

Transitivity alternation verbs and causative constructions in Eastern Armenian

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1. Introduction

Causative constructions refer to predicates formed by the combination of a causative event with an underlying predicate. The addition of the causative verbal element also adds a new participant (a causer), which initiates or controls the event of the underlying predicate. There are two methods for forming causative constructions in Eastern Armenian: Causatives may be formed morphologically by affixing the bound morpheme *-ts^h(n)* to the verbal root as illustrated in (1); they may also obtain by adding the verb *tal* ‘give’ to the predicate thus forming an analytic predicate as shown in (2).¹

- (1) a. šor-er-ə č^hor-an-um en
dress-pl-Nom dry-Inch-Imp be-3pl
‘The clothes are drying.’
- b. Nairi-n šor-er-ə č^hor-ats^hn-um e
Nairi-Nom dress-pl-Nom dry-Caus-Imp be-3sg
‘Nairi is drying the clothes.’
- (2) a. yerexa-n patuhan-ə bats^h-ets^h
child-Nom window-Acc open-Aor.3sg
‘The child opened the window.’
- b. yerex-in patuhan-ə bats^h-el təv-ets^h-i
pro child-Dat window-Acc open-Inf give-Aor-1sg
‘I made the child open the window.’

In this paper, we investigate the syntactic and semantic properties of the morphological causative in (1b) and of the analytic causative in (2b) in

¹Throughout this paper, the following abbreviations are used in the examples: Nom - Nominative case; Acc - Accusative case; Dat - Dative case; Gen - Genitive case; Loc - Locative case; Instr - Instrumental case; Caus - Causative; Inch - Inchoative; Neg - Negation; Inf - Infinitival; Subj - Subjunctive; Aor - Aorist affix; Imp - Imperfective; Res - Resultative; sg - Singular; pl - Plural; person agreement is marked with numbers 1,2,3. The characters *p*, *t*, *k*, *ts*, *č* refer to the voiceless unaspirated consonants while the aspirated voiceless are represented as *p^h*, *t^h*, *k^h*, *ts^h*, *č^h*, respectively.

Eastern Armenian. Based on evidence from binding, adverbial scope and the interpretation of the causee, we will show that the two causative constructions display distinct clausal properties. In particular, we argue that the morphological causative includes a single event (i.e., is monocausal) and is formed on predicates that lack external arguments. The analytic causative, however, consists of two events and is formed on predicates that have an external argument. Traditionally, the clausal properties of morphological and analytic constructions have been captured by positing two distinct levels of causative formation whereby morphological causatives are formed in the lexicon and analytic causatives are composed in the syntax. By concentrating on the properties of transitivity alternation verbs such as *č^horanal* ‘dry-intr.’ and *bats^hel* ‘open-tr.’, we will show that the difference in clausal structure need not be captured by distinguishing the domains of formation of the two causative types. Instead, this paper proposes that both causative constructions are complex predicates formed in the syntax, where the causative element takes the underlying predicate as an argument. The distinction between the two causative constructions arises from the nature of the base predicate. Specifically, we argue that the causative verb in the analytic causative takes a complex predicate as complement, but the causative verb in the morphological construction takes a single predicate which lacks all “event” information. Hence, the lexical and syntactic properties of the underlying predicate play a crucial role in determining the causative construction that can or should be formed. The analysis proposed in this paper gives a unified account of the synthetic and analytic causative constructions in syntax, without positing distinct levels of formation. The different syntax and semantics associated with the two causative predicates arise from the distinct lexical properties of the underlying verbal forms. Thus the analysis proposed captures the relation between the causative and non-causative forms of verbs and sheds light on the lexicon-syntax interface.

The paper is organized as follows: The following section presents the distribution of morphological and analytic causative constructions in Eastern Armenian. Section 3 investigates the properties of the causee argument while Section 4 focuses on the clausal and scopal properties of these causative predicates. Based on the results from the two previous sections, Section 5 provides a predicate-based approach to causative formation, which combines the primitive components of the verbal construction using syntactic principles within a single computational system (cf. Hale and Keyser 1993 and

Marantz 1997, among others). This section shows that the distinct surface forms of causatives are due to the difference in the lexical representation of the underlying transitivity alternation verbs. The last section concludes the paper.

2. Distribution of causative constructions

In Eastern Armenian², the formation of morphological causatives seems to be more constrained than the formation of the analytic causatives. In particular, the verbs that undergo morphological causativization can be classified into the following four groups:

The first group consists of deadjectival predicates that denote a change of state, as illustrated in the second column in (3). These verbs are intransitives, often referred to as *inchoatives* or *anticausatives*, and have the interpretation ‘BECOME Adjective’ (Minassian 1980). These verbs behave as transitives when they are causativized, as shown in the third column in (3).

