Direct causatives of unergatives: A view from variable unaccusativity

Eva Neu

Department of Linguistics, University of Massachusetts Amherst, 650 North Pleasant Street, Amherst, 01003, MA, USA.

Corresponding author(s). E-mail(s): eneu@umass.edu;

Abstract

In several languages, unergative verbs are able to undergo the causative alternation, contrary to common assumptions. Direct causatives of unergatives raise a vexing question concerning the status of the causee: given the unergative nature of the verb, the causee should be realized as an external argument; however, direct causatives are assumed to make only one external argument position available, which must already be occupied by the causer. This paper investigates direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic and shows that they have a regular transitive structure. The causee is merged as an internal argument and receives a patient-like interpretation clearly distinct from the agentive reading assigned to the subject of the intransitive unergative. To account for these findings, I link direct causatives of unergatives to variable unaccusativity, that is, the phenomenon that verbs can allow for both an unaccusative and an unergative use. Concretely, I propose that the structures which have been described as direct causatives of unergatives are not, strictly speaking, causatives of unergatives. Rather, the normally unergative root takes on an unaccusative behavior in such contexts and can thus causativize as usual. I address the issue of cross-linguistic variation in the availability of direct causatives of unergatives and I discuss further implications of the analysis for the general architecture of the lexicon-syntax interface.

Keywords: Causatives, unergatives, lexicon-syntax interface, Hindi-Urdu, Turkish, Arabic

1 Introduction

It is a widely assumed generalization that unaccusatives (1) but not unergatives (2) can undergo the causative alternation:[1]

(1) a. The glass broke.
b. Shama broke the glass.

(2) a. Rohan laughed.
b. *Shama laughed Rohan.

This generalization, however, does not hold up to scrutiny. In many languages, unergatives are able to form direct causatives, as demonstrated below for Hindi-Urdu (3), Turkish (4) and Sason Arabic (5).[2] All examples surface with causative morphology and receive a standard causative interpretation, with the subject being interpreted as an external argument bringing about a result state.

(3) a. Rohan naach rahaa hai.
Rohan.M dance PROG.MSG be.PRS.3MSG
'Rohan is dancing.'
b. Shama Rohan-ko nach-aa rahii hai.
Shama.F Rohan-DOM dance-CAUS PROG.F be.PRS.3MSG
'Shama is making Rohan dance/twirling him around (the dance floor).'
(Bhatt & Embick, 2017:124)

(4) a. Bebek uyu-du.
baby sleep-PST
'The baby slept.'
b. (Ben) bebeğ-i uyu-t-tu-m.
I baby-ACC sleep-CAUS-PST-1SG
'I put the baby to sleep.'

(5) a. i-zak.
3M-laugh
'He laughs.'
b. a-zakkiy-u.
1SG-laugh.CAUS-him
'I make him laugh.' (Akkuş, 2021a:175)

For a long time neglected, direct causatives of unergatives are now the subject of a growing area of research, having been attested in Georgian (Harris, 1981; Nash, 2021), Eastern Armenian (Megerdoomian, 2002), Niuean (Massam, 2009; Tollan & Massam, 2022), Acehnese (Legate, 2014), Samoan (Tollan, 2018; Tollan & Massam,

[1] Examples follow the Leipzig glossing conventions. Additional abbreviations: AOR = aorist, CAUS2 = indirect causative, DOM = differential object marker, IMPERS = impersonal. Unless taken from previous literature, judgments come from the following consultants: Rajesh Bhatt (Hindi-Urdu), Faruk Akkuş (Turkish, Sason Arabic), Özge Bakay (Turkish), Duygu Göksu (Turkish). Thanks to Faruk Akkuş and Rajesh Bhatt, as well as Özge Bakay, Brian Dillon, Duygu Göksu, Kyle Johnson, Shota Momma, Breanna Pratley, two anonymous reviewers, the editor, and the audiences at ALC16, the 2023 LSA Annual Meeting, the Agency and Intentions in Language 3 workshop, the Penn Syntax Lab and the UMass Syntax Workshop.

[2] Sason Arabic is a peripheral variety of Arabic spoken in a small area in Southeastern Turkey (Akkuş, 2021a).

2022), Algonquian (Tollan & Oxford, 2018), Tagalog (Nie, 2020), Kipsigis (Kouneli, 2021), Quechua (Myler, 2022) and Malayalam (Krishnan & Sarma, 2023).[3]

The puzzle posed by direct causatives of unergatives concerns the syntactic and semantic status of the causee, such as *Rohan* in (3b). Given the unergative nature of the verb 'dance,' we would expect *Rohan* to be realized as an external argument receiving an agent θ-role. However, direct causatives are monoeventive, and it is commonly assumed that a single event can contain only one external argument (e.g., Carlson, 1998, but see Nie, 2020). Since this external argument position must already be occupied by the causer *Shama*, *Rohan* seems doomed to remain syntactically homeless, but the construction is grammatical nonetheless.

In this paper, I take a closer look at direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic. I argue that such causatives are perfectly regular transitives in which the causer is merged as an external argument receiving an agent θ-role and the causee as an internal argument with a patient θ-role. The obvious question this finding raises is how an unergative verb could license an internal, patient-type argument. My solution to this problem consists in linking causatives of unergatives to variable unaccusativity, that is, the phenomenon that a given verb can often behave both as an unaccusative and as an unergative depending on interpretative factors. Concretely, I propose that the structures which have been described as direct causatives of unergatives are not, strictly speaking, direct causatives of unergatives. Rather, in such contexts, the normally unergative root takes on an unaccusative behavior and can thus causativize as usual. I show that this interpretation of the data fits neatly into the broader phenomenon of variable unaccusativity cross-linguistically. The bottom line is that at least in Hindi-Urdu, Turkish and Sason Arabic, unergatives *qua* unergatives cannot causativize: normally unergative verbs can only undergo the alternation if they shift to an unaccusative use. As a result, the term 'direct causatives of unergatives,' while I will continue to use it as a convenient shorthand in the following, is actually a misnomer.

Overall, my analysis of direct causatives of unergatives does not stipulate any novel syntactic or semantic operations but instead relies on a more fine-grained understanding of the mapping relation between lexical items and the structures in which the latter can be merged. The fact that direct causatives of unergatives are attested poses a puzzle only if we assume that verbal roots can be neatly and categorically classified as either unergative or unaccusative. Such a simplistic understanding of the lexicon-syntax interface has long been known to be untenable. Rather, we will see that whether a given root is compatible with a given structure is subject to gradient, flexible, context-sensitive and cross-linguistically variable constraints. The strategy pursued in this paper is to situate causatives of unergatives in the context of these constraints and to demonstrate that they fall out naturally.

While the connection I draw between direct causatives of unergatives and variable unaccusativity is novel, my claim that the former are syntactically regular transitives has in various ways been anticipated in previous research. Most comprehensively, it

[3] An anonymous reviewer points out that the Japanese morpheme *-(s)as*, which is commonly regarded to form direct causatives, can also appear on unergatives (Kuroda, 1993).

has been argued for by Legate (2014) for Acehnese and, in the framework of Relational Grammar, by Harris (1981) for Georgian; however, neither of the two discuss the theoretical challenge these findings raise. Marantz (2022) also argues that direct causatives of unergatives are transitives but puts forward a very different perspective on their semantic interpretation than developed here. Finally, a transitive syntax is adopted by Ramchand (2008) for direct causatives of unergatives in Hindi-Urdu, a proposal which I review in Section 6.2.

In contrast to this strand of research which regards direct causatives of unergatives as essentially transitives, an alternative approach has recently been gaining popularity, which I label the low subject proposal. According to this view, direct causatives of unergatives provide evidence that subjects of unergatives are merged low, in Spec$v$P, unlike subjects of transitives which occupy SpecVoiceP (Kouneli, 2021; Kumaran, 2021; Massam, 2009; Myler, 2022; Pineda & Berro, 2020; Tollan, 2018; Tollan & Massam, 2022; Tollan & Oxford, 2018). I discuss this proposal in Section 6.1 and show that it cannot account for direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic. While a general evaluation of the low subject proposal is beyond the scope of this paper, I contribute to the debate by providing an alternative account of the data against which the low subject approach will need to be measured.

The main theoretical premise I will rely on in the following is that word formation takes place in syntax, as assumed in the tradition of Distributed Morphology (Halle & Marantz, 1993, 1994; Marantz, 1997). For the sake of concreteness, I will adopt the view that the verbal domain consists of an acategorical root as well as two functional layers, VoiceP and vP, such that Voice introduces the external argument and v serves as a verbalizer carrying eventive semantics, besides potentially other functions (Harley, 2013, 2017; Legate, 2014; Pylkkänen, 2008). The gist of my proposal, however, is independent from this specific implementation.

Regarding causative constructions in particular, I adopt the widespread distinction between direct and indirect causatives, differentiated by the number of events they contain (Shibatani & Pardeshi, 2002). Direct causatives, I assume, are structurally transitives which differ from unaccusatives in containing a VoiceP layer introducing the external argument (Alexiadou, Anagnostopoulou, & Schäfer, 2015). I remain agnostic as to whether (some) unaccusatives contain an expletive, non-thematic Voice head (e.g., Schäfer, 2009). I also do not commit to any specific view on whether causatives differ from unaccusatives on the one hand and from non-causative transitives on the other on the level of (eventive) semantics, e.g., by virtue of containing a result state or a CAUSE predicate (Harley, 2013, 2017; Pylkkänen, 2008). The claim this paper will make is simply that direct causatives of unergatives are syntactically and semantically identical to regular direct causatives of unaccusatives, regardless of which concrete analysis is adopted for the latter. As for indirect causatives, I follow the view that they have a recursive biclausal structure, containing a v which embeds a VoiceP or vP (Akkuş, 2022; Legate, 2014; Pylkkänen, 2008). As a result, indirect but not direct causatives contain both a causing and a distinct caused event, each encoded on a separate v head.

Two terminological clarifications are in order. First, I will argue extensively that verbs cannot be classified categorically as either unergative or unaccusative. Strictly

speaking, the terms 'unergative' and 'unaccusative' thus describe structures in which a root can be merged, not lexical items themselves. However, I will continue to speak of unergative and unaccusative verbs to pick out the loosely defined classes of roots which under most circumstances tend to pass unergativity/unaccusativity diagnostics. Secondly, I will describe the two main θ-roles as agent and patient, without taking a stance on the question of whether there are relevant semantic and/or syntactic differences between agents and other kinds of external arguments such as inanimate causers, or between patients and themes.

I will proceed as follows. Section 2 provides some necessary background on unergatives and causatives in Hindi-Urdu, Turkish and Sason Arabic. Section 3 demonstrates that direct causatives of unergatives in these languages are regular transitives. In Section 4, I link these data to the broader phenomenon of variable unaccusativity, in that the normally unergative verb must take on an unaccusative behavior in order to causativize. Section 5 deals with cross-linguistic variation in the availability of direct causatives of unergatives, Section 6 reviews and refutes competing accounts and Section 7 briefly outlines a challenge that direct causatives of unergatives pose for a specific analysis of causative morphology. Section 8 concludes.

2 Background

To lay the groundwork for the syntactic analysis, this section confirms that Hindi-Urdu, Turkish and Sason Arabic have true direct causatives of unergatives. First, Section 2.1 shows that the verbs in question pass unergativity diagnostics. In Section 2.2, I then give an overview over direct and indirect causativization strategies in the three languages and establish that unergatives can form direct causatives.

2.1 Background on unergatives

For each language, I now present several diagnostics according to which some causativizing verbs should be classified as unergatives.

Hindi-Urdu

For Hindi-Urdu, Bhatt and Embick (2017) provide three unergativity diagnostics. First, unergatives are not able to appear in reduced relative environments whereas unaccusatives are (6):

(6) a. *hãs-aa huaa laṛkaa
laugh-PFV be.PFV boy
Intended: 'the laughed boy'
b. khul-aa huaa darwaazaa
open-PFV be.PFV door
'the opened door' (Bhatt & Embick, 2017:121)

Secondly, unergatives but not unaccusatives can form impersonal passives (7):

(7) a. calo, dauṛ-aa jaa-ye.
come run-PFV PASS-SBJ

'Come, let it be run.' (i.e., come, let us run)

b. *calo, kaṭ-aa jaa-ye.
come cut.INTR-PFV PASS-SBJ
Intended: 'Come, let us get cut.' (Bhatt & Embick, 2017:123)

Finally, unergatives and unaccusatives differ concerning their behavior in the so-called inabilitative construction, which is used to express that the subject is unable to perform a certain activity. Unergatives, patterning with transitives in this respect, can only appear in the inabilitative with passive (8a) but not with active syntax (8b). Unaccusatives, on the other hand, do not allow passive (9a) but only active syntax (9b):

(8) a. Nina-se dauṛ-aa nahĩĩ ga-yaa.
Nina-INST run-PFV NEG PASS-PFV
'Nina couldn't run.'

b. *Nina-se Mona nahĩĩ dauṛ rahii hai.
Nina-INST Mona.F NEG run PROG.F be.PRS.SG
Intended: 'Nina is unable to make Mona run.'

(9) a. *dhabbõ-se miṭ-aa nahĩĩ ga-yaa.
stains-INST wipe.INTR-PFV NEG PASS-PFV
Intended: 'The stains weren't able to bring themselves to erase themselves.'

b. Nina-se dhabbe nahĩĩ miṭ-e.
Nina-INST stains.M NEG wipe.INTR-PFV.MPL
'Nina wasn't able to wipe away the stains.' (Bhatt & Embick, 2017:122)

The vast majority of Hindi-Urdu verbs which qualify as unergatives according to these diagnostics can form direct causatives (Bhatt & Embick, 2017).[4]

Turkish

The following three diagnostics confirm the unergative status of some causativizing verbs in Turkish. First, unaccusatives but not unergatives can combine with the adjectival participle *-ık* (Acartürk, 2005; Acartürk & Zeyrek, 2010), as shown in (10):[5]

(10) a. kır-ık bardak
break-ADJ glass
'broken glass'

b. *uyu-k bebek
sleep-ADJ baby
Intended: 'slept baby'

[4] The only unergatives reported by Bhatt and Embick (2017) to not causativize are onomatopoeic denominatives such as *bilbilaa-naa*, 'cry in pain.' While I cannot discuss these cases in detail, it appears that such verbs already contain the morpheme *-aa*, suggesting that they are of a causative nature to begin with and thus cannot undergo further causativization.

