Morphological causatives are Voice over Voice[1]

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Abstract

Causative morphology has been associated with either the introduction of an event of causation or the introduction of a causer argument. However, morphological causatives are mono-eventive, casting doubt on the notion that causatives fundamentally add a causing event. On the other hand, in some languages the causative morpheme is closer to the verb root than would be expected if the causative head is responsible for introducing the causer. Drawing on evidence primarily from Tagalog and Halkomelem, I argue that the syntactic configuration for morphological causatives involves Voice over Voice, and that languages differ in whether their 'causative marker' spells out the higher Voice, the lower Voice or both.

Keywords: causative, Voice, argument structure, morpheme order, typology, Tagalog

1.   Introduction

Syntactic approaches to causatives generally fall into one of two camps. The first view builds on the discovery that causatives may semantically consist of multiple (sub)events (Jackendoff 1972, Dowty 1979, Parsons 1990, Levin and Rappaport Hovav 1994, a.o.). Consider the following English causative–anticausative pair. The anticausative in (1a) consists of an event of change of state, schematised in (1b). The causative in (2a) involves the same change of state plus an additional layer of semantics that conveys how that change of state is brought about (2a).

(1)   a.   The stick broke.
      b.   [BECOME [stick STATE(broken)]]

(2)   a.   Pat broke the stick.
      b.   [Pat CAUSE [BECOME [stick STATE(broken)]]]

Several linguists have proposed that the semantic CAUSE and BECOME components of the causative are encoded as independent lexical verbal heads in the syntax (Harley 1995, Cuervo 2003, Folli and Harley 2005, Pylkkänen 2008, a.o.). Each of these verbal heads (known as 'flavours' of v) introduces a separate event into the syntax. Therefore the anticausative in (1a) consists of a change of state event introduced by v_{BECOME} in (3a); the causative in (2b) involves the same change

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Abbreviations follow the Leipzig Glossing Rules. Other abbreviations: POL = politeness marker, AIA = Ability/Involuntary Action Voice, AV = Actor Voice, CV = Circumstantial Voice, DIR.CAUS = direct causative, INDIR.CAUS = indirect causative, LK = linker, P = preposition, PN = proper noun.

of state event plus an additional causing event introduced by v_{CAUSE} (3b). This approach to causatives, which I will refer to as the CAUSE theory predicts that the events introduced by v_{CAUSE} and v_{BECOME} should be available for independent modification in the syntax.

(3) a. [v_{BECOME} [break stick]]
    b. [Pat v_{CAUSE} [v_{BECOME} [break stick]]]

The second view, which will be referred to as the Voice theory, takes the causative alternation to be a Voice alternation (Alexiadou et al. 2006, 2015; Schäfer 2008; Kastner 2016, 2018). In this approach, causatives are just like regular transitives in that the external argument is introduced by Voice (Kratzer 1996), sketched in (4b). The external argument is interpreted as the causer of a change of state, without introducing an additional causing event into the syntax. Thus causatives consist of a single event associated with a single v. Throughout the paper, I use the term 'causer' to refer to the highest argument in a causative, not to indicate a thematic role distinct from agent.

(4) a. [v [break stick]]
    b. [Pat Voice [v [break stick]]]

In a language with overt causative morphology, the causative marker would spell out CAUSE in the CAUSE theory, and Voice in the Voice theory. Thus one common prediction made by these two approaches to causatives is that causative morphology should be spelled out high. That is, if affix order reflects the scopal relationships between morphemes in the syntax (Rice 2000) as expected by the Mirror Principle (Muysken 1981, Baker 1985), languages with overt voice causative morphology should reflect the relatively high position of CAUSE or Voice.

A question to be explored in this paper is whether the high causative prediction should carry over to more complex causatives. To illustrate from English, a *have*-causative like (5) in the CAUSE theory might be assigned a structure such as (6), where a causing event introduced by v_{CAUSE} scopes over a doing event introduced by v_{DO}. Under the Voice theory, which assumes that both causers and regular transitive agents are introduced by Voice, the *have*-causative might be assigned a structure such as (7).

(5) Sam had Pat eat the cookie.

(6) [Sam v_{CAUSE} [Pat v_{DO} [eat [cookie]]]]

(7) [Sam Voice [Pat Voice [eat [cookie]]]]

(6) and (7) show that for more complex causatives, the predictions of the CAUSE and Voice theories come apart. Causative morphology in the CAUSE theory should always be high. Causative morphology in the Voice theory, on the other hand, may in principle be realised in two positions: in the higher Voice position, lower Voice position or both.

This paper investigates whether the high causative prediction made by the CAUSE theory holds cross-linguistically for morphological causatives, defined as having (i) overt causative marking, (ii) a causee participant (as opposed to a theme, as in most lexical causatives), and (iii) an unmarked causative meaning (no coercion or permission of the causee). The high causative prediction is indeed borne out in Halkomelem, for example. As shown in the causative of an antipassive in (8), the causative affix -*stəxʷ*, which also encodes agreement with the causee, falls outside of the antipassive affix -*əm* indicating the valency of the lower predicate.

(8) niʔ cən q'ʷəl-əm-stəxʷ θə sleniʔ ʔə tθə səplil.
   AUX 1SBJ bake-ANTIP-CAUS.3OBJ DET woman OBL DET bread
   'I made the woman bake the bread.' (Gerdts 2004: 769)

The relative order of the causative and antipassive markers in Halkomelem reflect their syntactic and semantic scope: the causative is built on top of the antipassive.
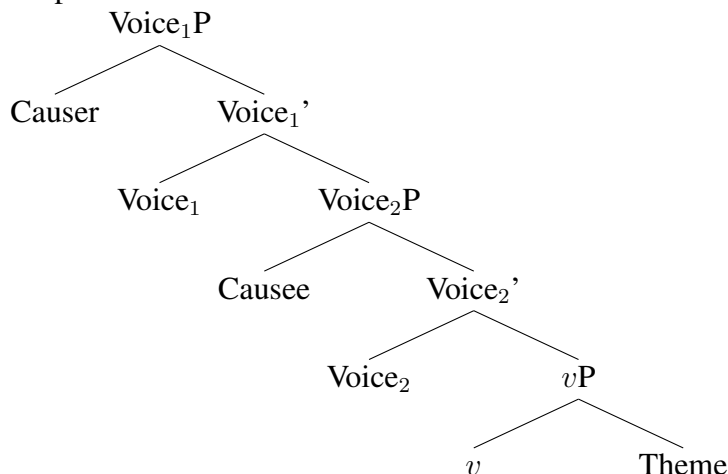
However, not all languages exhibit high causative morphology. In Tagalog, the causative marker *pa-* occurs inside of voice morphology, which reflects the transitivity of the entire clause. In the example in (9), the verb is prefixed with *nag-*, an Actor Voice (AV) marker which co-occurs with nominative case on the subject of the clause, in this case the causer. Notice that causative *pa-* appears closer to the verb than the *nag-* voice marker. Again, the relative order of the voice and causative markers reflects their syntactic scope: voice morphology is only determined once the entire causative predicate is built.

