

The Interaction of Transitivity Features in the Sinhala Involitive¹

John Beavers

The University of Texas at Austin

Cala Zubair

Georgetown University

Abstract

The Sinhala volitive/involitive contrast is characterized by verb stem and subject case marking alternations, and broadly indicates the volitionality/non-volitionality of the subject, plus other co-varying features. While superficially a high/low transitivity split à la Hopper and Thompson (1980), we argue that the distinction actually emerges from the interaction of just two factors: a realis/irrealis mode contrast relating to expectations of certain event participants and an independent semantic case system (building on Inman 1993). Co-variation of other semantic features — including volitionality — follows directly from their interaction with semantic case and modality. Explaining this transitivity split through the interaction of language-specific elements, our analysis refines recent Optimality Theoretic approaches to transitivity (Malchukov 2005, 2006) by partly obviating the need for

separate, transitivity-specific constraints and constraint rankings.

1 Introduction

Prototype theories of transitivity (Hopper and Thompson 1980, Tsunoda 1981, 1985, Lazard 1998, 2003, Malchukov 2005, 2006, *inter alia*) maintain that transitivity is a gradient notion, wherein a clause may be more or less transitive based on the degree to which it conforms to a transitive prototype defined in terms of some set of distinct but co-varying semantic features. Much work in this area has looked at so-called transitivity splits, where two clauses that differ in one or more relevant semantic features also differ by some overt grammatical distinction. However, certain questions regarding the nature of the systematic co-variation remain unexplained in the literature: why should the semantic features that tend to vary across transitivity splits vary together, and why should they result in specific types of grammatical splits? Using evidence from Colloquial Sinhala verb classes, we address these questions, demonstrating that a careful spelling out of the semantics of the relevant semantic and grammatical transitivity features in particular languages can sharpen our predictions about co-variation.

Sinhala verbs fall into two stem classes, the volitive and involitive. Subjects of volitives are almost invariably nominative and subjects of involitives occur in nominative, accusative, dative, or the postpositional case *atij*. Volitives generally indicate volitional action and involitives non-volitional action (Gair 1970, Inman 1993). Examples are given in (1), where a transitive volitive in (1a) contrasts with both a transitive involitive in (1b), where the subject is marked by *atij* (glossed POST), and an inchoative involitive with

a nominative or accusative subject in (1c) (Beavers and Zubair 2009).

- (1) a. *Aruni Nimal-wə gilūwa.*
Aruni Nimal-ACC drown.VOL.PST
'Aruni drowned Nimal (deliberately).'
- b. *Aruni atij Nimal-wə giluna.*
Aruni POST Nimal-ACC drown.INV.PST
'Aruni drowned Nimal (accidentally)/Nimal drowned.'
- c. *Nimal-wə/Nimal giluna.*
Nimal-ACC/Nimal drown.INV.PST
'Nimal drowned (accidentally).'

Superficially, (1a) vs. (1b,c) represents a transitivity split since volitionality and number of participants (two of Hopper and Thompson's features) systematically co-vary with the case marking and stem alternations. However, we argue that a careful examination of volitive and involitive semantics reduces the contrast to just two cross-classifying properties of the language. First, the stem alternation reflects a type of realis/irrealis contrast relating to the intentions or expectations of certain participants in the event (building on Inman 1993). This interacts significantly with other features that reference intentions, including volitionality and ultimately actorhood, but not other features, predicting when we see co-variation. Second, case-marking patterns follow from an independently motivated set of semantic (i.e. inherent, non-structural) cases, with nominative (the default structural case) surfacing to cover gaps in the paradigm. The categorical use of the nominative in the volitive follows from the fact that all volitive stems have subjects that fall into these gaps due to the types of events that volitive verbs describe.

Our analysis has ramifications for prototype theories of transitivity. First, it addresses the nature of co-variation, showing that a careful spelling out of the semantics of the relevant transitivity features can predict which features will co-vary and which will not, sometimes in surprising ways. Second, transitivity splits may arise partly due to the specific morphosyntactic resources available in a language for marking transitivity features, rather than separate constraints on transitivity. However, this again requires a clear spelling out of the semantics of the various resources.

In §2 we review prototype theories of transitivity and unanswered questions that remain. In §3 we outline the basic morphosyntactic and semantic patterns of volitive and involitive stems suggesting a transitivity split. We look at these factors more deeply in §4 and argue that the volitive/involitive contrast is fundamentally a realis/irrealis contrast subsuming and thus predicting co-variation with volitionality, among others. In §5 we examine the distribution of the different subject cases in Sinhala, arguing that each case is predicted on independent semantic grounds. We conclude in §6.

Before we begin, we note that Spoken Sinhala consists of a diglossic linguistic system with two related but contrastively defined varieties referred to as Formal and Colloquial Sinhala (Paolillo 1997). Colloquial and Formal Sinhala are lexically and grammatically distinct, and prescriptively used in different social domains. While our data draws primarily on Colloquial Sinhala, we note that subject case and the interpretation of involitive verbs is subject to regional variation. Thus we focus on the semantics underlying certain cases and interpretations when they arise for speakers, drawing from previously published and new data. Additional constraints may apply on an item by item or speaker by speaker basis.

2 High and Low Transitivity

The prototype theory of transitivity of Hopper and Thompson (1980) differentiates two types of transitive clauses. A prototypical, or “high” transitive, clause is one associated with a certain set of semantic features, while “low” transitive clauses are associated with essentially the opposite features (or the absence of them). These features are given in (2) (p. 252, (1)):

(2)	HIGH TRANSITIVE	LOW TRANSITIVE
A. PARTICIPANTS	2 or more participants (A and O)	1 participant
B. KINESIS	action	non-action
C. ASPECT	telic	atelic
D. PUNCTUALITY	punctual	non-punctual
E. VOLITIONALITY	volitional	non-volitional
F. AFFIRMATION	affirmative	negative
G. MODE	realis	irrealis
H. AGENCY	A high in potency	A low in potency
I. AFFECTEDNESS OF O	O totally affected	O not affected
J. INDIVIDUATION OF O	O highly individuated	O non-individuated

Hopper and Thompson further propose that when a clause overtly marks a high/low transitivity feature, other features of the clause will also co-vary in the same direction, their Transitivity Hypothesis (pp. 254-255, (9)):

- (3) TRANSITIVITY HYPOTHESIS: If two clauses (a) and (b) in a language differ in that (a) is higher in Transitivity according to any of the features [in (2)], then, if a concomitant grammatical or semantic difference appears elsewhere in the clause, that difference will also show (a) to be higher in Transitivity.