[5] Interestingly, the addition of a causative morpheme does not improve the acceptability of unergatives with *-ık*:

(i) *uyu-t-uk bebek
sleep-CAUS-ADJ baby
Intended: 'slept baby'

This unacceptability can be attributed to morphological ill-formedness: Gürer (2014) proposes that *-ık* attaches directly to the root, which suggests that the causative affix cannot intervene between the two.

Secondly, (11) demonstrates that the agent nominalizer *-ucu* can only surface with unergatives or transitives:

(11) a. koş-ucu
run-NMLZR
'runner'
b. sat-ıcı
sell-NMLZR
'seller'
c. *düş-ücü
fall-NMLZR
Intended: 'faller'

Finally, only unergatives can form impersonals in episodic contexts (12a) (Acartürk, 2005; Acartürk & Zeyrek, 2010; Akkuş, 2021a; Legate, Akkuş, Šereikaitė, & Ringe, 2020). Impersonals of unaccusatives, while felicitous under a habitual reading, cannot receive an episodic interpretation (12b):

(12) a. Dün burada uyu-n-du.
yesterday here sleep-IMPERS-PST
'People/one slept here yesterday.'
b. *Dün burada öl-ün-dü.
yesterday here die-IMPERS-PST
Intended: 'People/one died here yesterday.'

Several Turkish verbs which pass these three unergativity diagnostics causativize, such as 'sleep' (4), 'walk' (54) and 'sit' (24).

Sason Arabic

Finally, unergatives can be detected in Sason Arabic using the following diagnostics. First, resultative secondary predicates require the presence of an internal arguments and are thus only licensed with unaccusatives (13a). With unergatives (13b), the adjective can only have a depictive reading:

(13) a. sabi sar / var raxu.
boy became / fell sick
'The boy became/fell sick.'
b. #sabi faqaz raxu.
boy ran sick
Intended: 'The boy ran himself sick, became sick as the result of running.'

Secondly, only unergatives are able to form impersonal passives. Unaccusatives in Sason Arabic can surface with the same affix but the resulting constructions do not qualify as true passives. First, impersonals of unaccusatives are restricted to human referents: (14b) is infelicitous in a situation in which, for example, animals fall. True

impersonal passives in Sason Arabic, on the other hand, can take non-human referents, as seen in (14a). Secondly, impersonals of unaccusatives do not license a *by*-phrase:

(14) a. in-nam nihane (mı zɣar / ɣorif).
PASS.IPFV-sleep.IPFV.3M here (by children / sheep)
'It is slept here (by the children/sheep).'
b. in-vır nihane (*mı zɣar).
IMPERS-fall here (by children)
'People fall here/one falls here.'

The last diagnostic comes from path arguments and cognate objects. Following Kuno and Takami (2004) and Nakajima (2006), I assume that the latter can have two distinct syntactic realization. If they are true arguments of the verb, they are located in its complement position, are thus only compatible with unergatives and can passivize. I remain agnostic as to whether such arguments are base-generated in this position, as well as if and how they are assigned a θ-role. Alternatively, path arguments and cognate objects can be realized as adjuncts, in which case they can also surface with unaccusatives and resist passivization. Thus, (15) demonstrates that 'laugh' has unergative status in Sason Arabic since it combines with a cognate object which can passivize. On the contrary, unaccusative 'rot' can only take an adjunct cognate object which fails to passivize (16):

(15) a. zake-ma kotti zak.
laugh-a bad laughed.3M
'He laughed a bad laugh.' (Akkuş & Öztürk, 2017:2)
b. zake-ma kotti ın-zak (mı zɣar).
laugh-a bad PASS.PFV-laugh.PFV by children
'A bad laugh was laughed (by the children).'

(16) a. badıncanad pat-ma gıze kotti patto.
tomatoes rottening-a such bad rottened.3PL
'The tomatoes rottened such a bad rottening.' (Akkuş & Öztürk, 2017:3)
b. *pat-ma gıze kotti ın-pat (mı badıncanad).
rottening-a such bad PASS.PFV-rot.PFV by tomatoes
Intended: 'Such a bad rottening was rottened (by the tomatoes).'

Like Hindi-Urdu and Turkish, Sason Arabic has several verbs which pass these unergativity diagnostics but also form direct causatives, including 'laugh' (5) 'sleep' (31), 'jump' (30) and 'run' (34). In sum, we have seen that in all three languages, some causativizing verbs should be classified as unergatives based on standard diagnostics.

2.2 Background on causatives

I now give an overview over the various causativization strategies in all three languages and show that unergatives can form direct as opposed to indirect causatives. To first briefly introduce a diagnostic I draw on, it is well-known that we can distinguish

between direct and indirect causatives using adverbial modification (Martin & Schäfer, 2014), exemplified for English in (17):

(17) a. John$_1$ awoke Bill$_2$ quickly$_{1/*2}$.
b. John$_1$ made Bill$_2$ awake quickly$_{1/2}$.

In direct causatives, adverbials such as *quickly* can only describe the subject's action, not the object's: example (17a) is false if John is not acting quickly. Indirect causatives such as (17b), on the other hand, which contain a separate causing event, allow the adverbial to describe either the action of the causer or of the causee, given that the latter is the subject of the embedded event.

Hindi-Urdu

Hindi-Urdu has three morphologically distinct causatives, derived via changes in vowel length of the root, the morpheme *-aa* and the morpheme *-vaa*, respectively (Bhatt & Embick, 2017). Since the first strategy does not apply to unergatives, I will focus on the latter two. Causatives formed with *-aa* receive a direct interpretation, those formed with *-vaa* an indirect interpretation: the former can only be used to describe a situation in which the causer directly and physically acts on the causee whereas the latter requires the relation between causer and causee to be mediated in some way. Example (18) shows an unaccusative (18a), a direct *-aa* causative (18b) and an indirect *-vaa* causative (18c):

(18) a. makaan jal rahaa hai.
house.M burn PROG.M be.PRES
'The house is burning.'
b. ḍakaitõ-ne makaan jal-aa diyaa.
bandits-ERG house.M burn-CAUS give.PERF.M
'Bandits burned the house.'
c. zamiindaar-ne (ḍakaitõ-se) makaan jal-vaa diyaa.
landlord-ERG bandits-INS house.M burn-CAUS2 give.PERF.M
'The landlord had the house burned (by the bandits).' (Bhatt & Embick, 2017:94f.)

Unergatives can form both *-aa* (19a) and *-vaa* (19b) causatives. Intermediate agents are only available with the latter, supporting the claim that the former are direct:[6]

(19) a. Shama (*Mina-se) Rohan-ko nach-aa-egii.
Shama Mina-INST Rohan-DOM dance-CAUS-FUT.F

[6] A curious exception to this rule is the fact that *-aa* causatives formed from certain transitives receive an indirect reading, as demonstrated by their ability to combine with an intermediate agent:

(i) Anjum-ne (Saddaf-se) paoda kaṭ-aa-yaa.
Anjum-ERG Saddaf-INST plant cut-CAUS-PFV
'Anjum had Saddaf cut the/a plant.' (Ramchand, 2008:160)

Example (i) has the same meaning as the corresponding *-vaa* causative. I must leave it open why the *-aa* morpheme can be used in indirect causatives under these circumstances; however, as (19) shows, this confound does not affect the status of *-aa* causatives of unergatives and can thus be neglected for our purposes. Note also that my native speaker consultant rejects (i) but agrees with the broader point.

‘Shama is making Rohan dance/twirling him around (the dance floor).’

b. Shama Mina-se Rohan-ko nach-vaa-egii.
Shama Mina-INST Rohan-DOM dance-CAUS2-FUT.F
‘Shama makes Mina make Rohan dance.’

Yet further evidence is provided by adverbial modification. In the *-aa* causative in (20a), the adverb ‘in a strange way’ can only target a single event, obligatorily giving rise to the interpretation that the way in which Shama is acting is strange. In *-vaa* causatives, on the other hand, the adverb can either modify the main clause event, as in (20b), or – with a different word order – the event in the embedded clause, as in (20c):

(20) a. Shama Rohan-ko ajiib tarah-se nach-aa rahii hai.
Shama Rohan-DOM strange way-INST dance-CAUS PROG.F be.PRS.3MSG
‘Shama, in a strange way, is making Rohan dance.’

b. Shama-ne ajiib tarah-se Mina-se Rohan-ko nach-vaa-yaa.
Shama-ERG strange way-INST Mina-INST Rohan-DOM dance-CAUS2-PFV
‘Shama, in a strange way, makes Mina make Rohan dance.’

c. Shama-ne Mina-se Rohan-ko ajiib tarah-se nach-vaa-yaa.
Shama-ERG Mina-INST Rohan-DOM strange way-INST dance-CAUS2-PFV
‘Shama makes Mina, in a strange way, make Rohan dance.’

In (20b), Shama herself is acting strangely, while in (20c), she asks Mina to behave in a strange way. Moreover, *-vaa* causatives can surface with two distinct adverbs, one targeting each event (21a), such that Shama is acting in a strange way but asks Mina to proceed in a good way to make Rohan dance. This is not possible with *-aa* causatives (21b):

(21) a. Shama-ne ajiib tarah-se Mina-se Rohan-ko acchii tarah-se
Shama-ERG strange way-INST Mina-INST Rohan-DOM good way-INST
nach-vaa-yaa.
dance-CAUS2-PFV
‘Shama, in a strange way, is making Mina, in a good way, make Rohan dance.’

b. *Shama-ne ajiib tarah-se Rohan-ko acchii tarah-se
Shama-ERG strange way-INST Rohan-DOM good way-INST
nach-aa-yaa.
dance-CAUS-PFV
Intended: ‘Shama, in a strange way, is making Rohan dance in a good way.’

To summarize, *-vaa* causatives make two events available for modification but *-aa* causatives only one, confirming that the latter are direct and do not involve a separate causing event.

Turkish

Turkish has a single causativization strategy, realized with various allomorphs: *-DIr*, *-t*, *-Ir*, *-Ar*, *-It* and *-Art* (Akkuş, 2021a). The resulting causatives receive either a direct or an indirect reading depending on the verbal structure they combine with. Causatives of unaccusatives are obligatorily direct (22):[7]

(22) a. Kalem masa-dan düş-tü.
pencil table-APL fall-PST
'The pencil fell from the table.'
b. Leyla kalem-i masa-dan düş-ür-dü.
Leyla pencil-ACC table-APL fall-CAUS-PST
'Leyla dropped the pencil from the table.'
Not: 'Leyla caused someone to drop the pencil from the table.' (Akkuş, 2021a:216)

Causatives of transitives, in contrast, must be interpreted as indirect (23):

(23) a. bütün misafir-ler araba-yı temizle-di-ler.
all guest-PL car-ACC clean-PST-3PL
'All the guests cleaned the car.'
b. bütün misafir-ler-e araba-yı temizle-t-ti.
all guest-PL-DAT car-ACC clean-CAUS-3PL
'(S/he) made all the guests clean the car.' (Akkuş, 2021a:215)

Causatives of unergatives, finally, are ambiguous between a direct and an indirect reading (24):

(24) a. Çocuk koltuğ-a otur-du.
child couch-DAT sit-PST
'The child sat on the couch.'
b. (Ben) çocuğ-u koltuğ-a otur-t-tu-m.
I child-ACC couch-DAT sit-CAUS-PST-1SG
'I sat the child on the couch. / I made the child sit on the couch.'

If the causative is interpreted as direct, (24b) must mean that the speaker physically lifts up the child and places them on the couch, whereas under an indirect reading, the speaker might, for instance, order or persuade the child to sit on the couch or bring about this state of affairs in some other unspecified way. This ambiguity is confirmed by adverbial modification: if (25) receives a direct interpretation, no adverb can describe the action of the causee, whereas this is possible under the indirect interpretation.

(25) (Ben) sakince bebeğ-i koltuğ-a yavaşça otur-t-tu-m.
I calmly baby-ACC couch-DAT slowly sit-CAUS-PST-1SG
'Calmly and slowly, I sat the baby on the couch. / Calmly, I made the baby sit on the couch slowly.'

[7] Akkuş (2023) argues that what rules out indirect causatives of unaccusatives in Turkish is that the embedding *v* head obligatorily selects a VoiceP; see also Akkuş (2021b) for the same issue in Sason Arabic.

Again, this demonstrates that causatives of unergatives can have a direct interpretation without a separate causing event.

Sason Arabic

Finally, Sason Arabic has four distinct causatives, of which two are morphological and two periphrastic (Akkuş, 2021a). Since the latter are obligatorily indirect, I will only discuss morphological causatives, derived via ablaut and gemination, respectively. Ablaut causatives always receive a direct reading and are more restricted than geminates, applying only to a limited subset of unaccusatives and even fewer unergatives. Examples (26) and (27) show an ablaut causative of an unaccusative and an unergative, respectively, both obligatorily interpreted as direct:

(26) a. lāke tal-e.
stain came.out-3F
'The stain came out.'
b. tel-tu lāke.
came.out.CAUS-1SG stain
'I got the stain out.'
Not: 'I caused someone to get out the stain.' (Akkuş, 2021a:91)

(27) a. nam-e.
sleep-3FSG
'She slept.'
b. nem-tu-a.
sleep.CAUS-1SG-her
'I put her to sleep.'
Not: 'I caused her to sleep.'

Geminate causatives, on the other hand, which are formed by geminating the second consonant of the root, pattern with Turkish causatives. When formed from an unaccusative, they are obligatorily direct (28):

(28) a. xaser xıreb.
yoghurt spoiled.3M
'The yoghurt spoiled.'
b. leyla xarrıb-e xaser.
Leyla spoiled.CAUS-3F yoghurt
'Leyla spoiled the yoghurt.'
Not: 'Leyla caused someone to spoil the yoghurt.' (Akkuş, 2021a:91)

Geminate causatives formed from a transitive must receive an indirect reading. The causee can be realized either as a bare DP (29b) or as a PP headed by *mışa* 'to, for' (29c):

(29) a. kemal ku i-qri lala kitab.
kemal be.3M 3M-read.IPFV this.M book
'Kemal is reading this book.' (Akkuş, 2021a:93)

b. oratman ki tı-qarri kemal lala kitab.
teacher be.3F 3F-read.CAUS Kemal this.M book
'The teacher is making Kemal read this book.' (Yakut, 2012:14)

c. oratman ki tı-qarri lala kitab mışa kemal.
teacher be.3F 3F-read.CAUS this.M book to Kemal
'The teacher is making Kemal read this book.' (Yakut, 2012:14)

Geminate causatives of unergatives are again ambiguous between a direct and indirect interpretation (30):

(30) a. patk-e mı haydan.
jumped-3F over wall
'She jumped over the wall.'

b. pattık-tu-a mı haydan.
jumped.CAUS-1SG-her over wall
'I jumped her over the wall. / I made her jump over the wall.'

