The Report Committee for Kyle Joseph Jerro

Certifies that this is the approved version of the following report:

Argument Structure and the Typology of Causatives in Kinyarwanda: Explaining the Causative-Instrumental Syncretism

APPROVED BY

SUPERVISING COMMITTEE:

Supervisor: _____

John Beavers

_____

Stephen Wechsler

Argument Structure and the Typology of Causatives in Kinyarwanda: Explaining the Causative-Instrumental Syncretism

by

Kyle Joseph Jerro, B.A.

Report

Presented to the Faculty of the Graduate School

of the University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Master of Arts

The University of Texas at Austin

December 2013

Acknowledgements

I would like to thank my advisor, John Beavers, for his indefatigable dedication to my academic development. Without his patience, useful insights, and constructive criticism, this project would never have reached completion. In addition, I thank Stephen Wechsler, my other committee member, for his insightful comments and superb academic instruction. My gratitude for the unfailing support from my family and close friends cannot be overstated.

I am also indebted to many native speakers of Kinyarwanda for their judgments on the data in this paper. On a personal level, I must thank the staff and volunteers at the Urukundo Children's Home in Muhanga, Rwanda for giving me a place to live in their beautiful country as well as their friendship, care, and support. *Murakoze cyane.*

This work would not have been possible without the financial support of the Carlota Smith Memorial Fellowship and the Low-Density Machine-Translation Project, funded by the U.S. Department of Defense through the U.S. Army Research Office (grant number W911NF-10-1-0533).

Argument Structure and the Typology of Causatives in Kinyarwanda: Explaining the Causative-Instrumental Syncretism

by

Kyle Joseph Jerro, MA

The University of Texas at Austin, 2013

Supervisor: John Beavers

In the Bantu language Kinyarwanda, the morpheme *–ish* can be used to mark both causation and the instrumental applicative. This report proposes an explanation for this causative-instrumental syncretism, arguing that both causation and the introduction of an instrument are—at their core—two outgrowths of the same semantic notion. Fitting with other morphological causatives in Bantu, the causative use of *–ish* patterns as a lexical causative marker. The analysis presented here captures the lexical nature of the causative use of the morpheme by arguing that the new causal link is added sub-lexically, situating Kinyarwanda into a cross-linguistic typology of morphological causatives.

Table of Contents

Section 1: Introduction

Kinyarwanda (Bantu; Rwanda) has various grammatical forms available for encoding causation, including the morphological causative marker *-ish*.[1] In (1a), an example is provided of the transitive verb *kubita* 'beat,' and in (1b) is its causative-marked counterpart, with the *–ish* morpheme underlined for clarity.[2] Note that the *–ish*-marked variant is a ditransitive.

(1) a. Umu-gabo a-kubit-a in-ka.
CL1-man CL1S-beat-IMP CL9-cow
'The man beat the cow.'

b. Umu-gore a-kubit-ish-a umu-gabo in-ka.
CL1-woman CL1S-beat-CAUS-IMP CL1-child CL9-cow
'The woman made the man beat the cow.'

Speakers also have the option of expressing causation by using the verb *tuma* 'make,' underlined in (2), which syntactically embeds the base predicate.

(2) Umu-gabo ya-tum-ye umw-ana a-kubit-a
CL1.man CL1S-make-PERF CL1-child CL1-beat-IMP
in-ka.
CL9-cow
'The man made the child beat the cow.'

In Section 3.2 I show that this form patterns like an analytic causative, a term that will be explicitly defined in Section 2. Although the two superficially perform the same function of indicating causation, I show that

[1] The morpheme undergoes vowel harmony, with the allomorphs *–ish* and *–esh* being triggered by the quality of the preceding vowel in the stem. When the preceding vowel is high (i.e. [i] or [u]), the allomorph *–ish* is used; when the vowel is mid or low (i.e. [o], [e], or [a]), the allomorph *–esh* is used.

[2] All the Kinyarwanda examples in this paper come from field data collected by the author.

causative sentences of the type in (1b) and (2) differ systematically in their semantic interpretations and syntactic structures. This is shown by a variety of syntactic and semantic tests—such as the non-productivity of the causative with idiomatic verbs and a blocking relation between *–ish* causatives and other lexical causatives in the language. I provide both a descriptive picture of these forms in the language as well as an analysis that captures the syntactic and semantic differences between them.

I first show that the two kinds of causative in Kinyarwanda fit into the typology proposed by Comrie (1985, 1989), where syntactic structure and semantic meaning are iconic: a more direct causal meaning is reserved for lexical causatives, while mediated or indirect causation is associated with analytic causatives.[3] I will show that in Kinyarwanda, the *–ish* causative in (1b) patterns as a lexical causative and thus encodes a direct causative interpretation. On the other hand, the *tuma* causative in (2) permits readings that do not require a direct connection between the causing event and the result state.

