

# Sinhala Involitive Verbs from a Cross-linguistic perspective: Distinguishing Involuntary Agents from Involuntary Causers

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## ABSTRACT

This paper distinguishes between two types of constructions with involitive verbs in Sinhala: involitive sentences with dative marked subjects dubbed ‘Dative Involitives’ and involitive sentences with postpositional subjects dubbed ‘PP involitives’. Dative involitives involve activity verbs while PP involitives involve causative verbs. The flavors variously dubbed ‘involuntary’, ‘accidental’, ‘out-of-control’, ‘could-not-help’, or ‘inevitable’ associated with these involitive constructions derive from the presence of a modal element in them. The paper defends a compositional analysis of the two types of involitives according to which the modal in each construction displays a different argument structure. Dative involitives exhibit a universal circumstantial modal in a monadic structure with VoiceP as argument. This results in a subject-centered modality with Dative in an applicative counting as a ‘quirky subject’ interpreted as an ‘involuntary agent/actor/doer’. By contrast PP-involitives are shown to mirror causative interpretations. They contain a universal circumstantial modal relating a causal sub-event to a result sub-event in a bi-eventive causative structure. Here PP as ‘quirky subject’ in an Applicative is interpreted as an ‘involuntary causer/effector’. The paper sheds light on the considerable cross-linguistic variation regarding the presence/absence of ‘involuntary agents/actors/doers’ and ‘involuntary causers/effectors’ across several unrelated languages including Polish and Spanish.

## 1 Introduction

Volitive (Vol) and Involitive (Inv) verbs (Vs) in Sinhala (an Indo-Aryan language spoken in Sri Lanka) differ in morphology. Compare Vol *natənəwa* in (1a) with Inv *nətəwenəwa* in (1b) and Vol *kiwwa* in (2a) with Inv *kiyəwunaa* in (2b) and so on. Inv sentences (Inv’s) with dative-marked ‘subjects’ (Dat-Inv’s) as in (1b-2b), involve activity Vs and Inv’s with postpositional (PP) ‘subjects’ (PP-Inv’s) as in (3b-4a-b) involve causative Vs.

		Activity verbs:			
(1)	a.	Joon	natənəwa.		Volitive V
		John.NOM	dance.VOL.PRESENT		
		‘John is dancing.’			
	b.	Joon-tə	nətəwenəwa.		Involitive V
		John-DAT	dance.INV.PRESENT		
		‘John is dancing involuntarily/ John cannot help dancing.’			
(2)	a.	Joon	sindu-wak	kiwwa.	Volitive V
		John.NOM	song-ACC	sing.VOL.PAST	
		‘John sang a song.’			
	b.	Joon-tə	sindu-wak	kiyəwunaa.	Involitive V
		John-DAT	song-ACC	sing.INV.PAST	
		‘John sang a song involuntarily =John could not help singing a song.’			

- Causative verbs:
- (3) a. Lisa dorə æriya. Volitive V  
 Lisa.NOM door open.VOL.PAST  
 'Lisa opened the door.'
- b. Lisa athin dorə æruna. Involitive V  
 Lisa P door open.INV.PAST  
 'Lisa opened the door accidentally.'
- (4) a. Joon athin eyaa- wə- mə giluna. Involitive V  
 John P 3SG- ACC- REFL drown.INV.PAST  
 'John drowned himself accidentally.'
- b. Joon athin Nimal-wə giluna. Involitive V  
 John P Nimal-ACC drown.INV.PAST  
 'John drowned Nimal accidentally.'

In traditional grammars and the generative literature on Sinhala (Inman 1994, among numerous others), Dat-Inv's as in (1b-2b) and PP-Inv's as in (3b-4a-b), are both noted for flavors variously dubbed 'involuntary', 'accidental', 'out-of-control', 'could-not-help', or 'inevitable'.

In this paper, we adopt the standard hypothesis (Inman 1994 and later work) that such flavors signal/derive from the presence of modality in Dat-Inv's and PP-Inv's. This is the modality of inevitability: different circumstances conspire to make things happen. The modal hypothesis is empirically supported by comparing Dat-Inv's (1b-2b) and PP-Inv's (3b-4a-b) with (5):

- (5) Joon-tə natan-nə we-nəwa.  
 John-DAT dance-INFINITIVE has.to-PRESENT  
 'John has to dance.'

Sentence (5) is a canonical modal construction with a universal circumstantial Modal as an independent lexical entry: *we-nəwa* 'has to'. Inv's in (1b), (2b), (3b), and (4a-b) also contain a phonologically null universal circumstantial Modal overtly signalled by an (agreeing/concord) involitive inflectional category on the lexical verb: *we/wu/u*. In Inv's (1b-2b) and (3b-4a-b), the (overt) Inv inflection and lexical verb blend morphologically via Incorporation/Head-movement. V raises to Inv, and V+Inv raise to T, resulting in *nətə-we-nəwa* as in (1b).