(9) Nag-pa-takbo ako ng bata-ng lalaki.
   AV.PFV-CAUS-run 1SG.NOM GEN child-LK man
   'I made the boy run.' (Rackowski 2002: 66)

Causative morphology in Tagalog therefore appears to be low. This is unexpected in the CAUSE theory, according to which causative morphology should always be high. It is possible, however, for the low position of *pa-* to be captured in a Voice theory of morphological causatives.

The empirical evidence points to the need for an approach to morphological causatives that allows causative morphology to appear high in some languages and low in others. I argue that the Voice theory of morphological causatives allows us to capture this cross-linguistic variation. I propose that morphological causatives involve a Voice head that selects for another VoiceP and that what has been identified as the 'causative morpheme(s)' in a given language can spell out either the higher Voice head, the lower one or both Voices. The causative marker in Halkomelem, for instance, spells out the higher Voice head, while the causative marker in Tagalog spells out the lower Voice head. Japanese and Kinande will be shown to spell out both. The proposed structure for causatives is given in (10), where v stands for a verbalising head $v + \sqrt{\text{ROOT}}$ complex.

(10) Proposed causative structure

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                Voice₁P
              /        \
         Causer       Voice₁'
                     /      \
                Voice₁      Voice₂P
                           /      \
                      Causee      Voice₂'
                                 /      \
                            Voice₂       vP
                                        /   \
                                       v    Theme
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3

Some previous proposals have suggested that the "recursion" of Voice may be necessary in morphological causatives (Rackowski 2002, Tubino-Blanco 2010, Harley 2013). However, these approaches also assume that causative semantics arises from a syntactically-present v_{CAUSE} head that merges above the lower VoiceP and introduces a causing event; the result is a hybrid Voice+CAUSE approach to morphological causatives, sketched in (11).

(11) [Sam Voice [v_{CAUSE} [Pat Voice [v_{DO} [eat [cookie]]]]]]

My proposal takes the position that Voice over Voice is the defining property of morphological causatives, and that no dedicated CAUSE head is needed in the syntax.

The present analysis assumes a Minimalist syntactic approach to word building along the lines of Distributed Morphology (Halle and Marantz 1993), which assumes that the syntactic structure of a word is built in the syntax and gets sent to the PF and LF interfaces, where it receives a phonological form and semantic interpretation. One major conclusion of the current investigation is that morphological causatives contain no 'causative head' *per se*; rather, it is the Voice over Voice configuration that is assigned a causative interpretation at LF. Languages may choose to overtly realise different terminals in the causative configuration, which gives the impression of 'causative morphology' at varying heights in the structure. This kind of analysis is possible only if we assume that the determination of form and meaning follows compositional operations, as in realisational theories of morphology.

The rest of the paper is structured as follows. Section 2 presents data from morphological causatives in Halkomelem (Section 2.1), whose causative marker is high, and Tagalog (Section 2.2), whose causative marker is shown to be low. Section 2.3 then provides data from languages which exhibit 'double' causative marking, including Japanese and Kinande. Based on this evidence, I propose in Section 3 that morphological causatives involve Voice over Voice, which captures the variable spell-out of causative marking cross-linguistically. Evidence from agenthood diagnostics support the claim that causees in morphological causatives are indeed introduced by Voice. In Section 4, I show that CAUSE theories and hybrid Voice+CAUSE theories make incorrect predictions for the behaviour of morphological causatives. I argue against the presence of v_{CAUSE} in the syntax, showing that morphological causatives do not involve two syntactically represented events (Section 4.1) and provide no morphological evidence for a dedicated causative head (Section 4.2). Section 5 concludes.

2. Two positions for causative markers

This section presents data on morphological causatives from languages with overt voice or transitivity morphology. The presence of overt voice morphology allows us to diagnose the relative position of the causative marker in these languages. I provide data from Halkomelem (Section 2.1) and Tagalog (Section 2.2), which have a single causative marker, as well as Japanese and Kinande, which have 'double' causative marking (Section 2.3).

2.1. Halkomelem causatives

In Halkomelem (Salish, ISO: hur), intransitive predicates receive no special marking (12a), but simple transitives are overtly marked by the transitive suffix *-t* and an ergative agreement marker (12b). As shown in (12c), Halkomelem can also express semantically transitive sentences using

an antipassive construction where the verb is marked by the antipassive suffix -*əm* and the internal argument is demoted to an oblique.

(12) a. niʔ ʔiməš tθə swiwləs.
       AUX walk DET boy
       'The boy walked.'   (Gerdts 2004: 769)

   b. niʔ q'ʷəl-t-əs   θə sɬeniʔ tθə səplil.
       AUX bake-TR-3ERG DET woman DET bread
       'The woman baked the bread.'

   c. niʔ q'ʷəl-em   θə sɬeniʔ ʔə tθə səplil.
       AUX bake-ANTIP DET woman OBL DET bread
       'The woman baked the bread.'   (Gerdts 1980: 300)

The transitive and antipassive markers in Halkomelem are in complementary distribution in (12b) and (12c). I therefore assume that the language has both a transitive and antipassive Voice.

     (13) gives the causativised versions of the sentences in (12). The causative suffix is -*stəx^w*, which also encodes agreement with the causee.

(13) a. niʔ cən ʔiməš-stəxʷ   tθə swiwləs.
       AUX 1SBJ walk-CAUS.3OBJ DET boy
       'I made the boy walk.'

   b. *niʔ cən q'ʷəl-ət-stəxʷ   θə sɬeniʔ (ʔə) tθə səplil.
       AUX 1SBJ bake-TR-CAUS.3OBJ DET woman OBL DET bread
       Intended: 'I made the woman bake the bread.'

   c. niʔ cən q'ʷəl-əm-stəxʷ   θə sɬeniʔ ʔə tθə səplil.
       AUX 1SBJ bake-ANTIP-CAUS.3OBJ DET woman OBL DET bread
       'I made the woman bake the bread.'   (Gerdts 2004: 769)

Gerdts (1980, 2004) notes an interesting restriction on morphological causatives in Halkomelem: the language permits causatives of intransitives (13a) and causatives of antipassives (13c) but not causatives of transitives (13b). Such restrictions on the embedded clause are common cross-linguistically; see Section 3 for more discussion.

     The licit causatives in (13a) and (13c) show that the causative is built on top of their simple unergative and antipassive counterparts. In (13c), we see that the antipassive marker -*əm*, which tracks the transitivity of the lower clause, is embedded inside the causative marker -*stəx^w*. The causative marker is portmanteau with object agreement, which must be with the causee, as obliques do not control object agreement in the language. The resulting causative is therefore syntactically transitive. These facts indicate that whatever functional head is spelled out by -*stəx^w* must be merged higher than the antipassive morpheme, as schematised in (14).

