (39) *Nimal ibeemə sedhuna/nəwuna.*
 Nimal by REFL wash.INV.PST/bathe.INV.PST
 'Nimal accidentally bathed by himself.'

Still further evidence that (38) is derived via Causer Suppression comes from the fact that in addition to the nominative subjects as in (38) these forms also allow accusative subjects, crucially on the passive-type reading wherein there is necessarily an external causer, thus also rejecting *ibeemə*:

- (40) *Nimal-wə (#ibeemə) sedhuna/nəwuna, (#eet kawuruwat eyaa-wə*
 Nimal-ACC by REFL wash.INV.PST/bathe.INV.PST but nobody 3.SG-ACC
sedheuwe/nəweuwe nəə).
 washed.VOL.CAUS.PST.EMPH/bathed.VOL.CAUS.PST.EMPH NEG
 'Nimal got washed/bathed (#by himself), #but nobody washed/bathed him.'

The existence of these forms suggests that Causer Suppression is possible. How could this be, given that 'murder'-type verbs do not allow this?

In fact it is not surprising that at least some agent-subject verbs allow Causer Suppression: nothing prevents an agent-subject verb from taking a subject in *U* rather than in *E*, with agentivity ensured by some other means, e.g. as a lexical entailment deriving from the specific result state à la Beavers & Koontz-Garboden (2012) (e.g. part of the content of **bathed'** in (41)), and thereby being amenable to Causer Suppression:

- (41) a. $\llbracket naa- \rrbracket = \lambda y \lambda v \in U \lambda e [cause'(v, e) \wedge result'(y, e, \mathbf{bathed}')]]$
 b. $\llbracket naa+\emptyset_{CS} \rrbracket = \lambda y \lambda e [cause'(\underline{x}, e) \wedge result'(y, e, \mathbf{bathed}')]]$

The output in (41b) derives a reflexive reading for (38) and passive reading of (40):

- (42) a. $\exists e [cause'(\mathbf{nimal}', e) \wedge result'(\mathbf{nimal}', e, \mathbf{bathed}')]]$
 b. $\exists x \exists e [cause'(x, e) \wedge result'(\mathbf{nimal}', e, \mathbf{bathed}')]]$

That bodily grooming verbs behave like a distinct class among agentive verbs is also not surprising, as this is the case in other languages as well (e.g. in English they are reflexive with no reflexive pronoun, and in languages in which the base form is intransitive rather than transitive the transitive is derived via causativization but on an “antireflexivization” reading; Krejci 2012). Furthermore, the existence of these forms justifies that the Causer Suppression analysis of anticausatives as reflexives is plausible, since these data independently demonstrate that reflexivization is a possible interpretation for this operation.

However, there is a crucial limitation with this understanding of Sinhala inherent reflexives, namely that these middles are involitive. This is as expected given the discussion above (since Causer Suppression produces forms that can only be involitive). But it does mean that the reading is therefore necessarily non-volitional (save for ironic denial readings), something borne out by the fact that they do not permit modifiers indicating volition:

- (43) *Nimal (*hitəla) sedhuna/nəwuna.*
 Nimal deliberately wash.INV.PST/bathe.INV.PST
 ‘Nimal accidentally washed/bathed (*deliberately).’

The question arises of how one would express the presumably more canonical inherent reflexive meaning of volitional self-action. There appear to be two alternative means.

First, as discussed by Chandralal (2010, 136-139), and consistent with our informants, inherent reflexives are most canonically expressed via a volitivity-neutral light verb *gannə* ‘take’ combined with a participial form of the verbal root (see also Gair 1970, 123).

- (44) *Mamə sedhaa/naa gatta.*
 1SG washed.PRT/bathe.PRT take.PST
 ‘I washed/bathed.’

This form (unlike the Causer Suppressed form) has all of the canonical properties of inherent reflexives, e.g. a volitional reading is possible, as are purposives and *ibeemə* ‘by itself’, and no external causation is entailed:

- (45) a. *Mamə hitəla sedhaa/naa gatta.*
 1SG deliberately washed.PRT/bathe.PRT take.PST
 ‘I deliberately washed/bathed.’