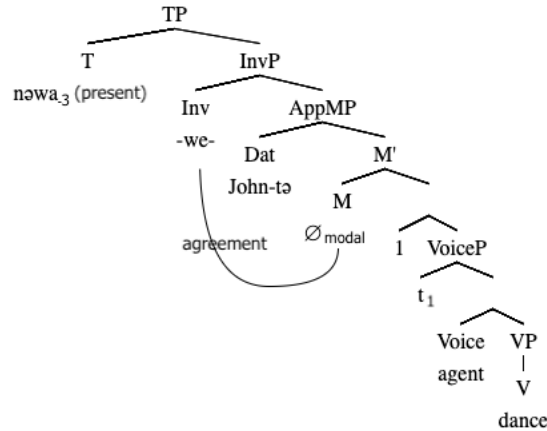
We defend a compositional analysis of Dat-Inv's (section 2), and PP-Inv's (section 3) according to which the modal in each construction displays a different argument structure. Dat-Inv's in (1b-2b) exhibit a universal circumstantial modal in a monadic structure with VoiceP as argument. This results in a subject-centered modality with Dat in an Applicative counting as a 'quirky subject' interpreted as an 'involuntary agent/actor/doer'. By contrast, PP-Inv's in (3b-4) mirror causative interpretations. They contain a universal Circumstantial Modal relating a causal sub-event to a result sub-event in a bi-eventive causative structure. Here PP as 'quirky subject' in an Applicative is interpreted as an 'involuntary causer/effector'. Different readings in Dat-Inv's vs. PP-Inv's with the same lexical Verb motivate our proposals: Inv *kæ-wu-na* as monadic 'eat' in Dat-Inv (6a), and as bi-eventive 'feed=cause to eat' in PP-Inv (6b):

- (6) a. Joon-tə mæss-ek kæ-wu-na.  
 John-DAT fly-IDF eat-INV-PAST  
 'John ate a fly involuntarily.'
- b. Joon athin malli-tə mæss-ek kæ-wu-na.  
 John P brother-DAT fly-IDF eat-INV-PAST  
 'Accidentally John fed his brother a fly.'

Inv inflection on V (*-we-*) is obligatory in both Dat-Inv's and PP-Inv's. We argue that inflectional Inv signals modal concord/agreement with the (null) modal in Dat-Inv's and the sub-lexical Modal within the causative structure in PP-Inv's, without an independent modal effect, while adding a sortal restriction (i.e., human).



c.



In the structures in (11a-b-c), Dat-Inv's are High Applicative constructions as in Pylkkänen (2008), with a dative 'quirky' subject not part of the argument structure of the verb, and a complement that is a Voice Phrase in the sense of Kratzer (1996). The 'quirky' dative = logical subject in Dat-Inv's is in the specifier of the High Applicative headed by a null universal circumstantial Modal in {agreement/concord} with the Involutive Inflection. The High Applicative is external to VP, and establishes a semantic relation between an individual encoded by the Dative, and an event encoded in the Voice Phrase. The Voice Phrase takes a complement VP headed by an activity predicate, which can be an ordinary transitive verb with an internal argument marked Accusative as in (2b), or an intransitive verb of the 'unergative' type as in (1b). Regarding the denotation of the circumstantial Modal in (12), Dat-Inv's are oriented toward the Dative subject in the Applicative, which is presented as unable to control the way the eventuality develops.

$$(12) \quad [[\emptyset_{\text{modal}}]]^{g,f} = \lambda p_{\langle e, \langle i, \langle s, t \rangle \rangle \rangle}. \lambda x_e. \lambda t_i. \lambda w. \forall w' \in f_{\text{circ}}(x): p(x)(t)(w') = 1$$

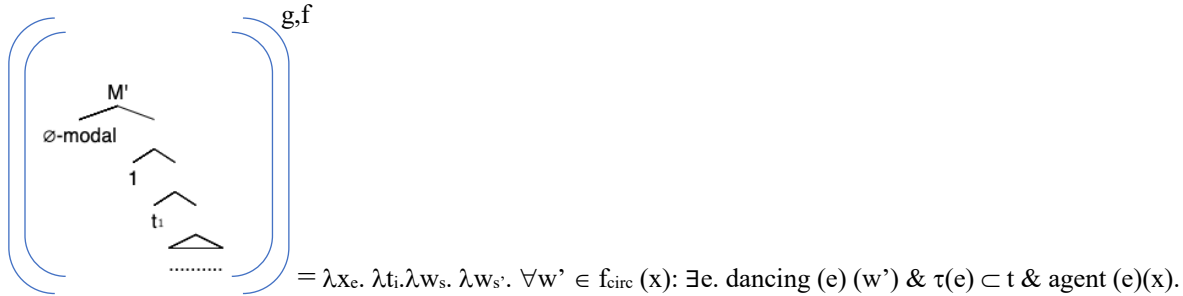
Given (12), the modal base of this circumstantial modal ( $f_{\text{circ}}$ ) is anchored on the entity argument  $x$  ('dative subject') (e.g., Hacquard, 2010; Kratzer, 2013 for 'anchoring' semantics for modals). The modal base identifies the propositions describing the circumstances/ inner state of the 'dative' quirky/logical subject that make up the modal base. Modal quantification thus takes place over all the worlds that match the actual circumstances of the entity argument (which will be the quirky subject). The claim is that in all of those worlds, the prejacent proposition holds at time  $t$ .