(14) [[[v] əm] stəxʷ]

Any analysis of morphological causatives in Halkomelem must therefore allow the embedding of Voice.

     Interestingly, despite being a transitive construction, causatives cannot be marked with the overt transitive suffix -*t* that occurs in simple transitives, as in (12b). This suggests that -*stəx^w*

behaves simultaneously as a marker of causation and of transitivity. This is consistent with the simple CAUSE and Voice theories of morphological causatives, where it is a high causative or Voice head that introduces the causer argument. However, the ungrammaticality of transitive *-t* in causatives is unexpected in a hybrid Voice+CAUSE approach, where an additional Voice marker would be predicted to occur outside the causative marker.

2.2. Tagalog causatives

Tagalog, like many other Austronesian languages, displays a rich system of voice morphology. For simplicity, I focus on just the Actor Voice and Patient Voice constructions, which track nominative case on the subject and on the object, respectively. When the subject of a transitive clause is nominative, the verb surfaces with the *nag-* Actor Voice prefix (15a). When the object is nominative, the verb surfaces with a null Patient Voice suffix that conditions the appearance of the perfective marker *<in>* (15b), which infixes initially to the verb (Schachter and Otanes 1972, De Guzman 1978, Maclachlan 1996).

(15) a. Nag-bagsak ang guro   ng   mag-aaral.
          AV.PFV-fail NOM teacher GEN student
          'The teacher flunked a student.'   Actor Voice
      b. B<in>agsak-∅ ng   guro   ang mag-aaral.
          <PFV>fail-PV   GEN teacher NOM student
          'The teacher flunked the student.'   Patient Voice

The Patient Voice suffix is overt in, for example, the infinitive form of the verb *bagsak-in* 'fail-PV'. I take voice morphology in Tagalog to be a true morphological reflex of Voice heads (Rackowski 2002; Aldridge 2004, 2012; Nie 2017).[2] Following Aldridge (2004, 2012), I assume that Actor Voice and Patient Voice are equivalent to antipassive and transitive Voice, respectively. The Voice head can also condition allomorphy on a higher Aspect projection, which is spelled out by *<in>* in the context of Patient Voice (15b).[3]

The causativised counterparts of (15) are given in (16), where the verb is marked with the causative prefix *pa-*. In the Actor Voice causative in (16a), causative *pa-* appears in between the Actor Voice marker *nag-* and the verb. In the Patient Voice causative in (16b), the voice marker is null, but the perfective marker *<in>* infixes not to the verb but to the causative marker *pa-*; this

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[2]Evidence that *nag-* spells out Voice comes from alternations with another Actor Voice affix *<um>* (i). As shown in (ii), *nag-* results in the addition of an external argument (Carrier-Duncan 1985, Travis 2000). This property of external argument introduction suggests that *nag-* is a true reflex of Voice.

(i)   B<**um**>agsak ang baso.
      <**AV**.PFV>drop NOM vase
      'The vase fell/dropped.'

(ii) **Nag**-bagsak ng   baso ang bata.
      AV.PFV-drop GEN vase NOM child
      'The child slammed down the vase.'   (Rackowski 2002: 72)

[3]Aspect exhibits similar allomorphy for Actor Voice (Schachter and Otanes 1972, De Guzman 1978), which I will set aside for the sake of simplicity.

suggests that *pa-* prefixes to the verb complex first, and then *<in>* infixes to the resulting form.

(16) a. Nag-pa-bagsak   ako   sa guro ng mag-aaral.
       AV.PFV-CAUS-fail 1SG.NOM OBL teacher GEN student
       'I made a teacher flunk a student.'

    b. P<in>a-bagsak-∅   ko   ang guro ng mag-aaral.
       <PFV>CAUS-fail-PV 1SG.GEN NOM teacher GEN student
       'I made the teacher flunk a student.'

Note that the voice morphology in both causatives is tracking the case properties of the entire causative, rather than that of the lower clause. That is, Actor Voice tracks the nominative causer subject in (16a), rather than the agent of the lower clause, i.e. the causee. Similarly, Patient Voice tracks the nominative causee 'object' in (16b), rather than the patient of the lower clause. Tagalog therefore differs from Halkomelem in that overt voice morphology has syntactic scope above the causative marker. This accords with morpheme order in the Actor Voice, where the *nag-* prefix attaches outside of the *pa-* + verb complex, indicating that Actor Voice is merged higher than the head that spells out the causative marker. Assuming that morphosyntactically conditioned allomorphy must be local (Bobaljik 2000, Embick 2010), the contextual spell-out of the Aspect head as *<in>* in the context of Patient Voice suggests that Patient Voice is also merged higher than the causative marker.

    Causatives of unergatives (17) and causatives of unaccusatives (18) in Tagalog show the same pattern as the causatives of transitives with respect to syntactic scope and morpheme order.[4]

(17) a. Nag-pa-kanta   ako   ng bata.
       AV.PFV-CAUS-sing 1SG.NOM GEN child
       'I made a child sing.'

    b. P<in>a-kanta-∅   ko   ang bata.
       <PFV>CAUS-sing-PV 1SG.GEN NOM child
       'I made the child sing.'

(18) a. Nag-pa-hulog   ako   ng bata.
       AV.PFV-CAUS-fall 1SG.NOM GEN child
       'I made a child fall.'

    b. P<in>a-tumba-∅   ko   ang bata.
       <PFV>CAUS-fall-PV 1SG.GEN NOM child
       'I made the child fall.'

Again, we see that voice morphology scopes above causative morphology in Tagalog. Actor Voice, for example, co-occurs with a nominative causer subject, not a nominative causee, which instead triggers Patient Voice.

    The hierarchical structure of the Actor Voice causative verbal complex in Tagalog is given in (19). The head that spells out the causative marker merges before voice morphology and therefore appears low in the structure.

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[4]Different verb roots (*hulog* and *tumba*) are used for the Actor Voice and Patient Voice causatives of unaccusatives in (18) due to what appears to be lexical incompatibility with one or the other Voice form of the causative. However, both roots appear to be unaccusative under standard tests.

(19) [nag- [pa- [v]]]

Tagalog is not alone in its 'low' causative morphology. Other languages which have been proposed to have a low causative marker include such typologically diverse languages as Acehnese (Legate 2014), Hiaki (Tubino-Blanco 2010, Harley 2013) and Zulu (Halpert 2015). Like in Tagalog, the voice or transitivity markers in these languages also scope above the causative marker.

Languages with low causative morphology are possible under Voice and hybrid Voice+CAUSE theories of morphological causatives, where the causative marker can spell out a projection lower than the Voice head that introduces the causer—the lower Voice projection or CAUSE, respectively. However, these languages pose a problem for simple CAUSE theories, which predict that the causative marker should be uniformly spelled out high.