- b. *Mamə_i* [*PRO_i saadaya-ʔə yannə*] *sedhaa/naa* *gatta*.
 1SG party-DAT go.VOL.INF washed.PRT/bathe.PRT take.PST
 ‘I washed/bathed to go to the party.’
- c. *Mamə ibeemə* *sedhaa/naa* *gatta*.
 1SG by REFL washed.PRT/bathe.PRT take.PST
 ‘I washed/bathed by myself.’
- d. *Mamə sedhaa/naa* *gatta*, *eet kawuruwat/kisivat mamə-wə*
 1SG washed.PRT/bathe.PRT take.PST, but nobody/nothing 1.SG-ACC
sedheuwe/nəweuwe *nəə*.
 washed.VOL.CAUS.PST.EMPH/bathed.VOL.CAUS.PST.EMPH NEG
 ‘I washed/bathed, but nobody/nothing washed/bathed me.’

The existence of a separate form for expressing this meaning has an obvious functional motivation: the light verb is not subject to the constraints on Causer Suppression that necessarily generate involitives, and thus permits volitional readings, filling in this gap in the paradigm. Thus while there is disunity in the expression of inherent reflexive middles, it is a principled disunity given the Sinhala-specific constraints limiting the use of the otherwise cross-linguistically “canonical” way of deriving middles.

There is also a second expression for a volitional inherent reflexive, namely a bare *volitive* form of the verb that also has a reflexive reading and canonical properties:

- (46) a. *Nimal (hitəla)* *sedhuwa/nəwuwa*.
 Nimal deliberately washed.VOL.PST/bathe.VOL.PST
 ‘Nimal deliberately washed/bathed.’
- b. *Nimal_i* [*PRO_i saadaya-ʔə yannə*] *sedhuwa/nəwuwa*.
 Nimal party-DAT go.VOL.INF washed.VOL.PST/bathe.VOL.PST
 ‘Nimal washed/bathed to go to the party.’
- c. *Nimal ibeemə* *sedhuwa/nəwuwa*.
 Nimal by REFL washed.VOL.PST/bathe.VOL.PST
 ‘Nimal washed/bathed by himself.’

This form is more mysterious, since it looks like the output of Causer Suppression (i.e. a nominative subject intransitive variant of an otherwise transitive verb), something unexpected if Causer Suppression is incompatible with volitive mood due to a clash in the subject type. However, there is an alternative analysis of (46), namely that it involves object *pro*-drop on a reflexive interpretation (e.g. a reflexive *pro_{refl}*). There are several pieces of evidence that this is the correct analysis of (46). First, the reflexive reading is not strictly necessary; a disjoint reference reading is also possible (i.e. Sinhala permits object *pro*-drop more generally), something not generally true of the *gannə* light verb construction:

- (47) ((*Lots of stuff is happening to Aruni. Bill fed her, John talked to her, and now...*))
*Nimal nəwuwa/*naa* *gatta*.
 Nimal bathe.VOL.PST/bath.PRT take.PST
 ‘Nimal bathed her.’

Indeed, as Chandralal (2010, 137-138) explicitly notes, light verb vs. bare forms alternate with a reflexive vs. disjoint *pro*-drop reading with roots that are not inherent reflexives:

- (48) *Ranjit hapaa gatta/hæpuwa.*
 Ranjit bit.PRT take.PST/bit.VOL.PST
 ‘Ranjit bit himself/bit someone.’ (gatta=reflexive, bare verb=disjoint)

This suggests that while the light verb (in at least some cases; see §6) has an inherently reflexive interpretation, the seemingly intransitive volitive form can in principle be disjoint or reflexive. However, the reflexive option only arises with inherent reflexive verb classes; the seemingly intransitive volitive in (48) with a non-inherent reflexive (“obviative”) verb does not admit this interpretation. This might argue against the existence of *pro_{refl}* in (46), since if it generally exists it should be possible in (48) as well with *hæpuwa*. However, there is further evidence that there is a *pro_{refl}* in (46), namely that in these cases it is also possible for the subject to be marked by the postpositional subject-case marker *atiŋ*:

- (49) *Nimal atiŋ sedhuna/næwuna.*
 Nimal POST wash.INV.PST/bathe.INV.PST
 ‘Nimal washed/bathed.’