Second, in the standard approach from the literature, causatives have been analyzed as operations in which a new causer is added to the argument structure of the base predicate. The introduction of this new causer in turn forces the previous subject to be demoted to some lower grammatical function (cf. Comrie (1985), Alsina (1992), Dixon and Aikhenvald (1997), Harley (2008)). On such an analysis, the sentence in (1b) is

[3]See also Haiman (1983:783-788) for discussion on iconicity and causatives, and see Haiman (1980), and the citations therein, for a discussion of iconicity in language more generally.

an example in which the subject *umugabo* 'man' from the base verb in (1a) is demoted and a new causer agent (i.e. *umugore* 'woman') is added. This analysis, however, is not entirely satisfying for Kinyarwanda, due to the fact that there is an alternative use of *–ish* as an instrumental applicative morpheme, something previously noted by Kimenyi (1980). This is illustrated in (3b), which is in complementary distribution with the instrumental oblique in (3a).

(3) a. Umw-ana a-kubit-a in-ka kw' in-knoni.
CL1-child CL1S-beat-IMP CL9-cow with CL6-stick
'The child beat the cow with a stick.'

b. Umw-ana a-kubit-ish-a in-koni in-ka.
CL1-child CL1S-beat-INST-IMP CL6-stick CL9-cow
'The child beat the cow with a stick.'

In (3b), the morpheme *–ish* licenses the instrumental object *inkoni* 'stick.' If one analyzes the *–ish* causative in (1b) as simply an operation of causer addition, then one is forced to analyze the instrumental use in (3b) as a wholly separate operation. An analysis is desired that can unify these two uses of the *–ish* morpheme.

I propose instead that *–ish* only introduces a new causal link into the causal chain, and that constraints on animacy and event types derive the possible readings for *–ish*-marked verbs, unifying the causative and instrumental applicative uses of the morpheme. This scenario can explain the syncretism by showing that the two uses are just two manifestations of the same causal structure.[4]

[4]Traditionally, the term "syncretism" refers to the merging of different inflectional varieties of a mor-

Finally, it has been proposed that the crucial distinction of interpretation between the instrumental and causative is the animacy of the intermediate argument (Petersen 2007). In (1b), the animate, causally intermediate object *umukobwa* 'girl' requires a causative reading, while the inanimate object *ikaramu* 'pen' derives an instrumental reading. However, I show that these two kinds of interpretation are not as categorically distinct as previously assumed; certain gradient interpretations exist that do not fit a rigid 'causative' or 'instrumental' categorization. I argue that these readings arise due to the constraints on combinatorial possibilities of event types, proposing that instruments and causees are thematically similar in the language.

The present proposal contrasts with an approach from Shibatani and Pardeshi (2001), who argue that a syncretism between a causative and applicative is predicted to arise in cases where the causative requires a sociative meaning. In their view, sociative causative meaning is defined as a high level of involvement by the agent in the caused action, a relationship that is obligatorily present with instruments and sometimes present with certain causatives. I show that although sociative meaning can indeed be expressed by the morphological causative, this reading is only one many other readings—all of which share the more general notion of direct causation. This is predicted from the typology of causative forms I propose for Kinyarwanda; the morphological causative *–ish* re-

pheme during the development of a language, something I believe occurred to derive the current *–ish* morpheme. My analysis of the *–ish* morpheme, however, is explicitly synchronic, aiming to demonstrate that there is an elegant analysis that subsumes these two readings under one shared semantics. See footnote 13 for a discussion of the possible historical situation that gave rise to there merge between these two uses.

quires a high level of directness in its interpretation, which can include sociative causation, but the sociative reading is crucially not required.

The structure of the paper is as follows. In the next section I outline a descriptive typology of the different causatives available in Kinyarwanda. In Section 3, I show that the *–ish* causative encodes direct causation, noting that this corresponds to the fact that the *–ish* causative patterns as a lexical causative. Section 4 outlines an event structural analysis of the *–ish* morpheme, capturing both the requisite direct causal semantics as well as offering a way of understanding the syncrestism between causative and applicative. Section 5 discusses previous approaches to morphological causatives and the causative-applicative syncretism in the literature, showing that these are not suited for the empirical facts of Kinyarwanda. Section 6 concludes.

Section 2: Descriptive Typology of Causatives in Kinyarwanda

I first give a brief description of the different options for representing causal meaning in Kinyarwanda. As mentioned above, the two central forms under discussion here are the *–ish* causative and the causative formed with the verb *tuma* 'make.' I will also discuss a class of lexical stem-alternating forms that will be used as a comparison case in Section 3.

Kinyarwanda is an SVO language, with rich verbal morphology, including subject agreement, tense, and aspect marking. Verbs agree in gender with the subject, and—as is characteristic of Bantu languages—Kinyarwanda has sixteen semantically distinct gender classes. Verbs may also optionally take incorporated object pronouns as well as various valency-changing morphemes, including applicatives, the morphological causative, reciprocals, and reflexives.

Before proceeding to a description of the different causatives in Kinyarwanda, I turn now to an overview of the terminology that I use for the duration of the paper. First, a causative is a verbal expression that corresponds to a non-causative verbal expression. I assume that all verbal expressions describe some series of events that may be causally linked. The causative variant has the same meaning and argument structure as the non-causative variant, but it also contains an additional element of causation, whereby an extra event is added into the chain of events. This also results in the causative variant containing an additional argument.