(3)	<u>Adjective</u>	⇒	<u>Change of State</u>	⇒	<u>CAUSE change of state</u>
	č ^h or ‘dry’		č ^h oranal ‘dry’		č ^h orats ^h nel ‘dry’
	mets ‘big’		metsanal ‘grow’		metsats ^h nel ‘grow, bring up’
	arag ‘fast’		araganal ‘quicken’		aragats ^h nel ‘accelerate’
	č ^h aḡ ‘fat’		č ^h aḡanal ‘become fat’		č ^h aḡats ^h nel ‘fatten’
	sev ‘black’		sevanal ‘blacken’		sevats ^h nel ‘blacken, darken’
	karmir ‘red’		karmərel ‘redden’		karmrats ^h nel ‘redden, sauté’

The second group consists of verbs denoting activities or actions. These verbs are unergatives that form their causatives morphologically.

(4)	lats ^h el ‘cry’	⇒	lats ^h ats ^h nel ‘make cry’
	vazel ‘run’		vazats ^h nel ‘make run’
	tsitsaḡel ‘laugh’		tsitsaḡats ^h nel ‘make laugh’
	xosel ‘speak, talk’		xosets ^h nel ‘make speak, make talk’
	k ^h ənel ‘sleep’		k ^h ənats ^h nel ‘put to sleep, marinate’
	xaḡal ‘play’		xaḡats ^h nel ‘make play’

²The data and judgments presented in this paper are mainly from the Armenian dialect spoken in Iran, which contains certain phonological, morphological and syntactic differences from standard Eastern Armenian.

A small group of transitive verbs can also form morphological causatives, exemplified below. The transitive verbs that allow morphological causatives are members of the ingestive verbs, physically such as *xəmel* ‘drink’ or figuratively such as *haskanal* ‘understand’.

(5)	<i>xəmel</i>	‘drink’	⇒	<i>xmets^hnel</i>	‘make drink’
	<i>utel</i>	‘eat’		<i>utets^hnel</i>	‘make eat’
	<i>haskanal</i>	‘understand’		<i>haskats^hnel</i>	‘make understand’
	<i>sovorel</i>	‘learn’		<i>sovorets^hnel</i>	‘teach’

Finally, some psych-verbs can form their causatives morphologically as shown below:

(6)	<i>vax</i>	‘fear’	⇒	<i>vaxenal</i>	‘fear’
				<i>vaxets^hnel</i>	‘frighten’
	<i>urax</i>	‘happy’	⇒	<i>uraxanal</i>	‘become happy’
				<i>uraxats^hnel</i>	‘make happy’
	<i>ǰəβayn</i>	‘angry’	⇒	<i>ǰəβaynanal</i>	‘become angry’
				<i>ǰəβaynats^hnel</i>	‘make angry’
	<i>zguyš</i>	‘caution’	⇒	<i>zguyšanal</i>	‘be careful’
				<i>zguyšats^hnel</i>	‘warn’

Analytic causatives, on the other hand, are formed from regular transitive verbs. Hence, most transitives can become causatives by adding the verb *tal* to the base predicate. For instance, verbs such as *open*, *write* and *kill* can only form analytic causatives in Eastern Armenian as illustrated in the examples in (7):

(7)	<i>bats^hel</i>	‘open’	⇒	<i>bats^hel tal</i>	‘make open’
	<i>gərel</i>	‘write’		<i>gərel tal</i>	‘make write’
	<i>spanel</i>	‘kill’		<i>spanel tal</i>	‘make kill’
	<i>kot̄rel</i>	‘break’		<i>kot̄rel tal</i>	‘make break’
	<i>pašt̄el</i>	‘admire/worship’		<i>pašt̄el tal</i>	‘make admire/worship’

Light verb constructions (predicates composed of a nominal or adverbial preverbal element and a light verb) can only form analytic causatives.

(8)	<i>het gal</i>	‘return’	⇒	<i>het gal tal</i>	‘make return’
	<i>t^helefon anel</i>	‘call/phone’		<i>t^helefon anel tal</i>	‘make phone’
	<i>man gal</i>	‘walk’		<i>man gal tal</i>	‘make walk’

In addition, most verbs that form morphological causatives can also appear in an analytic construction, but with distinct syntactic and semantic properties as will be discussed in Section 3.3.

3. External arguments

In this section, we will investigate the properties of the two causative types in Eastern Armenian and we will show that they differ in that the underlying predicate of the analytic causative, but not that of the morphological causative, has an external argument.

3.1. Binding facts

Subject-oriented anaphors in Armenian are bound by the closest c-commanding subject antecedent as the following examples illustrate. In (9), the anaphor in the postpositional phrase can only refer to the matrix subject and not to the dative element. In (10) two subjects are available, but only the first c-commanding subject, i.e., the embedded subject, is able to bind the embedded anaphor.