Note also that Tagalog differs from Halkomelem in that no voice morphology surfaces under the scope of the causative marker; there is no voice morphology on the verb that reflects the transitivity of the lower clause. However, Tagalog is *like* Halkomelem in that causatives only have two overt functional markers; Voice, whether high or low, is only spelled out once. This is problematic for the hybrid Voice+CAUSE theory of morphological causatives, which predicts that causatives should contain two reflexes of Voice, one for the lower clause and a second for the higher clause.

2.3. Doubly-marked causatives

Some languages exhibit apparent 'double' causative marking. In Japanese, for example, the anti-causative of some verbs surfaces with an -R- morpheme (20a), while their lexical causative counterparts are marked with -S- (20b), usually glossed as transitive or causative (Jacobsen 1982, Miyagawa 1998, Harley 2008, Oseki 2017).

(20) a. Kabin-ga kowa-re-ta.
          vase-NOM break-R-PST
          'The vase broke.'
      b. John-ga kabin-o kowa-si-ta.
          John-NOM vase-ACC break-S-PST
          'John broke the vase.'

Japanese also has morphological causatives that employ *-sase-* (Shibatani 1976, Miyagawa 1998, Harley 2008), which Oseki (2017) has suggested may be decomposed into double -S- marking:

(21) John-ga Mary-ni syasin-o mi-sa-se-ta.
     John-NOM Mary-DAT picture-ACC see-S-S-PST
     'John made Mary see a picture.'   (Oseki 2017: 24)

Thus while (some) lexical causatives are marked with one -S-, morphological causatives surface with two -S- markers in Japanese.

Several Bantu languages also appear to have double causative marking. Kinande, for example, has what is known as the direct or short causative marker *-i-* in lexical causatives (22b). The short causative marker obligatorily co-occurs with the indirect or long causative marker *-is-* in morphological causatives, resulting in double causative marking (23b). Only the Kinande verb stems are given below.

(22) a. -tsap- 'get wet'
     b. -tsap-i- 'wet (tr.)'   (Hyman 1993: 12)

(23) a. -lim- 'cultivate'
     b. -lim-is-i- 'cause to cultivate'   (Hyman 1993: 13)

Morphological causatives in Bemba and Luganda also have both the short *-i-* and long *-is-* causative markers (Hyman 2003). Georgian is another, unrelated language that has been reported to have doubly-marked causatives; causatives of transitives in the language receive both an *a-* prefix and *-in* suffix (Nash 1994, 2017).

Double causative marking is problematic for CAUSE and hybrid Voice+CAUSE analyses of morphological causatives because there is only one CAUSE projection that can be spelled out by causative morphology. If morphological causatives involve two stacked Voice heads, however, then the double marking is explained. This approach is supported by Oseki's (2017) reanalysis of Japanese -s- as a reflex of transitive Voice; double -s- marking therefore reflects the presence of two Voice heads.

3. Proposal

3.1. Voice over Voice

The morphological causatives discussed in the previous section bear *exactly two* overt markers on the verb. This is summarised in (24), where Affix1 indicates a position closer to the verb.

(24) Causative morphology

	Affix1	Affix2
Halkomelem	Voice	CAUS
Tagalog	CAUS	Voice
Japanese	-s-	-s-
Kinande	INDIR.CAUS	DIR.CAUS

Halkomelem and Tagalog both have one marker that conveys voice and another that conveys causation. In Halkomelem, the voice marker tracks the transitivity of the lower clause. In Tagalog, the voice marker reflects the transitivity of the entire clause. But why does neither language mark voice for both the inner and outer clauses? In other words, why don't causatives always have *three* overt markers, Voice-CAUS-Voice, as is predicted by the hybrid Voice+CAUSE approach?

My answer is simple: morphological causatives are bimorphemic. They consist of two Voice projections, one of which may receive an invariant spell-out form, giving rise to the appearance of 'causative' morphology. In a sense, then, languages with morphological causatives are indeed marking voice for both the inner and outer clauses. Causatives do not have three overt markers because there is no dedicated syntactic CAUSE head in the extended projection of the verb.

Adopting Kratzer's (1996) proposal that agents are generated in the syntax in the specifier of a functional head Voice, I propose that the causer and causee are each introduced by a Voice head. The higher $Voice_2$ introduces the causer, and the lower $Voice_1$ may introduce a transitive or unergative causee. The tree in (25), repeated from (10), sketches the structure for a causative of a transitive; v stands for the verbalising head $v + \sqrt{\text{ROOT}}$ complex.

(25) Proposed causative structure

```
                    Voice₂P
                   /       \
             Causer         Voice₂'
                           /       \
                     Voice₂         Voice₁P
                                   /       \
                             Causee         Voice₁'
                                           /       \
                                     Voice₁         vP
                                                   /  \
                                                  v    Theme
```
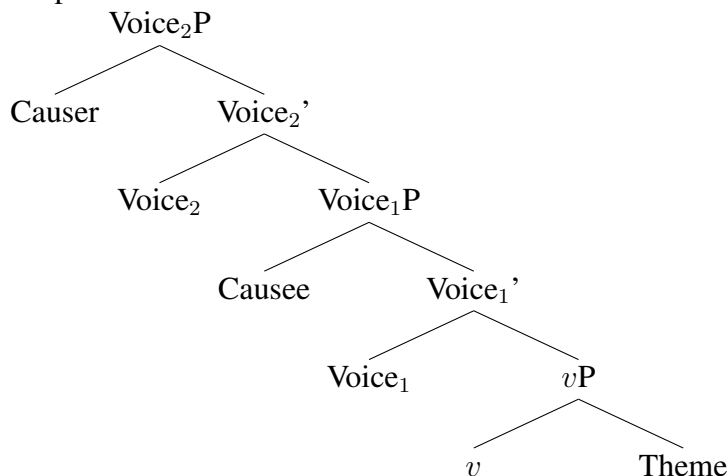
I assume that a Voice head is present in all predicate types, including unergatives and unaccusatives. This is possible if we allow our inventory of functional heads to include multiple Voice heads with different syntactic and semantic properties, including an unaccusative Voice head which prohibits a specifier but is nonetheless morphologically overt in many languages (see Schäfer 2008; Alexiaou et al. 2015; Wood 2015; Kastner 2016, 2017; Oseki 2017). Therefore the causative of an unergative in this approach differs structurally from (25) only in the absence of a theme argument, while the causative of an unaccusative differs in the absence of a causee; the sequence of functional heads remains the same. This captures the identical morphological behaviour of causatives of transitives, unergatives and unaccusatives in, for example, Tagalog (see Section 2.2).

I assume that morphological causatives in all languages have the same syntactic hierarchy of heads, given in (25). However, languages will vary in whether one or both Voice heads receives an invariant 'causative' spell-out, where the form of Voice does not change according to the voice properties of the clause. These invariant forms are labelled CAUS (or -S- in the case of Japanese) in (24). For instance, the invariant Voice is high in Halkomelem and low in Tagalog. This can be captured with Vocabulary Items that obey contextual spell-out: the causative marker spells out Voice in the context of a lower Voice in Halkomelem (26) but in the context of a higher Voice in Tagalog (27).