In what follows, we highlight some steps in the composition of the interpretation. We have abstracted away from details regarding the temporal dimension, and for the sake of simplicity will assume that at the level of the VP there are restrictions on both events and times, with a stand-in perfective aspect that locates the running time of the eventuality  $\tau(e)$  within the reference time ( $t$ ) (the reference time argument slot will later be saturated by the referential present tense, e.g. Kratzer 1998). Further work would be needed to pin down the temporal details of the interpretation.

$$(13) \quad \left( \left( \begin{array}{c} \diagup \text{VoiceP} \\ 1 \\ \diagdown \\ \diagup t_i \\ \diagdown \\ \text{Voice} \end{array} \right) \right)^{g,f} = \lambda x_e. \lambda t_i. \lambda w_s. \exists e. \text{dancing}(e)(w) \ \& \ \tau(e) \subset t \ \& \ \text{agent}(e)(x).$$

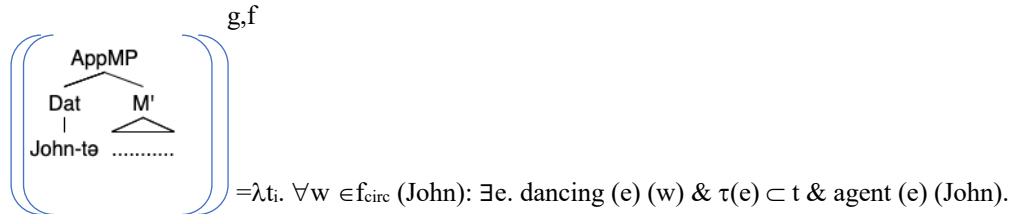
We assume that 'binder indices' may be projected in the structure, triggering predicate abstraction (see Heim and Kratzer 1998). The denotation of the structure in (13) will thus be a function that maps individuals to properties of times. Given an individual  $x$ , the output function will be a property of times that maps times  $t$  to propositions true in a world  $w$  iff there exists a dancing event in  $w$  with a running time included in  $t$  of which  $x$  is the agent.

(14)



As illustrated in (14), the result of combining the phonologically null modal with the embedded property will shift the evaluation of the property to the worlds quantified over. Once the entity argument and temporal argument are saturated, the result will be a proposition true in a world iff in all the worlds corresponding to the circumstances of the individual (external circumstances or inner state), there is a dancing event with a running time included in the relevant time with the relevant individual as agent. This is a type of circumstantial reading anchored on properties of the individual argument.

(15)



When the quirky subject is combined with the denotation of  $[[M^*]]$ , the dative argument identifies the individual on whose circumstances is anchored the domain of quantification. All that remains then is to identify the time for the event. This is done by the tense head. We assume a referential approach to tense and propose the denotation for present tense in (16):

(16)  $[[\text{present}_3]]^{g,f} = g(3) = t_3$ , defined only if  $g(3)$  overlaps the speech time.

According to this proposal, present tense morphology denotes a time interval identified by the contextually salient variable assignment  $g$  on the basis of the index found on tense (it is a temporal pronoun). The interpretation is defined only if the interval identified by  $g$  overlaps the speech time. Putting everything together, we obtain (17) as the interpretation of the entire structure:

(17) For all worlds  $w$ ,  
 $[[\text{TP}]]^{g,f}(w) = 1$  iff  $\forall w' \in f_{\text{circ}}(\text{John}): \exists e. \text{dancing}(e)(w') \ \& \ \tau(e) \subset t_3 \ \& \ \text{agent}(e)(\text{John})$ ,  
 defined only if  $t_3$  overlaps the speech time.

According to (17), (11a) will be true in a world if the property corresponding to VoiceP holds of the 'dative' subject in all the situations in the intersection of the propositions in the modal base. That will be the case if the circumstances of the 'dative' subject make it necessary that the property holds (and thus is inevitable, out of the 'dative' subject's control).

We thus account for the involuntary flavour of Dat-Inv's with a compositional analysis. Crucially, Dat-Inv's as in (1b-2b) carry a universal circumstantial modal element couched in a monadic structure with VoiceP as argument. This derives a subject-centered modality with Dat in an Applicative counting as a 'quirky subject' interpreted as an 'involuntary agent/actor/doer'.

## 2.2 Motivating two (new) properties of Dat Inv's

In this section, we present evidence to demonstrate the formal status of the subject and the modal in Dat-Inv's. Section 2.2.1 establishes the 'subjecthood' of the subjects of Dat-Inv's given their control properties while Section 2.2.2 shows that the modal in Dat-Inv's belongs in syntax and semantics and provides at-issue content.

### 2.2.1 A contrast in Control into Adjuncts

The literature on Sinhala mentions several 'subject-like' properties for the Datives in Dat-Inv's, which we will not rehearse except for one important for our purposes. Namely, Datives in Dat-Inv's are able to control into several types of adjuncts, such as notably the temporal type as in (18a). In this way, Datives in Dat-Inv's parallel regular nominative subjects with verbs with volitive inflection, (18b), and also dative subjects for the circumstantial modal *wenəwa* 'has to' introduced in (5): (18c).