- (9) Vrež-ə_i Armen-in_j [ink^{hən} ir_{i/*j} tan meč^h] handip-ets^h
 Vrej-Nom Armen-Dat self-Gen house-Gen inside met-3sg
 ‘Vrej_i met Armen_j in his_{i/*j} own house.’
- (10) Vrež-ə_i uzum er [vor Armen-ə_j ink^{hən} ir_{*i/j} das-ə
 Vrej-Nom wanting was that Armen-Nom self-Gen lesson-Acc
 gəri]
 write-Subj/3sg
 ‘Vrej_i wanted Armen_j to write his_{*i/j} own homework.’

The binding possibilities of subject-oriented anaphors within causative constructions show that morphological causatives differ from their analytic counterparts with respect to the ‘subjecthood’ of the causee. In morphological causatives, the anaphor can only corefer with the matrix subject, whereas the causee of the analytic causatives acts as an antecedent to the anaphor, suggesting that the underlying predicate contains a subject.

- (11) Ara-n_i yerex-in_j ink^{hən} ir_{i/*j} deᅇ-ə xəm-ets^h-rets^h
 Ara-Nom child-Dat self-Gen medication-Acc drink-Caus-Aor.3sg
 ‘Ara_i made the child_j drink his_{i/*j} own medication.’

In analytic constructions, however, the reflexive which appears in the lower clause can only be bound by the causee (i.e, the lower subject).

- (12) Ara- n_i yere x -in $_j$ ink^hən ir_{* i / j} senyak-ə dasavorel təvets^h
 Ara-Nom child-Dat self-Gen room-Acc organize gave.3sg
 ‘Ara $_i$ made the child $_j$ clean up his_{* i / j} own room.’

Hence, subject-oriented anaphors in the lower clause can only have the causee as antecedent in the analytic causatives and the matrix subject in the morphological causatives. Since the anaphor is always bound by the closest c-commanding subject in the clause, then we can conclude that there exists a distinction between the two causees based on their agency or subjecthood properties.

Similarly, when the subject-oriented anaphor occurs within an instrumental adjunct in the lower clause of a morphological causative, only the subject of the matrix clause can act as an antecedent for the reflexive, as shown in (13). In the analytic causative construction, on the other hand, the anaphor in the adjunct phrase can refer to either the embedded subject (the causee) or the matrix subject (the causer) as exemplified in (14).

- (13) tsabratsu- n_i Ara-in $_j$ [ink^hən ir _{i / $*j$} kukla-yov] tsitsaβ-ats^h-rets^h
 clown-Nom Ara-Dat self-Gen doll-Inst laugh-Caus-Aor.3sg
 ‘The clown $_i$ made Ara $_j$ laugh with his _{i / $*j$} own doll.’

- (14) p̄ofesor-ə $_i$ ašakert-in $_j$ [ink^hən ir_{?? i / j} heʀatesil-ov] astβer-ə
 professor-Nom student-Dat self-Gen telescope-Inst stars-Acc
 nayel təvets^h
 watch gave.3sg
 ‘The professor $_i$ made the student $_j$ watch the stars with his_{?? i / j} own telescope.’

We suggest that the analytic causatives form bi-predicative structures with the embedded predicate acting as a syntactic and semantic argument of the causative verbal element. In these constructions, the subject of the embedded clause is the causee, which has agentive properties. The morphological causatives, on the other hand, are monoclausal and only the matrix subject possesses agentive properties.

3.2. Manner adverbs

Additional support for the fact that the embedded subject or causee has subject-like properties in analytic causatives, but not in the morphological constructions, comes from the interpretation of the manner adverb. The adverb *vəstah* has the meaning ‘with confidence’ when used as a manner adverb.³ When *vəstah* appears in a sentence containing a morphologically causativized verb, it can only refer to the subject of the matrix clause. This is illustrated in the first interpretation in (15), where the manner adverb is interpreted as referring to Ara. This is in clear contrast with interpretation (i) in (16), in which the manner adverb refers to the subject of the embedded clause and not to the matrix subject.

- (15) Ara-n Nairi-in vəstah xos-ets^h-rets^h
 Ara-Nom Nairi-Dat confident speak-Caus-Aor/3sg
 (i) ‘With confidence, Ara made Nairi speak.’ (i.e., Ara was confident, not Nairi)
 (ii) ‘Ara certainly made Nairi speak.’
- (16) Ara-n Nairi-in vəstah xos-el təvets^h
 Ara-Nom Nairi-Dat confident speak-Inf gave-3sg
 (i) ‘Ara made Nairi speak with confidence.’ (i.e., Nairi was confident, not Ara)
 (ii) ‘Ara certainly made Nairi speak.’

3.3. Agency and volition

An important distinction between the two causative constructions in Eastern Armenian lies in the interpretation of the causee. The causee in an analytic causative has agentive properties and seems to behave volitionally. The causee in a morphological causative, on the other hand, acts as a theme or patient. This difference in interpretation can be clearly seen in the causative formation of verbs that allow both the morphological and the analytic constructions. In all of the example pairs listed below, the causees in the analytic constructions are more agentive, whereas the causees of the

³*vəstah* can also be interpreted as a sentential adverb in which case it means ‘certainly’ or ‘surely’; that interpretation is available in both morphological and analytic causatives. Moreover, *vəstah* is also an adjective meaning ‘confident’.

morphological structures seem to undergo the action and lack volition. In the morphological constructions, the action is being done to the causee without his or her agreeing. In the analytic constructions, there is the meaning in which the causee is performing the action or event on his or her own (even though he/she was made to do it), hence acting as an agent. This second interpretation is traditionally referred to as indirect causation. Thus, there is a strong semantic distinction depending on which causative structure is chosen.