The direct reading of (30b) entails that the speaker lifts the causee over the wall, whereas under the indirect interpretation, the speaker causes them to jump in some way, be it via physical coercion, persuasion, or any other measure. Moreover, in the latter case, it is possible for the causing and the jumping event to take place at different times which is not conceivable under the direct reading.

I demonstrate the adverbial diagnostic for ablaut causatives which, being obligatorily direct, lend themselves most easily to this diagnostic, but note that the facts replicate for geminate causatives. In example (31a), the subject-oriented adverb can only modify the first person singular speaker, not the sleeper. This contrasts with the periphrastic indirect causative in (31b) formed with the causativizing verb 'make' in which two events can be targeted by modification: while the action of sleeping is peaceful, the action of causing someone to sleep is slow.

(31) a. sakin nem-tu-a.
peacefully slept-1SG-her
'I put her to sleep peacefully.'

b. hedi hedi si-te nom sakin.
slow slow made-2SG.F sleep.INF peacefully
'You.F slowly made someone sleep peacefully.'

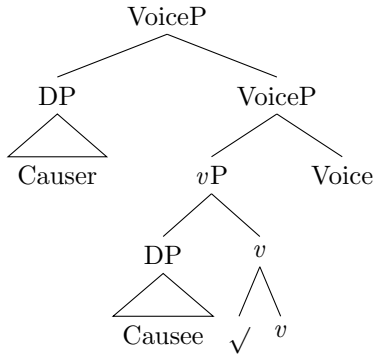
As before, this confirms the direct nature of some causatives of unergatives in Sason Arabic.

To conclude, I have established in this section that Hindi-Urdu, Turkish and Sason Arabic all can form both direct and indirect causatives of unergatives. The latter pose no particular problem and can simply be analyzed on a par with indirect causatives of transitives, containing an embedded VoiceP with the causee in its specifier position. The former, however, are puzzling: if a single event indeed makes only one external argument position available (Carlson, 1998), which must already be occupied by the causer, this raises the question where the causee is realized syntactically. I will propose and defend an answer to this question in the next section.

3 The causee is an internal argument

The syntactic analysis I propose for direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic is a standard transitive structure, with the causer realized as an external, the causee as an internal argument. Concretely, I assume the structure in (32) (*modulo* headedness):

(32)



I now present evidence for this proposal from six domains: interpretation of the causee, reduced relatives, secondary predicates, telicity, ingesto-reflexives, and path arguments and cognate objects.

Interpretation of the causee

In all three languages, the causee in causatives of unergatives obligatorily receives a deagentivized reading, being depicted as not being in control of the situation or even performing the activity against their will. By way of example, in the previously discussed Hindi-Urdu causative 'Shama is dancing Rohan,' Rohan does not actively and volitionally initiate the dancing but is shoved and twirled around like a puppet on strings. Instead, it is Shama who is presented as agentive and responsible. This is in line with the view that the causer, merged in SpecVoiceP, is interpreted as the agent, while the causee, merged as the verbal complement, receives a patient-like reading.

Reduced relatives

We have seen in (6) that reduced relatives in Hindi-Urdu require the presence of an internal argument, thus being licensed with unaccusatives but not with unergatives. Causativized unergatives, however, can form reduced relatives targeting the causee, indicating that the latter is realized as an internal argument (33):

(33) a. *dauṛ-aa laṛkaa
run-PFV.MSG boy
Intended: 'the run boy'

b. [Ravi-dwaaraa dauṛ-aa-yaa gayaa] laṛkaa
Ravi-by run-CAUS-PFV PASS.PFV boy

'the boy run by Ravi' (i.e., the boy chased by Ravi) (Bhatt & Embick, 2017:124f.)

Resultatives

In Sason Arabic, resultatives have been shown above in (13) to require the presence of an internal argument. Crucially, the causee in causatives of unergatives licenses a resultative, as in (34):

(34) faqqız-tu-a raxu-e, yani cımd-e barra.
ran.CAUS-1SG-her sick-F that.is got.cold-3F outside
'I ran her sick, that is, she got a cold outside.'

Example (34) could be used in a situation in which the speaker made the causee run outside in the cold for several hours, as a result of which she fell sick. Again, this is strong evidence for the internal argument status of the causee.

Telicity

A characteristic property of internal arguments is that they can often confer a telic interpretation on the verb phrase (Tenny, 1987). For instance, while the intransitive *Zeno ate* is atelic, *Zeno ate an apple* describes a telic event which comes to its natural endpoint when the apple is fully consumed. This is not to claim a one-to-one correspondence between internal arguments and telicity: not all internal arguments induce telic readings, and under certain circumstances, a telic reading can be generated in the absence of any internal argument (Ramchand, 2008). However, we can nevertheless use telic interpretations to detect the presence of an internal argument if other factors are carefully controlled for, as I will do in the following.

In various languages, the distinction between telic and atelic interpretation is reflected in the type of temporal modifier licensed in the sentence. For instance, in English, *in X hours* requires a telic but *for X hours* an atelic verb phrase (Vendler, 1957), shown in (35):

(35) a. Zeno ate an apple in an hour.
b. #Zeno ate an apple for an hour.
c. Zeno ran for an hour.
d. *Zeno ran in an hour.

Example (35d) is ungrammatical, supporting the claim that a telic reading requires an internal argument. On the other hand, as (35b) shows, an atelic interpretation which allows *for X hours* to surface can often be enforced even in the presence of an internal argument if the event is construed as having been interrupted. For instance, (35b) becomes more felicitous if the apple is not fully consumed. I will note this confound in the following where applicable but it will not be relevant for our purposes.

All these observations from English replicate in Turkish with the contrast between the postpositions *içinde* 'in' and *boyunca* 'for.' Unaccusatives, which have an internal argument and can receive a telic interpretation, preferably take *içinde* (36), whereas unergatives, being atelic, combine with *boyunca* (37):

(36) a. Yağ üç dakika içinde eri-di.
butter three minutes in melt-PST
'Butter melted in three minutes.'
b. *Yağ üç dakika boyunca eri-di.
butter three minutes for melt-PST
Intended: 'Butter melted for three minutes.'

(37) a. Kadın üç saat boyunca çalış-tı.
woman three hours for work-PST
'The woman worked for three hours.'
b. *Kadın üç saat içinde çalış-tı.
woman three hours in work-PST
Intended: 'The woman worked in three hours.' Nakipoğlu-Demiralp, 2002, cited and translated in Acartürk, 2005:45f.)

As in English, (36b) is acceptable if the melting process is interrupted after three minutes without the butter being fully melted yet. Note also that for my consultants, it is more natural to use a bare DP instead of a *boyunca* 'for' PP, and the locative suffix *-te* instead of an *içinde* 'in' PP, as seen in (38) and (39):

(38) a. Yağ üç dakika-da eri-di.
butter three minutes-LOC melt-PST
'Butter melted in three minutes.'
b. *Yağ üç dakika eri-di.
butter three minutes melt-PST
Intended: 'Butter melted for three minutes.'

(39) a. Kadın üç saat çalış-tı.
woman three hours work-PST
'The woman worked for three hours.'
b. *Kadın üç saat-te çalış-tı.
woman three hours-LOC work-PST
Intended: 'The woman worked in three hours.'

We can now employ this telicity contrast to diagnose internal arguments in direct causatives of unergatives. As a baseline, (40) demonstrates that the intransitive unergative 'sleep' can combine with *boyunca* or the bare DP (40a), as expected:

(40) a. Bebek iki saat (boyunca) uyu-du.
baby two hour (for) sleep-PST
'The baby slept for two hours.'

However, to complicate matters, 'sleep' can also be used with *içinde*/*-te* but then receives the markedly different interpretation 'fall asleep.' I argue that in this case, the normally unergative verb is used as an unaccusative when appearing in a telic environment, as a result of which its sole argument is realized in the internal position. Acartürk (2005) has attested this effect of telicity extensively for Turkish. I will discuss such cases in much more detail under the label of variable unaccusativity in Section

3.1. What matters for our current purposes is that 'sleep' allows for both an atelic and a telic use with different interpretations.

In causative environments, 'sleep' can take both *boyunca*/DP (41a) or *içinde*/*-te* (41b). Crucially, this correlates with a difference in the interpretation of the causative:

(41) a. Bakıcı bebeğ-i sadece iki saat (boyunca) uyu-t-tu.
caretaker baby-ACC only two hour (for) sleep-CAUS-PST
'The caretaker let the baby sleep for only two hours.'

b. Bakıcı bebeğ-i sadece {iki saat-te / iki saat içinde}
caretaker baby-ACC only {two hour-LOC / two hour in}
uyu-t-tu.
sleep-CAUS-PST
'The caretaker (was able to) put the baby to sleep in only two hours.'

In (41a), 'sleep' is used as an atelic predicate, accordingly taking a *boyunca*/bare DP modifier: the example features a cruel caretaker who only allows the baby two hours of sleep. In contrast, in (41b), 'sleep' is used as a telic predicate in the sense of 'fall asleep' as seen earlier, giving rise to the interpretation that the caretaker manages to make the extremely unruly baby fall asleep in merely two hours. This contrast in telicity predicts that (41b) but not (41a) should contain an internal argument.

This prediction aligns with the fact that (41a) is interpreted as an indirect and (41b) as a direct causative. Thus, the former contains an embedded unergative structure which lacks an internal argument and thus receives an atelic reading. On the other hand, the direct causative in (41b) contains an internal argument which makes a telic reading available. The fact that we cannot enforce a telic reading in an indirect causative, unlike in the intransitive base case (40), confirms the claim made earlier that the availability of a telic interpretation in the latter is the result of an unaccusative use of the verb: since indirect causatives cannot embed unaccusatives in Turkish, they must always contain an unergative structure which only allows for an atelic interpretation. To summarize, the direct causative licenses temporal modifiers with *içinde*/*-te*, the latter only surface with telic events, those in turn are licensed by an internal argument, and thus, we can infer that the direct causative contains an internal argument.

Ingesto-reflexives

The present approach predicts that direct causatives should never be licensed if the verbal complement position where the causee would have to be realized is already filled by another argument. Overall, this prediction is borne out: in all three languages, transitives are unable to form direct causatives. However, an apparent counterexample is a class of transitives such as 'learn,' 'see,' 'taste,' 'read,' 'understand' and 'drink,' traditionally labelled ingesto-reflexives, which both in Hindi-Urdu (42) and in Sason Arabic (43) can form direct causatives:

(42) Tina-ne Mina-ko angrezii sikh-aa-yii.
Tina-ERG Mina-DAT English.F learn-CAUS-PFV.F

'Tina taught Mina English.' (lit. 'Tina learned Mina.DAT English') (Bhatt and Embick 2017:128)

(43) şarrıp-to-lla mayn.
drank.CAUS-1SG-her.DAT water
'I_1 gave her_2 water to drink.' (lit. 'I drank her.DAT water.')

Direct causatives of ingesto-reflexives, as opposed to other transitives, are cross-linguistically very common (see Krejci, 2020 for a typological overview). I argue that these causatives, far from contradicting the present proposal, constitute further evidence for it.

In both Hindi-Urdu and Sason Arabic, direct causatives of ingesto-reflexives can be shown to have a ditransitive structure, as also argued by Legate (2014) for Acehnese. For Hindi-Urdu, this has been solidly established by Bhatt and Embick (2017); for Sason Arabic, it can be demonstrated using secondary predication. In (44), the third person causee cannot be modified by a depictive secondary predicate. Akkuş (2021a) has shown that while both indirect objects of ditransitives and causees of indirect causatives are marked with dative case in Sason Arabic, only the latter license depictives, as also noted by Pylkkänen (2008) for English. Hence, (43) is indeed a monoclausal ditransitive structure and not a biclausal indirect causative.

(44) şarrıp-to-lla mayn raxu-(*e).
drank.CAUS-1SG-her.DAT water sick-F
'I_1 gave her_2 water to drink $sick_{1/*2}$.' (lit. 'I drank her.DAT water sick.')

The dative-marked causee must thus be merged in a position distinct from both the external and the internal argument position. I here analyze it as an applicative argument, but not much hinges on the details. In this position, it receives a non-agentive θ-role, such as that of a goal, recipient, benefactor or experiencer. This is confirmed by its non-agentive interpretation: in (42), Mina is presented as the recipient of English lessons rather than as an independent learner, and in (43), the causee passively receives the water from the speaker.

Further support for this analysis comes from the fact that some Hindi-Urdu ingesto-reflexives also allow dative-marked arguments in monotransitive structures (45a), besides regular ergative case (45b); note that the root undergoes a predictable vowel change.

(45) a. Ram-*ko* Sita dikh-ii.
Ram-DAT Sita see-PFV.F
'Ram saw Sita.' (lit. Sita appeared to Ram)
b. Ram-*ne* Sita-ko dekh-aa.
Ram-ERG Sita-DOM see-PFV
'Ram saw Sita.' (Bhatt & Embick, 2017:130f.)

I argue that analogous to *Mina* in (42), the argument *Ram* in (45a) is generated in SpecApplP and receives an experiencer-like θ-role, whereas in (45b), it is merged in

SpecVoiceP and receives an agent θ-role.[8] This is again reflected in the interpretation of the argument: in (45a), Ram does not intentionally observe Sita but merely passively apprehends her in his field of vision. These data strengthen the claim that ingesto-reflexive verbs allow the causee to be merged in an applicative position and to be assigned a non-agentive θ-role.

Overall, what allows ingesto-reflexives to causativize, unlike other transitives, is that their lexical semantics makes an applicative argument position available where the causee can be merged. In this way, the latter does not compete with the direct object for the same syntactic position: the ditransitive structure has room for all three arguments. This strongly suggests that what blocks causativization of other transitives is that the causee would have to be merged in the internal argument position which is already occupied, in line with the present proposal.