For example, they claim that in ergative languages, the contrast between ERG-ABS vs. ABS-OBL (i.e. antipassive) case frames co-varies with several transitivity features as follows (Hopper and Thompson 1980: 268, (53)):

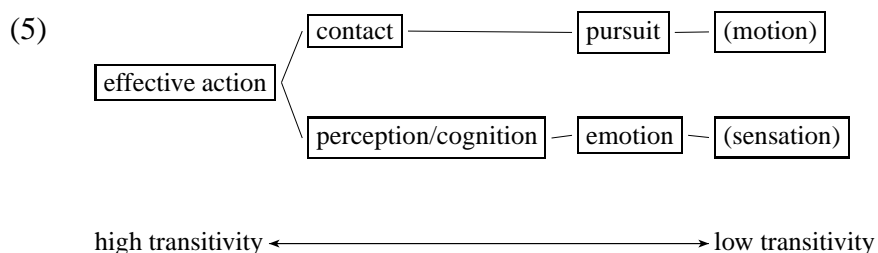
(4)	ERGATIVE	ANTIPASSIVE
	Verb codes two participants	Verb codes only one participant
	Perfective aspect	Imperfective aspect
	Total involvement of O	Partitive O
	Definite O	Indefinite O
	Kinetic/volitional V	Stative/involuntary V
	Active participation of A	Passive participation of A

While Hopper and Thompson (1980) initiated many invaluable discussions on transitivity, several components of their work require further theorizing. First, the Transitivity Hypothesis lacks independent grammatical definitions of high and low transitivity through which to verify their claims. Tsunoda (1981, 1985) addresses this by tying high/low transitivity to morphological markedness. He asserts that unmarked NOM-ACC or ERG-ABS case frames reflect high transitivity, while alternative (more marked) case frames indicate low transitivity. This provides a testable link between the semantic factors in (2) and some grammatical consequence, yet does not clarify *which* marked case frames will occur for any given low transitivity feature.

Malchukov's (2005, 2006) Optimality Theoretic interpretation of transitivity partly addresses these issues. Malchukov (2006) argues that high/low transitive marking follows from the relative ranking of various functional constraints on grammatical encoding (see also Wunderlich and Lakämper 2001, de Hoop and Narasimhan 2005). One such constraint is the Relevance Principle (RelP), wherein the element in the clause (A, O, V) that

overtly marks high/low transitivity is the one associated semantically with the relevant feature in (2). Ranking RelP high means the element that overtly indicates a certain feature is the one that feature pertains to (e.g. agency of A is marked on A), whereas ranking it low means we may find mismatches (e.g. agency of A is marked on V or O). In conjunction with this are constraints on case-marking for A/O-related features, including a faithfulness constraint on thematic roles, FaithRole, and a Transitive Default (TransDef) constraint. FaithRole requires the grammatical output form be faithful to the underlying thematic role and TransDef prefers unmarked case frames. The relative ranking of these constraints determines different patterns. Ranking TransDef high produces languages that prefer unmarked cases no matter the underlying semantics, while ranking FaithRole high produces languages that show more variability based on semantics, even if this produces marked cases. Malchukov’s constraints thus reveal a more regimented process of transitivity marking than available under Hopper and Thompson (1980).

Malchukov (2005) (building on Tsunoda 1981) furthermore demonstrates that different constraint rankings have different consequences for case-marking with different verb-types. He proposes the two-dimensional semantic map in (5) to explain how verb classes deviate from core high transitivity depending on how much A deviates from a prototypical agent (upper tier) and how much O deviates from a prototypical patient (lower tier) (cf. p.81, Fig.1):



For example, NOM-ACC and ERG-ABS satisfy all constraints for effective action verbs. But as we move down the O-hierarchy we see more marked cases on O and conversely for A on the A-hierarchy. In addition, language type plays a role: an additional Unmarked Case Constraint (UCC) requiring one unmarked (nominative/absolutive) argument per clause produces different outputs for ergative and accusative languages, generating still more complex patterns (see Malchukov 2005: 96-107 for a detailed discussion).

Though these updates to Hopper and Thompson's proposals greatly contribute to developing a testable theory of transitivity, a few problems remain. First, as Tsunoda (1985) and Malchukov (2006) note, while the Transitivity Hypothesis in (3) allows for systematic co-variation, nothing inherent in the hypothesis explains such variation (or predicts when it will occur). Why should the features in (2) vary in the same direction when they co-vary? For example, telicity, affectedness of O, and individuation of O are closely related (see e.g. Tenny 1994, Krifka 1998, Beavers 2009) and thus intuitively are expected to co-vary (though not categorically; Lazard 2003: 175, Beavers 2009). However, other features are clearly unrelated (e.g. agentivity of A and affectedness of O) and intuitively should (and do) vary independently, contra (3). A suitable Transitivity Hypothesis should have a mechanism for calculating which semantic features co-vary and when.

Malchukov (2006: 333-334) partly addresses this by proposing that Hopper and Thompson's features can be ranked along a Transitivity Scale (a one-dimensional semantic map) from those most likely to pertain to A, to those most likely to pertain to V, to those most likely to pertain to O.

(6) **Transitivity Scale**

A-features

V-features

O-features

animacy|volitionality|kinesis|factivity|tense/aspect|affectedness|(O-)individuation

Malchukov argues that adjacency of features predicts where there should be relationships, e.g. O-individuation and affectedness are adjacent and co-vary, but not affectedness and volitionality. Furthermore, if non-adjacent features do co-vary then all features between them must also co-vary. Although a step towards understanding co-variation, Malchukov still does not fully motivate why the ranking in (6) is the appropriate ranking, or if the semantic map might be multi-dimensional rather than one dimensional. Yet presumably a scale like (6) should follow from how the features are defined and need not be posited independently. Thus a second issue follows directly from the first, namely giving precise definitions to the features in (2). Non-typological work in formal and lexical semantics has focused on nearly all of these features (independently or in combination), but unfortunately has rarely been applied to work in transitivity.

A third and final issue is the grammatical flip-side of the second: although Malchukov regiments semantic features into A, O, and V-related, thus associating them with A, O, and V-related grammatical markers, the question still remains *which* A, O, and V-related features will be exploited in a language. This is an important question, since the resources available in a language could have an impact on the shape of a split. For example, for Malchukov ranking FaithRole high produces more quirky case patterns. But what about a language with few semantic cases? Could it have FaithRole ranked high yet still assimilate most verb types to the transitive default?

In the following, we update Malchukov's Transitivity Scale and OT analysis as pertains to the Sinhala volitive/involitive split, in a way that follows from independently documented semantic patterns of the relevant features.

The emergent definitions of each feature allows us to make specific predictions about when we will get systematic co-variation between features and when we will not. Furthermore, doing so we show that the semantic features do not form a one-dimensional hierarchy, but rather a multi-dimensional map. Likewise, the devices independently available for marking low transitivity have semantic content that also plays a role in predicting when we get high/low transitive marking, regardless of the underlying clausal semantics.