To illustrate, consider the two sentences in (17). In (17a), the verb *mətnel* ‘enter’ is causativized by attaching the morpheme *-ts^h-* to the verbal root, deriving the morphological causative verb, *məts^hnel*. In this sentence, the interpretation is that the soldier forcefully pushed the student into the car. In contrast, the analytic causative of *mətnel* in (17b) allows an agentive interpretation of the causee. In this example, the student is still forced to enter the car but he or she enters the car on his or her own. Similar contrasts are represented by the sentences exemplified in (18) and (19).

- (17) a. zinvor-ə ašakert-in mek^hena-yi meč^h mət-ts^h-rets^h
 soldier-Nom student-Dat car-Gen inside enter-Caus-Aor/3sg
 ‘The soldier pushed the student into the car.’
- b. zinvor-ə ašakert-in mek^hena-yi meč^h mətnel təvets^h
 soldier-Nom student-Dat car-Gen inside enter gave
 ‘The soldier made the student enter the car.’
- (18) a. Naira-in hey pətət-ats^h-rank^h minč^hev vor
 pro Naira-Dat continually turn-Caus-Aor/1pl until that
 əngav
 fell-3sg
 ‘We kept turning/rotating Naira until she fell.’
- b. Naira-in hey pətət-el təvank^h minč^hev vor
 pro Naira-Dat continually turn-Inf gave-1pl until that
 əngav
 fell-3sg
 ‘We made Naira turn until she fell.’
- (19) a. menk^h Ara-in lav xəm-ats^h-rank^h
 we Ara-Dat good drink-Caus-Aor/1pl
 ‘We made Ara drink a lot (i.e., we made Ara get drunk).’

- b. menk^h Ara-in lav xəmel təvank^h
 we Ara-Dat good drink gave
 ‘We made Ara drink a lot.’

Further evidence for the close correlation of agency and the causee of the analytic causative comes from the following example, which shows that the causee of the analytic cannot be inanimate as illustrated by the ungrammaticality of (20b).

- (20) a. yerexa-n kukla-yin mət-ts^h-rets^h tan meč^h
 child-Nom doll-Dat enter-Caus-Aor/3sg house(Gen) inside
 ‘The child pushed the doll into the house.’
 b. ?*yerexa-n kukla-yin tan meč^h mətnel təvets^h
 child-Nom doll-Dat house(Gen) inside enter gave
 ‘The child made the doll enter the house.’

3.4. Idioms and agency

Morphological causatives sometimes have an idiomatic meaning, in the sense that the meaning of the causative form of a verb does not necessarily mean ‘cause to V’ but takes on a special (though often semantically related) meaning. So, for instance, *k^hənats^hnel*, the causative form of the Armenian verb *k^hənel* ‘sleep’, can mean ‘to put to sleep’, but it also has the idiomatic reading ‘to marinate’. (21) illustrates some of these constructions that, in addition to their compositional meaning, also give rise to idiosyncratic interpretations.

- | | | | | | |
|------|----------------------|------------------|---|--|-------------------|
| (21) | t ^h əinel | ‘fly’ | ⇒ | t ^h ər̄its ^h nel | ‘steal’ |
| | tsəβkel | ‘bloom’ | | tsəβkats ^h nel | ‘embellish’ |
| | metsanal | ‘grow’ | | metsats ^h nel | ‘exaggerate’ |
| | pətətəl | ‘turn’ | | pətətats ^h nel | ‘take for a ride’ |
| | k ^h ənel | ‘sleep’ | | k ^h ənats ^h nel | ‘marinate’ |
| | xəβəl | ‘play’ | | xəβats ^h nel | ‘mess with, mock’ |
| | nəβanal | ‘thin, shrink’ | | nəβats ^h nel | ‘disturb, bug’ |
| | kərmərel | ‘reddden, blush’ | | kərmrats ^h nel | ‘brown, sauté’ |
| | p ^h axnel | ‘escape’ | | p ^h axts ^h nel | ‘kidnap’ |

Following the observations in Marantz (1984), Marantz (1997) and Ruwet (1991), we suggest that the external argument is not part of the idiomatic

reading available in the verbal predicate. Marantz notes that there is a closer relation between a verb and its internal arguments than between the verb and the subject or external argument. Hence, the choice of the direct object can express a wide range of predicates whereas varying the subject of the verbal predicate does not give rise to similar idiosyncratic or idiomatic readings. Based on the preponderance of object over subject idioms, Marantz argues for an asymmetric representation of the verbal structure, whereby external arguments are projected by a separate verbal head *v* and are not directly related to the verbal root. In contrast, the internal arguments are in close relation with the verbal root. For our present purposes, this analysis indicates that external arguments are never included within the domain of idiomatic readings. Put differently, idiomatic interpretations are only available if there is no agent within the idiom domain. This in effect supports the generalization that we have reached so far that the causee in the morphological constructions is not agentive (i.e., is not an external argument of the embedded clause) in Eastern Armenian. As the example below illustrates, the morphological causative in (22a) can give rise to the idiomatic reading ‘to steal’; the latter disappears in the analytic construction in (22b).