Haspelmath (1993), building on Nedjalkov (1969), discusses the typology of causatives, which he categorizes based on the grammatical form of the causative, i.e. what marking is used to distinguish the causative form the non-causative variant. The various types are defined by whether it is the causative or non-causative (or both, or neither) variant that is marked. The categories are as follows: *overt causative* marking,[5] where the causative bears a morpheme that is not found on the non-causative in order to indicate causation; *anticausative* marking, where the non-causative is marked and the non-causative is unmarked; *suppletive* pairs, where the causative bears no resemblance to the non-causative; and *equipollent* marking, where the causative and non-causative are equally marked (i.e. both are formally marked or neither is formally marked). Note that these classifications are based on the formal marking that is used to differentiate between the causative and non-causative.

In this paper, I discuss two conceptual categories of overt causatives, which I shall call lexical and analytic—a distinction going back to at least Shibatani (1976). These two categories are defined based on various syntactic and semantic properties, including: directness of causation, productivity, transparency of meaning, and temporal/conceptual separability of events. These two semantic types of causative are not necessarily required to correspond to particular forms across languages, though some typological tendencies have been observed (see Section 3.1).

The main distinction between analytic and lexical causatives is the

[5]Haspelmath calls this class "causatives," but to avoid ambiguity, I will use the terms "overt causative" to mean "causative" in Haspelmath's sense, i.e. where the causative variant is marked.

degree to which the form productively appears on non-causative forms. Analytic causatives are generally productive; any causative marked form has a predictable meaning based on the meaning of the non-causative variant, and the argument structure is systematically predictable based on the the non-causative variant. Due to the productive nature of analytic causatives, they also apply across all verb classes. As I discuss in detail in Section 3.1, analytic causatives also often prefer an indirect semantic interpretation as well as permit subevents to be temporally separated.[6] The term analytic is used because these forms are systematically derivable from the non-causative variant. This kind of causative is usually encoded grammatically as a periphrastic causative.

Lexical causatives, on the other hand, are causative variants of verbal expressions that are not productive, and the meaning of the causative variant may not be predictable from the non-causative. For example, certain causative variants may have idiomatic interpretations. Further, there may be lexical gaps where the causative or non-causative variant is not grammatical for certain verbs or verb classes. Lexical causatives do not permit that subevents be temporally separated, which corresponds to the fact that lexical causatives have a requisite direct causative interpretation. In these cases, the causative can be assumed to have been lexicalized, and there is no clear derivation between causatives and non-causatives. This suggests that the causative and non-causatives are stored

[6]By temporal separability, I mean that analytic causatives permit temporal distance between the causing event and the result state—something that is not possible with lexical causatives. I will discuss the tests for temporal separability in more detail in Sections 2 and 3.

lexical pairs, which I assume is the case with Haspelmath's equipollent and suppletive causatives. Haspelmath's overt causative class is typologically variable with respect to whether an overt causative in a language will pattern as an analytic or lexical causative, and this has been the focus of much cross-linguistic research. I return to the variation found with overt causatives in Section 3.1.

The terms "analytic" and "lexical" are terms that have been used to describe clusters of semantic and grammatical properties, though these attributes can be found on a variety of different grammatical forms in different languages, such as the periphrastic causative (where a predicate is embedded under a causative verb) and the morphological causative (where the causative variant of a verb is marked by a bound verbal morpheme indicating causation). As I discuss in detail in Section 3.1, morphological causatives can pattern as lexical and analytic causatives in different languages, and a central question of this present paper is fitting the morphological causative *–ish* in Kinyarwanda into this typological picture.

I turn now to a discussion of the different kinds of causative in Kinyarwanda. First, there is the *–ish*-causative, which is a morphological causative that attaches to the stem of a verb, introducing causative meaning as well as increasing the verbal valence by one. Consider the intransitive and transitive sentences in (4).[7]

[7]Stems often undergo phonological alternations in the perfective aspect. The non-finite forms of the verbs in (4) are *boroga* 'scream', *gungunya* 'throw', and *kata* 'cut', respectively.

(4) a. Aba-na ba-a-boroz-e.
CL2-children CL2-PST-scream-PERF
'The children screamed.'

b. Umu-gabo y-a-junguny-e umu-pira.
CL1-man CL1-PST-throw-PERF CL3-ball
'The man threw the ball.'

c. Umu-gabo y-a-kas-e igi-ti.
CL1-man CL1-PST-cut-PERF CL7-tree
'The man cut the tree.'

These verbs may all be causativized by the morpheme *–ish*. The sentences in (5a-c) are the causativized forms of sentences in (4a-c), respectively. This is a clear example of "overt causatives."

(5) a. Aba-na ba-a-borog-*esh*-eje umu-gore.
CL2-children CL2-PST-scream-CAUS-PERF CL1-woman
'The children made the woman scream.'

b. Umu-gabo y-a-junguny-*ish*-ije umu-hungu
CL1-man CL1-PST-throw-CAUS-PERF CL1-boy
umu-pira.
CL1-ball
'The man made the boy throw the ball.'

c. Umu-gabo y-a-kat-*esh*-eje umu-hungu igi-ti.
CL1-man CL1-PST-cut-CAUS-PERF CL1-boy CL7-tree
'The man made the boy cut the tree.'