Path arguments and cognate objects

The claim that the causee is merged as an internal argument makes another prediction, namely, that direct causativization should be blocked for unergatives with true path arguments or cognate objects which occupy the internal argument position. Example (46) shows that this is borne out for Hindi-Urdu:

(46) a. Rohan do tarah-ke tango naach-egaa.
Rohan two type-GEN tango dance-FUT.3MSG
'Rohan will dance two types of tango.'

b. *Shama Rohan-ko do tarah-ke tango nach-aa-egii.
Shama Rohan-DOM two type-GEN tango dance-CAUS-FUT.3FSG
Intended: 'Shama will make Rohan dance two types of tango.'

The ungrammaticality of (46b) cannot be attributed to case but persists regardless of whether the causee, the path argument, neither or both receive direct object marking. Moreover, the case marking in (46b) in which one argument is marked with *-ko* and and the other one is bare is the same pattern as observed for Hindi ditransitives, as seen previously in the ingesto-reflexive (42). Hence, there is nothing illicit about this case configuration as such. Note also that the path argument can raise to subject under passivization, confirming that it is a true argument of the verb instead of an adjunct (47):

(47) kal yahaan do tarah-ke tango naach-e jaa-enge.
tomorrow here two kind-GEN tango dance-PFV.MPL PASS-FUT.MPL
'Tomorrow, two kinds of tango will be danced here.'

Given that in (46b), the internal argument position is thus already occupied by the path argument, the causee cannot be merged in this position, and causativization fails.

Sason Arabic patterns with Hindi-Urdu in equally not allowing unergatives with path arguments or cognate objects to causativize. This is shown below for the verb 'run': under the direct reading, the causer takes the causee, typically a child, by the

[8] The alternation in (45) is in fact an instance of the flexible mapping from event participants to θ-roles which is discussed in Section 4 under the term variable unaccusativity: the same argument can receive different θ-roles.

hands and helps them run by providing balance, whereas under the indirect reading, the causer makes the causee run in some other unspecified way. However, the direct interpretation disappears once a path argument is added, as in (48):

(48) faqqız-tu-a 10m.
run.CAUS-1SG-her 10m
'I made her run 10m. / #I ran her 10m.'

The fact that the path argument construction in (49a) can passivize to form (49b), with the path argument raising to subject, confirms the complement as opposed to adjunct status of the argument:

(49) a. kemal i-fqez 10m.
Kemal 3M-run.IPFV 10m
'Kemal runs 10m.'

b. 10m in-fıqez.
10m PASS.IPFV-run.IPFV
'10m is run.'

Overall, direct causativization is thus blocked whenever the internal argument position which would need to host the causee is already occupied by a true path argument or cognate object.[9]

To summarize, I have presented several pieces of evidence supporting the view that the causee in direct causatives of unergatives is realized as a run-of-the-mill internal argument. However, as the reader will have noticed, this view also raises genuine questions I have eschewed so far: it is unclear how unergatives could take an internal argument, or how the resulting structure would be interpreted. I will tackle these questions in the next section, and instead of positing novel interpretative mechanisms I will rely on an established but neglected phenomenon: variable unaccusativity.

4 Unergatives *qua* unergatives cannot causativize

This section will make sense of the syntactic analysis proposed above by situating direct causatives of unergatives in the context of variable unaccusativity. The main claim I will defend is that unergatives *qua* unergatives cannot causativize. Rather, the normally unergative root takes on an unaccusative behavior – with the primary argument being depicted with reduced agentivity and realized as a patient instead –

[9] In Turkish, the status of path arguments is unclear. Generally, in Turkish, causatives of unergatives – both direct and indirect –, the causee receives accusative case, whereas in causatives of transitives, the causee is marked with dative, the embedded direct object with accusative case. Unergatives with path arguments can surface with two different case markings (i):

(i) a. Çocuğ-*a* 10m-*yi* yürü-t-tü-m.
child-DAT 10m-ACC walk-CAUS-PST-1SG
'%I walked the child 10m. / I made the child walk the 10m.'
b. Çocuğ-*u* 10m yürü-t-tü-m.
child-ACC 10m walk-CAUS-PST-1SG
'I walked the child 10m. / I made the child walk 10m.'

Example (ia) aligns with transitives in that the causee receives dative, the path argument accusative case. In (ib), on the other hand, the causee is assigned accusative case while the path argument does not receive any case marking. One of my consultants rejects a direct interpretation in (ia), indicating that in their grammar, the accusative-marked path argument is a true complement of the verb blocking direct causativization. Others, however, accept both readings in both cases, which might suggest that they allow for accusative case marking on adjuncts. I must leave this question open.

and can thus causativize as usual. I will first introduce the phenomenon of variable unaccusativity in general and then return to direct causatives of unergatives to show that they fall out as part of the same phenomenon.

4.1 Introducing variable unaccusativity

It is a well-known fact that the distinction between unergative and unaccusative verbs, as introduced by Perlmutter (1978) and Burzio (1981, 1986), is far from being a clear-cut line. While different roots do prefer different structures – and sometimes strongly so –, many can behave both as unergatives and as unaccusatives, typically with certain interpretative changes (Perlmutter & Postal, 1984). The general perspective I will adopt in the following is that the distinction between unaccusative and unergative roots is a gradient spectrum, ranging from prototypical unergatives to prototypical unaccusatives, with a broad range of intermediate cases in between. Sorace (2000, 2004, 2011) has shown that while 'core' unergative and unaccusative verbs tend to show consistent behavior, verbs in the middle of the spectrum can vary more easily between an unergative and an unaccusative use, both within and between languages, and are more prone to diachronic change. Moreover, unaccusativity/unergativity diagnostics tend to elicit clear judgments with core verbs, but less determinate intuitions with intermediate verbs.

Where a given verb is located on the unergative/unaccusative spectrum is determined, Sorace has argued, by two semantic factors, telicity and agentivity (see also Dowty, 1991, among many others). That is, telic verb phrases are more likely to be realized with an unaccusative structure, while strongly agent-like participants tend to be realized in the external argument position and thus to give rise to an unergative structure. These semantic factors not only account for the difference in behavior between distinct lexical items but also trigger variable behavior: whether a root is merged in an unergative or unaccusative syntax can depend on whether the verb phrase it projects receives a telic interpretation, as well as on how agent-like its argument is understood to be. Since telicity is not crucial for our purposes, the following discussion focuses on the effect of agentivity only, for which I will now present three examples.

The first example comes from first conjunct agreement in Russian, licensed with unaccusative but not unergative verbs (Krejci, 2020). In (50), the verb 'stand' agrees with the features of the first conjunct only, which leads to an ungrammaticality in (50a) but not in (50b):

(50) a. *Na lestničnoj ploščadke stojal sosed i ego
on stairway landing stood.MSG neighbor.MSG.NOM and his
brat.
brother.MSG.NOM
Intended: 'My neighbor and his brother were standing on the stairway landing.'

b. Na stole stojal stakan i kuvšin.
on table stood.MSG glass.MSG.NOM and jug.MSG.NOM
'On the table stood a glass and a jug.' (Krejci, 2020:126f.)

Krejci argues that in (50a), the event participant exerts energy to maintain its position, is therefore conceptualized as agentive and merged as the external argument in an unergative structure. Thus, first conjunct agreement is ruled out. On the other hand, the inanimate argument in (50b) does not qualify as sufficiently agent-like and is realized as a patient in the internal argument position, licensing first conjunct agreement. In short, the animacy status of the argument impacts whether the verb behaves as an unergative or as an unaccusative.

A similar effect can be observed for case marking in Tsova-Tush. In general, in sentences with local subjects, external arguments in Tsova-Tush are assigned ergative, internal arguments nominative case. Interestingly, some verbs allow for both case marking patterns, with the expected differences in interpretation (51):

(51) a. (as) vuiž-n-as.
1SG.ERG fell-AOR.1SG-ERG
'I fell down, on purpose.'
b. so vož-en-sO.
1SG.NOM fell-AOR.1SG-NOM
'I fell down, by accident.' (Holisky, 1987:105)

In (51a), the sole argument is merged in the external position and hence receives an agentive reading, giving rise to the interpretation that the speaker fell down intentionally. This contrasts with (51b), in which the participant is mapped onto the internal argument position and is therefore interpreted as a patient, that is, as someone who fell down against their will. What can trigger variable behavior of verbs is thus not only the animacy status of the argument, as seen in (50), but also the degree of agentivity more broadly that is ascribed to the event participant.

Finally, to use a language investigated here, we saw that Hindi-Urdu licenses reduced relatives only in the presence of an internal argument. Accordingly, they are grammatical with unaccusatives and causativized unergatives but not with intransitive unergatives. In fact, however, the latter do license reduced relatives if their argument is inanimate (52):

(52) a. *uṛ-ii (huu-ii) ciṛyaa
fly-PFV.FSG be-PFV.FSG bird.FSG
Intended: 'the flown bird'
b. uṛ-ii (huu-ii) patang
fly-PFV.FSG be-PFV.FSG kite.FSG
'the flown kite' (Ahmed, 2010:8f.)

This aligns with previous examples: the inanimate argument 'kite' possesses reduced agentivity and thus has a strong tendency to be merged as an internal argument, giving rise to an unaccusative structure.

In sum, the above examples show that verbs cannot be categorically classified as either unergative or unaccusative but often vary in their behavior. We can gain a sense of the proportion of verbs which are affected by variable unaccusativity by looking at Tsova-Tush, already discussed above, for which (Holisky, 1987:122–129) provides the following count:

(53)
a. 31 verbs behave exclusively as unaccusatives;
b. 27 verbs tend towards unaccusative behavior but can be coerced into an unergative use;
c. 61 verbs can behave either way, with a difference in meaning;
d. 36 verbs tend towards unergative behavior but can be coerced into an unaccusative use;
e. 78 verbs can only behave as unergatives.

Variable unaccusativity is thus not a fringe phenomenon which could be reduced to lexical idiosyncrasies but a persistent and widespread property of languages.

Finally, a question that remains is how concretely the syntactic behavior of an intransitive is affected by the semantics of its argument. I assume that as part of their grammar – or perhaps their more general cognition –, speakers possess a prototypical notion of an agent in the sense of Dowty (1991). Whether an event participant is mapped onto the external argument position is determined by how closely it conforms with the agent prototype. This fit depends to some extent on the participant's objective properties such as their animacy, as seen in the Russian and Hindi-Urdu examples, but also on how the speaker wishes to frame the event: for instance, in the Tsova-Tush example, a single event token could be described with both an unaccusative and an unergative syntax depending on the speaker's communicative intentions.

To conclude, the idea of a neat categorical distinction between unergative and unaccusative verbs is – and has long been – disproven by how verbs actually behave in the wild. While the lexical semantics of the root does generally make one usage more felicitous than the other, factors such as telicity and agentivity can lead to the verb surfacing in the less preferred structure instead. On a terminological note, I will continue to speak of unergative and unaccusative verbs, but as already highlighted earlier, this is to be understood as 'verbs which under most circumstances tend to pass unergativity/unaccusativity diagnostics.' The claim that an unergative verb can be used as an unaccusative or vice versa thus does not mean that its intrinsic nature is magically transformed, but simply that it appears in a syntax it is less often associated with.

4.2 Linking causatives of unergatives to variable unaccusativity

Having provided a general picture of variable unaccusativity, I will now argue that this phenomenon can be leveraged to account for causatives of unergatives. The key idea I will put forward is that what enables normally unergative verbs in Hindi-Urdu, Turkish and Sason Arabic to causativize is that in such cases, they are used as unaccusatives instead.[10] In the following, I first show how causatives of unergatives can be understood as an instance of variable unaccusativity and then discuss potential objections to the proposal.

To reiterate, what variable unaccusativity demonstrates is that verbal roots, while usually preferring either an unergative or an unaccusative use, can often also be used in the alternative structure. As we saw, this variation is often associated with

[10]The reverse pattern appears to be attested in Eastern Armenian, in which normally unaccusative verbs must be coerced into an unergative use in the context of indirect causatives (Megerdoomian, 2002). For the question of why some languages might disallow indirect causatives of unaccusatives, see footnote 7.

changes in the semantics of the argument. Crucially, the same can be observed for direct causatives of unergatives, in which the causee not only displays the syntactic properties of internal arguments but also obligatorily receives a deagentivized interpretation. Hence, I propose that what allows Hindi-Urdu, Turkish and Sason Arabic to 'causativize unergatives' is the fact that what is causativized is not an unergative but an unaccusative structure, in which the primary argument is construed as a patient rather than as an agent and merged in the internal rather than external argument position.

By way of example, consider the Turkish causative in (54) which describes the speaker holding the child by both hands and helping them walk by providing balance:

(54) Çocuğ-u yürü-t-tü-m.
child-ACC walk-CAUS-PAST-1SG
'I walked the child.'

While walking is normally seen as an activity largely under the control of the walker, in the scenario described it is very plausible to regard the speaker, not the physically quite helpless child, as primarily responsible for the walking event. Thus, the speaker is construed as the agent and the child as the patient of the event, resulting in a transitive syntax. Overall, events that are described by a normally unergative root allow for a causative description if the primary event participant is sufficiently deagentivized to be realized as an internal argument, resulting in an unaccusative structure which can causativize as usual.

Note that in such cases, whether or not an argument qualifies as an agent is arguably determined not only by how well it lives up the agent proto-role in and of itself but also by how it compares with other participants in the same event description. That is, the reason why the child in (54) is merged as an internal argument is not only that it lacks strong agent-like properties but also that it pales in comparison to the speaker in this respect. Interestingly, in all three languages, direct causatives of unergatives are unacceptable if the causer is inanimate. This is as expected if the causee must score lower on agentivity compared to the causer in order to be merged as an internal argument, which is hard to achieve if the causer is inanimate. All of this suggests that whether or not a participant passes as an agent is not simply determined based on the properties of this participant viewed in isolation but by considering it in relation to other event participants.

A possible objection to the analysis outlined so far in this section is that it seems at odds with our common understanding of θ-roles in the following two respects. First, in the intransitive and the transitive variant of the verb, the agent θ-role is assigned to two different participants performing very different activities. For example, in 'Rohan is dancing,' Rohan is the agent of the dancing whereas in 'Shama is dancing Rohan,' Shama is. This would be a problem if it were the case that a given θ-role of a given verb was always associated with a particular kind of activity. However, this problem disappears once it is taken into account that the external argument does not serve as the agent of the verb as such but of the entire verb phrase (Marantz, 1981).[11] In the same way that the agents of 'hit the wall,' 'hit a snowstorm' and 'hit the road'

[11] I thank David Embick for drawing my attention to this point.

respectively, receive very different interpretations, so do the agents of 'dance' and 'dance Rohan.'