- (22) a. Ara-n t^həiɾ^hun-in t^həiɾ-t^s^h-ret^s^h
 Ara-Nom bird-Dat fly-Caus-Aor/3sg
 (i) ‘Ara made the bird fly.’
 (ii) ‘Ara stole the bird.’
- b. Ara-n t^həiɾ^hun-in t^həiɾnel təvets^h
 Ara-Nom bird-Dat fly gave
 (i) ‘Ara made the bird fly.’
 (ii) * ‘Ara stole the bird.’

Summary

So far, we have shown that the underlying predicate of the analytic causative has an external argument. This is in contrast with the causee in the morphological causative which lacks the properties of an external argument. This distinction suggests that the analytic causatives consist of two distinct predicates, each with its own external argument, whereas the morphological constructions are monoclausal. In the next section, we will present further arguments illustrating the distinct clausal properties of the two causative types in Armenian.

4. Clausal properties

4.1. Adverbial scope

The scopal interpretation of manner adverbs supports the clausal distinction suggested in the previous section. Adverbs are able to modify the causation event independently of the basic predicate in analytic causatives, but can only refer to the whole predicate in the morphological causative. Thus, in the morphological causatives in (23), the adverbs refer to the whole event consisting of the cause+verb unit. In the analytic counterpart in (24), the adverb can modify either event independently: I.e., the first interpretation in (24) the adverb refers to the action of the matrix subject and means that the doctor made a slow or quiet motion to the prisoner to sit. In the second interpretation, however, the adverb refers to the base predicate and means that the doctor made the prisoner sit down slowly because he or she was afraid that the prisoner might make a sudden move.

- (23) bəžišk-ə bandarkyal-in kamats^h nəst-ats^h-rets^h
 doctor-Nom prisoner-Dat slow sit-Caus-Aor/3sg
 ‘The doctor sat the prisoner down slowly.’

- (24) bəžišk-ə bandarkyal-in kamats^h nəst-el təvets^h
 doctor-Nom prisoner-Dat slow sit-Inf gave.3sg
 (i) ‘The doctor slowly/quietly made the prisoner sit down.’
 (ii) ‘The doctor made the prisoner sit down slowly.’

4.2. Negation

Additional support for the existence of two distinct predicates in analytic causative constructions, as opposed to the morphological causatives, is provided by the following examples:

- (25) yes ašakert-ner-in ays girk^h-ə kart^h-al təvets^hi, bayts^h deř
 I student-pl-Dat this book-Acc read-Inf gave but yet
 mi toᅇ el č^h-en kart^hats^hel.
 one line even Neg-are read
 ‘I made the students read this book, but they haven’t yet read a single line.’

- (26) *usuts^hič^h-ə Ara-in ays gir^h-ə kart^h-ats^h-rets^h, bayts^h deř
 teacher-Nom Ara-Dat this book-Acc read-Caus-Aor but yet
 mi toḡ el č^h-i kart^hats^hel
 one line even Neg-is read
 ‘The teacher made Ara read this book, but he hasn’t yet read a
 single line.’

The underlying event can be negated independently of the causation in analytic constructions as shown in (25). Although the event of ‘reading’ has been caused in this example, it does not necessarily need to have taken place and can be negated. In contrast, the sentence in (26) demonstrates that the basic predicate cannot be interpreted independently from the causative predicate in a morphological causative construction, as shown by the ungrammaticality obtained when the caused event is negated. These examples suggest that the caused predicate and the causation form a single event in the morphological causative but constitute two independent events in the analytic construction.

4.3. Embedded Causatives

Causativization of a causative predicate can only be formed using the analytic causative. As illustrated in (27), if a predicate already contains a causative morpheme (i.e., it is a morphological causative) as in (27a), it cannot be causativized again using another causative morpheme (27b). It can, however, form a causative by the addition of *tal* and an external argument (27c).⁴

- (27) a. Anuš-ə yerex-in k^hən-ats^h-rets^h
 anush-Nom child-Dat sleep-Caus-Aor.3sg
 ‘Anuš put the child to sleep.’
 b. *Ara-n Anuš-in yerex-in k^hən-ats^h-ats^h-rets^h
 Ara-Nom Anuš-Dat child-Dat sleep-Caus-Caus-Aor.3sg
 ‘Ara made Anuš put the child to sleep.’
 c. Ara-n Anuš-in yerex-in k^hən-ats^h-nel təvets^h
 Ara-Nom Anuš-Dat child-Dat sleep-Caus-Inf gave

⁴In certain Western dialects of Armenian, however, a doubling of the causative affix seems to be possible as in *sir-ts^h-ə-s-nil* (‘to cause to love’) in the Kesab dialect, where *əs* is a phonological variant of the causative *ts^h* affix (cf. Cholakian 1986).