3 Volitive and Involitive Verbs - Syntax and Semantics

The Sinhala volitive/involitive stem contrast is marked by a combination of morphophonological features (Inman 1993: 23-27). Present tense involitive stems have front root vowels and a thematic vowel *-e-*, while present tense volitive stems have no place restrictions on their root vowels, and have thematic vowels *-a-* or *-i-*. Past tense stems for both volitive and involitive forms have front root vowels, but the thematic vowel is *-un-* for the involitive and *-u(w)-* or *-i(y)-* (with additional final consonant gemination) for the volitive. The inflected forms are derived by appending *-nəwa* (simple present), *-a(a)* (simple past), or *-nnə/ṇḍə* (infinitive). Example paradigms are given in (7) (adopted from Inman 1993: 24-25, (1)-(2)):

(7)	Present Stem Formation		Past Stem Formation	
	<i>gloss</i>	<i>volitive</i>	<i>involitive</i>	<i>volitive</i>
‘wash’	<i>hood-a-nəwa</i>	<i>heed-e-nəwa</i>	<i>heed-u(w)-a</i>	<i>heed-un-a</i>
‘suck’	<i>ur-a-nəwa</i>	<i>ir-e-nəwa</i>	<i>ir-u(w)-a</i>	<i>ir-un-a</i>
‘make’	<i>had-a-nəwa</i>	<i>hæd-e-nəwa</i>	<i>hæd-u(w)-a</i>	<i>hæd-un-a</i>
‘open’	<i>ar-i-nəwa</i>	<i>ær-e-nəwa</i>	<i>ær-i(y)-a</i>	<i>ær-un-a</i>

Volitives take nominative subjects and indicate volitional action as in (8a) for an unergative verb and in (8b-e) for (di)transitive verbs. Direct objects may be accusative (8c) or dative (8d), although, since Sinhala is a differential object-marking language, only animates show accusative (8b,c), and then only optionally (8c). Indirect objects are dative as in (8e).

- (8) a. *Malini dalada maaliḡawə-tə diuwwa.*
 Malini Temple Tooth-DAT run.VOL.PST
 ‘Malini (deliberately) ran to the Temple of the Tooth.’
- b. *Aliya nestomalt(-*wə) biuwwa.*
 elephant nestomalt drink.PST
 ‘The elephant drank nestomalt (chocolate milk).’
- c. *Aruni Nimal(-wə) ḡiluwa/mæruwa.*
 Aruni Nimal(-ACC) drown.VOL.PST/kill.VOL.PST
 ‘Aruni (deliberately) drowned/killed Nimal.’
- d. *Aliya Joon-tə ḡæhuwa.*
 elephant John-DAT hit.VOL.PST
 ‘The elephant hit John with his trunk.’
- e. *Eyaa maṭə mee sumaane sælli dunna.*
 he 1SG.DAT this week.GEN money give.VOL.PST
 ‘He gave me this week’s money.’ (Gair 1970: 64)

Semantically, volitive verbs do not strictly entail volitionality. At least some volitives may occur in explicitly non-volitional contexts. In (9), the verb has a volitive stem and a nominative subject, but can occur with the modifier *hitəla nemeyi* ‘without intention’, indicating accidental action.

- (9) *Laməya piŋgaanəyə kəduwa, eet hitəla nemeyi.*
 child plate broke.VOL.PST but intention without

‘The child broke the plate unintentionally.’ (Inman 1993: 98, (39))

Nonetheless, some volitives require volitionality, including the verb for ‘murder’, which is incompatible with a continuation denying volitionality:

- (10) *#Siri Gunee-wə miniməruwa, eet hitəla nemeyi.*
 Siri Gunee-ACC murder.VOL.PST but intention without
 ‘Siri murdered Gunee, but not intentionally.’

Therefore while some volitives entail volitionality, others leave it unspecified. We thus assume volitionality can be a property of the verb root, but for roots that do not entail volitionality, we assume it arises by Gricean implicature (in contrast with the involitive stem), which we discuss further below.

Turning to involitives verbs, as noted in §1 subjects of involitives are found in a range of different cases. Subjects of transitive verbs are marked by the postposition *atiŋ* or by dative case as in (11a,b) respectively. Subjects of intransitives may be dative, accusative, or even nominative, as in (11c-e) respectively. In addition, the unaccusatives in (11d,e) represent detransitivized versions of (8c). Crucially, unlike volitive stems, most involitives categorically entail non-volitionality, as also shown in (11).

- (11) a. *Siri atiŋ (#hitəla) piŋgaanəyə kəduna.*
 Siri POST (intentionally) plate break.INV.PST
 ‘Siri accidentally broke the plate #intentionally.’
- b. *Laməya-tə (#hitəla) saddəyak əhuna.*
 child-DAT (intentionally) noise hear.INV.PST
 ‘The child accidentally heard a noise #intentionally.’

- c. *Amma-tə (#hitəla) wewuluna.*
 Mother-DAT (intentionally) shiver.INV.PST
 ‘Mother involuntarily shivered #intentionally.’
- d. *Laməya-wə (#hitəla) giluna/mæruna.*
 child-ACC (intentionally) drown.INV.PST/die.INV.PST
 ‘The child involuntarily drowned/died #intentionally.’
- e. *Aruni (#hitəla) giluna/mæruna.*
 Aruni (intentionally) drown.INV.PST/die.INV.PST
 ‘Aruni involuntarily drowned/died #intentionally.’

Conversely, these are acceptable with *nohitaa* ‘unintentionally’ (though our informants note some redundancy). On the surface the volitive and involitive contrast supports the Transitivity Hypothesis: volitive verbs have NOM-ACC case frames while involitives have frames that deviate from this. This corresponds to the volitionality feature (E) in (2) as well as the number of participants feature (A) for unaccusatives. Also, all of the subjects in (8) are actors, in the sense of performing some action or exerting some internally-derived force; the closest match here with one of Hopper and Thompson’s features would be agency (H) (A is high in potency). Actorhood does not hold for involitives, which can also have patient and experiencer subjects.

However, this apparent co-variation is as yet unexplained. Furthermore, the correlation is incomplete: unergatives such as *duwannə* ‘run’ in (8) appear in the volitive on volitional readings but have one argument; thus (A) and (E) conflict. We argue next that a careful spelling out of the semantics of the relevant features predicts co-variation, with the addition of another feature.

4 The Unrealis Nature of Involitive Stems in Sinhala

As depicted in previous analyses (Inman 1993, Henadeerage 2002), the semantics of the involitive are complex beyond a simple correlation with non-volitionality. Inman (1993) analyzes volitionality intensionally, building on Kratzer (1977, 1981). Kratzer proposes that intensional modal operators consist of at least two core components: (1) the modal force, representing either necessity or possibility of a proposition being true in some world(s) and (2) the modal base, representing the relevant conversational background against which the modal force is interpreted. Inman analyzes the intentions/expectations of individual x as a set of possible worlds, such that if x intends for P to be true, then x 's intentions are a subset of the worlds at which P is true. Thus if there exists any world in the intention set such that P is false, P was not intended, yielding the following definition of unexpectedness/unintendedness (drawing from Inman 1993: 120, though we also allow for cases where x has no intentions):

- (12) P is unintended by/unexpected to x iff there is some possible world in which x 's intentions/expectations are realized in which P is false, or x has no intentions.

We follow Inman in analyzing the involitives in (11) as reflecting a modal operator over the proposition P expressed by the predicate indicating unintendedness of P by the subject x . The modal base is x 's intentions and the force is possibility (there is some world in the base at which P is false):

- (13) **Involitive (version 1):** *inv* P is true iff P is true and P is unexpected to the subject x . (cf. Inman 1993: 138, (107))

Our updated definition in (12) covers not just cases where the subject did not intend to make *P* true, but also cases where the subject had no intentions at all, thus permitting inanimate subjects with unaccusatives as in (14).

- (14) *Piŋgaanəyə məsəyən wætuna.*
 plate table.INST fall.INV.PST
 ‘The plate fell from the table.’