Crucially, as discussed by Beavers & Zubair (2010, 87-89), *atiŋ* only ever occurs marking subjects of transitive verbs that take a separate direct object DP, thus motivating that there is a null *pro_{refl}* in (49) and justifying that this analysis could extend easily to (46) as well.¹¹

But if *pro_{refl}* exists in Sinhala, why is it only attested with inherent reflexive verbs, and why is it furthermore the default reading for them? We suggest that the available readings are essentially root-conditioned (building on Kemmer 1993, Alexiadou & Doron 2012). The simplest analysis would be to say that while all verbs can select non-reflexive *pro* in object *pro*-drop, it is a special fact about inherent reflexives that they may also select for *pro_{refl}*. However, an alternative analysis may derive this from more basic principles of markedness. In particular, while both obviative and inherently reflexive verbs with overt objects allow reflexive or non-reflexive readings depending on the choice of object, they describe events for which the default expectation is self-action in the case of inherently reflexive verbs and non-self-action in the case of obviative verbs. We suggest that this is the reason the unmarked interpretation of object *pro*-drop for an obviative verb is non-reflexive and the unmarked reading for an inherent reflexive is reflexive. If so, that a reflexive reading is ruled out for obviative verbs can then be explained by an appeal to markedness — this would be a marked reading, and there are overt marked expressions for this reading in the language, namely the light verb construction, which we suggest therefore blocks *pro_{refl}* from occurring with these verbs. Conversely, for inherent reflexives the marked reading is the obviative one. But in this case there is no marked obviative expression equivalent to *pro*-drop, and thus obviative *pro*-drop is allowed.¹² Thus default expectations about interpretation for different verb classes plus form-to-meaning markedness principles can derive

¹¹Our informants also accepted a *pro*-drop reading of (38), though it was dispreferred. Here we suggest this is a variant of (49) with *atiŋ* dropped (something that showed up occasionally in naturally occurring data with otherwise transitive verbs). The crucial point is that *atiŋ* only otherwise occurs with transitive verbs.

¹²There are overt pronouns and reflexives in Sinhala, though these are not entirely freely interchangeable with *pro*-drop in that they convey a different information structural status of their referents.

the distribution of *pro_{refl}*, meaning the data in (46) can be independently explained and the proposal that Causer Suppression indeed produces only involitives can be maintained.

In sum, the *gannə* light verb seems to be *the* canonical expression of inherent reflexives allowing volitional readings, with *pro_{refl}* serving as a secondary strategy, and Causer Suppression arising only in cases where the subject acts non-volitionally. The simplest analysis of *gannə* is that it takes a transitive verb permitting eventuality subjects and outputs an intransitive form with the same subject, but binding off the patient and introducing conditions that ensure that whatever referent is introduced by the Generalized Quantifier subject DP as the *causer'* of the causing event *v* is also the patient, thereby deriving a reflexive reading:

$$(50) \quad \llbracket gannə \rrbracket = \lambda P \lambda v \in V \lambda e \exists y [P(y, v, e) \wedge \forall z [causer'(z, v) \rightarrow z = y]]$$

Applied to the participial form of (41a), the resulting form would be (ignoring tense again):

$$(51) \quad \llbracket naa gatta \rrbracket = \lambda v \in V \lambda e \exists y [cause'(v, e) \wedge result'(y, e, \mathbf{bathed}') \wedge \forall z [causer'(z, v) \rightarrow z = y]]$$

That the subject could still in principle be an event in *E* licenses purposive modification. The denotation for the relevant form in (44) for a causing eventuality in *E* would be:

$$(52) \quad \llbracket Mamə naa gatta \rrbracket = \lambda e \exists v \in E \exists y [causer'(\mathbf{I}, v) \wedge cause'(v, e) \wedge result'(y, e, \mathbf{bathed}') \wedge \forall z [causer'(z, v) \rightarrow z = y]]$$

The key point is that while there is disunity among expressions of inherent reflexives, the disunity has a principled explanation: the degree to which Causer Suppression is the Sinhala instantiation of the cross-linguistically attested “normal” middle forming operation posited for Indonesian (and presumably extant in other languages), its use is limited by an interaction with Sinhala volitive mood to only allow non-volitional readings (modulo specialized uses such as ironic denial). The other possible expressions of the middle lack this constraint, and serve to fill in the lacuna, and indeed the *gannə* light verb in particular produces forms whose meanings are truth conditionally equivalent to the output of Causer Suppression were it to apply among volitive verbs, suggesting that there is a core unity to all middles even if the overt expression differs considerably. We now consider non-reflexive middles in Sinhala, looking first at middle constructions and then middle passives.