In (5), the morpeheme increases the verbal valency of the corresponding sentences in (4) by one. As a side note, speakers also accepted sentences in which the objects in (5b) and (5c) were offered in the reverse order:

(6) a. Umu-gabo y-a-junguny-*ish*-ije umu-pira
CL1-man CL1-PST-throw-CAUS-PERF CL1-ball
umu-hungu.
CL1-boy
'The man made the boy throw the ball.'

b. Umu-gabo y-a-kat-*esh*-eje igi-ti umu-hungu.
CL1-man CL1-PST-cut-CAUS-PERF CL7-tree CL1-boy
'The man made the boy cut the tree.'

Kinyarwanda has been noted to be a symmetrical object language, in which both objects in applied double-object constructions are treated equally in their objecthood properties (Kimenyi 1980). One of these properties is that the order of the objects does not affect the interpretation of the sentence. An explanation of this fact is left for a theory of object symmetry, of which there are many approaches (see Jerro (2013) for an overview).

The sentences in (4) can also be causativized by being embedded under the verb *tuma* 'make.' The data in (7) correspond to the verbs in (4).

(7) a. Aba-na *ba-tum-ye* umu-gore
CL2-children CL2-make-PERF CL1-woman
a-borog-a.
CL1-scream-IMP
'The children made the woman scream.'

b. Umu-gabo *y-a-tum-ye* umu-hungu a-juguny-a
CL1-man CL1-PST-make-PERF CL1-boy CL1-throw
umu-pira.
CL3-ball.
'The man made the boy throw the ball.'

c. Umu-gabo *y-a-tum-ye* umu-hungu a-kat-a
CL1-man CL1-PST-make-PERF CL1-boy CL1-cut-IMP
igi-ti.
CL7-tree
'The man made the boy cut the tree.'

In these sentences, the sentence is embedded under the verb *tuma* 'make'. Note that the erstwhile subject of the non-causative form (e.g. *umugore* 'woman' in (7a)) still triggers subject agreement on the embedded verb. Conversely, the introduced argument in an *–ish* causative, as in (5), triggers no such subject agreement.

The *tuma* 'make' causative is completely productive with every verb in the language. The *–ish* causative is more restricted; while it can grammatically appear with all elicited transitive verbs, such as those in (5), it cannot productively apply to certain intransitives, such as the verb *–beshya* 'to tell lies' in (8).

(8) *Umu-hungu a-beshy-esh-a umu-kobwa.
CL1-boy CL1-lie-CAUS-IMP CL1-girl
'The boy is making the girl lie (=tell lies).'

There are, however, intransitive verbs that do permit the morphological causative, such as *–boroga* 'scream' in (5a), as well as *–shonga* 'melt' in (9).

(9) Umu-gabo y-a-shong-esh-eje uru-bura.
CL1-man CL1-PST-melt-CAUS-PERF CL11-ice
'The man made the ice melt.'

The reason for the ungrammaticality of *–ish* on certain intransitives is

not entirely clear, and is left as a question for future research. One constraint that has arisen, however, is that *–ish* is blocked by a class of lexical causatives in the language, a point I shall return to in 3.2. This class of lexical causatives encodes causal meaning by a change in the final consonant of the stem, alternating between an intransitive with the phoneme [r] and a transitive stem with the phoneme [z], such as *–cara* 'to sit (intr)' and *–caza* 'to seat (tr).' This is suppletive marking.

(10) Aba-na b-ica*r*-a.
CL2-children CL2-sit.intr-IMP
'The children sit.'

(11) Umu-gore y-ica*z*-a aba-na.
CL1-woman CL1-sit.tr-IMP CL2-children
'The woman seats the children.'

Other verbs of this class are (with the intransitive first, followed by the causativized transitive): *–garagara/–garagaza* 'appear,' *–andura/–anduza* 'dirty,' *–egura/–eguza* 'retire,' *–bira/–biza* 'boil,' *–rira/–riza* 'cry,' *–angira/–angiza* 'rot,' *–itsamura/–itsamuza* 'sneeze,' *–korora/–koroza* 'cough,' *–abira/–abiza* 'moo,' and *–imura/–imuza* 'move.' These verbs do not seem to fit into any cohesive semantic class, and I assume that these are lexicalized forms of an earlier causative form which has idiosyncratically lexicalized on certain verbs.[8]

I have outlined the three forms available for encoding causal meaning in Kinyarwanda: (i) the morphological causative *–ish*, (ii) the verb *tuma*,

[8]Kimenyi (1980) mentions this class as a group of causatives that are causativized by a causative *–y*. Evidence for this as a separable morpheme has not been found, as all the forms under discussion seem to have lexicalized this contrast as a stem change.

and (iii) the suppletive *r/z*-stem alternating forms. The emphasis of the present study is the syntactic and semantic nature of the *–ish*, using other causatives in the language as comparison cases. I turn next to outlining the syntax and semantics of the *–ish* causative.

Section 3: The Syntax and Semantics of *–ish* Causatives

In this section, I show that the morphological causative *–ish* in Kinyarwanda patterns with lexical causatives in its semantic interpretation and syntactic structure. In order to situate this discussion within typological work on the semantic nature of causatives, I briefly outline how the literature has discussed these constructions in Section 3.1, where I also outline an explicit definition of direct causation. I then turn to a description of the semantic and syntactic facts of the *–ish* causative in Kinyarwanda in Section 3.2.