However, Inman notes that the intentions of the subject are not always at question. Another (less common) use of the involitive is where the event is unexpected from the speaker’s perspective (cf. Inman 1993: 100, (41)):

- (15) *Kellə atij maalu ageeṭə pihenəwa.*
 girl POST fish very.well cook.INV.PRS
 ‘The girl can cook fish very well.’ (despite expectations)

Here the reading is that the girl cooked well on purpose, but this was unexpected to the speaker, a reading Inman refers to as “doxastic”. To capture this, Inman (1993: 140-152) suggests that the modal base of the involitive can in some cases be the expectations of the speaker, all else being equal:

- (16) **Involitive (version 2):** *inv P* is true iff *P* is true and *P* is unexpected to speaker *y* or subject *x*.

Thus the involitive seems to have as its semantics (a) that the event occurred and (b) that it was unexpected from the viewpoint of either the subject or the speaker, where the modal force is that of possibility (there exists at least some world in the modal base at which the event did not occur).

Unfortunately, our informants were unable to verify Inman’s doxastic examples. However, we did find an additional ironic use of the involitive that occurs during “smack talk” (playful taunting and insulting). An example is

given in (17), where B uses the volitive form of a verb for ‘watch’ to claim C participated in a certain watching event, and C counters with an involitive use to *deny* that the event occurred (cp. sarcastic intonation in English).

(17) ((*C is explaining why he left work late the night of his car accident*))

A: *æi parakku wela eheng giye?*

why late happen.PST there go.PST

‘Why did (you) leave there (work) so late?’

B: *Okkoməla gədərə giyaa-ṭə passe porn bəluwa.*

everyone home go.PST after porn watch.VOL.PST

‘when everyone left (he) looked at porn.’

C: *Ouu machang, okkoməla gedərə giyaaṭə passe mamə atij*

yes dude everyone home go.PST after 1SG POST

wəla bəlenəwa.

porn watch.INV.PRS

‘Yeah I look at porn when everyone leaves.’

Additional examples are given in (18)-(19).

(18) ((*A is surprised that B has cooked for himself*))

A: *Uyenəwe-də? Oyaa atij iwenəwa, nææ.*

cook.PRES-Q 2SG POST cook.INVOL.PRES NEG

‘(You) cooked? You cook, no.’

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

B: *Ehe giye? Nææ, machang. Mamə atij pare*

there go.PST NEG dude 1SG POST street-LOC

hinganna-gen ewa horəkən keruna.

beggar-INSTR them steal do.INV.PST

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

Such data have two important consequences for analyzing the involitive. First, contra Inman, the propositions are not asserted to be true — rather, their truth is denied. Second, the modal force is necessity, since it is not just that the speaker did not expect for the proposition to be true, but rather the speaker expects it to be false, i.e. in *all* worlds in the modal base.

Thus factoring out the semantics common to all involitives, we first see that assertion of P is not part of its semantics; it obtains only on some uses. Second, the strongest modal force across all uses is possibility; necessity the ironic use is a stronger reading, leaving the core semantics in (20).

(20) **Involitive (final)**: *inv P* is true iff P is unexpected to the speaker y or subject x .

In the ironic use the modal force is strengthened to “entirely unexpected” and the modal base is the speaker’s intentions. In the non-volitional and doxastic readings P is additionally asserted to be true, though the two readings differ in the modal base (subject’s intentions vs. speaker intentions respectively). Thus Inman’s modal analysis (with some modifications) provides a simple way to capture the range of uses of the involitive, by differences in modal base, modal force, and truth of the proposition.

Nonetheless, Inman does not give a corresponding definition of the volitive, which we provide in (21b), based on the definition of intendedness in (21a), where P must be true and (by default) must be intended by the subject (the modal base is the subject’s intention and the modal force is necessity):

(21) a. P is intended by x iff for all possible worlds in which x ’s intentions/expectations are realized x made P is true.

- b. **Volitive:** *vol P* is true iff *P* is true and (by default) *P* was intended by the subject *x*.

Note that (21a) is not the negation of (12). First, intendedness (unlike unintendedness) requires not just that *x* expects *P* to be true, but expects to make *P* true (e.g. if one expects to be forced to do something then one *expects* to do it but does not *intend* to do it). Second, vacuous universal quantification over an empty intention set allows inanimates, which lack intentions, to occur with volitives, a prediction borne out for natural forces and instruments:

- (22) a. *Huləŋə hamənəwa.*
 wind blow.VOL.PRS
 ‘The wind blows.’ (Inman 1993: 182, (82b))
- b. *Mitiyə piŋgaanəyə kəduwa.*
 hammer plate break.VOL.PST
 ‘The hammer broke the plate’

Thus on our analysis, the definitions of (un)intendedness/(un)expectedness in (12) and (21a) taken together exempt inanimates from the computing of intentions, explaining their occurrence as subjects of both kinds of verbs. To explain why volitional readings arise for animates when not entailed, we propose the pragmatic principle in (23), a variant of the principle of Holisky (1987: 118-119) for interpreting human effectors as agents in the absence of evidence to the contrary (see also Van Valin and Wilkins 1996: 309-317):

- (23) **Principle of Volitional Subject Interpretation:** Interpret the subject of a volitive verb as volitional unless contextually denied.

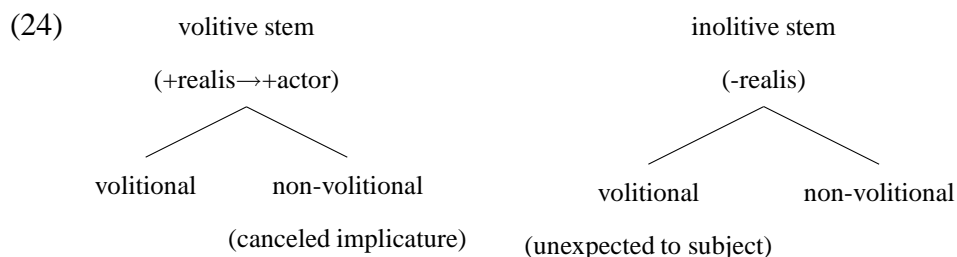
Crucially, now that we have spelled out the semantics of volitive and involitive stems, it is clear that the contrast does not fundamentally mark

volitionality vs. non-volitionality, since doxastic and ironic involitives may be volitional and some volitives are non-volitional. Thus the grammatical contrast does not necessarily co-vary with volitionality (E) in Hopper and Thompson's system in (2). However, there is one constant difference between volitive and involitive stems: the volitive is necessarily realis — the event must have occurred in the real world and in all worlds in the modal base — while in the involitive the event may not have occurred and furthermore the involitive involves calculating other worlds in which it did not occur. Thus the transitivity feature in (2) that systematically co-varies with volitivity marking is the (ir)realis mode feature (G).²

However, the fact that this specific modal operator references subject intentions most often means that it *typically* boils down to a volitional/non-volitional contrast, even if it fundamentally is not one. In other words, (E) in (2) is reducible to a particular subtype of (G), and because of this additional property of this particular modal operator, the effect is one of systematic co-variation of (E) and (G). Likewise, recall that subjects of volitives must be actors (H), another co-varying feature. Why should this be? Here we tentatively suggest that it has to do with the pragmatic principle in (23): for someone to act volitionally is for her to intend to make an event occur, and thus she must be capable of bringing it about, i.e. an actor. Thus action by the subject is a prerequisite for (23). Conversely, for involitives no such constraint applies, and both actor and non-actors are possible.