(26) Halkomelem: Voice ↔ -stəxʷ / Voice] __]

(27) Tagalog: Voice ↔ pa- / [Voice [__

Interestingly, the difference in the spell-out rules between Halkomelem and Tagalog causatives seem to reflect a difference in their syntax. The lower Voice in Tagalog may be transitive, unergative or unaccusative (Section 2.2); these Voices are all spelled out as *pa-*. The lower Voice in Halkomelem, by contrast, can be intransitive or antipassive but not transitive; variable voice morphology on the lower Voice marks this restriction. I speculate that causative morphology can be spelled out low in a language that has no restrictions on the lower Voice but is spelled out high in a language with such restrictions on the lower Voice.

Both Voice heads are invariant in Japanese and Kinande, which gives rise to their double causative marking. -S- marks any transitive Voice in Japanese (28). In Kinande, *-is-* marks transitive Voice in the context of a higher Voice projection, while *-i-* is the elsewhere form for transitive

Voice, which ensures that it gets spelled out on the highest Voice.

(28) Japanese: Voice$_{TR}$ ↔ -S-

(29) Kinande: Voice$_{TR}$ ↔ -i-, Voice$_{TR}$ ↔ -is- / __] Voice]

These simple contextually-conditioned Vocabulary Items allow the Voice head that spells out the causative marker(s) in these languages to be realised in its scopal position.

The Voice over Voice approach also provides a way to connect what have been traditionally called 'lexical' and 'syntactic' causatives. Lexical causatives in Japanese, for example, involve a single Voice head, as suggested by the single -S- in (30), while morphological or 'syntactic' causatives employ two Voice heads, as suggested by the double marking in (31).

(30) John-ga   kabin-o   kowa-si-ta.
John-NOM vase-ACC break-S-PST
'John broke the vase.'

(31) John-ga   Mary-ni   syasin-o   mi-sa-se-ta.
John-NOM Mary-DAT picture-ACC see-S-S-PST
'John made Mary see a picture.'   (Oseki 2017: 24)

3.2. Agenthood

The evidence presented in favour of a Voice over Voice approach to morphological causatives has so far been mostly morphological. Recall that transitive Voice was originally proposed to introduce agentive external arguments (Kratzer 1996). Evidence that the causer and causee can both be agentive would therefore constitute further positive support for the Voice over Voice analysis of morphological causatives. Specifically, agenthood of the causee would support the proposal that morphological causatives contain an embedded Voice head that introduces the causee.

Agenthood can be diagnosed with the use of agent-oriented adverbs (Jackendoff 1972, Ernst 1984, Geuder 2000, Pylkkänen 2008). In simple unergatives in Tagalog, agent-oriented adverbs like *sinasadya* 'deliberately' associate straightforwardly with the agent, as shown in (32). In the causative of the same unergative predicate given in (33); postverbal *sinasadya* can associate with either the causer or unergative causee, suggesting that both the causer and causee are agents.[5]

(32) Um-iyak   si   Kiko nang sinasadya.
AV.PFV-cry NOM.PN Kiko ADV deliberately
'Kiko$_2$ cried deliberately$_2$.'

(33) P<in>a-iyak-∅   ko   si   Kiko nang sinasadya.
<PFV>CAUS-cry-PV 1SG.GEN NOM.PN Kiko ADV deliberately
'I$_1$ made Kiko$_2$ cry deliberately$_{1/2}$.'

Agenthood may also be demonstrated by the compatibility of an argument with an instrument (Fillmore 1968). The Tagalog causative of an unergative in (34) shows that the instrumental adjunct *gamit ang tungkod* 'with the cane' may associate with either the causer or the causee; the sentence

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[5]The Actor Voice version of the causative in (33) is judged to be marginal with or without *sinasadya* 'deliberately', likely due to the non-specific interpretation of a genitive-marked causee.

can convey either that Kiko used the cane to walk with or that the speaker threatened Kiko with the cane. The association of the instrumental adjunct in the causative of transitive in (35) is similarly ambiguous between the causer and causee.

(34) P<in>a-lakad-∅   ko   si   Kiko gamit ang tungkod.
     <PFV>CAUS-walk-PV 1SG.GEN NOM.PN Kiko using NOM cane
     'I$_1$ made Kiko$_2$ walk with$_{1/2}$ the cane.'

(35) P<in>a-luto-∅   ko   si   Kiko ng   pansit gamit ang kahoy.
     <PFV>CAUS-cook-PV 1SG.GEN NOM.PN Kiko GEN pancit using NOM stick
     'I$_1$ made Kiko$_2$ cook pancit with$_{1/2}$ the stick.'

The agenthood diagnostics in (33) through (35) demonstrate that both the causer and causee are agents in Tagalog.

Transitive and unergative causees do not exhibit agentive characteristics in all languages, however. In Korean, for example, the agent-oriented adverb *ilupule* 'on purpose' can associate with the causer but not causee, as shown in (36).

(36) Swuni-ka Minswu-eykey chayk-lul ilpule   ilk-hi-ess-ta
     Suni-NOM Minsu-DAT   book-ACC on.purpose read-CAUS-PST-DECL
     'Suni$_1$ had Minsu$_2$ read the book on purpose$_{1/*2}$.'   (Kim 2011: 500)

Similarly, in Acehnese, the agent-oriented adverb *ngon saba* 'patiently' can associate with the causer but not the causee:

(37) (Ngon saba)   gurèe lôn geu-pu-baca   buku nyan bak lôn (ngon saba).
     with   patience teacher 1SG 3POL-CAUS-read book DEM at   1SG with   patience
     'My teacher$_1$ made me$_2$ read the book patiently$_{1/*2}$.'   (Legate 2014: 125)

On the basis of such evidence, Kim (2011) and Legate (2014) argue that while causers are indeed agents in Korean and Acehnese, respectively, causees are not agents, and a Voice over Voice approach to morphological causatives is therefore untenable. Kim (2011) suggests instead that transitive causees in Korean are introduced by a high Applicative head, while Legate (2014) posits a special kind of Applicative Voice to introduce transitive causees in Acehnese.

However, in the current approach we do not expect *all* embedded Voice heads in causatives to introduce agents. Causatives of unaccusatives, for instance, are proposed to contain a lower unaccusative Voice head; unaccusative Voice prohibits a specifier and therefore cannot introduce an agent. If it is indeed the case that causees of morphological causatives are never agentive in Korean and Acehnese, then this can be modelled as a language-specific restriction on the set of Voice heads that may be embedded under another Voice head. In fact, restrictions on the lower Voice are common cross-linguistically. Recall, for example, that morphological causatives in Halkomelem permit embedded antipassive Voice but not transitive Voice (Section 2.1). The variation observed across languages might then be due to different restrictions on the set of Voice heads they allow to be embedded; further investigation of these restrictions is left for future research.[6]

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[6]As Svenonius (2005) and especially Key (2013) show, there is a limit to causative "recursion" or embedding cross-linguistically. It may be possible to model this also as a restriction on embedded Voice heads.