‘Ara made Anuš put the child to sleep.’

Moreover, the analytic causative must be used with verbs that are traditionally analyzed as “lexical causatives” such as *spanel* ‘kill’, or with the transitive variant of transitivity alternation verbs such as *kotrel* ‘break’. We can therefore formulate the generalization that the analytic causative is used when the underlying predicate contains a causation event and an external argument.

Summary

In this section, we have seen that with an analytic causative construction, we can negate the lower and higher events separately; the scope of the adverb can be ambiguous; and embedded causatives are allowed. In the morphological causative, however, the lower predicate and the causative are not behaving as two independent events. These data show that the morphological causatives have a single event (i.e., are monoclausal), whereas the analytic causatives consist of two independent events (i.e., are biclausal).

5. Analysis

In the previous sections, we looked at evidence from anaphoric binding, adverbial interpretation and derivational properties of embedded predicates such as negation and causativization. The data discussed in this paper support the claim that the clausal structures of the two causative constructions in Eastern Armenian are different. The conclusions from the previous two sections are summarized in the table below.

Table 1: Properties of analytic and morphological causatives

Analytic Causative	Morphological Causative
- two events	- one event
- base predicate has an external argument	- base predicate: no external argument
- semi-productive (can appear on other causatives)	- not productive

In the morphological causative, the causative morpheme affixes to the underlying verb, with which it forms a single predicate. In the analytic causative, however, the causative predicate and the underlying verbal clause behave as two independent predicates. We therefore propose that the analytic causative is obtained when the base predicate already contains a cause event projecting an external argument, and the morphological causative is formed when the underlying predicate lacks the cause event.

5.1. Causative formation in syntax

We adopt an analysis based on verbal decomposition as suggested by Chomsky (1995), Hale and Keyser (1993) and Travis (1991), among others. In these VP-shell configurations, the substantive part of the verbal predicate is denoted in the inner verbal domain or the VP node, which projects the change of state information and the internal arguments. Causation is then represented by a light verb *v*, which corresponds to the higher or outer event and projects the external argument. Hence, a causative construction would include a little-*v* head providing the CAUSE information for the predicate. Consider the sentences below:

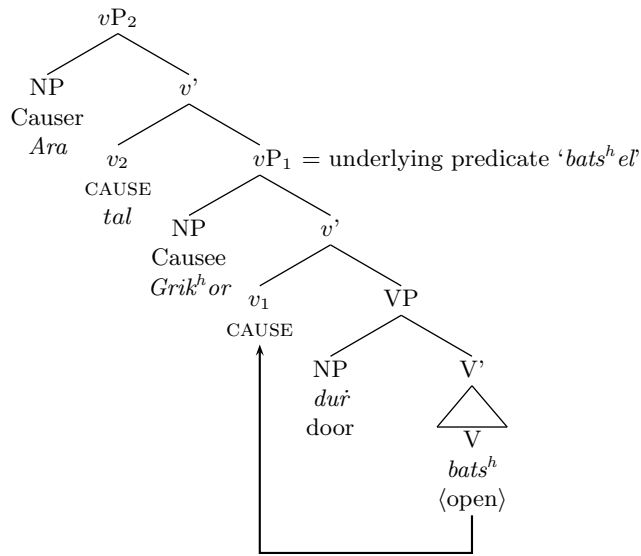
- (28) Ara-n Grik^hor-in duṛ-ə **bats^h-el** **təv-ets^h**
 Ara-Nom Grigor-Dat door-Acc open-Inf gave.3sg
 ‘Ara made Grigor open the doors.’

- (29) Ara-n dzerik^h-er-ə č^hor-**ats^h**-rets^h
 Ara-Nom hand-pl-Acc dry-**Caus**-Aor.3sg
 ‘Ara dried his hands.’