Thus co-variation between mode, volitionality, and actorhood is expected semantically. Conversely, co-variation with other features is *not* expected. For example, number of participants is not inherently a mode distinction, and thus we predict (and see) no correlation. That being said, there is a

partial correlation: since the modality of volitives requires actorhood, patient subjects are precluded, correctly predicting that unaccusatives occur exclusively in the involitive. Furthermore, our analysis also predicts that co-variation should not be categorical when it does occur, although free variation is strictly limited. For example, volitives can be non-volitional, but only if explicitly canceled in context, something not possible for all roots. Conversely, involitives can be volitional, but only if the speaker's expectations are taken into account instead, meaning that involitives are not a general way of encoding volitionality. The overall picture of co-variation is as follows:



This analysis makes predictions that differ from Malchukov's Transitivity Scale in §2. Malchukov puts mode ("factivity"), adjacent to tense/aspect but separated from volitionality. Yet our discussion has shown that volitionality can be effectively reduced to a subtype of the mode once the semantics of volitionality are better spelled out. This means that mode can be both an A-related and V-related feature, depending on the specific modal operator (indeed also supporting the Relevance Principle, since the feature is marked on both elements via stem form and quirky case). But of course it need not be; other modal operators may make no reference to A or O participants. Likewise, the mode to actorhood connection (mediated through volitionality) is also unexpected in general, but predicted in this particular case. More fundamentally, our analysis demonstrates that the relationships between features are not one-dimensional, but multi-dimensional, contingent

on the specific meanings of the specific features in a given language.

Ideally, once the semantics of each feature is spelled out, there should be no need for a Transitivity Scale to predict co-variation — all of the predictions follow from the semantics, recognizing a more fluid set of interactions. Our analysis has shown that this is possible for three features relevant for the involitive. With this analysis of the volitive/involitive stem contrast as a backdrop, we turn next to the case variation we see in involitives.³

5 Subject Case and Verb Type

Recall that Malchukov (2005) proposes that verb type (as determinant of thematic roles for A and O) interacts with argument realization constraints to produce different case patterns in different languages. However, the Sinhala data above pose an interesting puzzle for this proposal: volitive verbs, regardless of verb type, are always coded as high transitives. Why should this be? One might suggest that realis mood — the only core feature for volitives — is necessary for effective action. But why would this manifest as an unmarked case frame except through the A-related feature of volitionality, which does not hold categorically?⁴ Alternatively, it could be that the constraints are ranked differently for volitives and involitives, so that Trans-Def (preferring unmarked case frames) is ranked more highly for volitives than involitives. But why should this be?

We argue that the high transitive case frames of volitives are expected once we make a careful examination of the semantics of the relevant cases. In particular, the quirky cases found with involitives all have independently motivated meanings that are all ruled out for volitives, leaving the default

case, nominative, as the only possible subject case. Indeed, even among involitives there are gaps in the semantic case paradigm, predicting the presence of nominative — and thus high transitive marking — there as well.

5.1 Dative vs. *atiŋ* Subjects

Subjects marked by *atiŋ* occur exclusively with transitive caused change-of-state verbs (e.g. *issennə* ‘lift’; *kædennə* ‘break’, *ærennə* ‘open’; *ellennə* ‘hang’; *hellennə* ‘shake’; *pælennə* ‘split’ (as in wood); *kærəkennə* ‘turn’, *weelennə* ‘twine’; see Wijayawardhana et al. 1991: 113-122), while dative subjects occur primarily with unergative verbs (e.g. *æŋdennə* ‘cry’; *hi-naawennə* ‘laugh’; *wewulennə* ‘shiver’; *æænumak ærennə* ‘yawn’; *næŋennə* ‘dance’; *æwidennə* ‘walk’; Henadeerage 2002: 137-140). We could analyze the distribution of *atiŋ* and dative structurally: *atiŋ* only occurs with transitives and dative only with intransitives (i.e. *atiŋ* indicates the presence of a lower argument as in the analysis of ergative case by Wunderlich 1997).

However, this analysis is clearly insufficient, since (as discussed above) unaccusative verbs are intransitive but do not take dative subjects. Furthermore, we also find dative subjects with some transitive involitive verbs, including performance verbs (*kiyəwennə*, ‘read’, *pæwennə* ‘perform’, *kiyennə* ‘speak, say, recite’), psych-verbs (*dænennə*, ‘feel’; *peennə*, ‘see’; *æhennə*, ‘hear’; *teerennə*, ‘understand’), and verbs of receiving (*læbennə*, ‘receive’):

(25) a. *Maŋə/*mamə atiŋ potə kiyəwewuna.*

1SG.DAT/1SG POST book read.INV.PST

‘I (accidentally) read the book.’ (i.e. my eyes just fell on it)

b. *Laməya-ʔə/*laməya atij saddəyak əhuna.*

child-DAT/child POST noise hear.INV.PST

‘The child hear a noise.’

c. *Lamayi-ʔə/*lamayi atij tæægi læbuna.*

child.PL-DAT/child.PL POST gift.PL receive.INV.PST

‘The children received gifts.’

Thus we cannot simply associate *atij* with transitives and dative with intransitives. An alternative is to take a partly semantic view of the two cases. Inman (1993: 32-34) argues that *atij* represents a “generalized ergative” (following the terminology of Kiparsky 1992), wherein its distribution is determined structurally as the “default” subject of involitive verbs, superseded only by a more specific semantic case. Dative, he argues, is semantically determined, marking participants that do not intend for the event to occur (p.161ff). Further support for this comes from the fact that on this use datives are ruled out for inanimates. Indeed, our speakers find natural force subjects acceptable with involitive unergatives, but they are nominative:⁵

(26) *Huləŋə hæmenəwa.*

wind blow.INV.PRS

‘The wind blows.’

However, as Inman also notes, sometimes dative and *atij* alternate (Inman 1993: 163, (8); glosses from original):

(27) a. *Andəree atij wæli kæwenəwa.*

Andare POST sand eat.INV.PRS

‘Andare happens to be eating sand.’

b. *Andəree-tə wəli kəwenəwa.*

Andara-DAT sand eat.INV.PRS

‘Andare happens to eat sand involuntarily.’

Inman argues that in (27a) the subject acted intentionally, perhaps to eat something, but ended up eating sand, while in (27b) the subject did not intend to do anything at all, yet found himself eating sand. We return to this below, but the fact that the verbs in (25) do *not* allow an alternation while (27) does suggests that there is a semantic restriction on *atiŋ* as well.

We argue that *atiŋ* marks involuntary causers while dative marks a host of thematic roles sharing non-volitionality in common. First, dative generally marks experiencer subjects (as in many Indo-Aryan languages; see the papers in Verma and Mohanan 1990). For example, experiencer subjects of non-verbal predicates can also be dative:

(28) *Api-ge laməya-tə tikak asəniipay.*

1PL-GEN child-DAT a.bit sick-ASN

‘Our child is a bit sick.’