6. Existential Binding Middles

Starting with middle constructions, we note first that it was difficult to get consistent judgments from our informants since the middle construction reading is hard to get across accurately. That said, three variants arose that seem to serve this functionality. First, some speakers found accusative subject involitives to most naturally allow this reading:¹³

$$(53) \quad \begin{array}{ll} Vesi-wə & pahasuven vikunenəwa. \\ prostitutes-ACC easily & sell.INV.NPST \\ \text{‘Prostitutes sell easily.’} & \end{array}$$

¹³Sinhala is a differential object marking language and as such accusative mainly only occurs on human DPs, hence the need for plausible human subjects even with verbs meaning ‘sell’.

These forms disallow *ibeemə* and purposives, but entail external causation:

- (54) a. #*Vesi-wə* *ibeemə pahasuven vikunenəwa.*
 prostitutes-ACC by REFL easily sell.INV.NPST
 #‘Prostitutes sell easily by themselves.’
- b. **Vesi-wə_i* [PRO_{i/j} *tarangaya dinannə*] *pahasuven vikunenəwa.*
 prostitutes-ACC contest win.VOL.INF easily sell.INV.NPST
 *‘Prostitutes sell easily to win the contest.’
- c. #*Vesi-wə* *pahasuven vikunanuna, eet kawuruwat eewa-wə*
 prostitutes-ACC easily sell.INV.PST, but nobody 3.PL-ACC
 vikunaneuwe *nææ.*
 sell.VOL.CAUS.PST.EMPH NEG
 #‘Prostitutes sold easily, but nobody sold them.’

This is all as expected — if the appropriate analysis of accusative subject intransitive involitives involves existential binding of the underlying subject argument then such a form with a generic or ability modal interpretation will serve as a middle construction.

However, there are limits to the applicability of this operation in forming middle constructions since it would only occur with verb forms with general subjects, i.e. just those verbs that otherwise form anticausatives and inherent reflexives, since in general Sinhala Causer Suppression only applies to these verbs. Yet as discussed in §2, cross-linguistically middle constructions occur with a much wider range of (mostly) change-of-state verbs. Causer Suppression indeed does not generate middles with other agent-subject verbs such as words meaning ‘cut’ that would otherwise form acceptable middle constructions in English (evidenced by the acceptable translation):

- (55) **Vesi-wə* *pahasuven kæpenəwa.*
 prostitutes-ACC easily cut.INV.NPST
 ‘Prostitutes cut easily.’

This leaves open how (if at all) middle constructions could even be formed with such verbs.

For some speakers we consulted the light verb construction instead served as the canonical middle construction expression (and allowed middle constructions like *kaṛaa gatta* ‘cut took’ ‘got cut’, contra (55)), entailing external causation and rejecting purposives and *ibeemə*, consistent with other languages:

- (56) a. *Meeka kaar-eka pahasuven viku gannəwa*
 this car-INDF easily sell.PRT take.NPST
 ‘This car sells easily.’
- b. *[*Meeka kaar-eka*]_i [PRO_{i/j} *tarangaya dinannə*] *pahasuven viku*
 this car-INDF contest win.VOL.INF easily sell.PRT
 gannəwa
 take.NPST
 *‘This car sells easily to win the contest.’

- c. #*Meeka kaar-eka ibeemə viku gannəwa*
 this car-INDF by REFL sell.PRT take.NPST
 #‘This car sells by itself.’ (on intended reading)
- d. #*Meeka kaar-eka pahasuven viku gatta, eet kawuruwat eyaa-wə*
 this car-INDF easily sell.PRT take.PST but nobody 3.SG-ACC
vikunaneuwe nææ.
 sell.VOL.CAUS.PST.EMPH NEG
 #‘This car sold easily, but nobody sold it.’

For these speakers, the analysis of *gannə* given above — wherein it always generates a reflexive reading by binding off the patient, stipulating that the subject is an eventuality (and thus ensuring there is a *causer'* introduced by the subject DP), and equating the patient with the *causer'* — is not appropriate. Rather, there must be a separate use of *gannə* that binds off the causing eventuality and introduces a *causer'* distinct from the patient:

$$(57) \llbracket gannə \rrbracket = \lambda P \lambda y \lambda e \exists v \in V \exists x [causer'(x, v) \wedge P(y, v, e)]$$

Applied to the ‘sell’ root the interpretation would be like an accusative subject anticausative:

$$(58) \llbracket viku gatta \rrbracket = \lambda y \lambda e \exists v \in V \exists x [causer'(x, v) \wedge cause'(v, e) \wedge result'(y, e, sold')]$$