My approach therefore does not recognise a dedicated 'causative morpheme' or head in the syntax. Instead, I propose that the semantics of causation arises due to a rule of interpretation at LF that assigns a Voice over Voice configuration a causative interpretation. Such rules at LF are necessary in order to capture such ambiguities as in (38), from Japanese, in which an apparently causative -S- construction may have both a causative interpretation (a) and a non-causative, adversity interpretation (b).

(38) Taroo-ga   musuko-o sin-ase-ta.
      Taroo-NOM son-ACC   die-S-PST
      a.   'Taro caused his son to die.'
      b.   'Taro's son died on him.'   (Pylkkänen 2008: 90)

Pylkkänen (2008) proposes that both interpretations of (38) arise from causative structures with causative semantics. I adopt Wood and Marantz's (2017) approach, which agrees with Pylkkänen that Japanese adversity causatives "look morphosyntactically like plain transitive causatives, because they have the same syntactic structure as plain [lexical] transitive causatives" (2017: 275) but "denies that the adversity causative asserts causative semantics" (276). The reader is referred to their paper for the details of their analysis, including its advantages over Pylkkänen's approach. If Wood and Marantz are correct, then the availability of the adversity reading in (38) as well as the possibility of -S- doubling in (31) suggest that it is not the case that (each instance of) -S- always gives rise to causative semantics. Rather, there may be multiple rules of interpretation that are compatible with the syntactic structure of (38), one that leads to the causative reading and another to the adversity reading. This kind of analysis is only tenable within a realisational theory of morphology with regards to both form (PF) and meaning (LF) (see Marantz 2013, Wood 2015, Myler 2016, Wood and Marantz 2017).

4.   Alternatives

This section discusses the predictions made by the CAUSE and hybrid Voice+CAUSE approaches to morphological causatives. Both approaches claim that causatives contain a verbal head v_{CAUSE} that introduces a causing event in the syntax. In the simple CAUSE analysis, flavours of v can introduce both an event and an external argument (Harley 1995, Cuervo 2003, Folli and Harley 2005), as shown in (39) for *Sam had Pat eat the cookie*. In the hybrid Voice+CAUSE approach, v introduces just an event, and Voice introduces the external argument (Rackowski 2002, Pylkkänen 2008, Tubino-Blanco 2010, Harley 2013, Legate 2014), as shown in (40).

(39) [Sam v_{CAUSE} [Pat v_{DO} [eat [cookie]]]]

(40) [Sam Voice [v_{CAUSE} [Pat Voice [v_{DO} [eat [cookie]]]]]]

Both theories predict that the causing event introduced by v_{CAUSE} and the doing event introduced by v_{DO} can be independently modified, for example, by temporal adverbials. The CAUSE theory furthermore predicts that causative morphology should always be spelled out high, while the hybrid Voice+CAUSE theory predicts that two voice markers should be spelled out alongside the causative morpheme in languages where Voice is overt.

Section 4.1 first shows that morphological causatives in Tagalog display no evidence for a syntactically-represented causing event. This conflicts with the claim that v_{CAUSE} introduces a

causing event that should be available for independent modification in the syntax. Section 4.2 then returns to the data from the high, low and doubly-marked causatives discussed in Section 2, demonstrating that CAUSE and Voice+CAUSE theories of morphological causatives make incorrect predictions for morpheme order.

4.1. Eventhood

The CAUSE and hybrid Voice+CAUSE theories contend that both lexical and morphological causatives contain a syntactically-represented causing event not found in their non-causative counterparts. Consider again the causative–inchoative alternation in English. If the causative contains a causing event, we expect to be able to modify it using, for example, temporal and manner adjuncts independently of the change of state event. This prediction is not borne out, as shown in the lack of contrast between the inchoative of *break* in (41a) and *-ing* nominalisation in (41b) on the one hand and the causative of *break* in (42) on the other. There is no causing event in English lexical causatives that can be modified by temporal adjuncts (42a) or manner adjuncts (42b) independently of the change of state.

(41)   a.   The stick broke on Monday.
       b.   The breaking of the stick on Monday

(42)   a.   Pat broke the stick on Monday (*by stepping on it on last week).
       b.   Pat broke the stick quickly (*by stepping on it slowly).

Bjorkman and Cowper (2013: 4) show that, like lexical causatives, *have*-causatives in English also disallow independent temporal modification of the supposed causing event and caused event (see also Ritter and Rosen 1993, 1996):[7]

(43)   *They had the team throw the game on Monday by threatening them on Sunday night.

　　　When we turn to morphological causatives in other languages, we find that the same generalisation holds. In the Tagalog causative in (44), the putative causing event and caused event cannot receive independent temporal modification.

(44)   P<in>a-iyak-∅　　　　ko　　　si　　　Kiko sa Lunes　(*sa pang-iinsulto　ko　　　sa
　　　<PFV>CAUS-cry-PV 1SG.GEN NOM.PN Kiko P　Monday P　　ADV-insulting 1SG.GEN P
　　　kanya　　sa Linggo).
　　　3SG.OBL P　Sunday
　　　Intended: 'I made Kiko cry on Monday (by insulting him on Sunday).'

Because events are spatial-temporal entities, we expect to be able to modify them temporally. In (44), however, there appears to be no event for the temporal adjunct to modify.

　　　Again-attachment has been widely used to diagnose event decomposition in the syntax (McCawley 1968, Dowty 1979, von Stechow 1996). Inchoatives with *again* are known to be ambiguous between restitutive and repetitive readings depending on where in the structure *again* attaches, as shown in (45). The restitutive reading in (45a) presupposes only that the baby was previously in a

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[7]English *have*-causatives differ from *make*-causatives, for which the two events may indeed be subject to independent temporal modification.

state of wakefulness; *again* scopes over just this state. The repetitive reading in (45b) presupposes that the baby has previously undergone a dynamic event of waking up; *again* scopes over the entire change of state event.

(45)   The baby woke up again.

    a.   [BECOME (*again* [baby STATE(awake)])]
           Context: *Luz gave birth to a beautiful new baby. The baby was awake and crying when he was born. Soon he quieted down and fell asleep. A few hours later he woke up.*
    b.   (*again* [BECOME [baby STATE(awake)]])
           Context: *Luz gave birth to a beautiful new baby. The baby was miraculously asleep when he was born, but soon he woke up and started crying. The baby eventually quieted down and fell asleep but a few hours later he woke up.*

Inchoatives therefore allow *again* to attach at two different points in the structure. If causatives contain an additional CAUSE event, then *again* should be able to attach at a third point in the structure. That is, causatives should be three-ways ambiguous. The crucial prediction is that *again* should be able to scope in between the CAUSE and BECOME components of the causative, which would provide evidence that they are present and differentiated in the syntax.