3.1 The Causative Continuum and Direct Causation

Typological work on causatives have shown that the semantics of causative constructions is iconic to the syntactic structure of the causative—i.e. structure corresponds to semantic meaning (Comrie 1985, 1989, Haiman 1983).[9] The point of variation hinges on the level of directness between the causing event and result state. Many studies have investigated the semantic nature of causation in natural languages (Fodor 1970, Smith 1970, Lewis 1973, Shibatani 1973, 1976, McCawley 1978, Dowty 1979, Ginet 1990, Bittner 1999), but few works give an explicit formal definition of direct and indirect causation. For the purposes of this discussion, I will adopt a definition given in Kratzer (2005:27-29), which she develops to model the direct causal meaning that arises in resultative constructions

[9]Haiman (1980) defines this as iconic motivation, where "the structure of a language corresponds to some aspect of the structure of reality" (p. 515). With causatives, the conceptual distance (i.e. between two events) corresponds to a linguistically-encoded structural distance.

in German.

Kratzer's definition—building on work from (Lewis 1973, Dowty 1979, Ginet 1990, Bittner 1999)—distinguishes direct from indirect causation based on whether the relevant causing event is part of the same event as the effect in a causal chain C. On Kratzer's analysis, in a chain C of linearly ordered causal events taken from a universe of events E, each member of the chain is an ordered pair of events connected by a causation relation of counterfactual dependence, i.e. in the ordered pair of events $\langle$A B$\rangle$, event B will not have occurred without event A having previously occurred. Crucially, chains are convex, which means that no relevant intervening events are skipped in C. In this system, a maximal element is an event in C that causes no other event in C, while a minimal event is an event in C which is not caused by any other event in C. Maximal and minimal elements, if present, are always unique.

Direct causation, then, arises when an event e includes, as subparts, the maximal element as well as all previous members of a causal chain C. The diagram in (12) models this relation, where X, Y, and Z represent events in a causal chain of the type just described. Z is the maximal element, i.e. the result state or effect. The brackets with subscript e indicate that all the events in the causal chain that are subparts of the event e.

(12) $[\mathrm{X} \rightarrow \mathrm{Y} \rightarrow \mathrm{Z}]_e$

Indirect causation, on the other hand, involves a causing event c where c is the minimal element in a causal chain with a maximal element e, but

crucially, c is not part of the same event as the maximal element Z.

(13) $[\mathrm{X}]_c \rightarrow [\mathrm{Y} \rightarrow \mathrm{Z}]_e$

This permits that, for example, that the causing event X and the maximal event Z may be temporally separable, or that some other event may intervene between the causing and maximal events. The intuition behind these definitions is that with direct causation, the relevant causing event and result state are part of the same event. With indirect causation, the two are parts of separate events.

An example from English is the transitive verb *break* compared to the analytic *cause to break*, which are typically thought to encode direct and indirect causation, respectively.

(14) a. John broke the vase.

b. John caused the vase to break.

Given the definition of direct causation in (14a) John's causing and the vase's breaking are construed as members of the same event. John's action directly leads to the breaking of the vase with no significant temporal gaps or intervening events. In (14b), on the other hand, it is felicitous if a variety of intervening events occur between John's causal action and the vase's result state of being broken. For example, suppose John left a banana peel peel nearby the vase so that someone would trip, fall into the vase, and break it. In this scenario, John's causing and the vase's breaking are conceptualized as clearly separate events. This reading is crucially unavailable in (14a), where the cause and effect must be part of

the same event.

With this definition in mind, direct causation is generally relegated to lexical type causatives, i.e. causatives where the causative meaning is encoded by the verb itself (cf. (14a)). Indirect causation is generally conveyed by analytic causatives, e.g. analytic constructions where a predicate is embedded under a causative verb, such as English *make* or *cause* (cf. (14b)). This can be conceptualized as a continuum, with highly direct and indirect at each end of the spectrum, corresponding to lexical and analytic causatives, respectively.[10]

(15) Direct ——————————— Indirect
Lexical ——————————— Analytic

In short, lexical causative forms, such as *kill* in English, prefer direct causal interpretations, while analytic causative forms, such as *cause to die*, prefer an indirect causal interpretations, as already noted above.

Recall from Section 2 that morphological causatives are grammatical forms in which a bound morpheme is marked on the verb to indicate causation. Morphological causatives vary across languages, potentially patterning with either analytic or lexical causatives. For example, Comrie discusses the language Nivkh (language isolate spoken in Russia), which has a morphological causative that sits at the analytic end of the spectrum, showing indirect causative semantics. Consider the data in (16), cited from Comrie (1985:333, (134)-(136)).

[10]Comrie assumes a continuum between direct and indirect on the one hand, and lexical and analytic. Some people have proposed intermediary points along this continuum, such as Shibatani and Pardeshi (2001), as discussed in section 5.1.

(16) a. Lep čed′
bread dry.INTR
'The bread dried.'

b. If Lep seu.d′
he bread dry.TR
'He dried the bread.'

c. If lep če-gu-d′
he bread dry.INTR-CAUS
'He caused the bread to get dry (e.g. by forgetting to cover it).'