Secondly, and more interestingly, the subject of the intransitive and the causee of the transitive are assigned different θ-roles despite the fact that they appear to perform the same action. For instance, in the alternation 'The child walked'/'I walked the child,' the child is assigned an agent θ-role in the intransitive and a patient θ-role in the transitive, although the participant is in both cases interpreted as moving forwards by virtue of putting one foot in front of the other. While this apparent mismatch might seem dubious, the same state of affairs holds for variable unaccusativity in general. The examples discussed in the previous subsection all demonstrate that participants who stand, fall or fly can each be realized either as agents or as patients depending on the construal of the event.[12] Overall, direct causatives of unergatives do pose interesting challenges to theories of θ-role assignment which ought to be explored further, but their apparent oddities are attested elsewhere as well.

Turning to another potential objection, it might be argued that the present approach to verbal behavior vastly overgenerates, predicting that speakers are at liberty to use each verb in whichever structure suits their communicative intentions best, be it as unaccusatives, unergatives or transitives. For instance, one might wonder why not all unergatives in Turkish and Sason Arabic causativize. This problem is real and troubling but not limited to the present paper. Which roots can be used in which structures is subject to complex restrictions that we still have no handle on. The related question why in other languages such as English, unergatives apparently cannot causativize freely by switching to an unaccusative use will be addressed in the next section, and I will again argue that in general, languages are known to vary in the licit mappings between roots and structures in ways that are poorly understood.

There is, however, a more specific challenge faced by the present proposal.[13] If unergatives can causativize by switching to an unaccusative use, one might predict that the relevant roots can be used as base unaccusatives as well, which is not borne out for most causativizing unergatives in the three languages. However, whether such a prediction is made depends on the theory of argument structure adopted. To account for productive alternations without positing rampant redundancy in the lexicon, earlier approaches have relied on the idea that one of the two alternants is derived from the other – for instance, the causative from the unaccusative or vice versa –, be it via a lexical rule or a syntactic transformation (see Schäfer, 2009 for an overview). From this perspective, the present analysis might be taken to suggest that direct causatives of unergatives are built via a two-step process, which first turns the unergative into an unaccusative and then derives a causative from the latter. This would indeed wrongly predict that at the intermediate step, the root inhabits an unaccusative structure which should be independently attested.

[12] An interesting observation made by a participant at the *Agency and Intentions in Language 3* workshop is that 'Shama is dancing Rohan' entails 'Rohan is dancing.' Thus, under the present analysis, it follows from the fact that Rohan is the patient of a dancing event that he is also the agent of such an event, which prima facie might seem a faulty inference. The more general question this raises is how θ-roles, if understood to be flexible and context-sensitive, can be used in logical inference. I must leave this intriguing issue to future research.

[13] I thank an anonymous reviewer for encouraging me to tackle this issue explicitly.

More recent work in the tradition of DM, however, has abandoned such derivational analyses in favour of a common base approach (Alexiadou et al., 2015, see also Alexiadou, Anagnostopoulou, & Schäfer, 2006; Borer, 2005; Embick, 2004; Pylkkänen, 2008, among many others). Instead of positing a derivational relation between the two alternants, Alexiadou et al. argue that they share a common core. In a DM framework, this boils down to 'proposing that the transitive and the intransitive variant are derived from the same root' (2015:4). To causativize an unaccusative is, under this view, not a derivation, syntactic or otherwise; rather, it consists in merging a root which also fits into an unaccusative structure in a transitive structure. Against this background, the claim made in the present paper that unergatives can form direct causatives by taking on an unaccusative use is not a derivational analysis consisting of an unergative/unaccusative switch and a causativization process on top. The claim is simply that an argument which more commonly surfaces in the external argument position can also be realized as an internal argument (as evidenced by variable unaccusativity), in which case SpecVoiceP can host another argument (as evidence by regular causativization). While Alexiadou et al. (2015) do not specifically address direct causatives of unergatives, nothing in their approach seems to rule out that a verb can surface both as an unergative and as a transitive, given that they share the same root.

It bears highlighting that in consequence, the common base approach in its essence has very little to say about correlations between usages of roots, that is, about whether any root which fits into structure X can also be merged in structure Y. For instance, in English, most unaccusatives can and most unergatives cannot be causativized, which is not naturally predicted by the common base approach. Given that the facts in Hindi-Urdu are strikingly different, this is actually a welcome result. Overall, if the possible usages of roots are not within the domain of syntactic knowledge, then neither are the correlations between their usages. Rather, this knowledge sits at the lexicon-syntax interface, in the mapping between roots and structures.

This concludes the main part of this paper. In a nutshell, I have proposed that unergatives *qua* unergatives cannot causativize. What enables normally unergative roots to be merged in causative structures in Hindi-Urdu, Turkish and Sason Arabic is the fact that in such contexts, the normally external argument is deagentivized and merged as an internal argument instead. As already highlighted earlier, a consequence of this analysis is that the term 'direct causative of unergative,' used in this paper as a convenient shorthand, actually turns out to be a misnomer: roots, whatever their preferred behavior in intransitive structures, only allow for causative structures if their primary argument is merged in the internal argument position, that is, if they behave as unaccusatives. Even regarding direct causatives of unergatives as a separate class of causatives is misleading since the only way in which they differ from direct causatives of unaccusatives is in how their root tends to be used when transplanted into an intransitive syntax. Otherwise, they are perfectly identical.

5 Cross-linguistic variation

An open question which the reader might wish to raise at this point is how the present proposal can deal with the fact that not all languages have direct causatives of

unergatives. For instance, most if not all of the examples cited above for Hindi-Urdu, Turkish and Sason Arabic are ungrammatical in English. Since the analysis developed here does not rely on specialized syntactic heads or features whose presence could be restricted to certain languages, it is not obvious how it could be parameterized. In response to this, I argue in this section that cross-linguistic variation in the availability of direct causatives of unergatives is located at the lexicon-syntax interface, that is, in the mapping between roots and structures. Moreover, I establish that the variation is gradient: direct causatives of unergatives are licensed to different degrees in Hindi-Urdu, Turkish and Sason Arabic and also attested in English to a limited extent. This gradient nature of the cross-linguistic variation supports the claim that it is located at the lexicon-syntax interface, rather than in the syntax proper.

It is an obvious fact that which verbal roots can be merged in which structures varies to some extent from language to language. That is, two languages might have a root with virtually identical semantic content but nevertheless differ in whether this root tends to behave as an unaccusative or as an unergative, whether it can vary in its intransitive behavior, whether it can causativize, and in various other respects. What makes this variation peculiar is that its locus is neither the syntax nor the lexicon proper but their interface: being item-specific, it does not boil down to syntactic variation between languages, but it is also too systematic to be reducible to idiosyncratic differences in the lexicon.

This systematic aspect has been established most extensively by Sorace (2000, 2004, 2011) in her work on the unergative/unaccusative distinction in Romance and Western Germanic languages. Sorace proposes to group verbs into several semantically defined classes, such as 'change of state' or 'controlled motional process,' ranging from strongly unaccusative to strongly unergative. Drawing on auxiliary selection as a diagnostic, Sorace shows that languages draw the line between predominantly unergative and predominantly unaccusative verbs at different points in this hierarchy, with intermediate classes being treated differently in different languages. All languages, however, obey an implicational hierarchy: if a given verb class behaves as, for instance, unaccusatives, all verb classes closer to the unaccusative end of the spectrum do so as well. What this demonstrates is that the unergative/unaccusative distinction is governed by universal principles, but also that there is also gradient cross-linguistic variation as to how concretely these principles are realized in a given language. As Sorace highlights, current research is ill-equipped to deal with such variation. Since we arguably do not have a working theory of how the licit mappings between roots and structures are encoded in the grammatical knowledge of a speaker, *a fortiori* we have no theory of how these mappings are parameterized cross-linguistically.

I argue that cross-linguistic variation in the availability of direct causatives of unergatives needs to be understood along the same lines, namely as having its locus in the mapping relation between roots and structures. Under the present analysis, direct causatives of unergatives are motivated by the same flexibility in the root-structure mapping as variable unaccusativity, in that an argument can be merged in different positions depending on its degree of agentivity. Hence, in the same way that variable unaccusativity plays out differently across languages, whether and which

direct causatives of unergatives are licensed in a language equally varies. These cross-linguistic differences are not a matter of syntax; they are a matter of what can go into which syntax. This is certainly not a comprehensive analysis, but in the absence of a working theory of variation at the lexicon-syntax interface there is unfortunately little else to say.

The question of course remains what determines why certain languages pattern a certain way. That is, we still would like to know what it is specifically about Hindi-Urdu, Turkish and Sason Arabic that makes causatives of unergatives more felicitous in these than in other languages. While I cannot answer this question conclusively, there is one interesting correlation which might have some explanatory power in this respect. In Hindi-Urdu, variable unaccusativity in general is highly sensitive to animacy, in that inanimate arguments often enforce an unaccusative use of an otherwise unergative verb. The same mechanism underlies direct causatives of unergatives, in which the normally external argument is deagentivized and thus merged as an internal argument instead. Overall, it appears that in Hindi-Urdu, the position of arguments is more flexible and is determined to a greater extent by their degree of agentivity, which licenses direct causatives of unergatives more easily. More broadly, this suggests that languages in which the behavior of intransitives is more variable and more sensitive to agentivity should also license direct causatives of unergatives more easily. Testing this hypothesis cross-linguistically is a task for future work.

The claim that variation in the availability of direct causatives of unergatives is located at the lexicon-syntax interface rather than in the syntax proper is supported by the fact that, as I will show now, it is of a gradient nature. Languages do not fall into two clearly distinct classes based on whether or not they allow their unergatives to causativize but are rather located on a spectrum, such that some tolerate direct causatives of unergatives more, others less easily. If the latter indeed required a special piece of syntax only available in a subset of languages, we would expect them to be fully licensed in some languages and completely ruled out in others; however, this is not what we observe. If, on the other hand, their availability depends on fine-grained properties of the mapping between roots and structures, the fact that they are licensed to different degrees in different languages is as expected.

Of the languages investigated in this paper, Hindi-Urdu forms direct causatives of unergatives highly productively and with ease. Turkish and Sason Arabic, however, license them to a more limited extent in the following three respects. First, in these languages, the alternation is restricted to a subset of unergative verbs whereas in Hindi-Urdu, virtually all unergatives alternate. Secondly, in Turkish and Sason Arabic, some – but not all – direct causatives of unergatives require a rather idiosyncratic interpretation. For instance, the direct causatives of 'walk' and 'run' in Turkish and Sason Arabic, respectively, typically denote specifically the action of taking a toddler by the hands and helping them take a few steps. Thirdly, Turkish and Sason Arabic direct causatives of unergatives tend to require a context in which it is highly salient that the causer is more agentive than the causee. This is exemplified by the fact that several causatives are only felicitous if the causee is a baby or child – a demographic which generally scores low on agentivity –, including the causatives of 'walk' and 'run'

just discussed, as well as of 'sleep.' Overall, Turkish and Sason Arabic can in principle causativize unergatives, but do so less easily than Hindi-Urdu.

For further cross-linguistic comparison, in the rest of this section I will look in some more detail at English, a language which might be taken to not allow unergatives to causativize. It is correct that squeezing an unergative root into a causative structure is not per se felicitous (55):

(55) a. *The comedian laughed her audience.
b. *The professor slept the students.

In fact, however, the empirical picture is more complex. English does have causatives of unergatives, albeit only to a limited degree. Among the most well-known cases are examples such as (56) and (57):

(56) a. The nurse burped the baby.
b. The doctor bled the patient. (Levin & Rappaport Hovav, 1995:115f.)

(57) Maayan walked her dog.

Levin and Rappaport Hovav (1995) argue that causatives such as (56) are idiosyncratic cases and not derived by a general rule, as evidenced by the fact that they are only felicitous with highly specific choices of objects and can only describe very particular events. The latter is certainly correct; for instance, (58) is infelicitous if the victim is stabbed and consequently bleeds to death:

(58) #The murderer bled her victim.

However, very similar restrictions hold for some causatives of unergatives in the languages discussed previously. For example, as pointed out above, the causatives of 'walk' in Turkish and 'run' in Sason Arabic are pragmatically odd if the object is not a baby or a toddler and can only have the fairly specific meaning of providing balance to a child who is learning to walk. Nevertheless, these are languages in which causatives of unergatives are certainly productive. There is no clear line that could be drawn between lexically idiosyncratic causatives that are simply listed as such and regular, rule-derived causatives with predictable and transparent meaning.

Moreover, it has long been known that manner of motion verbs can form transitives under certain circumstances (59):

(59) a. Kemal waltzed Matilda *(around the ballroom).
b. The general marched the soldiers *(to the battlefield).

Previously thought to contain a small clause structure (Folli & Harley, 2006), these cases have recently been shown by Biggs (2019) to in fact be regular transitives, with the PP realized as an adjunct. However, transitives of manner of motion verbs are usually only licensed in the presence of PPs, as in (59) or, alternatively, certain other modifiers, negation markers, modals and even prosodically heavy objects (Biggs, 2019). While it is thus tempting to analyze them as direct causatives of unergatives, they are subject to additional complications which remain poorly understood. Therefore, I sidestep these cases here, including their treatment in Biggs (2019). Interestingly,

however, transitives of manner of motion verbs no longer require a special licensor such as a PP if the causee is inanimate (60):

(60) a. Breanna danced her little sister *(around the nursery).
b. Breanna danced her teddy bear (around the nursery).

Under the present approach, this is as expected. Inanimate arguments have a strong tendency to be realized in the internal position, thereby enforcing an unaccusative use of the verb which can thus causativize. This suggests that (60b) should be analyzed on a par with direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic.

Next, verbs of emission, which pass unergativity diagnostics, have been observed to form direct causatives, as seen in (61) and (62):

(61) a. The doorbell buzzed/rang.
b. The postman buzzed/rang the doorbell.