The middle construction itself is the result of a generic modality applied over a clause headed by such a predicate. In this case the paradigmatic contrast between $+0_{CS}$ and *gannə* is sharpest, essentially reflecting volitivity-sensitive and volitivity-neutral variants of the same operation, albeit achieved through slightly different means (saturation of an argument vs. existential binding of different arguments and conditions on co-reference/disjoint reference). That said, other speakers we consulted *only* got a reflexive reading with *gannə*; examples corresponding to (57) readings are not available at all, and so *gannə* and Causer Suppression are not entirely interchangeable for these speakers. Thus for some speakers middle constructions may be more limited in Sinhala than in other languages.

That said, a further encoding option for middle constructions is discussed by Gair (1970, 70-71, 76), who explicitly notes a class of what he refers to as “Subjectless Active Clauses” and their corresponding involitives (“Subjectless Inactive Clauses”) that are glossed as what seems clearly to be middle constructions given their semantics, occurring in both volitive and involitive mood (adapted from Gair 1970, 70, 76):¹⁴

- (59) a. *Mee wat-te wii wawənəwa.*
 this estate-DAT unhusked_rice grow.VOL.NPST
 ‘Unhusked rice is grown on this estate.’
- b. *Dawəsəkə-ṭə pol siiak witərə kædenəwa.*
 day-DAT coconut hundred about cut.INV.NPST
 ‘About a hundred coconuts a day are/get picked.’

As Gair discusses, in each case it is possible to insert an overt subject into such constructions with no other grammatical change:

¹⁴Our informants did not produce these possibilities and we leave it for future research to verify their acceptability for speakers who also use the middle constructions discussed above.

- (60) a. *Taatta mee wat-te wii wawənəwa.*
 father this estate-DAT unhusked_rice grow.VOL.NPST
 ‘Father grows unhusked rice on this estate.’ (adapted from Gair 1970, 70)
- b. *Nimal atij dawəsəkə-ṭə pol siiak witərə kədenəwa.*
 Nimal POST day-DAT coconut hundred about cut.INV.NPST
 ‘Nimal picks about a hundred coconuts a day.’

This might suggest that the constructions in (59) therefore involve no argument structural shift at all, but instead reflect a type of *pro*-drop grammatically (which is in fact Gair’s analysis). If data such as this involves *pro*-drop, though, then the relevant null pronoun must be of an appropriate type to generate the middle construction type reading, e.g. *pro_{one}*. Crucially, this would predict that the volitive examples at least should actually allow purposive modifiers, unlike canonical middle constructions, despite sharing a related semantics, though we have so far been unable to verify this. In sum, it appears that there are a range of candidates for expressing the middle construction, in this case not all necessarily grammatical or semantically fully equivalent, with speaker variation on what is possible. Crucially, the options beyond Causer Suppression are also not subject to conditions ruling out volitive mood stems, thus again filling in that lacuna in the paradigm of “normal” middle formation.

We now briefly discuss passive middles, before turning to some broader commentary on these two types of middles together. The existence of passive middles in Sinhala has in fact already been discussed above in §3 — these would correspond to Causer Suppressed verbs with accusative subjects, which crucially show all of the properties of passive middles in Indonesian, e.g. they reject purposive modifiers (unlike regular passives in Indonesian) and *ibeemə* ‘by itself’ modifiers, but do entail external causation, and bear episodic readings (data repeated from (24)):

- (61) a. *Meeri-wə (#ibeemə) giluna.*
 Mary-ACC by REFL drown.INV.PST
 ‘Mary drowned.’
- b. *#Eyaa-wə lissuna, eet kawuruwat/kisivat eyaa-wə*
 3SG-ACC slip.INV.PST but nobody/nothing 3SG-ACC
lisseywe nææ.
 push.VOL.CAUS.PST.EMPH NEG
 ‘She fell, but nobody/nothing pushed her.’
- c. *[*PRO_{i/j} Rakshana salli gannə*], *Meeri-wə_i giluna.*
 insurance money take.VOL.INF Mary-ACC drown.INV.PST
 *‘Mary_i drowned [*PRO_{i/j}* to collect the insurance money].’