The sentence in (16b) is the lexical causative, and the causal meaning is requisitely direct, i.e. the man worked directly on the bread to to bring it to state of dryness. In (16c), on the other hand, the morpheme *–gu–* is a morphological causative that has an indirect meaning, i.e. the man forgot to cover the bread, which caused (indirectly) the bread to become dry as a separate event. In Nivkh, indirect causal meaning is encoded by the morphological causative, patterning like analytic causatives in other languages.[11]

Unlike Nivkh, Mixtec, an Otomanguean language of Oaxaca Mexico, has a morphological causative which encodes direct causal meaning ((Haiman 1983), citing (Hinton 1982)). In (17), the causative prefix *s–* requires a direct interpretation.[12]

[11]Comrie (1985) does not mention if there is a separate analytic causative in the language.

[12]In fact, there are two morphological causatives in Mixtec: *s–* and *sá–*. The former is used on verbal predicates and the latter is used on adjectival predicates. Both forms show direct causal meaning (Haiman 1983:787).

(17) s-kée.
cause-eat(pot.)
'Feed him.' (= put the food directly into his mouth) Haiman (1983:787,(12b))

In terms of the definition of direct causation outlined above, the causing event is part of the same event as the feeding event; the two are temporally inseparable. This contrasts with the analytic causative in the language *sá'á*, which has indirect causal meaning:

(18) SÁ'À hà nà kee.
cause NOM OPT eat(pot.)
'Make him eat.' (= prepare food for him to eat) Haiman (1983:787,(12a))

In this example, the causal meaning is indirect. The feeding event and the consumption event are not members of the same event.

The empirical question for Kinyarwanda is how verbs that are causativized with *–ish* pattern with respect to direct/indirect causation. In the next subsection, I show that *–ish* in Kinyarwanda encodes direct causal meaning. Furthermore, I will show that, as expected from the typological picture outlined above, the morphological causative in Kinyarwanda also patterns as a lexical causative.

To summarize, cross-linguistically, languages use different causative forms to express different degrees of directness—a notion that relies on the immediacy of the result state in relation to the causing event. Indirect causative meaning, on the other hand, permits intervening events

between the causing action and the result state. The generalization is that lexical causatives across languages generally correspond to a more direct semantics, while analytic causatives generally correspond to a more indirect semantics. In languages that have them, morphological causatives may pattern with either analytic or lexical causatives in their coding of direct/indirect semantics. Nivkh is an example of a language where the morphological causative behaves like an analytic causative, whereas the Mixtec morphological causative behaves like a lexical causative, and must encode direct causation.

3.2 The *–ish* Morpheme as a Lexical Causative

This subsection outlines the semantic and syntactic properties of the *–ish* causative in Kinyarwanda. First, I show that *–ish* has direct causative semantics. I then turn to showing that *–ish* patterns syntactically with lexical causatives. In the discussion of the lexical nature of *–ish*, I will compare its syntactic and semantic properties to that of the *tuma* causative, which contrasts with *–ish* by always patterning as an analytic causative.

Take the minimal pair in (19) and (20), where the same causal event structure is conveyed by the *–ish* morpheme and the *tuma* 'make' causative, respectively. These sentences both encode a causal meaning, but differ in the degree of directness between the causing event and the result state.

(19) Umw-arimu y-a-ndik-ish-ije umw-ana
CL1-teacher CL1S-PST-write-CAUS-PERF CL1-child
in-kuru
CL 9-story

‘The teacher made the child write the story.’ (*–ish* Causative)

(20) Umw-arimu ya-tum-ye umw-ana ya-ndik-a
CL1-teacher CL1S-make-PERF CL1-child CL1S-write-IMP
inkuru.
CL9-story
‘The teacher made the child write the story.’ (*tuma* Causative)

Both of these examples encode the same actors and events; however, the nuances of the interpretations are different. The sentence in (19) is only compatible with interpretations that include direct causal meaning, i.e. a situation in which the teacher’s causing and the writing event are part of the same event. An example of this kind of scenario is where the teacher is standing behind the student, forcing the student to write the story. The causative in (20), on other hand, is more general and is compatible not only with the contexts available in (19), but also with situations where the cause and result states are not part of the same event—e.g. the teacher inspires the student to write a story many years later. This inspiration reading is crucially unavailable in the sentence in (19).

One way of emphasizing the directness that is required by the *–ish* morpheme is to attempt to break apart the event temporally. I refer to this as ‘temporal inseparability,’ i.e. the causing event and result state cannot be located at different times. The sentence in (21) is infelicitous because the causing and result states cannot occur on different days; they must be members of the same event that occur at one narrow interval of time.[13]

[13]One speaker that was interviewed had divergent judgments on these data. For this speaker, sentences of

(21) #Ejo hashize, umw-arimu y-a-ndik-ish-ije
Yesterday CL1-teacher CL1S-PST-write-CAUS-PERF
umw-ana in-kuru, ariko umw-ana a-ya-ndik-a
CL1-child CL9-story, but CL1-child CL1S-CL9O-write-IMP
uyu munsi.
today
'Yesterday, the teacher made the child write the story, but the child wrote it today.'

The *tuma* causative permits the causing and result states to be separated temporally:

(22) Ejo hashize, umw-arimu ya-tum-ye umw-ana
Yesterday CL1-teacher CL1S-make-PERF CL1-child
ya-ndik-a in-kuru, ariko umw-ana
CL1-write-IMP CL9-story, but CL1-child
a-ya-ndik-a uyu munsi.
CL1S-CL9O-write-IMP today
'Yesterday, the teacher made the child write the story, but the child wrote it today.'