(62) a. The flashlight beamed/shone.
b. We beamed/shone the flashlight. (Levin & Rappaport Hovav, 1995:115)

Levin and Rappaport Hovav's (1995) analysis of such examples very closely prefigures the present proposal for direct causatives of unergatives in general, although couched in a lexicalist framework: emission verbs, they argue, are compatible with being construed both as internally and as externally caused and can thus surface both with an unergative and a transitive syntax. Note that there are two reasons why verbs of emission should be able to take on an unaccusative guise more easily than other unergatives. First, they take inanimate causees which, as already seen above, make an unaccusative structure more felicitous. Secondly, verbs of emission are located in the middle of the unergative/unaccusative spectrum, being neither strongly agentive nor strongly telic. As a result, they are expected to be highly flexible in their behavior, in line with what we observe.

Finally, as also noted by Levin and Rappaport Hovav, direct causatives of unergatives are often spontaneously coined in everyday speech (63):

(63) a. We're gonna splash and we're gonna spin ya. We're gonna scream and we're gonna grin ya. [In promotional brochure for an amusement center]
b. What's fussing her? [A Grandpa worrying why baby is crying]
c. At the end of the week "Here little doggie, here is your bone, now last it until next week." (Pinker, 2013:179)

Large-scale corpus studies might reveal that such examples are more prevalent than commonly assumed.[14] Overall, there is no doubt that English does not allow causatives of unergatives as easily as the languages investigated previously. However, declaring them to be categorically ungrammatical does not square with the facts either.

In sum, whether or not a language can causativize unergatives is a matter of gradience. On one end of the spectrum, we find languages in which causatives of

[14] Direct causatives of unergatives have been extensively documented in acquisition (e.g., Bowerman, 1982; Pinker, 2013). For reasons of space, I cannot address here the implications of the present proposal for the acquisition of argument structure, which would be worthwhile exploring in future research.

unergatives are highly productive, semantically transparent and felicitous in a broad range of contexts. The more we approach the other end, the more they become limited to a subset of verbs, take on an idiosyncratic meaning and require a salient context. This picture is hardly compatible with the idea that causatives of unergatives rely on a special piece of syntax available in some languages but not others. Rather, it suggests that syntactically, they are built with a simple transitive structure, but that which roots can be merged in this structure is subject to gradient, complex and largely unexplored cross-linguistic variation.

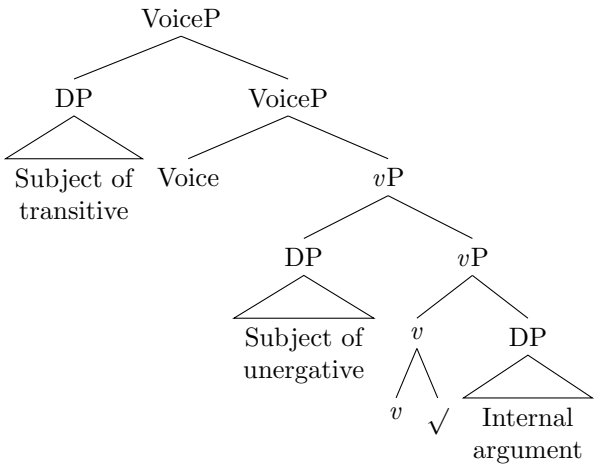
6 Against alternative approaches

Having outlined my own proposal for direct causatives of unergatives, I will now review two alternative approaches. I begin with what I label the low subject analysis, originally developed by Massam (2009), and then turn to Ramchand's (2008) work on Hindi-Urdu.

6.1 The low subject analysis: Massam (2009) and beyond

The core idea of the low subject approach is that subjects of unergatives differ syntactically from subjects of transitives, contrary to what is commonly assumed. Concretely, it has been argued that while subjects of transitives are generated in SpecVoiceP, subjects of unergatives are generated lower, in Spec$v$P, as seen in (64) (Kouneli, 2021; Kumaran, 2021; Massam, 2009; Myler, 2022; Pineda & Berro, 2020; Tollan, 2018; Tollan & Massam, 2022; Tollan & Oxford, 2018). Internal arguments of unaccusatives and transitives are, as usual, assumed to be merged as complements to the verb:[15]

(64)



[15] Tollan (2018) and Tollan and Oxford (2018) argue that certain transitive subjects in Samoan and Algonquian, respectively, are also located in Spec$v$P. For Kipsigis, Kouneli (2021) claims that subjects of unaccusatives are equally generated in Spec$v$P, or rather, that the language lacks true unaccusatives altogether.

What this structure is meant to achieve is, in the most basic terms, to account for systematic differences between unergative and transitive subjects, such as differences in case marking (Massam, 2009), voice morphology (Tollan & Oxford, 2018) and plural marking (Kumaran, 2021), all of which I must sidestep in the following. What matters for our purposes is how the low subject approach is leveraged to account for yet another difference between unergatives and transitives: in Niuean (Massam, 2009)[16], Samoan (Tollan, 2018), Algonquian (Tollan & Oxford, 2018), Kipsigis (Kouneli, 2021) and Quechua (Myler, 2022), unergatives but not transitives can causativize, as in Hindi-Urdu, Turkish and Sason Arabic. Under the low subject approach, this falls out from the fact that in unergatives, the SpecVoiceP position is vacant and can be filled by the causer, which is not possible with transitives. Hence, unlike under the view argued for in the present paper, the subject of the intransitive unergative and the causee of the causative are assumed to occupy the same position, Spec$v$P.

For reasons of space, I cannot engage with the data from the languages for which this analysis has been originally raised. However, we do need to consider whether it might not account for Hindi-Urdu, Turkish and Sason Arabic. To this end, I will now briefly revisit the various pieces of evidence for the internal argument status of the causee in causatives of unergatives given in Section 3 above and assess whether they are compatible with the low subject approach.

First, we have seen that the causee receives a deagentivized reading different from its interpretation in the intransitive. If the subject of the base unergative and the causee of the transitive are both merged in Spec$v$P, the fact that they differ in interpretation is unexpected, regardless of what θ-role is concretely assumed to be assigned to Spec$v$P. In response, one might argue that the θ-role assigned to Spec$v$P is context-dependent, being lower in agentivity if a Voice projection is merged on top.[17] This is a technically feasible strategy but it would essentially implement variable unaccusativity at a purely semantic level, in that an argument is assigned different θ-roles depending on the presence of other arguments. It sacrifices a clear mapping between syntactic positions and semantic interpretations – agents being merged in SpecVoiceP, patients in the verbal complement position –, and it still has nothing to say about the syntactic differences between the subject of the unergative and the causee of the transitive, summarized in the following.

In particular, I have shown that the causee behaves as an internal argument in the three following respects: it allows for reduced relatives, can be modified by resultative predicates and can give rise to a telic interpretation of the verb phrase. Given that the properties of the novel Spec$v$P position are as of yet ill-defined, it is not clear whether an argument in this position is predicted to pass these diagnostics. However, what is predicted is that the subject of the intransitive and the causee of the transitive, assumed to be structurally identical, should behave in the same way. The low subject approach has no way of explaining the fact that, on the contrary, the two arguments differ in their ability to license reduced relatives, resultatives and telic interpretations, as shown in Section 3.

[16] In Niuean, transitives can causativize if and only if the original direct object remains unexpressed, is incorporated or surfaces with an instrumental applicative marker (Massam, 2009); see the discussion of ingesto-reflexives in Section 3.

[17] I credit Julie Legate for this perspective.

Furthermore, the low subject analysis predicts transitives to be categorically unable to causativize given that they already have a SpecVoiceP argument. In fact, however, ingesto-reflexives do causativize by allowing the causee to merge in an applicative position, equally seen in Section 3. It might seem possible that the latter fact could simply be integrated into the low subject approach. However, such a view presupposes that the same argument can be merged in two different positions, namely, SpecVoiceP in the transitive and SpecApplP, or perhaps Spec$v$P, in the ditransitive. This would allow for precisely the kind of flexible mapping between arguments and syntactic positions – of which variable unaccusativity is just a special case – that the low subject analysis was designed to avoid. That is, if causees of causative ingesto-reflexives can be realized in a different position from where the corresponding argument is merged in the non-causative, it is not clear why the same should not be possible for causees of causativized unergatives.

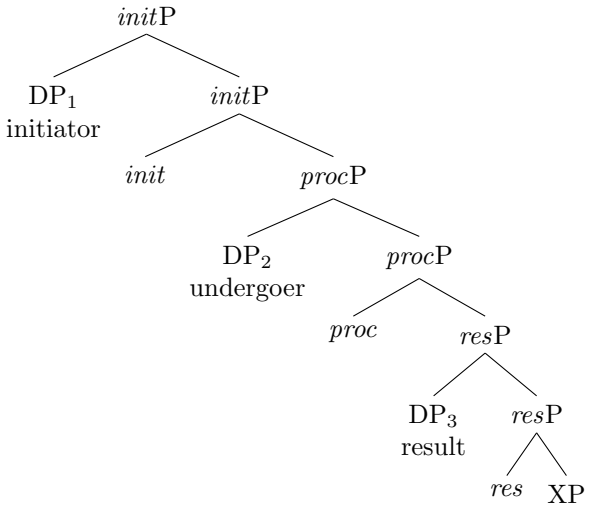
Finally, I have demonstrated that Hindi-Urdu and Sason Arabic block direct causatives of unergatives with path arguments and cognate objects. Under the low subject approach, it is not clear why the presence or absence of a VoiceP layer hosting the causer should determine whether or not another DP can be added as a complement of the verb. If the causee is located in Spec$v$P, it remains mysterious why its presence co-varies with that of path arguments and cognate objects.

Overall, the low subject approach clearly fails to capture the data presented above, which all easily fall out from the present proposal. To reiterate, I do not presume to cast a judgment on the success of the low subject analysis for the languages it was designed for. It also ought to be highlighted that the above discussion has set aside all other kinds of data that have been taken as evidence for this analysis, e.g., coming from case marking. What I do conclude is that the low subject approach cannot account for direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic.

6.2 Covertly transitive unergatives: Ramchand (2008)

I now turn to Ramchand's (2008) analysis of direct causatives of unergatives in Hindi-Urdu, developed as part of a novel and highly innovative approach to verbal syntax. Ramchand proposes to split up the verbal domain into three projections, namely *init*P for the initiation, *proc*P for the process and *res*P for the result of the event. Each of these heads takes an argument in its specifier: *init* introduces an initiator, *proc* an undergoer and *res* a result (65). The position marked here as XP can host various material; we can ignore it for now.

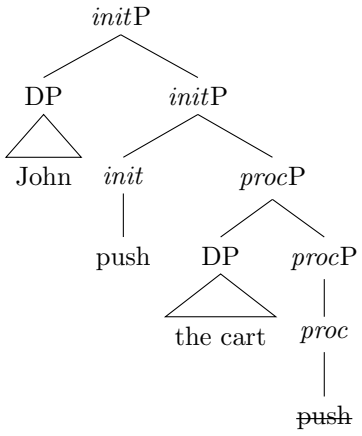
(65)



(Ramchand, 2008:39)

A verbal root can be merged in one or several of these head positions but is only spelled out in the highest position that it occupies. Which heads a verb can associate with is specified in its lexical entry. For instance, the verb *push* is listed with the category features [*init*, *proc*] and thus projects the structure in (66):

(66)



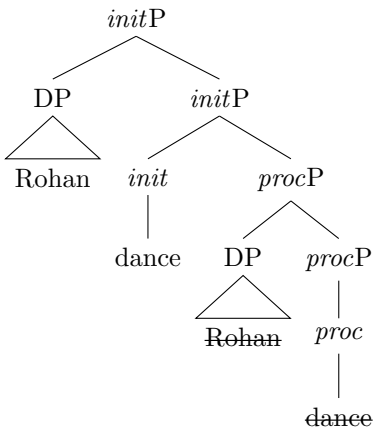
(Ramchand, 2008):65)

While every verbal domain needs to contain a *proc*P, neither *init*P nor *res*P are obligatory. For instance, (66) does not have a result state encoded by a *res*P, and unaccusatives lack an *init*P with an initiator.

In the same way as heads, arguments can equally be merged in more than one position simultaneously while again only being spelled out in their highest position. This assumption is crucial to Ramchand's analysis of intransitive unergatives. The latter, she argues, project a transitive structure containing an *init*P and a *proc*P – just

as seen for *push* above – but their lexical entry requires the two argument positions to be filled by the same argument. Thus, the derivation of *Rohan is dancing* is as in (67):

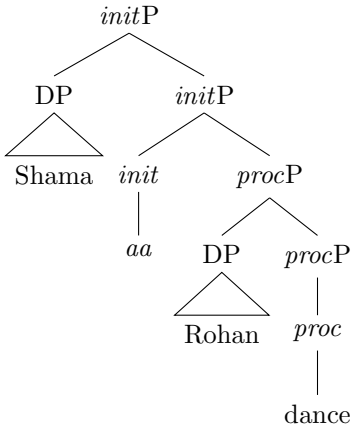
(67)



Hence, the argument *Rohan* is interpreted as both initiating and undergoing the event.

To causativize unergatives in languages such as Hindi-Urdu, Ramchand relies on a mechanism she labels underassociation. While the lexical entry of a verb specifies in which head positions it can be merged, nothing requires it to merge in all of them. A subset of features may remain underassociated as long as the feature is exponed by an independent syntactic element. Ramchand argues that in Hindi-Urdu causatives of unergatives, the *init* feature dissociates from the lexical root and instead associates with the causative morpheme -*aa*. Since *init* and *proc* are now filled by distinct morphemes, the requirement that their two arguments be identical is lifted and a distinct causer can be merged in Spec*init*P (68):

(68)



Hence, while in the intransitive, *Rohan* both initiates and undergoes the dancing, in the transitive, the initiator is now *Shama*. Overall, the goal of this analysis is to

capture the sense that the entailments associated with *Rohan* in the transitive and the intransitive, respectively, are shared, but only partially: in both, Rohan undergoes the dancing, but only in the intransitive can he also be said to agentively initiate it.