One significant aspect of Sinhala, though, is that these middles are again restricted to the verb classes that allow anticausative or inherent reflexive readings, i.e. those that are amenable to Causer Suppression at all, something that follows from the constraints on which verbs may undergo this operation to begin with. In Indonesian the verbs that allow the passive middle interpretation are those that allow the middle construction reading, typically caused change-of-state verbs regardless of whether agentivity is entailed or not

of their subjects, something that as far as we can tell is similar in other languages such as Spanish. At this point it is again a fair question to ask how other passive readings are derived for other verbs in general. In the case of Indonesian (as discussed above) there is a separate personal passive *di-* form that has significantly more general applicability, and thus in principle there are no particular constraints on which forms may show some type of passive, although the *di-* passives and middle passives are not identical in their grammatical properties (e.g. the former admit *oleh* ‘by’ PPs expressing the agent and the agent is accessible to purposive modifiers, as discussed above, but not in passive middles). In spoken Colloquial Sinhala there is however no canonical passive equivalent to this. Rather, as discussed by Chandralal (2010, 152-160), the functionality of a passive qua its role in a language like English or Indonesian in deemphasizing the agent but preserving it is instead picked up by a range of other constructions, including topic-comment structures, various sorts of *pro*-drop constructions (both subject and object *pro*-drop), and various uses of the involitive.¹⁵ In this way, the passive middle and middle construction bear much in common in terms of a considerable diversity in encoding: in both cases a wide range of grammatically and semantically disparate constructions in Sinhala convey what in some other languages may be one or two separate constructions. This accords, however, with work specifically focusing on middle constructions that have suggested that these particular middles are truly notional, i.e. just a (generic or ability) reading of some other construction (Condoravdi 1989, Lekakou 2002, Ackema & Schoorlemmer 2005, Fábregas & Putnam 2014). In this case the expectation is that the various constructions that serve as middle constructions should in fact behave differently, inheriting whatever properties the underlying construction has, and the same would presumably be true of the passive middle. That said, the argument suppressing operations that generate other middles ($+\emptyset_{CS}$ and *gannə*) are among those operations that middle constructions and passive middles can be based around, and in general the semantics of other middle construction and passive forms is consistent with the kinds of semantics generated by more explicit middle formation operations. Plus the distribution of different ways of forming these middles follows the lines expected on the analysis of Causer Suppression in Sinhala suggested above. Thus again all types of middles have at least a partially unified analysis.

7. Conclusion

We have suggested that all middles have a fundamental commonality: an inherently dyadic verb has its valence reduced but not its truth conditional content, with two ways of understanding the suppressed argument, either reflexively or with disjoint reference to the expressed argument. In principle this plus verb type constraints will derive the core classes of middles, and in many languages the realization of this operation is consistent across middles. In Sinhala, however, volitives but not involitives require agent subjects in a type-

¹⁵The involitive has in fact been argued to simply be a passive form in some prior literature (see e.g. Gunasinghe 1985, Gunasinghe & Kess 1989, Kahr 1989, Wijayawardhana et al. 1991), but the semantic effects of involitivity in terms of non-volitionality and the restrictions on which verbs show it in which argument structures strongly argue against this classification, although as noted it nonetheless may in some contexts serve a function similar to a canonical passive.

theoretic (qua grammatical) sense, and this interacts significantly with the Sinhala equivalent of the middle formation operation otherwise attested in languages like Indonesian to rule out certain classes of middles from being formed by it. Other constructions serve to realize the middles that are ruled out due to this clash. The various middles indeed split along predicted lines: effector subject verbs and inherent reflexives form middles in a consistent fashion, but for other verb classes other constructions fill in the gaps.

(62) Interpretation	Verb Type		Middle Type
	Effector Subject Verbs	Other	
Reflexive	NOM subj+V _{inv} + \emptyset_{CS}	N/A	Anticausatives
	NOM subj+V _{inv} + \emptyset_{CS}	V+gannə/pro _{refl} +V _{inv/vol}	Inherent reflexive
∃-binding	ACC subj+V _{inv} + \emptyset_{CS}	Various	Passive
	ACC subj+V _{inv} + \emptyset_{CS}	V+gannə/pro _{one} +V _{inv/vol}	Middle construction

In Indonesian no such distinction exists, and all verbs are treated identically via one Causer Suppression operation. Thus the core unity is the same across languages, but the way it manifests in different languages due to language internal factors can create the appearance of dissimilarity, albeit dissimilarity that is principled in nature.

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