The sentences in (21) uses the *–ish* morphological causative and requires a direct causation interpretation; the causing event and the result state cannot be separated temporally in (21). The two can be separated in the *tuma* causative in (22), which permits an indirect causative interpretation.

Note that despite the temporal simultaneity found with lexical causatives, it is possible for sub-lexical modification of result states by modifiers such as *again* or *for a long time* (Dowty 1979). This sub-lexical mod-

the type in (21) were acceptable. In this paper, I model the grammar of those speakers for whom this contrast exists.

ification of result states is possible in Kinyarwanda, as shown in (23) - (24). The modifiers *umwanya muremure* 'a long time' and *incuro nyinshi* 'many times,' respectively, can only modify the result state and not the causing event.[14]

(23) Y-a-ndik-ish-a umu-nyeshuri in-kuru
CL1S-PST-write-CAUS-IMP CL1-student CL9-story
umw-anya mu-remu-re.
CL3-time CL3-long
'He makes the student write the story for a long time.'

#'He makes, for a long time, the student write the story.'

(24) Umw-arimu y-a-simbuk-ish-ije umw-ana in-curo
CL1-teacher CL1S-PST-jump-ISH-PERF CL1-child CL9-time
ny-inshi.
CL9-many
'The teacher made the child jump many times.'

#'The teacher, many times, made the student write the story.'

When these adverbs are used, the causing event cannot be modified to the exclusion of the result state. This is not an example of temporal inseparability as defined above; lexical causatives are proposed to temporally inseparable if the causing event and result state cannot be separated into two temporal events. It is assumed that all causatives may allow sub-lexical modification of result states with modifiers such as durative adverbs, which do not affect the temporal nature of the event.

As discussed in the previous subsection, direct causal meaning cor-

[14]The adverbial phrase *umwanya muremure* 'for a long time' can only be used with durative verbs, while *incuro nyinshi* 'many times' can only be used with semelfactives.

responds to lexical causatives across languages. As just described, the morphological causative *–ish* in Kinyarwanda encodes a direct causal meaning, which predicts that *–ish* will also pattern as a lexical causative. This subsection outlines a variety of syntactic tests that show that the *–ish* is indeed treated as a lexical causative in the language. The nature of these tests seeks to investigate whether the interpretation in an *–ish* causative is transparently derived from its subcomponents (Shibatani 1973, Alsina 1992, Harley 2008). Analytic causatives, across languages, are assumed to combine transparently to the meaning of the embedded verb. Lexical causatives, on the other hand, permit idiosyncrasy in the meaning of the causative.

The first group of tests are semantic in nature. First, it is shown that idiomatic verbs do not retain their idiomatic reading when causativized by *–ish*, while other verbs acquire idiomatic interpretations under the morphological causative. The second group of tests are syntactic. Some *–ish*-marked verbs have idiosyncratic lexical marking, showing that the *–ish*-causative is not syntactically productive. The final test is that the *–ish* morpheme interacts with other lexical causatives in the language. These tests show that *–ish* is not derivational, but rather a lexicalized causative variant of the base non-causative form of the verb. For ease of discussion, I will describe the *–ish* variants as "derived" from the base verb, though technically *–ish* is not assumed to be syntactically derived.

The behavior of idiomatic verbs under causation is a standard test in the literature for determining whether a form behaves as a lexical or

analytic causative (Shibatani 1973, Alsina 1992, Harley 2008). When causativized using *–ish*, idiomatic verbs do not retain their idiomatic reading, which suggests that the causal meaning encoded by the morphological causative is not transparently applied to meaning of the verb. Consider the idiom in (25), which literally means "to fold the coat," and idiomatically means "to die."

(25) Y-a-zinz-e i-koti.
CL1S-PST-fold-PERF CL9-coat
'S/he folded the coat' (literal) OR

'S/he died.' (idiomatic)

When causativized with the morpheme *–ish*, the verb does not retain its idiomatic reading.[15]

(26) Umu-gabo y-a-mu-zing-ish-ije i-koti.
CL1-man CL1S-PST-CL1O-fold-CAUS-PERF CL9-coat
'The man made him/her fold the coat.' (literal)

*'The man made him/her die.' (idiomatic)

This meaning is retained, however, when the verb is causativized with the *tuma* causative.

[15]The change of the root from *zinz* to *zing* is due to a change in transitivity. Certain verbs in Kinyarwanda undergo lexical stem changes to mark transitivity (see below), but this does not affect the inability for the idiomatic reading in (26b); the transitive stem is used in the grammatical idiomatic construction in (27).

(27) Umu-gabo y-a-tum-ye umu-gore a-zing-a
CL1-man CL1S-PST-make-PERF CL1-woman CL1S-fold-IMP
i-koti.
CL9-coat
'The man made the woman fold the coat.' OR

'The man made the woman die.'

While the meaning of the verb in (26) is limited to the literal interpretation when causativized with *–ish*, the verb can have either the literal or idiomatic interpretation when causativized analytically, as in (27). This suggests that the *–ish* causative patterns as a lexical causative; the causal semantics is not transparently combined with the meaning of the base verb. The *tuma* causative, on the other hand, transparently applies to the semantics of the base verb.