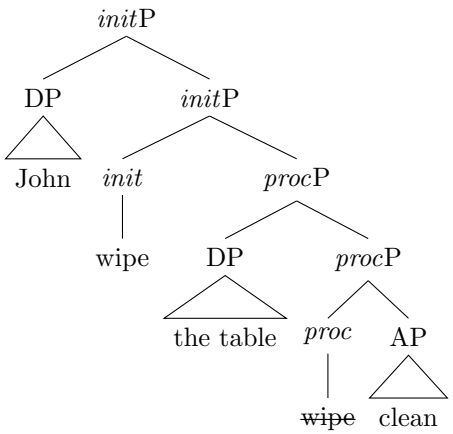
I argue that this intuition is misleading. To begin with, the observation that two arguments have some properties in common does not in and of itself warrant the claim that they must be sharing a θ-role: for instance, in *Shama pushed the cart to the store* and *Shama fell*, both instances of Shama move in space but the argument is nevertheless assigned a different θ-role in each structure. The claim Ramchand makes, of course, is that the subject of the intransitive and the causee of the transitive do not merely share some spurious attribute such as moving in space but rather a fundamental property associated with a θ-role: namely, both in the transitive and the intransitive, Rohan undergoes the dancing. This notion, however, is vexingly vague. The most plausible interpretation of what it means to undergo a dancing is to simply do or perform the dancing. However, intuitions about whether or not a participant performs an activity are not due to any entailments associated with a θ-role but simply depend on whether an argument can serve as the subject of the predicate. For instance, in *Shama kicked the ball*, it would be incorrect to say that the ball does the kicking since *kick* is a non-alternating transitive (**The ball kicked*). On the other hand, in *Shama opened the door*, it is perfectly correct that the door does the opening since *open* has an unaccusative variant (*The door opened*). By the same token, the sense that in *Shama is dancing Rohan*, Rohan does the dancing simply reflects the fact that Rohan can serve as the subject of the intransitive (*Rohan is dancing*). In sum, there is no denying that the subject of the intransitive and the causee of the transitive have overlapping attributes, but it is not clear why the latter would need to be captured by a shared θ-role.

Moving beyond these theoretical considerations, Ramchand's proposal also faces a number of more tangible problems, all stemming from the claim that base unergatives contain a silent undergoer argument co-indexed with the initiator. The first question this raises, not addressed by Ramchand, is what determines whether an argument co-indexed with a higher argument is realized as null or spelled out as an overt anaphor. We might argue that an argument must be silent if and only if it is specified on a head as being *obligatorily* co-indexed. However, note that it is possible for the overt and the silent instance of an argument to be introduced by different heads (Ramchand, 2008:102, 118, 179), and it is unclear what would require the arguments of two distinct heads to be co-indexed and where this information would be stored. What is more, this approach only begs the question: those arguments considered to be obligatorily co-indexed with a higher argument – such as the undergoer of an unergative – are precisely those kinds of arguments whose existence is debatable, and claiming that they can simply forego spell-out would be stipulative. In short, it remains unclear why the undergoer argument of an unergative, if it did exist, would not be realized as an overt anaphor.

Next, if unergatives had an undergoer argument – corresponding roughly to an internal argument –, another puzzle this poses is why they fail to pass standard diagnostics for internal arguments such as resultative predicates. Ramchand proposes two

distinct resultative structures. First, certain adjectives can be merged directly as a complement of *proc*, as in *John wiped the table clean* (69):

(69)



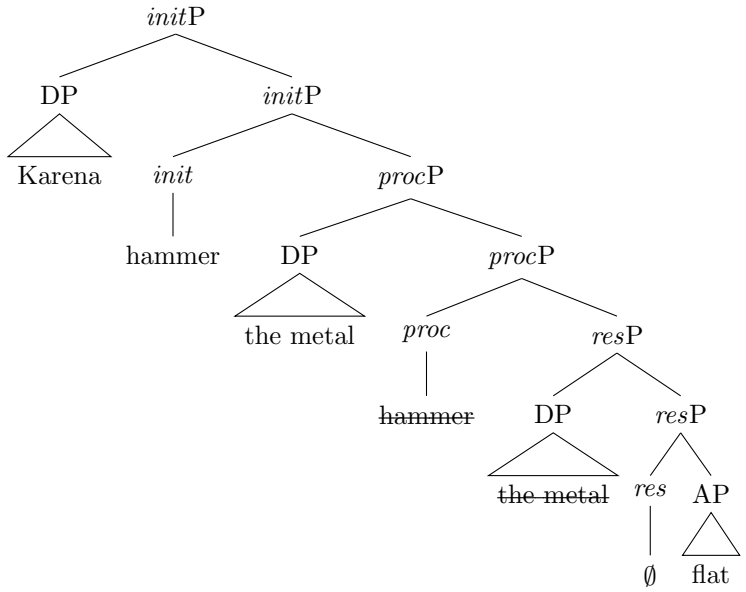
(Ramchand, 2008:122)

Given that under Ramchand's view, unergatives equally have an *init-proc* structure – with the sole difference being that the arguments are co-indexed –, they are expected to equally license a resultative predicate in the complement position of *proc*. This prediction is not borne out, even if the adjective is kept constant. Example (70) can only have a depictive reading:

(70) John showered clean.

The second type of resultative structure Ramchand proposes is built by merging an AP in the complement position of *res*. This can be achieved in two ways. If the verb already has a *res* feature, the AP can be added without any further ado. If, on the other hand, the verb itself lacks *res*, languages such as English have a silent *res* head available that can project a *res*P licensing the resultative AP. The latter is demonstrated in (71) for *Karena hammered the metal flat*:

(71)



(Ramchand, 2008:127)

As before, we would expect unergatives to be able to appear in the same structure. An *init-proc* verb such as 'run' should be able to form a resultative via the addition of a *res*P headed by a silent element; in fact, however, such structures are unavailable. Example (72) can only have a depictive reading:

(72) Karena ran tired.

Resultatives with unergatives are of course possible with unselected objects, including anaphoric ones (73):

(73) Karena ran herself tired.

However, this brings us back to the first problem discussed above, namely why one but not the other of the two lower *Karena* arguments in (73) is realized as an anaphor. In sum, the proposal that unergatives have a silent undergoer argument cannot explain why resultatives are either not licensed at all in such structures or require the presence of an anaphor.

The final problem for Ramchand's analysis of unergatives concerns path arguments. Ramchand assumes that path arguments are merged as complements of *proc*, thus in a position distinct from the undergoer argument.[18] As a result, she fails to account for the fact that in Hindi-Urdu, as well as in Sason Arabic, unergatives with path

[18]Under Ramchand's view, the category of path arguments is broader than commonly assumed and also includes arguments that are more commonly regarded as patients or themes. However, there is no reason to believe that for Ramchand, the path arguments discussed in the present paper would not qualify as such; hence, the following argument is pertinent nonetheless.

arguments are unable to causativize. One would need to argue that path arguments are only licensed if initiator and undergoer are co-indexed, but such a restriction lacks any motivation or basis. More in general, Bruening (2010) has noted that the distinction Ramchand makes between path and undergoer argument positions is not backed up by any kind of syntactic support: while there are clear semantic differences between the two kinds of arguments, there is no evidence that they occupy distinct positions in the structure. If, however, we give up on the idea that path and undergoer arguments are merged in different positions, the idea that unergatives take a silent undergoer argument collapses, as does Ramchand's analysis of causatives of unergatives as a whole.

To summarize, I have shown that Ramchand's proposal fails to account for the distribution of anaphors, the unavailability of resultatives with unergatives, and the inability of unergatives with path arguments to causativize. I conclude from this that her analysis of direct causatives of unergatives in Hindi-Urdu, while compelling, is ultimately untenable.

7 A note on causative morphology

An outstanding issue I have steered away from so far concerns the morphology of direct causatives of unergatives, or more concretely, the question which part of their syntax is mapped onto a causative morpheme at PF. In a way, the answer to this question is simple. I have argued that direct causatives of unergatives are syntactically and semantically identical to direct causatives of unaccusatives, differing only in how their roots tend to behave in intransitive structures. Furthermore, they surface with the same overt morphological marking. Hence, no special morphological analysis is needed for direct causatives of unergatives as such. The more general question this raises, namely how to analyze the causative morphemes of Hindi-Urdu, Turkish and Sason Arabic in general, is beyond the scope of this paper as well as orthogonal to its purpose, and I will not attempt to provide a conclusive answer to it. Instead, the goal of this very brief section is to point out a challenge which direct causatives of unergatives raise for one specific analysis of causative morphology that has been proposed, namely, that causative morphemes spell out a thematic Voice head or are otherwise conditioned by the presence of thematic Voice.

To remind us of the data, Table 1 summarizes the morphological marking of direct and indirect causatives in our three languages. For brevity's sake, I refer to the various phonologically conditioned allomorphs of the Turkish causative affix (see Section 2.2) simply as *-DIr*. Note also that the indirect causative suffix in Hindi-Urdu is analyzed here as consisting of two components: the morpheme *-aa* equally present on direct causatives, and the additional morpheme *-v*.

In the following, I sidestep the periphrastic *make* and *give* causatives of Sason Arabic as well as the indirect *-v* morpheme of Hindi-Urdu. I also will not deal with the vowel change and ablaut causativization strategies since the former is exclusively, the latter largely restricted to unaccusatives. While I cannot provide a definite answer to the question why vowel change causatives in Hindi-Urdu and ablaut causatives in Sason Arabic are limited to unaccusatives, a very plausible account is a diachronic one. Both

Language	Direct causative morphemes	Indirect causative morphemes
Hindi-Urdu	*-aa* vowel change	*-v* + *-aa*
Turkish	*-DIr*	*-DIr*
Sason Arabic	gemination ablaut	gemination *make* *give*

Table 1 Causative morphology in Hindi-Urdu, Turkish and Sason Arabic

vowel change and ablaut might be the older causativization strategies in their language, only later supplemented by *-aa* and geminate causatives, respectively. These older strata of Hindi-Urdu and Arabic might not have allowed causatives of unergatives as freely as the contemporary variants, thus restricting their direct causatives largely to unaccusatives. Independently, ablaut causativization in Sason Arabic is constrained by morphophonological template restrictions which might equally prevent some unergative roots from forming such causatives. Thus, the only morphemes which are relevant for the following discussion are *-aa*, *-DIr* and gemination, which surface in both direct and indirect causatives and are able to combine with unaccusatives, unergatives and transitives alike.

One approach to causative morphology in the literature has been to consider it as reflecting the presence of thematic Voice (e.g., Key, 2013; Schäfer, 2009). Concretely, causative morphemes might either directly spell out Voice or, allomorphically, realize *v* in the presence of thematic Voice. While for simplicity's sake, I will focus on the former, more straightforward implementation, the problem outlined in the following arises for any view which assumes that intransitives and causatives contain the same *v* head (Alexiadou et al., 2015) and conditions the presence of causative morphology exclusively on thematic Voice, be it directly or indirectly. Such theories correctly account for the fact that causative morphology is present on causatives but absent on unaccusatives, which either, as assumed in the present paper, lack a Voice projection altogether or contain an expletive Voice head which is not mapped onto a causative morpheme (e.g., Schäfer, 2009). However, the analysis raises an obvious challenge: since intransitive unergatives also contain a VoiceP, the analysis would predict them to equally surface with causative morphology, contrary to fact.

A possible way of dealing with this challenge is to argue that Voice is only spelled out as a causative morpheme if it is not already obligatorily included in the spell-out of the root. Concretely, we might assume that spell-out rules can make reference not only to individual heads but also to sequences of heads (Svenonius, 2012, 2016), and that the lexical entry for unergatives does not provide a spell-out for the root as such but only for the sequence of root, *v* and Voice. Since the latter is thus already realized at PF when in the presence of an unergative or obligatorily transitive root, it is not mapped onto the causative morpheme. This is illustrated in the toy example (74) below, using the Hindi-Urdu causative affix *-aa* for the sake of concreteness. If (74a)–(74c) are listed in the lexicon, (74d) follows:

(74) a. Voice ↔ /aa/

b. $\sqrt{\text{fall}} + v \leftrightarrow$ /fall/
c. $\sqrt{\text{dance}} + v + \text{Voice} \leftrightarrow$ /dance/
d. $\sqrt{\text{fall}} + v + \text{Voice} \leftrightarrow$ /fall/ + /aa/

The key problem I wish to highlight in this section is that this strategy fails in the face of the data presented in this paper. Under my analysis, both intransitive and causativized unergatives contain a VoiceP layer. It is not clear why the Voice head should be spelled out as a causative morpheme in the transitive but not in the intransitive, given that in both cases, it is merged in the presence of the same root.

It should be noted that once more, the problem exists independently as long as variable unaccusativity is taken seriously. The rules in (74) rely on the idea that roots are specified in the lexicon either as unaccusative or as unergative, depending on whether or not they must be spelled out together with Voice. This does not square with the fact that many roots show variable behavior. Allowing for two spell-outs of a single root to be listed in the lexicon – one with and one without Voice – does not solve this problem either. Suppose that, for instance, the root 'dance' was associated with the following two spell-out rules:

(75) a. $\sqrt{\text{dance}} + v + \text{Voice} \leftrightarrow$ /dance/
b. $\sqrt{\text{dance}} + v \leftrightarrow$ /dance/

The entry in (75a) could then be used for the intransitive and the one in (75b) for the transitive. However, nothing enforces this. In an intransitive such as 'Rohan is dancing,' for instance, it would be perfectly possible to let the rule in (75b) apply instead of (75a). As a result, since Voice is not spelled out yet, rule (74a) would apply and the intransitive unergative would surface with causative morphology. This only brings us back to the initial problem.

To summarize, the idea that causative morphology is associated with Voice leads to the problem of why causative morphemes are not found on intransitive unergatives. An apparent solution to this problem is to condition the spell-out of Voice on the kind of root with which it appears, i.e., unergative or unaccusative. However, I have shown that against the background of direct causatives as well as variable unaccusativity in general, this solution cannot be maintained. Assessing alternative analyses of causative morphology is beyond the scope of this paper.

8 Conclusion

To summarize, this paper has argued that direct causatives of unergatives in Hindi-Urdu, Turkish and Sason Arabic are standard transitives which are semantically and syntactically identical to direct causatives of unaccusatives, as previously argued by Harris (1981) for Georgian and Legate (2014) for Acehnese. To form causatives, the normally unergative verb must shift to an unaccusative use, that is, the primary argument must be construed as a patient and merged in the internal position, contrasting with its status in the intransitive as an agent and external argument. This flexible mapping between event participants on the one hand and syntactic positions and

θ-roles on the other is well-known from variable unaccusativity (Holisky, 1987; Perlmutter & Postal, 1984; Sorace, 2000). In short, if some roots can be merged both in an unergative and in an unaccusative syntax, it is not clear why roots should not be able to merge both in an unergative and in a transitive syntax.