- |      |    |  |           |             |                |        |
|------|----|--|-----------|-------------|----------------|--------|
| (18) | a. | Joon-tə  | [sindu-wə | æhenə-kotə] | nətə-wu-na.    |        |
|      |    | John-DAT   | song-ACC  | listen-ADV  | dance-INV-PAST |        |
|      |    | 'John danced involuntarily while listening to the song.' |           |             |                |        |
|      | b. | Joon   | [sindu-wə | æhenə-kotə] | nətuwa.        |        |
|      |    | John-NOM   | song-ACC  | listen-ADV  | dance-VOL-PAST |        |
|      |    | 'John danced while listening to the song.'               |           |             |                |        |
|      | c. | Joon-tə  | [sindu-wə | æhenə-kotə] | natan-nə       | wuna.  |
|      |    | John-DAT   | song-ACC  | listen-ADV  | dance-INF      | had.to |
|      |    | 'John had to dance while listening to the song.'         |           |             |                |        |

The parallel control properties of (18a) with (18b) serve as empirical motivation for the variable *x* as external argument in the Specifier of VoiceP in the structural frame of Dat-Inv's in (11a) and its semantic analysis as an entity argument in (12)-(17). However, it seems to have escaped notice that the Dative in Dat-Inv's cannot control into purpose clauses, (19a), this time in contrast with nominatives with volitive Vs, (19b), and with dative subjects for the lexical modal: (19c).

- |      |    |  |            |                              |                |
|------|----|--|------------|------------------------------|----------------|
| (19) | a. | *Joon-tə   | [amma-wə   | tharaha gassan-nə]           | nətə-wu-na.    |
|      |    | John-DAT   | mother-ACC | anger trigger-INF            | dance-INV-PAST |
|      |    | *John danced involuntarily to annoy his mother.' |            |                              |                |
|      | b. | Joon   | [amma-wə   | tharaha gassan-nə]           | nətuwa.        |
|      |    | John-NOM   | mother-ACC | anger trigger-INF            | dance.VOL.PAST |
|      |    | 'John danced to annoy his mother.'               |            |                              |                |
|      | c. | Joon-tə  | [[amma-wə  | tharaha-gassan-nə] natan-nə] | wu-na.         |
|      |    | John-DAT   | mother-ACC | annoy-INF dance-INF          | had-to         |
|      |    | 'John had to dance to annoy his mother.'         |            |                              |                |

It is often noted in the Sinhala literature that the Inv morphology is incompatible with intentional adverbs such as *hitəla* 'intentionally, on purpose' as in (20).

- |      |                               |               |                   |
|------|-------------------------------|---------------|-------------------|
| (20) | *Joon-tə                      | hitəla        | nətə-we-nəwa.     |
|      | John-DAT                      | intentionally | dance-INV-PRESENT |
|      | 'John is dancing on purpose.' |               |                   |

In view of the parallel between (18a) and (18b) and between (19a) and (20), we conclude that the deviance of the last two cases derives from the same source: the compositional effect of M in (1) and (14), which results in an 'out-of-control' flavor incompatible with an intentional purpose.

### 2.2.2 The formal status of M

For Alonso-Ovalle and Hsieh (2017), Tagalog Involuntary Actions such as (10) contain a circumstantial modal that contributes a not-at-issue meaning, given that so-called Actuality Entailments (Bhatt 2006) in perfective affirmative constructions are reversed/cancelled under negation. Sinhala differs from Tagalog, with the consequence that it can be maintained that the Modal in (11)-(12) {adds at-issue meaning/ belongs in syntax and semantics}. Dat-Inv's display 'Actuality entailments'. However, these need not reverse under negation: (21a-b). Sentence (21a) speaks of a dancing event that holds in the actual world, but denies its involuntary flavor. Intentionality, not the event, may be negated, and negation may display other scopes within the construction, which are not illustrated.

- (21) a. Mary-tə nətə-wu-ne næ. Eyaa nətuwa.  
 Mary-DAT dance-INV-PAST NEG she-NOM dance.VOL.PAST  
 'Mary did not dance (involuntarily as expected). She danced (voluntarily).'
- b. Joon bath kəæ-wa eya-tə bath kə-wu-ne næ  
 John-NOM rice eat-VOL-PAST he-DAT rice eat-INV-PAST NEG  
 'John ate rice voluntarily, he did not eat rice involuntarily.'

Negation may license NPIs such as *kisimə* in Dat Inv's as in (22). This argues against the idea that negation in (21b) could be metalinguistic in Horn's sense (1985). Again, an eating event happened, and what is denied is the involuntary nature of the action on the part of the Dative.

- (22) Joon-tə kisimə məss-ek ke-wu-ne næ, eya un  
 John-DAT any fly-INDF eat-INV-PAST NEG he them okkomə  
 kəwa.  
 all ate.VOL  
 'John didn't eat any fly accidentally; he ate them all (on purpose).'

In the following section, we offer an account of PP-Inv's that differs from that of Dat-Inv's.