(Gair and Paolillo 1988)

Thus the dative in (25b) can be assimilated under a more general use of the dative for experiencer subjects. Dative also independently marks possessors, including both possessor subjects and indirect objects (the stative volitive in (29a) being a very rare example of a non-volitional, quirky subject volitive, which we treat as a lexical exception):

(29) a. *Laməya-tə selləŋbaduwak tiyenəwa.*

child-DAT toy exists.VOL.PRS

‘The child has a toy.’

(Gair and Paolillo 1997: 66)

- b. *Eyaa maṭə mee sumaane salli dunna.*
 he 1SG.DAT this week.GEN money give.VOL.PST
 ‘He gave me this week’s money.’ (Gair 1970: 64)

Thus the dative in (25c) can also be subsumed under a more general use of the dative. Indeed, these two datives may be collapsible, as argued by Mohanan and Mohanan (1990) based on data from Malayalam, where experiencers may be expressed as the goal argument of a light deictic motion verb with the stimulus as a theme (cp. English *happiness came to him*). Thus a single notion of “goal” may underlie both uses of the dative: either the goal of a physical object or the goal of a mental/physical sensation.

However, this analysis does not obviously explain why dative also marks subjects of unergatives or subjects of performance verbs such as those meaning ‘read’, ‘perform’, and ‘recite’. Before we offer a tentative solution to this, we first argue that these two uses of the dative are not distinct. As suggested by Tenny (1994), and then argued (in different ways) by Beavers (2009) and Rappaport Hovav (2008), performance verbs are not standard agent/patient transitive verbs on par with verbs meaning ‘break’ or ‘cool’. Rather, these verbs take direct objects that measure out the event by the subject’s progress through the object — the subject “moves” through the book in (25a), much in the same way that the subject moves along the path object in *John hiked the trail*. Evidence for this comes from the fact that performance objects pattern like path objects in terms of measure phrases: in both cases *V DO halfway* means roughly *V half of DO*, an equivalence that does not maintain for most change-of-state verbs:

- (30) a. John hiked half of the trail ↔ John hiked the trail halfway.

- b. John read half of a book \leftrightarrow John read a book halfway.
- c. John cooled half of the soup \leftrightarrow John cooled the soup halfway.

In (30c) the first clause is true if half of the soup becomes any cooler, while the second clause is true only if there is a contextually specified target temperature for the soup to which John has cooled it halfway. No separate contexts are possible for the pairs in (30a,b). Furthermore, the subjects in (30a,b) are in a sense “in motion”, albeit abstractly in (30b), but not for (30c). This can be seen in (31), where for (31a,b) the subject is entailed to be “in the middle” of the object, but not so for patient objects in (31c).

- (31)
- a. John is hiking the trail, so he is somewhere in the middle of it.
 - b. John is reading a book, so he is somewhere in the middle of it.
 - c. #John is cooling the soup, so he is somewhere in the middle of it.

This is again explained if performance verbs are analyzed as abstract motion verbs, where the subject progresses through the direct object, which in turn measures out the event (see Beavers 2009 for a detailed analysis). On this analysis, performance verbs are abstract unergative verbs, and thus the dative is subsumable under the same analysis as more canonical unergatives.

With this reduction, we argue that the subject role for involitive unergatives is that of involuntary actor. Evidence comes from a comparison with the semantics of *atiŋ*, which we suggest marks involuntary causers. It is a crucial difference between clauses that take *atiŋ* and those that take dative that the former have causative semantics, i.e. in standard event decomposition terms we can say that causative events have the structure in (32a) and unergatives have the structure in (32b) (following the notation of Rappaport Hovav and Levin 1998: 108 for expository convenience).

- (32) a. [x CAUSE [y BECOME < STATE >]] (x, y individuals)
 b. [x ACT (y)] (x, y individuals)

Causation can be probed for by scope ambiguities with modifiers such as negation (Dowty 1979: Ch.5). Negated causative clauses are ambiguous between a reading where the causing event did not occur, the resultant event did not occur, or neither occurred, as in (33a). This is not possible with non-causative verbs as in (33b), there being only one subevent in (32b).

- (33) a. John did not break the vase.
 i. The vase broke by itself. (negated cause)
 ii. The vase did not break, though John hit it. (negated result)
 iii. John neither acted nor did the vase break. (both negated)
 b. John did not run/read the book. (no ambiguity)

Crucially, clauses that take *atiŋ* subjects show ambiguity under negation, but those that take dative do not, as in (34), supporting our analysis.

- (34) a. *Eyaa atiŋ piŋgaanəyə kædune nææ.*
 3SG POST plate break.INV.PST NEG
 ‘She did not accidentally break the plate.’
 i. The plate broke by itself. (negated cause)
 ii. The plate did not break, though she hit it. (negated result)
 iii. She neither acted nor did the plate break. (both negated)
 b. *Maʔə potə kiyəwewune nææ*
 1SG.DAT book read.INV.PST NEG
 ‘I did not (accidentally) read the book.’ (no ambiguity)

Further evidence for the contrast between clauses with *atij* subjects and those with dative subjects comes from verbs that show an alternation. As noted above, the verb meaning ‘eat’ in (27) allows either *atij* or dative; with the former the subject intended to do something, though not to eat sand, while in the latter case the subject had no intentions at all. Crucially, with *eat* verbs the subject is both an actor and a causer: the subject works his way through the sand in (27) like a motion verb (Ramchand 2008) and simultaneously the sand comes to be affected (eaten) by the action of the subject like an agent/patient verb (Beavers 2009). This event type is schematized in (35) (again borrowing for convenience the notation for accomplishments with associated actions of Rappaport Hovav and Levin 1998: 108).

(35) [[x ACT] CAUSE [y BECOME < EATEN >]] (*x, y* individuals)

If dative marks involuntary actors and *atij* marks involuntary causers, the dual nature of the subject’s role explains the alternation and the semantic contrast. If the action is intentional but the causation is not, the subject is an involuntary causer, yielding *atij*. Alternatively, if the action itself is unintended, the subject is an involuntary actor and dative is licensed. Thus the semantic contrast reflects the variable scope of the involitive operator, providing further motivation for the contrast in the two cases.

We now ask what independent evidence there is for these analyses. For datives, we tentatively suggest that an involuntary actor is essentially an experiencer, albeit an experiencer of a physical sensation of performing an action rather than a psychological or static physical sensation. The explanation for the lack of dative inanimate involuntary actors may follow from this fact (since inanimates cannot be experiencers), or from a restriction of dative to actors that are truly non-volitional, requiring that they have inten-

tions (i.e. unlike the involitive operator more generally, inanimates are not exempt from computing intentions if dative).

For *atiŋ* we propose that its distribution derives from its etymology: it is synchronically identical to the instrumental form of *atə* ‘hand’, i.e. it is superficially identical to the expression ‘by hand’. However, there is evidence that it has grammaticalized into a substantive postposition (Gair 1970: 73) that heads a PP that is the subject of the involitive clause. First, the [DP *atiŋ*] phrase is a constituent, as can be shown by constituency tests. For example, while scrambling is possible in Sinhala, as shown in (36a-c), *atiŋ* cannot be scrambled away from the DP it marks, as shown in (36d,e).