(28) represents an analytic causative and (29) is a morphological causative. We have argued that the main distinction between the morphological and the analytic causatives lies in the structure of the underlying predicate. If v_{cause} takes a full vP as complement, the analytic causative configuration in (30) obtains and the causation is realized as the causative verb *tal*. In the morphological causative, the underlying predicate consists only of the lower VP node; it does not include a little-*v* representing causation. In this construction, v_{cause} takes the VP structure as a complement and forms a full verbal phrase or vP with the underlying predicate, as illustrated in the structure given in (31). In other words, the distinction between the two causative

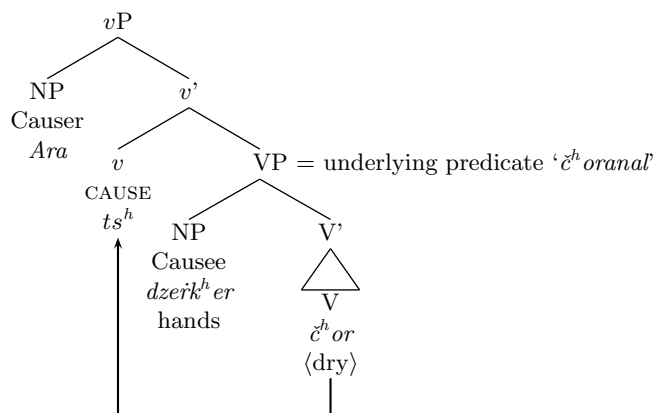
constructions resides in whether the higher causative event is part of the verbal complex, as in the morphological causative in (31) or if it is added as a separate event on a full verbal predicate, as in the analytic causative in (30).

(30) Analytic Causative



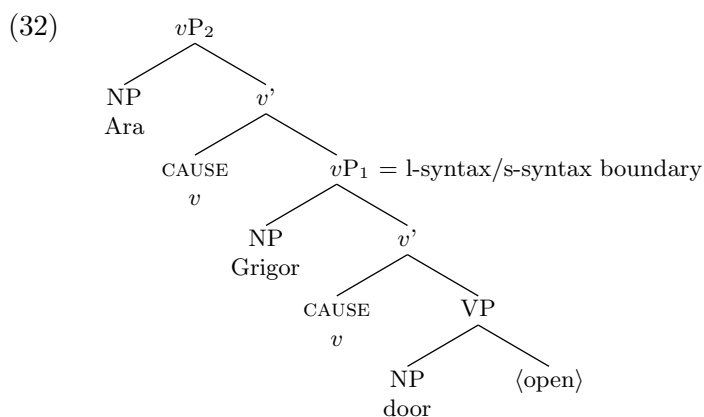
Hence, verbs such as *bats^h el* come with a causative verb included in their structure. These verbs therefore have a bigger structure, containing a full *vP*. Verbs such as *č^h oranal*, on the other hand, do not have a causative verb associated with the adjective *č^h or* ‘dry’. They are consequently smaller in structure and need to join with a cause event in the syntax in order to form the causative verb.

(31) Morphological Causative



Traditionally, morphological and analytic causatives have been distinguished based on the component in which they are formed (Di Sciullo and Williams 1987, Williams 1996, Alsina 1996). Other analyses have argued for two distinct causative morphemes in the lexicon (Ackerman and Moore 1999). In the analysis proposed here, however, the morphological and analytic causatives are both formed within the same computational system following a uniform set of word-formation principles. Thus, the distinction between the morphological and analytic causatives is not due to different causation morphemes, nor is it because of distinct verb formation components, but is rather a result of the distinct structures of the base predicate in each instance.

A similar analysis has been provided by Travis (1999) in which, following the terminology introduced in Hale and Keyser (1993), she makes a distinction between an *l-syntax* (lexical) causative and an *s-syntax* (productive) causative in Malagasy and Tagalog, based on the structural position of the causative morphemes. The phrase structure configuration in (32) could be used to schematize this approach for the analytic causative in Eastern Armenian, in which *l-syntax* roughly corresponds to the domain of words and *s-syntax* includes phrase-level syntax. In the examples discussed here, the CAUSE verb of *bats^hel* 'open-tr.' is in the *s-syntax* domain, while the CAUSE event of *c^horats^hnel* 'dry-tr.' is within the *l-syntax*. However, note that the causative verb in each case is the same; the only difference is the base predicate in each instance.



5.2. Two lexical items: Further evidence

Based on the investigation of the causatives in Eastern Armenian, we argued in the last section that the difference between morphological and analytic constructions can be reduced to the structure of the underlying predicate. In particular, it was proposed that we can distinguish two classes of alternating verbs: verbs such as *bats^hel* ‘open-tr.’ already include a v_{cause} in their lexical structure and thus appear as a full vP in the syntax. Verbs of the *č^horanal* ‘dry-intr.’ category, however, appear only as the adjective *č^hor* ‘dry’ and do not include a v_{cause} . We suggest that the distinct properties of these two verbal categories are due to the different lexical representations in each instance. Hence, in Eastern Armenian, the verbs depicted in (33) are only listed as an adjectival root and both the transitive and intransitive forms of these verbs are actually formed in syntax. On the other hand, those listed in (34) are in fact transitive verbal categories in the lexicon.⁵

⁵Note that this conclusion is different from the classification by Levin and Rappaport Hovav (1986), who place English transitivity alternation verbs ‘dry’ and ‘open’ within the same category, arguing that the underlying representation of both verbs includes a causation event.