### 3 PP Inv's and Causative Vs

We formally relate PP-Inv's containing causative Vs in Sinhala (3b) and (4a-4b) repeated below to Oblique Causer constructions (a.o. Schäfer 2008) whose accidental-causation flavor we propose is modal.

- (3) b. Lisa athin dorə æruna. InvolitiveV  
 Lisa P door open.INV.PAST  
 'Lisa opened the door accidentally.'
- (4) a. Joon athin eyaa-wə-mə giluna. InvolitiveV  
 John P 3SG-ACC-REFL drown.INV.PAST  
 'John drowned himself accidentally.'
- b. Joon athin Nimal-wə giluna. InvolitiveV  
 John P Nimal-ACC drown.INV.PAST  
 'John drowned Nimal accidentally.'

Languages with causative constructions that parallel Sinhala PP-Inv's as to the accidental-causation modal flavor include at least Albanian (Kallulli 1999), German, Greek, Polish, Slovenian, and Spanish (Rivero 2003, 2004, Schäfer 2008). We illustrate with Spanish (23) (Fernández-Soriano and Mendikoetxea 2013 for detailed discussion).

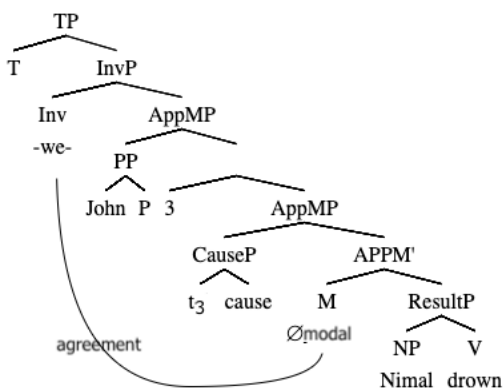
- (23) A Juan se le rompió el vaso. Spanish  
 P Juan REFL he.DAT broke.PAST the glass.  
 'John broke the glass accidentally.'

We offer a formal account of PP-Inv's in the next section.

### 3.1 Analysis of PP-Inv's

We propose that PP-Inv's have the structure in (24). For the sake of simplicity, we will not analyse tense at all in our discussion below.

(24)



The proposal is that PP-Inv's contain a universal circumstantial Modal, in parallel to Dat-Inv's in (11) and (12)-(17). M is responsible for the causation modal flavor of PP-Inv's. The PP-Inv M is phonologically null, like its Dat-Inv counterpart, and also heads an Applicative Modal Phrase. However, M in Dat-Inv's and M in PP-Inv's differ in argument structure, as also seen in (25). In PP-Inv's, M takes two properties of events as arguments, dubbed Cause P and ResultP as shown in (24) and defined in (26) and (27) (other labels are possible). Given this proposal, the quirky subject is interpreted as a causer.

Below we walk through some of the key points of our analysis. We adopt the interpretation for the null modal presented in (25) (in doing so, we depart from a Kratzer-style proposal in terms of contextually salient modal basis, just for simplicity):

$$(25) \quad [[\emptyset_{\text{modal}}]]^g = \lambda P_{\langle \text{ev}, \langle s, t \rangle \rangle}. \lambda Q_{\langle \text{ev}, \langle s, t \rangle \rangle}. \lambda w_s. \exists e_{\text{ev}}. \exists e'_{\text{ev}}'. P(e)(w) = 1 \ \& \ Q(e')(w) = 1 \ \& \ \forall w' \in \text{SIM}_w \ \& \ e' \text{ does not occur in } w': e \text{ does not occur in } w'.$$

This proposal is inspired by Lewis's analysis of causation (Lewis 1973), according to which we can say, roughly, that when  $e$  and  $e'$  are two distinct actual events,  $e$  causally depends on  $e'$  if, were  $e'$  not to occur,  $e$  would not occur either. This view cashes out a causation relation between events  $e$  and  $e'$  (where  $e'$  causes  $e$ ) in terms of a counterfactual conditional about what would have happened if  $e'$  had not occurred. Following Lewis, we adopt the view that such conditionals are to be understood in terms of universal quantification over the most similar worlds in which the antecedent is true. In our proposal in (25), the domain of quantification is established by SIM, which identifies the worlds most similar to  $w$  in which  $e'$  does not occur. Since the identification of the domain is carried out in terms of matching with actual world circumstances, the flavor of modality is circumstantial.

Let us turn now to the argument of the modal:

$$(26) \quad [[\text{ResultP}]]^g = \lambda e. \lambda w. \text{drown}(e)(w) \ \& \ \text{theme}(e)(\text{Nimal}).$$

The denotation of ResultP is property of events true of an event  $e$  in a world  $w$  iff  $e$  is a drowning event in  $w$  and Nimal is the theme.

The argument of the AppM' phrase is a property of events (27). The only condition put on these events is that they be events caused by the entity that the variable assignment links to the index 3:



(27)  $[[\text{CauseP}]]^{\text{g},\text{f}} = \lambda e. \lambda w. \text{causer}(e)(w) ([[t_3]]^{\text{g}})$ .