(36) a. *Siri atiŋ piŋgaanəyə wærədilla binduna.*

Siri POST plate accidentally broke.INV.PST

‘Siri broke the plate accidentally.’

b. *Piŋgaanəyə Siri atiŋ wærədilla binduna.*

c. *Piŋgaanəyə wærədilla Siri atiŋ binduna.*

d. **Siri piŋgaanəyə atiŋ wærədilla binduna.*

e. **Siri piŋgaanəyə wærədilla atiŋ binduna.*

Thus *atiŋ* forms a constituent with the DP to its left, and is not (for example) an instrumental adverbial. However, the resultant constituent shares an index with the embedded DP, not the postposition. As Inman (1993: 53-56) makes clear, these PPs can act as antecedents for various types of anaphors, including the null subject PRO of adverbial clauses as in (37a) and reflexive pronouns as in (37b) (Inman 1993: 54-56, (52), (57)).

(37) a. [*PRO_i wædə kərənə gamaŋ*], *Gunee_i atiŋ Siri-wə*

work do.PRT while Gunee POST Siri-ACC

wiweecənee keruna.

criticism do.INV.PST

‘Gunee_i criticized Siri_j while PRO_{i/*j} working.’

b. *Nimal_i atij Siri-wə taman-ge_i gedərə-di tallu*

Nimal POST Siri-ACC self-GEN house-at pushing

keruna.

do.INV.PST

‘Nimal_i pushed Siri_j at self’s_{i/*j} house.’

These data confirm that *atij* phrases are not literally translated as ‘(by) X’s hand’, since otherwise the referent of the phrase would be X’s hand, not X, and these binding facts would be surprising. Thus *atij* is historically an instrumental, but synchronically a case-marking postposition.

However, we suggest that two (vestigial) aspects of *atij*’s erstwhile instrumental semantics explain its use marking involuntary causes in transitive clauses. First, we consider the semantics of instrumentality vis-à-vis causation. Croft (1991:178) analyzes the English instrumental *with* as a marker of causal intermediacy, i.e. an entity intermediate in the event’s force-dynamic structure, being acted upon by an external causer but causally prior to some patient. This general semantics subsumes the two different uses of *with* marking canonical instruments as in (38a) and so-called “displaced themes” (Rappaport and Levin 1988: 28-31) as in (38b), with the common force-dynamic semantics illustrated in the (simplified) Croft-style diagrams.

(38) a. John cut the bread with a knife. *John* → *knife* → *bread*

b. John filled the glass with water. *John* → *water* → *glass*

The Sinhala instrumental case shows the same two uses, suggesting it also

encodes causal intermediacy:

- (39) a. *Chamara kothu roti atij kaewwa.*
Chamara kothu roti hand.INST eat.VOL.PST
'Chamara ate kothu roti with her hands.' *C.* → *hands* → *roti*
- b. *Mamə wiiduru-wə wature-n piruwa.*
1SG glass-ACC water-INSTR fill.VOL.PST
'I filled the glass with water.' *I* → *water* → *glass*

This in turn explains the restriction that *atij* always occur with transitive causation verbs: the causal intermediacy requires the presence of some other entity in the clause that is acted upon, which requires the presence of a lower argument, effectively replicating the Wunderlich (1997) analysis of ergative case noted above. The only aspect of causal intermediacy not preserved is the requirement of an external causer, though this may have been lost in grammaticalization since *atij* is not referential on its own.

Likewise, the exclusive use of *atij* in involitive clauses may also derive from its erstwhile instrumental status. Instruments are by definition unwitting, so that we might expect *atij* to only occur in non-volitional clauses. However, as noted above, doxastic and ironic uses with *atij* are volitional, suggesting that non-volitionality is not a synchronic component of its meaning. Nonetheless, it is plausible that this component of instrumentality has grammaticalized into a restriction that *atij* only occur with involitives. Thus, while postpositional *atij* is not attested outside of involitive clauses, its distribution may have an independent diachronic semantic explanation.

We can thus sweep non-nominative subjects of transitive and unergative verbs under two semantic cases:

- (40) a. Dative = “goal” (goal, recipient, experiencer, involuntary actor)
 b. *atij* = causally prior participant (for involitives)

We turn next to intransitives, and argue that semantics also determines the subject cases there, although at least one case may indeed be a default case.

5.2 *Nominative vs. Accusative Subjects*

Unaccusative verbs occur exclusively in the involitive. There are at least two types of unaccusatives: externally caused change-of-state (ECOS) (e.g. *mærennə* ‘die’; *wæʔennə* ‘fall’; *gilennə* ‘drown’; *hirəwennə* ‘get stuck’; *lissennə* ‘slip’) and internally caused change-of-state (ICOS) (*pipennə* ‘bloom’) (Levin and Rappaport Hovav 1995: 90ff.). Subjects of ICOS verbs are necessarily nominative, while subjects of ECOS verbs are either accusative (Inman 1993) or nominative (Henadeerage 2002), as in (41).

- (41) a. *Aruni-ge ratu rosa(-*wə) pipuna.*
 Aruni-GEN red rose-*ACC bloom.INV.PST
 ‘Aruni’s red rose bloomed.’
- b. *Laməya/Laməya-wə giluwa/mæruna.*
 child/child-ACC drown.INV.PST/die.INV.PST
 ‘The child drowned/died (accidentally).’

The fact that nominative subjects occur with involitive verbs is surprising — Inman claims that nominative never occurs with involitive verbs, though Henadeerage gives numerous examples and our informants also find them acceptable. Beavers and Zubair (2009) propose that the nominative/accusative contrast reflects ultimate causation, illustrated in (42) and (43). In (42), a

nominative subject is compatible with a context in which there was no external causer, but not an accusative subject. Similarly, the emphatic/reflexive clitic *-mə* (which conveys a “by himself/herself” reading) is only compatible with nominative subjects as shown in (43).⁶

- (42) a. *Amma lissuna, eet kowwuruwat eyaa-wə*
 Mother fall.INV.PST but somebody 3SG-ACC
lisseuwe nææ.
 push.CAUS.PST NEG
 ‘Mother fell, but nobody pushed her.’ (No external cause)
- b. *#Amma-wə lissuna, eet kowwuruwat eyaa-wə*
 Mother-ACC fall.INV.PST but somebody 3SG-ACC
lisseuwe nææ.
 push.CAUS.PST NEG
 ‘Mother fell, but nobody pushed her.’ (#No external cause)
- (43) a. *Shameela-mə hirəwuna/lissuna.*
 Shameela-REFL get.stuck.INV.PST/slip.INV.PST
 ‘Shameela got herself stuck/slipped on her own.’ (reflexive)
- b. *#Shameela-wə-mə hirəwuna/lissuna.*
 Shameela-ACC-REFL get.stuck.INV.PST/slip.INV.PST
 ‘Shameela got herself stuck/slipped on her own.’ (#reflexive)

Beavers and Zubair argue that ECOS unaccusatives are derived from transitive causative volitive verbs by a process of causer suppression that may result in two possible interpretations — the suppressed causer is interpreted reflexively as co-identified with the patient argument, or it is existentially bound and is interpreted as distinct from the patient. These two meanings

are represented in (44b,c) respectively. ICOS verbs we assume are non-causative and reflect only inchoative semantics as in (44a).