(33) **Group 1:** *Listed in lexicon as adjectival roots*

<u>Adjective</u>		\Rightarrow	<u>Change of State [Intransitive]</u>
layn	‘wide’		laynanal ‘widen’
č ^h or	‘dry’		č ^h oranal ‘dry’
mets	‘big’		metsanal ‘grow’
arag	‘fast, quick’		araganal ‘quicken’
č ^h aβ	‘fat’		č ^h aβanal ‘become fat’
sev	‘black’		sevanal ‘blacken’
karmir	‘red’		karmørel ‘redden’

 \Rightarrow CAUSE change of state [Transitive]

layn.ats ^h .nel	‘widen’
č ^h or.ats ^h .nel	‘dry’
mets.ats ^h .nel	‘grow, bring up’
arag.ats ^h .nel	‘accelerate’
č ^h aβ.ats ^h .nel	‘fatten’
sev.ats ^h .nel	‘blacken, darken’
karmr.ats ^h .nel	‘redden, sauté’

(34) **Group 2:** *Listed in lexicon as transitives*

<u>CAUSE Change of State</u>	
kotrel	‘break’
ep ^h el	‘cook’
p ^h oxel	‘change’
šaržel	‘move’
xortakel	‘sink, drown’
bats ^h el	‘open’
koxpel	‘close’

Further evidence for the distinct lexical representations is found in participial formation in Eastern Armenian, which are created by adding the suffix *-ats*, often referred to as the Resultative morpheme (cf. Kozintseva 1995), to the aorist stem of the verb. If in fact the basic structures of the two categories of transitivity alternation verbs discussed in the last section are distinct, we would expect their deverbal formation to differ as well. This is borne out as shown in the following examples in which the boxed element

corresponds to the aorist stem. These examples show that in the verbs of group 1, the participial can be formed either on the inner VP projection (35a) where a causer is not present, or on the outer *vP* (35b), thus including a causer in the structure. In contrast, the verbs of group 2, whose lexical entry corresponds to the full *vP*, can only form the participial on the outer *vP* projection (36).

- (35) a. im č^hor.ats^h.ats pamidoṛ-ə
 my dry.Aor.Res tomato-Nom/Acc
 ‘my dried tomato’ (no causer is implied)
- b. im č^hor.ats^h.r.ats pamidoṛ-ə
 my dry.Caus/Aor.Res tomato-Nom/Acc
 ‘my dried tomato’ (i.e., ‘the tomato that I or someone dried’)
- (36) im kotṛ-ats bažak-ə
 my break.Res glass-Nom/Acc
 ‘my broken glass’ (i.e., ‘the glass that I or someone broke’)

Example (35a) illustrates the adjectival participial forms on the aorist stem of the verb ‘dry’. Here, the *-ats* morpheme is added on the inchoative construction of the verb and as the translation indicates, no causer is present in this reading. Hence, the way in which the tomato was dried or the causer of the drying event is not important but only the result state of being ‘dried’ is available. In contrast, the participial in (35b) is formed on the aorist stem of the causative verb. In this instance, the causer of the event is present and it may coincide with the possessive pronoun. Hence, this example refers to the tomato that either I or someone else dried. There exists however only one type of participial formation based on the verbs of group 2. Example (36) shows a participial form which is created based on the aorist stem of the verb ‘break’. As the English translation shows, the resulting reading is equivalent to the one obtained in the second participial of group 1 verbs, i.e., the one formed on the causative aorist in (35b). These results clearly point to a distinction between the structures of the verbs ‘dry’ and ‘break’ in Eastern Armenian. In particular, (36) indicates that *kotr*-, the base stem of the verb ‘break’, includes an external argument or causer and a causation event in its basic representation.

6. Conclusion

In this paper, we investigated the distinct properties of morphological and analytic causatives in Eastern Armenian and showed that the differences between the two structures can be reduced to a distinction in the lexical representations of the underlying predicates.

Based on evidence from binding, adverbial scope and the interpretation of the causee, we argued that the morphological causative behaves as a single clause, whereas the analytic causative consists of two independent clauses.

By concentrating on the properties of causative alternation verbs such as *č^horanal* ‘dry-intr.’ and *bats^hel* ‘open-tr.’, we demonstrated that the difference in clausal structure need not be captured by distinguishing the domains of formation of the two causative types, as has been done in traditional analyses. Instead, this paper proposes that both causative constructions are complex predicates formed in the syntax, where the causative element takes the underlying predicate as an argument. The distinction between the two causative constructions arises from the nature of the base predicate since analytic causatives are formed on predicates that already contain a *v* head whereas the underlying predicates of morphological causatives are single predicates that lack all “event” information.

In addition, we argued that transitivity alternation verbs do not constitute a uniform class in Armenian but have distinct internal structures: verbs such as *bats^hel* ‘open-tr.’ are listed in the lexicon as a full verb by being associated with a CAUSE feature within the lexical entry, whereas *č^horats^hnel* ‘dry-tr.’ is only available as an adjectival root element and lacks all eventuality information.

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