Given the binding configuration in (24), the PP subject will fill the argument slot corresponding to the entity argument of *cause*. The CauseP will thus be a property of events caused by John (we do not know much about these events! we only know John was the causer!).

Putting things together, and abstracting away from tense, we obtain the following truth conditions: for any world  $w$ ,  $[[24]]^{\text{g}}(w) = 1$  iff  $\exists e_{\text{ev}}. \exists e_{\text{ev}}'. \text{drown}(e)(w) \ \& \ \text{theme}(e)(\text{Nimal}) \ \& \ \text{causer}(e')(w)(\text{John}) \ \& \ \forall w' \in \text{SIM}_w \ \& \ e$  does not occur in  $w'$ :  $e'$  does not occur in  $w'$ . This means that (24) will be true if there is an event that has John as causer (e.g. a pushing, a throwing, a pulling) that has caused an event of drowning that has Nimal as theme.

Inspired by Beaver and Zubair (2013), Cause P in (24) contains a variable as Unspecified Causer. PP as 'quirky' subject is an adjunct/modifier attached to MP'. This PP 'quirky subject' is linked to the variable in CauseP. The overt Involitive Inflection (-*wə*-) formally licenses the phonologically null Modal in the causative structure in (24) via feature-valuation (as it also does in Dat-Inv's), with technical details left to future research. Overt Inv establishes an {agreement/concord} relation roughly in the sense of (Zeijlstra 2007) with null M (a raising analysis is also possible).

### 3.2 Two parallelisms between PP- Inv's and Dat-Inv's

In this section, we show that the formal status of the PP-‘subjects’ and the modal in PP-Inv's parallel those of Dat-Inv's. Section 2.2.1 shows the parallelism between the subjects of Dat-Inv's and PP-Inv's in relation to control while Section 2.2.2 shows the formal status in syntax and semantics of the modal in PP-Inv's in comparison to that in Dat-Inv's.

#### 3.2.1 A contrast in Control into Adjuncts in parallel to Dat-Inv's

The literature on Sinhala mentions several 'subject-like' properties for the PP in PP-Inv's, which we will not rehearse, except for a characteristic shared with Dat-Inv's important for our purposes. PPs in PP-Inv's control into several types of adjuncts, including the temporal type, (28a) in parallel to Nominative subjects with Volitive Vs (28b). This provides support for the variable  $t_3$  under CauseP in tree (24).

- (28) a. Joon athin viiduru-wə eliyətə gannə-kotə bind-u-na.  
 John P glass-ACC out take-ADV break-INV-PAST  
 ‘John broke the glass accidentally when taking it off.’
- b. Joon viiduru-wə eliyətə gannə-kotə binda.  
 John glass-ACC out take-ADV break.VOL.PAST  
 ‘John broke the glass when taking it off.’

However, in parallel to Dat-Inv's, PP Inv's cannot control into purpose clauses, (29a), this time in contrast with nominatives with Volitive Vs, (29b).

- (29) a. \*Joon athin amma-wə tharaha gassan-nə viiduru-wə bind-u-na.  
 John P mother-ACC anger trigger-INF glass-ACC break-INV-PAST  
 ‘John broke the glass accidentally to annoy his mother.’
- b. Joon amma-wə tharaha gassan-nə viiduru-wə binda.  
 John mother-ACC anger trigger-INF glass-ACC break.VOL.PAST  
 ‘John broke the glass to annoy his mother.’

In our view, the impossibility to control into purpose clauses in PP-Inv and Dat-Inv is due to the compositional effect of M in each case, which results in modal flavors that are not totally identical, but are both incompatible with intentionality.<sup>1</sup>

### 3.2.2 The formal status of M in PP-Inv's parallels M in Dat-Inv's

PP-Inv's display 'Actuality entailments' like Dat-Inv's counterparts. These need not reverse under negation. Thus, (30a) may be followed in the discourse by (30b), indicating that the accidental flavor may be negated, not the breaking event. (30a) also illustrates that Negation may license NPIs in PP-Inv's as it does in Dat-Inv's.

- (30) a. Joon athin kisima viiduru-w-ak bind-u-ne næ.  
 John- PP any glass-ACC-INDF break-INV-PAST NEG  
 'John did not break any glass accidentally.'
- b. Joon eewa okkoma binda.  
 John them all broke  
 'John broke them all (on purpose).'

In the next section, we carry out a cross-linguistic comparison of Dat and PP-Inv's with similar constructions in some languages pointing to some generalizations.

## 4 A cross-linguistic comparison: identifying typological similarities and differences

Some languages display constructions with the modal flavors of Sinhala Dat-Inv's with activity Vs and with those with the modal flavors of Sinhala PP-Inv's with causative Vs, and distinguish them morpho-syntactically. Polish and Laz are two cases in point. Other languages lack equivalents of Sinhala Dat-Inv's with activity Vs, and display a type similar to Sinhala PP-Inv's with causative Vs. This second type has attracted considerable attention in the literature (Kittila 2005 for a typological overview), and includes Greek, Italian, German, and Spanish (Rivero 2003, Schäfer 2008, a.o).