Moreover, I have developed an outline of possible cross-linguistic variation with respect to direct causatives of unergatives, arguing that the variation is located at the lexicon-syntax interface and that direct causatives of unergatives are licensed to varying degrees in different languages. On one end of the spectrum, in languages such as Hindi-Urdu, direct causatives of unergatives are formed highly productively, have a transparent denotation and adapt easily to various contexts. Closer to the other end, languages such as Turkish, Sason Arabic and especially English only allow a subset of unergatives to causativize, tend to assign them rather idiosyncratic interpretations and restrict them to highly salient contexts. Fleshing out this cross-linguistic spectrum further is a task for future work.

None of this is to say that cross-linguistically, all direct causatives of unergatives are necessarily amenable to the analysis developed here. In my discussion of the low subject proposal, developed for languages such as Niuean, Samoan, Algonquian, Kipsigis and Quechua, I have emphasized that without a closer examination of the data we cannot draw a firm conclusion as to whether they can be captured by the present approach. However, the fact that the latter accounts for several typologically unrelated languages – Hindi-Urdu, Turkish and Sason Arabic, besides Georgian (Harris, 1981) and Acehnese (Legate, 2014) – strongly suggests that it has the potential to extend cross-linguistically. Further research could confirm whether it can also be adopted for those languages which have previously been taken as evidence for the low subject approach. The present paper has established a number of concrete diagnostics which could be employed for this purpose.

Finally, it has become clear that a better theory of the mapping between individual roots and syntactic structures is a crucial desideratum. Direct causatives of unergatives are only puzzling if we make a certain assumption about this mapping relation, namely, that an event participant must always be merged in the same syntactic position and receive the same θ-role. As evidenced by variable unaccusativity, this assumption is wrong, and once it is abandoned, the analysis of direct causatives of unergatives is trivial. Research on argument structure must be, and always is, based on an understanding of how roots are mapped onto syntax. The upshot of this paper is that neglecting the flexibility and context-sensitivity of this mapping prevents our understanding of the most basic syntactic structures.

References

Acartürk, C. (2005). *Gradient characteristics of the unergative/unaccusative distinction in Turkish: An experimental investigation* (Unpublished master's thesis). The Middle East Technical University.

Acartürk, C., & Zeyrek, D. (2010). Unaccusative/unergative distinction in Turkish: A connectionist approach. *Proceedings of the 8th workshop on Asian language resouces* (pp. 111–119). Beijing, China: COLING 2010 Organizing Committee.

Ahmed, T. (2010). The unaccusativity/unergativity distinction in Urdu. *Journal of South Asian Linguistics*, *3*, 3–22,

Akkuş, F. (2021a). *(Implicit) argument introduction, Voice and causatives* (Unpublished doctoral dissertation). University of Pennsylvania, Philadelphia, PA.

Akkuş, F. (2021b). Variable embedded agent in Sason Arabic. *Journal of Linguistics*, *57*(2), 233–277, https://doi.org/10.1017/S0022226720000493

Akkuş, F. (2023). Turkish causatives embed a thematic VoiceP, and the Causee is an argument. S.-Y. Lam & S. Ozaki (Eds.), *Proceedings of the 53rd Annual Meeting of the North East Linguistic Society (NELS 53)* (pp. 1–15). Amherst, MA: GLSA Publications.

Akkuş, F., & Öztürk, B. (2017). On cognate objects in Sason Arabic. *University of Pennsylvania Working Papers in Linguistics: Vol. 23* (pp. Iss. 1, Article 2).

Akkuş, F. (2022). On causee in Sason Arabic. *Syntax*, *25*, 299–334, https://doi.org/10.1111/synt.12233

Alexiadou, A., Anagnostopoulou, E., Schäfer, F. (2006). The properties of anticausatives crosslinguistically. M. Frascarelli (Ed.), *Phases of interpretation* (pp. 187–211). Berlin: Mouton de Gruyter.

Alexiadou, A., Anagnostopoulou, E., Schäfer, F. (2015). *External arguments in transitivity alternations: A layering approach.* Oxford: Oxford University Press.

Bhatt, R., & Embick, D. (2017). Causative derivations in Hindi-Urdu. *Indian Linguistics*, *78*, 93–151,

Biggs, A. (2019). Objects in motion verb phrases. *Glossa: a journal of general linguistics*, *4*, 98, https://doi.org/10.5334/gjgl.820

Borer, H. (2005). *Structuring sense vol. II: The normal course of events.* Oxford: Oxford University Press.

Bowerman, M. (1982). Starting to talk worse: Clues to language acquisition from children's late speech errors. S. Strauss (Ed.), *U-shaped behavioral growth* (pp. 101–145). Academic Press.

Bruening, B. (2010). Review of *Verb meaning and the lexicon: A first-phase syntax* by Gillian Catriona Ramchand. *Journal of Linguistics*, *46*, 260–270, https://

doi.org/10.1017/s0022226709990363

Burzio, L. (1981). *Intranitive verbs and Italian auxiliaries* (Unpublished doctoral dissertation). Massachusetts Institute of Technology, Cambridge, MA.

Burzio, L. (1986). *Italian syntax: A Government and Binding approach.* Dordrecht: D. Reidel.

Carlson, G. (1998). Thematic roles and the individuation of events. S. Rothstein (Ed.), *Events and grammar. Studies in linguistics and philosophyh* (pp. 35–51). Dordrecht: Springer.

Dowty, D. (1991). Thematic proto-roles and argument selection. *Language*, *67*, 547–619, https://doi.org/10.2307/415037

Embick, D. (2004). Unaccusative syntax and verbal alternations. A. Alexiadou, E. Anagnostopoulou, & M. Everaert (Eds.), *The unaccusativity puzzle: Explorations of the syntax-lexicon interface* (pp. 137–158). Oxford: Oxford UP.

Folli, R., & Harley, H. (2006). On the licensing of causatives of directed motion: Waltzing Matilda all over. *Studia Linguistica*, *60*, 121–155, https://doi.org/10.1111/j.1467-9582.2006.00135.x

Gürer, A. (2014). Adjectival participles in Turkish. *Lingua*, *149*, 166–187, https://doi.org/10.1016/j.lingua.2014.07.013

Halle, M., & Marantz, A. (1993). Distributed Morphology and the pieces of inflection. K. Hale & S.J. Keyser (Eds.), *The view from building 20* (pp. 111–176). Cambridge, MA: MIT Press.

Halle, M., & Marantz, A. (1994). Some key features of Distributed Morphology. *MIT working papers in linguistics* (pp. 275–288).

Harley, H. (2013). External arguments and the Mirror Principle: On the distinctness of Voice and *v*. *Lingua*, *125*, 34–57, https://doi.org/10.1016/j.lingua.2012.09.010

Harley, H. (2017). The 'bundling' hypothesis and the disparate functions of little *v*. I. Franco, R. d'Alessandro, & A. Gallego (Eds.), *The verbal domain* (pp. 3–28). New York: Oxford University Press.

Harris, A. (1981). *Georgian syntax.* Cambridge: Cambridge University Press.

Holisky, D.A. (1987). The case of the intransitive subject in Tsova-Tush (Batsbi). *Lingua*, *71*, 102–132, https://doi.org/10.1016/0024-3841(87)90069-6

Key, G. (2013). *The morphosyntax of the Turkish causative construction* (Unpublished doctoral dissertation). Tucson, AZ.

Kouneli, M. (2021). *High vs. Low external arguments: Evidence from Kipsigis.* (Handout from talk given at SAIAL, Potsdam)

Krejci, B. (2020). *Syntactic and semantic perspectives on first conjunct agreement in Russian* (Unpublished doctoral dissertation). Stanford University, Stanford, CA.

Krishnan, G.G., & Sarma, V.M. (2023). Unlocking the verbal spine in Malayalam: Past tense is key. *Glossa: a journal of general linguistics*, *8*, 1–44, https://doi.org/10.16995/glossa.6368

Kumaran, E. (2021). Two types of external argument in Karuk. S. Kim, N. Kurtz, M. Hewett, & C. Kasper (Eds.), *Proceedings of the 56th Annual Meeting of the Chicago Linguistic Society* (pp. 257–268).

Kuno, S., & Takami, K. (2004). *Functional constraints in grammar: On the unergative-unaccusative distinction.* Amsterdam: John Benjamins.

Kuroda, S.-Y. (1993). Lexical and productive causatives in Japanese: An examination of the theory of paradigmatic structure. *Journal of Japanese Linguistics*, *15*, 1–82, https://doi.org/10.1515/jjl-1993-0102

Legate, J.A. (2014). *Voice and v: Lessons from Acehnese.* Cambridge, MA, and London: MIT Press.

Legate, J.A., Akkuş, F., Šereikaitė, M., Ringe, D. (2020). On passives of passives. *Language*, *96*, 771–818, https://doi.org/10.1353/lan.2020.0062

Levin, B., & Rappaport Hovav, M. (1995). *Unaccusativity: At the syntax-lexical semantics interface.* Cambridge, MA: MIT Press.

Marantz, A. (1981). *On the nature of grammatical relations* (Unpublished doctoral dissertation). Massachusetts Institute of Technology, Cambridge, MA.

Marantz, A. (1997). No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *University of Pennsylvania working papers in linguistics 4.2* (pp. 201–225).

Marantz, A. (2022). *Reducing lexical categories to two syntactic heads: Implications for causative alternations.* Blog post (available at https://wp.nyu.edu/morphlab/blog/, accessed 04/17/2023).

Martin, F., & Schäfer, F. (2014). Causation at the syntax-semantics interface. B. Copley & F. Martin (Eds.), *Causation in grammatical structures* (pp. 209–244). Oxford University Press.

Massam, D. (2009). The structure of (un)ergatives. S. Chung, D. Finer, I. Paul, & E. Potsdam (Eds.), *Proceedings of the 16th Meeting of the Austronesian Formal Linguistics Association* (pp. 125–135). Santa Cruz, CL.

Megerdoomian, K. (2002). *Beyond words and phrases: A unified theory of predicate composition* (Unpublished doctoral dissertation). University of Southern California, Los Angeles, CA.

Myler, N. (2022). *Argument structure and morphology in Cochabamba Quechua (with occasional comparison with other Quechua varieties).* Ms., Boston University.

Nakajima, H. (2006). Adverbial cognate objects. *Linguistic Inquiry*, *37*, 674–684, https://doi.org/10.1162/ling.2006.37.4.674

Nakipoğlu-Demiralp, M. (2002). Türkçe'de ayrık geçişsiz eylemlerin olay yapısal bir incelemesi. [An event-structural investigation of the split intransitivity in Turkish]. *Dilbilim Araştırmaları*, 1–16,

Nash, L. (2021). Nonunitary structure of unergative verbs in Georgian. *Natural Language and Linguistic Theory*, *40*, 1201–1267, https://doi.org/10.1007/s11049-021-09529-8

Nie, Y. (2020). *Licensing arguments* (Unpublished doctoral dissertation). New York City, NY.

Perlmutter, D. (1978). Impersonal passives and the Unaccusative Hypothesis. *Papers from the Annual Meeting of the Berkeley Linguistic Society*, *4*, 157–189, https://doi.org/10.3765/bls.v4i0.2198

Perlmutter, D., & Postal, P. (1984). The 1-Advancement Exclusiveness Law. D. Perlmutter & C. Rosen (Eds.), *Studies in Relational Grammar* (pp. 81–125). Chicago, IL: University of Chicago Press.

Pineda, A., & Berro, A. (2020). Hybrid intransitives in Basque. *Glossa: a journal of general linguistics*, *5*, 22, https://doi.org/10.5334/gjgl.824

Pinker, S. (2013). *Learnability and cognition: The acquisition of argument structure* (New ed. ed.). Cambridge, MA: MIT Press.

Pylkkänen, L. (2008). *Introducing arguments.* Cambridge, MA: MIT Press.

Ramchand, G.C. (2008). *Verb meaning and the lexicon.* Cambridge: Cambridge UP.

Schäfer, F. (2009). The causative alternation. *Language and Linguistics Compass*, *3*, 641–681, https://doi.org/10.1111/j.1749-818x.2009.00127.x

Shibatani, M., & Pardeshi, P. (2002). The causative continuum. M. Shibatani (Ed.), *The grammar of causation and interpersonal manipulation* (Vol. 48, pp. 85–126). Amsterdam: John Benjamin.

Sorace, A. (2000). Gradients in auxiliary selection with intransitive verbs. *Language*, *76*, 859–890, https://doi.org/10.2307/417202

Sorace, A. (2004). Gradience at the lexicon-syntax interface: Evidence from auxiliary selection and implications for unaccusativity. A. Alexiadou, E. Anagnostopoulou, & M. Everaert (Eds.), *The unaccusativity puzzle* (pp. 243–268). Oxford: Oxford University Press.

Sorace, A. (2011). Gradience in split intransitivity: The end of the Unaccusative Hypothesis? *Archivio Glottologico Italiano*, *XCVI*, 67–86,

Svenonius, P. (2012). *Spanning.* (Ms., CASTL/University of Tromsø)

Svenonius, P. (2016). Spans and words. H. Harley & D. Siddiqi (Eds.), *Morphological metatheory* (pp. 199–220). Amsterdam: John Benjamins.

Tenny, C. (1987). *Grammaticalizing aspect and affectedness* (Unpublished doctoral dissertation). Massachusetts Institute of Technology, Cambridge, MA.

Tollan, R. (2018). Unergatives are different: Two types of transitivity in Samoan. *Glossa: a journal of general linguistics*, *35*, 1–41, https://doi.org/10.5334/gjgl.223

Tollan, R., & Massam, D. (2022). Licensing unergative objects in ergative languages: The view from Polynesian. *Syntax*, *25*, 242–275, https://doi.org/10.1111/synt.12232

Tollan, R., & Oxford, W. (2018). Voice-less unergatives: Evidence from Algonquian. W.G. Bennett, L. Hracs, & D.R. Storoshenko (Eds.), *Proceedings of the 35th West Coast Conference on Formal Linguistics* (pp. 399–408). Somerville, MA: Cascadilla Proceedings Project.

Vendler, Z. (1957). Verbs and times. *The Philosophical Review*, *66*, 143–160, https://doi.org/10.2307/2182371

Yakut, A.B. (2012). *Syntax of Sason Arabic: A descriptive review.* (Ms., Boğaziçi University)