However, as von Stechow (1996: 99) shows, lexical causatives are only ambiguous between two meanings, one where *again* scopes over just the state of wakefulness (46a) and one where *again* scopes over the entire causative, including both participants (46c). What is unavailable is the reading in (46b), which is intended to presuppose a previous event of the baby waking up which the nurse was not necessarily involved in (see von Stechow 1996, Pylkkänen 2008, Schäfer 2008).

(46)   The nurse woke the baby up again.

    a.   [nurse CAUSE [BECOME (*again* [baby STATE(awake)])]]
           Context: *Luz gave birth to a beautiful new baby. The baby was awake and crying when he was born. Soon he quieted down and fell asleep. A few hours later the nurse woke the baby up.*
    b.   *[nurse CAUSE (*again* [BECOME [baby STATE(awake)]])]
           Context: *Luz gave birth to a beautiful new baby. The baby was miraculously asleep when he was born. The doctor woke him up and he started crying. The baby eventually quieted down and fell asleep but a few hours later a nurse woke him up.*
    c.   (*again* [nurse CAUSE [BECOME [baby STATE(awake)]]])
           Context: *Luz gave birth to a beautiful new baby. The baby was miraculously asleep when he was born. The nurse woke him up and he started crying. The baby eventually quieted down and fell asleep but a few hours later the nurse woke him up.*

Just like in inchoatives, then, *again* only attaches at two points in the structure of lexical causatives, resulting in (i) a restitutive reading or (ii) a repetitive reading over the entire clause. Crucially, *again* cannot scope *in between* the CAUSE and BECOME components of the causative, suggesting that they are not in fact differentiated in the syntax.

The same *again*-attachment behaviour is exhibited by inchoatives and lexical causatives in Tagalog. Inchoatives take an Ability/Involuntary Action (AIA) prefix, which is frequently used to mark change of state events (Dell 1983).The inchoative of *gising* 'wake up' is given in (47)

with *ulit*, a second position element meaning 'again' (Aldridge 2004). Like its English counterpart in (45), the Tagalog inchoative is ambiguous between the restitutive reading (47a) and repetitive reading (47b). The contexts given for these readings were the same as those in (45).

(47) Na-gising   ulit   ang   sanggol.
     AIA-wake.up again NOM baby
     'The baby woke up again.'

    a.   [BECOME (*ulit* [baby STATE(awake)])]
    b.   (*ulit* [BECOME [baby STATE(awake)]])

As shown in (48), the lexical causative of *gising*, which takes the Patient Voice form, also has only two readings: the restitutive reading (48a) and the repetitive reading over the whole clause (48c). Crucially, the interpretation where *ulit* scopes over just the change of state is unavailable (48b). The contexts given for these readings were the same as those in (46).

(48) G<in>ising-∅   ulit   ng   nars   ang   sanggol.
     <PFV>wake.up-PV again GEN nurse NOM baby
     'The nurse woke the baby up again.'

    a.   [nurse CAUSE [BECOME (*ulit* [baby STATE(awake)])]]
    b.   *[nurse CAUSE (*ulit* [BECOME [baby STATE(awake)]])]
    c.   (*ulit* [nurse CAUSE [BECOME [baby STATE(awake)]]])

Let us now return to morphological causatives, which are the focus of this paper. It could in principle be the case that morphological causatives behave differently from lexical causatives with respect to *ulit*-attachment in Tagalog. As it turns out, however, they exhibit the same behaviour. Consider the root *tulog* 'sleep', whose inchoative form with *ulit* in (49) is ambiguous between a restitutive reading (49a) and repetitive reading (49b).

(49) Na-tulog ulit   ang   sanggol.
     AIA-sleep again NOM baby
     'The baby fell asleep again.'

    a.   [BECOME (*ulit* [baby STATE(asleep)])]
          Context: *Luz gave birth to a beautiful new baby. The baby was miraculously asleep when he was born. Soon he woke up and started crying. A few hours later he quieted down and fell asleep.*
    b.   (*ulit* [BECOME [baby STATE(asleep)]])
          Context: *Luz gave birth to a beautiful new baby. The baby was awake when he was born. Soon he fell asleep. A few hours later he woke up and starting crying. Eventually he fell asleep.*

There is no lexical causative of *tulog*, but a morphological causative can be formed using the *pa*-causative marker (50). The morphological causative has the restitutive reading (50a) and the repetitive reading over the whole clause (50c). However, it crucially does not have the interpretation where *ulit* scopes over just the change of state event (50b).

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(50) P\<in\>a-tulog-∅   ulit   ng   nars   ang   sanggol.
\<PFV\>CAUS-sleep-PV again GEN nurse NOM baby
'The nurse put the baby to sleep.'

     a.   [nurse CAUSE [BECOME (*ulit* [baby STATE(asleep)])]]
          Context: *Luz gave birth to a beautiful new baby. The baby was miraculously asleep when he was born. Soon he woke up and started crying. The nurse picked him up and rocked him until he fell asleep.*

     b.   *[nurse CAUSE (*ulit* [BECOME [baby STATE(asleep)]])]
          Context: *Luz gave birth to a beautiful new baby. The baby was awake and crying when he was born. The doctor picked him up and rocked him until he fell asleep. A few hours later the baby woke up and starting crying. The nurse came and rocked him to sleep.*

     c.   (*ulit* [nurse CAUSE [BECOME [baby STATE(asleep)]]])
          Context: *Luz gave birth to a beautiful new baby. The baby was awake and crying when he was born. The nurse picked him up and rocked him until he fell asleep. A few hours later the baby woke up and starting crying. The nurse came and rocked him to sleep.*

Thus morphological causatives in Tagalog exhibit the same pattern as lexical causatives with respect to *ulit*-attachment. I take this evidence to suggest that morphological causatives do not necessarily introduce a causing event into the syntax. Instead, what distinguishes causatives from their non-causative counterparts is simply the addition of an external argument.

4.2. Voice and *v*

As noted in Section 3, morphological causatives in languages that spell out both voice and causative morphology overtly generally have two markers on the verb. The data summary from the languages discussed in Section 2 is repeated in (51), where Affix1 indicates a position closer to the verb.
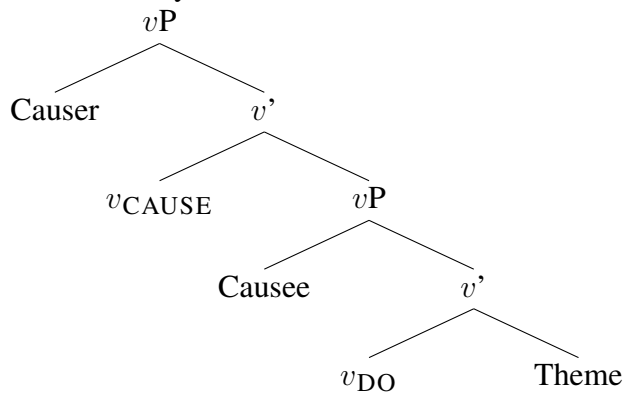
(51) Causative morphology

	Affix1	Affix2
Halkomelem	Voice	CAUS
Tagalog	CAUS	Voice
Japanese	-S-	-S-
Kinande	INDIR.CAUS	DIR.CAUS

The Voice over Voice approach to morphological causatives presented in Section 3 predicts that (i) there are two positions eligible for overt realisation, and (ii) the 'causative marker' can be realised in either or both positions. (51) shows that this is a welcome result.