What does our analysis say about such a typological difference? First, Laz (Demiroz 2017) and Polish (a.o. Rivero 2003, Rivero and Frackowiak 2011, Frackowiak 2015) count as languages that resemble Sinhala in so far as they display both types of constructions, and distinguish them morphosyntactically as we illustrate with Polish. On the one hand, the so-called Involuntary State construction in Polish (9a) repeated next shares the 'out-of-control' modal flavor with Sinhala Dat-Inv's. It is signalled by a dative 'quirky subject', a theme as accusative object, a reflexive morphology, and an activity V without agreement (neuter) associated with impersonal constructions.

- (9) a. Npisało mi się własne imie. Polish  
 PREF.wrote.NEU I.DAT REFL own name.ACC  
 'I wrote my own name (by accident).'

On the other hand, Polish equivalents of Sinhala PP-Inv's also exist, as in (31). They also display a quirky subject in the dative, they are also equipped with reflexive morphology, but the causative V agrees with the nominative theme in an agreement pattern also found with canonical anti-causatives (Złamały się okulary 'The glasses broke.')

- (31) Jankowi złamały się okulary. Polish  
 John.DAT PF.broken.FEM.PL REFL glasses.NOM.FEM.PL  
 'John broke the glasses accidentally.'

Therefore, Polish resembles Sinhala at the proper level of abstraction. Polish distinguishes between the two constructions (a) by the case on the internal argument, and (b) by the absence/presence of agreement on the verb. By contrast, Sinhala shows a constant involitive marking on the verb in the two constructions typical or ordinary anti-

<sup>1</sup>Polish is identical to Sinhala regarding both activity and causative constructions as to control and NPI's, but is not illustrated. Thus control, negation, and NPI's characteristics are not language-particular but general.

causatives (Dorə æruna 'The door opened'), but distinguishes them on the basis of the morphological marking on the non-nominative 'subject': dative vs PP. In spite of such morphosyntactic differences, the proposals in (11) and (12)-(17) inspired by an earlier analysis of Polish serves to capture the modal flavor of Sinhala Dat-Inv's. Accidental causation in Polish awaits a precise treatment as modal flavor. However, we can now go on to suggest that Polish patterns of the type in (31) should also receive an analysis with a circumstantial modal that takes two sub-events as arguments along the lines of Sinhala PP-Inv's in section 3. Second, in contrast with Sinhala, Polish, and Laz, there are languages that lack constructions comparable to Sinhala Dat-Inv with activity Vs, while displaying constructions with causative Vs and an accidental flavor comparable to PP-Inv's. German, Greek, Italian and Spanish belong to this second type as we illustrate with the causative pattern in Spanish (32). At the proper level of abstraction Spanish (32) is reminiscent of Polish (31). It displays a dative quirky subject (doubled by a dative clitic), a reflexive morphology shared with anti-causatives as the verb agrees with a nominative theme, and the accidental causation flavor shared by Sinhala PP-Inv's.

- (32) A Juan se le rompieron las gafas. Spanish  
 To John REFL DAT-clitic break.PAST.3PL the glasses  
 'John broke the glasses accidentally.'

Spanish too awaits a precise semantic analysis for the accidental flavor of constructions with dative subjects and verbs with anti-causative agreement of the type in (32). It can then be suggested that Spanish (32) also exemplifies a circumstantial modal responsible for the accidental flavor, which takes two arguments in the way depicted in section 3. However, Spanish is in clear contrast with both Sinhala and Polish in lacking the equivalent of PP-Invs with activity Vs, which has not escaped notice (Rivero 2003 and later work). To illustrate, if Sinhala (2b) repeated next is compared to Spanish (33), the contrast in interpretation is striking. In Spanish, the dative can only be interpreted as a benefactive/recipient, never as an involuntary singer.

- (2) b. Joon-tə sindu-wak kiyə-wu-na. Involitive V  
 John-DAT song-ACC sing-INV-PAST  
 'John sang a song involuntarily =John could not help singing a song.'
- (33) A Juan se le cantó una canción. Spanish  
 John-DAT REFL he-DAT sang.3SG a song  
 'One =people sang a song for John.'  
 Never = 'John sang a song involuntarily.'

Thus, Spanish is among the languages that share the analysis proposed in section 3 for Sinhala causative patterns, while lacking the modal in section 2 when it comes to activity verbs and their composition.

## 5 Summary and Conclusions

Sinhala distinguishes between two modal constructions dubbed here Dat-Inv's and PP-Inv's, which combine (a) non-nominative 'subjects', (b) involitive verbs, and (c) 'out-of-control' modal flavors. Dat-Inv's and PP-Inv's share important characteristics: PP-Inv's contain a universal circumstantial Modal in parallel to Dat-Inv's. The PP-Inv M is phonologically null like its Dat-Inv counterpart. Both Modals head Applicative Phrases, and enter a concord relation with the Involitive morphology. Both Dat-Inv's and PP-Inv's involve Actuality Entailments. In both Dat-Inv's and PP-Inv's, actuality entailments need not reverse under Negation. Dat-Inv's and PP-Inv's also differ on morphosyntactic and semantic grounds: Sinhala distinguishes Dat-Inv's from PP-Inv's via the case on the non-nominative subject: Dative vs. PP (oblique). Dat-Inv's contain a VoiceP with an agentive-like Specifier linked to the Dat, and a VP with an activity-like verb. PP-Inv's contain a CauseP with an unspecified Causer linked to the PP, and a causative-like verb. M in Dat-Inv's and M in PP-Inv's differ in argument structure. In Dat-Inv's M takes VoiceP as argument. In PP-Inv's, M takes two [sub-events=situations] as arguments dubbed CauseP and ResultP. Cross-linguistically, Sinhala Dat-Inv's share properties with 'out-of-control' constructions found in several genetically unrelated languages, including most notably Polish. Sinhala PP-Inv's share properties with so-called Oblique Causer constructions in many genetically unrelated languages, including most notably Polish and Spanish.