- (44) a. [y BECOME < STATE >] (ICOS)
b. [x CAUSE [x BECOME < STATE >]] (Refl. ECOS)
c. $\exists x$ [x CAUSE [y BECOME < STATE >]] (\exists -bound ECOS)

What unifies (44a) and (44b) is that in neither case is there an entailment of external causation, i.e. reflexive ECOS verbs are de facto ICOS verbs. We thus suggest that accusative in Sinhala has a semantic use that indicates a patient of an externally caused event (cp. Wunderlich 1997).

- (45) ACC = Patient of an externally caused event

Thus any verb that takes a patient argument and entails an external causer will realize that argument as accusative, including ECOS verbs on the reading in (44b) plus all transitive change-of-state verbs. Note that for such arguments dative and *atij* are of course ruled out: these participants are neither actors nor causers. Unfortunately, this definition of accusative is something of a stipulation — accusative is also a structural case and can mark non-patient arguments as well. Nonetheless, all externally manipulated patients are accusative, so that the stipulation represents a unidirectional correlation.

This leaves the distribution of nominative, which realizes (a) actor subjects of volitive verbs (which are by default volitional, but not always), (b) inherently non-volitional patients of involitive ICOS/reflexivized ECOS verbs, and (c) non-volitional inanimate subjects of unergatives. Prima facie there is no semantic unification of these roles since it would have to cover both volitional and non-volitional participants as well as both actors and patients. The obvious conclusion is simply that nominative is the default case,

and arises due to gaps in the paradigm: the arguments that take nominative are unable to bear any of the semantic cases discussed above.

Among involitives, unaccusative subjects cannot be marked by *atij* since there is no causal precedence, nor dative because they are not involuntary actors, recipients/goals, or experiencers. If there is external causation accusative is possible, but minus that there is no semantic case left. Likewise, inanimate actors such as natural forces cannot be marked dative since they have no intentions, nor *atij* or accusative due to lack of causally subsequent/prior entities. In all cases, default nominative is all that is left.

Among volitives, animate subjects of unergatives may not be dative since its inherent non-volitionality clashes with the interpretative principles governing volitives. Inanimate subjects are ruled out for dative *a priori*. Accusative may not mark subjects of volitives since no volitive takes a patient subject (as discussed in §4), and *atij* is (as argued above) restricted to involitive clauses and thus also never occurs with volitives. Thus again default nominative is the only case left. Note that it *is* possible to have quirky subjects in the volitive; as shown in (29a) dative possessor subjects are possible. Thus the only explanation is that nominative fills in the gaps where other cases fail, and there are more such gaps with volitive verbs than involitives.

5.3 *The Interaction of Verb Type, Semantic Case, and Volitivity*

To summarize, we have argued for particular semantic definitions for dative, *atij*, and accusative that predict their distributions. Nominative is not associated with any semantics, and shows up when no more specific case applies, including nearly all volitive verbs and even some involitives. The patterns in

§3 and §§5.1-5.2 emerge through the interaction of three factors: verb class, the modal operators associated with the two stem types, and the system of specific semantic cases found in the language. In terms of Malchukov (2005), FaithRole (overtly indicate thematic roles) is presumably ranked highly in Sinhala, explaining why we get quirky cases at all. However, were we to focus just on Malchukov's constraints, we might expect some volitives with quirky subjects, and likewise no nominative subjects in involitives. We could overcome this by saying TransDef (prefer unmarked frames) is ranked more highly just for volitive stems, but this would not explain nominative subjects with involitives. On our analysis, no reranking is necessary: even with FaithRole ranked highly across the board, if there is no case for a given thematic role, then nominative is all that is left (i.e. FaithRole is vacuously satisfied). However, it is only by examining the semantics of particular cases in detail that this conclusion emerges, adding an additional level of explanation beyond Malchukov's broader constraints on surface forms.

6 Conclusion

We have argued that the Sinhala volitive/involitive contrast is a high/low transitivity split that reduces to two factors: a stem alternation indicating a realis/irrealis distinction that has significant interaction with volitionality and actorhood, and a system of semantic cases. In contrast to Malchukov's one-dimensional Transitivity Scale, our analysis indicates that semantic features form a multi-dimensional map. The crucial factor is the way particular semantic features are independently defined, so that mode — not normally considered an A-related feature — happens to be an A-related feature here.

Likewise, the resources available in a language for marking low transitivity are semantically contentful but may contain gaps that result in the emergence of high transitive (default) marking through interaction with semantic features. This gives Sinhala the appearance of preserving transitive defaults across verb types in one stem but not the other. Thus examining how the semantic and grammatical transitivity features in the language interact offers an explanation behind this superficial pattern. This shows the necessity of a close examination of semantic and grammatical features that play into transitivity splits, since relying on constraints purely on surface form alone may not fully capture all of the co-variations seen within a language.

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Endnotes

¹We would like to thank Patrick Brandt, Marco Garcia, Andrej Malchukov, and an anonymous reviewer for their very useful comments on an earlier draft. Thanks also to Andrew Koontz-Garboden, John Peterson, Farzan Zaheed, Bettina Zeisler, and audiences at the Transitivity Workshop at Cologne and the 2008 LSA Annual Meeting for their feedback. We would also like to thank our informants. Any errors or omissions are our own.

²There are of course other modalities in Sinhala (e.g. future tense) that vary independently; we refer here just to the specific modality associated with (in)volitive-marking.

³Alternatively, volitive-marking could be a type of evidential-marking, which is independently known to express non-volitionality (Curnow 2003). However, while evidentials and involitives clearly overlap in functionality, as Curnow (p.40) notes, the key feature of evidentiality is reference to the source of the information conveyed by the proposition, something not encoded by volitivity-marking. Thus volitive-marking is not a type of evidential-marking, though there is clearly a semantic link; we leave this for future work.

⁴There is some evidence of this in other languages as well. Brandt (2006) notes a parallel situation with German cipient-datives in *too*-comparatives similar to *The soup is too hot (to me)*. Brandt argues that the predicate expressing too hotness generates a presupposition that there is some other index (world) in which this state of affairs does not obtain, and this index is associated with the dative-marked participant, which he analyzes as a predicate internal subject of sorts. Thus again computing possible worlds results in A-marking.

⁵The difference between (26) and the volitive variant in (22a) is that the involitive typically conveys a meaning that the blowing is unexpected/unexplained to the speaker, i.e. a doxastic use. To simply say that the wind blows, the volitive is the preferred form. This is as expected on our approach. Since the subject has an empty intention set, the non-volitional reading of the involitive means the same as the volitive. In this case we would expect the unmarked volitive to be preferred, leaving the involitive for uses that do not code subject intentions, such as the doxastic. Thanks to an anonymous reviewer for pointing this out us.

⁶As noted in §3 Sinhala is a differential object-marking language, so that accusative never occurs with inanimate objects and only optionally occurs with animates. However, (42)-(43) show that overtly accusative subjects have a different reading from overtly nominative ones, suggesting that when marking subjects these cases are not in free variation.