By contrast, theories that adopt a dedicated causative head v_{CAUSE} make incorrect predictions for the morphology of causatives. Consider the simple CAUSE theory, in which flavours of v can introduce both an event and an external argument into the syntax (Harley 1995, Cuervo 2003, Folli and Harley 2005, a.o.). In this approach, v_{CAUSE} introduces a causing event as well as the causer argument, as shown in the causative of transitive structure in (52). It is also assumed that overt causative morphology on the verb spells out v_{CAUSE} rather than any other head. The only other head eligible for spell-out along the extended projection of the verb is v_{DO}, which may be realised by overt voice morphology. v_{CAUSE} always scopes higher than v_{DO} in this approach.

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(52) CAUSE theory causative structure

vP
- Causer
- v'
  - v_{CAUSE}
  - vP
    - Causee
    - v'
      - v_{DO}
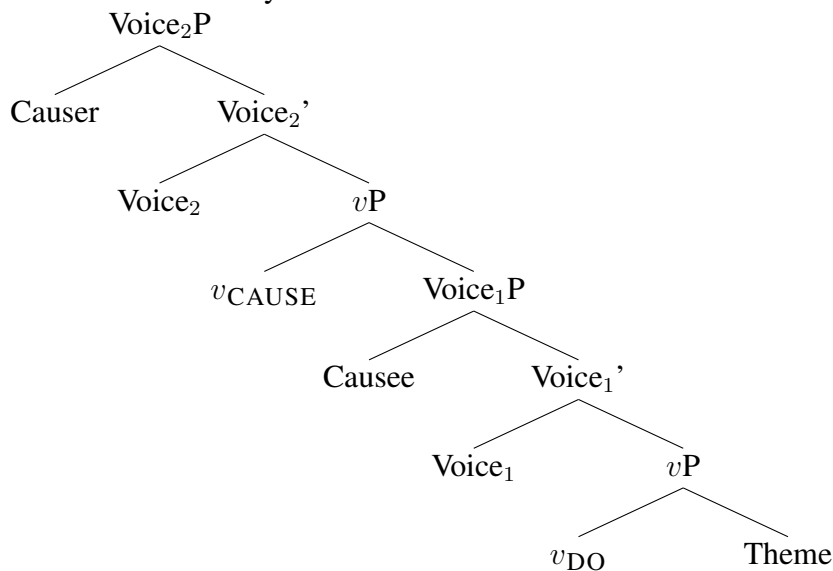   - Theme

The CAUSE theory therefore makes the following predictions: (i) morphological causatives are bimorphemic, and (ii) causative morphology should be spelled out high relative to voice morphology and at most once on the verb. As (51) demonstrates, the second prediction is not borne out either in Tagalog, where the head that spells out voice morphology scopes over the head that spells out causative morphology, or in Japanese or Kinande, which have doubly-marked causatives.[8]

Some scholars have proposed a hybrid Voice+CAUSE theory of morphological causatives in which flavours of v introduce events in the syntax but Voice introduces external arguments (Rackowski 2002, Pylkkänen 2008, Tubino-Blanco 2010, Harley 2013). This is shown in the causative of transitive structure in (53) modelled after the proposal in Harley (2013), in which v_{CAUSE} is merged above the Voice_2P layer and below the Voice_1P layer.

(53) Voice+CAUSE theory causative structure

Voice_2P
- Causer
- Voice_2'
  - Voice_2
  - vP
    - v_{CAUSE}
    - Voice_1P
      - Causee
      - Voice_1'
        - Voice_1
        - vP
          - v_{DO}
          - Theme

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[8]It is possible to conceive of an analysis within the CAUSE theory in which the two v heads in the causative are spelled out contextually, in parallel fashion to the proposal for Voice given in Section 3. In Tagalog, then, v_{DO} would be spelled out as the causative marker *pa-* in the context of v_{CAUSE}. While this approach could work out technically, given the lack of evidence that the two v heads introduce independent events into the syntax (Section 4.1), the v heads involved would essentially only be argument-introducers. However, this is precisely the function of Voice.

Notice that the structure in (53) has four heads along the extended projection of the verb that could in principle be spelled out overtly. A language with overt voice morphology and causative morphology might be therefore be expected to have causative forms like Voice$_2$-v_{CAUSE}-Voice$_1$-v_{DO}-Verb, where two voice markers reflect the Voice heads of the inner and outer clause and two v markers reflect the event properties of the clause.

However, as Legate (2014) points out for Acehnese and as I have shown for all of the languages discussed in this paper, this prediction is not borne out. Causatives of antipassives in Halkomelem, for instance, mark the inner clause with an overt antipassive suffix but do not have an overt transitive *-t* suffix which reflects the transitivity of the outer clause; the hybrid theory would have to stipulate that the lower Voice$_1$ is realised but the higher Voice$_2$ is not. In Tagalog causatives, on the other hand, Voice$_2$ would have to be overt while Voice$_1$ is not. For Japanese and Halkomelem, it is unclear which heads would be responsible for their two overt markers. Thus there is no morphological evidence for a third or fourth position for spell-out, yet this is exactly what the hybrid Voice+CAUSE analysis predicts.

This section has demonstrated that CAUSE and hybrid Voice+CAUSE theories of morphological causatives make incorrect predictions for both the eventhood properties and the morphology of causatives. I conclude that there is no evidence for the presence of a dedicated causative head v_{CAUSE} in morphological causatives. The properties of morphological causatives receive a natural account, on the other hand, under a Voice over Voice analysis in which either or both Voice heads can be spelled out by causative markers.

5.   Conclusion

In this paper, I presented evidence from languages with overt voice and causative morphology that morphological causatives are bimorphemic. I argued that causatives also have a higher Voice head. The overall structure I propose for morphological causatives therefore involves a Voice head that selects for another Voice projection; the set of lexical Voice types that may be selected can vary from language to language. Languages also differ in whether the 'causative marker' spells out the higher Voice, lower Voice or both. There is no evidence from the morphology or from eventhood diagnostics that morphological causatives contain a verbal head v_{CAUSE} that introduces an independent causing event into the syntax.

A consequence of my proposal is that there is no cross-linguistically identifiable dedicated 'causative morpheme' or head in the syntax. Rather, morphological causatives are in a sense epiphenomenal, the result of a Voice over Voice configuration that is assigned causative semantics. Languages may overtly realise one or both of these Voice heads with an invariant form, which may give the impression of 'causative morphology'. This study of morphological causatives therefore supports a theory of morphology in which word-building takes place in the syntax and the resulting configurations are phonologically realised and semantically interpreted post-syntactically.

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