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## References

- Alonso-Ovalle, Luis and Henrison Hsieh. 2017. Causes and expectations: On the interpretation of the Tagalog ability/involuntary action form. *SALT* 27: 75–94.
- Bhatt, Rajesh. 2006. *Covert modality in non-finite contexts*. Berlin: Mouton de Gruyter.
- Beavers, John and Cala Zubair. 2013. Anticausatives in Sinhala: Involitivity and causer suppression. *NLLT* 31(1):1–46.
- Davis, Henry, Lisa Matthewson, and Hotze Rullmann. 2009. “Out of control” marking as circumstantial modality in St’a’t’imcets. In L. Hogeweg, H. de Hoop, and A. Malchukov, eds., *Cross-linguistic semantics of tense, aspect, and modality*, pages 205–244. Amsterdam: Benjamins.
- Demirok, Ömer. 2017. Modal approach to dative subjects in Laz. *NELS* 48.
- Fernández-Soriano, Olga and Amaya Mendikoetxea. 2013. Non selected dative arguments in Spanish anticausative constructions: Exploring subjecthood. In I. Serzant and L. Kulikov, eds., *The Diachronic Typology of Non-Canonical Subjects*. Amsterdam: Benjamins
- Frąckowiak, Ewelina and María L. Rivero. 2011. Unintentional Agents vs. Unintentional Causers in Polish. In P. Bański, B. Łukaszewicz, M. Opalińska and J. Zaleska, eds, *Generative Investigations: Syntax, Morphology, and Phonology*. Cambridge Scholars Publishing.
- Frąckowiak, Ewelina. 2015. *Understanding Situation and Viewpoint Aspect in Polish through Dative Anticausative Constructions and Factual Imperfectives: Chapter 3*. Unpublished Ph.D. thesis, University of Ottawa.
- Hacquard, Valentine. 2010. On the event relativity of modal auxiliaries. *Natural Language Semantics* 18: 79-114.
- Horn, Laurence. 1985. Metalinguistic negation and pragmatic ambiguity. *Language* 61: 121-174.
- Inman, Michael. V. 1994. *Semantics and pragmatics of colloquial Sinhala involitive verbs*. PhD thesis, Stanford University.
- Kallulli, Dalina. 1999. Non-active morphology in Albanian and Event Decomposition. In I. Kenesei, ed., *Crossing Boundaries*, pages 259-292. Amsterdam: Benjamins.
- Kittilä, Seppo. 2005. Remarks on involuntary agent constructions. *Word* 56(3): 381-419.
- Kratzer, Angelika. 1996. Severing the External Argument from its Verb. In J. Rooryck, L. Zaring, eds., *Phrase Structure and the Lexicon (Studies in Natural Language and Linguistic Theory, vol 33)*, pages 109-137. Dordrecht: Springer.
- Kratzer, Angelika. 2013. Modality for the 21st century. *The Language-Cognition Interface /L'interface Langage-Cognition*: 179-199. Genève-Paris: Librairie Droz.
- Lewis, David. 1973. Causation. *Journal of Philosophy* 70: 556–67
- Pylkkänen, Liina. 2008. *Introducing Arguments*. Cambridge: MIT Press.
- Rivero, María L. 2003. Reflexive clitic constructions with datives: syntax and semantics. In *Formal Approaches to Slavic Linguistics 11, 2002: The Amherst Meeting*, pages 469-494. Ann Arbor, MI: Michigan Slavic Publications.
- Rivero, María L. 2004. Datives and the Non-Active Voice / Reflexive Clitic in Balkan Languages. In O. Tomic, ed., *Balkan Syntax and Semantics*, pages 237-267. Amsterdam: John Benjamins.
- Rivero, María L., Ana Arregui, and Ewelina Frackowiak. 2010. Variation in circumstantial modality: Polish versus St’a’t’imcets. *LI* 41(4):704–14.
- Rivero, María L. and Ana Arregui. 2012. Building involuntary states in Slavic. In V. Demonte and L. McNally, ed., *Telicity, change, and state: A cross-categorial view of event structure*, pages 300–332. London: Oxford U. Press.
- Schäfer, Florian. 2008. *The Syntax of (Anti-)Causatives*. Amsterdam: John Benjamins.
- Zeijlstra, Hedde. 2007. Modal Concord. *SALT* 17: 317-332.