Some verbs, on the other hand, *acquire* an idiosyncratic meaning when they are causativized with *–ish*, which serves as further evidence that *–ish* causatives are not applied transparently to the verbal predicate. The verb *–tek-esh-a* 'cook-ISH' in (28) does not literally mean 'make someone cook,' as would be expected if the causal semantics were applied transparently to the base verb.

(28) Mama ya-tek-esh-eje umu-gore imy-umbati.
CL1.mama CL1S-cook-CAUS-PERF CL1-woman CL4.cassavas
'Mama ordered cassavas from the girl.'

The sentence in (28) would literally mean 'mama made the girl cook cassavas' if the semantics were transparently applied; however, in natural speech it takes on a specific idiomatic reading of ordering food in a

restaurant. This does not follow from the meaning of CAUSE + 'cook.' This supports the claim that the *–ish* causative is not analytic, but lexical. The *tuma* causative, on the other hand, gives the anticipated meaning:

(29) Mama y-a-tum-ye umu-gore a-tek-a
mama CL1S-PST-make-PERF CL1-woman CL1S-cook-IMP
imy-umbati.
CL4-cassava
'Mama made a woman cook cassavas.'

The data in (28) - (29) show that the morphological causative *–ish* is not productive, while the *tuma* causative productively derives a causativized meaning from the embedded predicate.

A further piece of evidence that *–ish* causatives in Kinyarwanda are lexical is that verbs causativized with *–ish* may have idiosyncratic selectional restrictions on their objects. All transitive verbs take two bare objects when they are causativized with *–ish*, as seen in the sentence in (1b), repeated in (30).

(30) Umu-gabo a-kubit-ish-a umw-ana in-ka.
CL1-man CL1S-beat-CAUS-IMP CL1-child CL9-cow
'The man made the child beat the cow.'

In (30), the causativized verb *–kubitisha* 'cause to beat' selects for two bare objects (*umwana* 'child' and *inka* 'cow'). A very limited set of verbs, however, permit an optional instrumental oblique marker when causativized with *–ish*. For example, both the verbs *ndika* 'write' and *–teka* 'cook' in (31) may appear with two bare objects, which is the expected pattern:

(31) a. Umw-arimu y-a-ndik-ish-ije umw-ana
CL1-teacher CL1S-PST-write-CAUS-PERF CL1-child
in-kuru.
CL 9-story
'The teacher made the child write the story.'

b. Mama y-a-tek-esh-eje umu-gore
CL1.mama CL1-PST-cook-CAUS-PERF CL1-woman
imy-umbati.
CL4-sweet.potatoes
'Mama made the woman cook the sweet potatoes.'

But these verbs may also select for the causee to be marked with instrumental/comitative oblique marker *ku* 'with,' shown in (32a) and (32b), for *ndika* 'write' and *–teka* 'cook' respectively.

(32) a. Umw-arimu y-a-ndik-ish-a in-kuru *ku*
CL1-teacher CL1S-PST-write-CAUS-IMP CL9-story with
mu-nyeshuri.
CL1-student
'The teacher is making the student write the story.'

b. Mama y-a-tek-esh-eje *ku* mu-gore
CL1.mama CL1-PST-cook-CAUS-PERF with CL1-woman
imy-umbati.
CL4-sweet.potatoes
'Mama made the woman cook the sweet potatoes.'

These data show that the causee may be optionally marked with the instrumental oblique *ku* 'with.' The oblique marking of causees is not productive with *–ish* causatives (i.e. it is limited to these two verbs), which suggests that this comes from idiosyncratic selectional restrictions of the *–ish*-marked verb form. Cooper (1976) shows that similar idiosyncratic

oblique marking pattern is also found in Xhosa and Tswana, which he also takes as evidence that the morphological causative in those two languages is lexical.

Analytic causatives, on the other hand, can never have an oblique marker on the causee, as shown in (34).

(33) Umw-arimu y-a-tum-ye umu-nyeshuri
CL1-teacher CL1S-PST-cause-PERF CL1-student
y-a-ndik-a in-kuru.
CL1S-PST-write-IMP CL9-story
'The teacher made the student write the story.'

(34) *Umw-arimu y-a-tum-ye k' umu-nyeshuri
CL1-teacher CL1S-PST-cause-PERF with CL1-student
y-a-ndik-a in-kuru.
CL1S-PST-write-IMP CL9-story

In (34), the oblique marker *ku* 'with' cannot be used on the causee argument, in contrast to the verbs in (32). This suggests that the oblique marking on *–ish*-marked verbs is a lexical idiosyncrasy.

A property of lexical causatives is that they are not productive, meaning that there are often lexical gaps where they cannot appear. For example, the *–ish* variant of the verb *kubita* 'hit/beat' is not permitted on the causative reading:

(35) *Umw-arimu y-a-kubit-ish-ije umu-nyeshuri
CL1-teacher CL1S-PST-hit-ISH-PERF CL1-student
i-meza.
CL9-table
Intended: 'The teacher made the student hit the table.'

The presence of lexical gaps such as the ungrammaticality of (35) is

evidence that *–ish* is a lexical causative; it cannot productively apply to all verbs. The verb *kubita* 'hit/beat' can, however, be causativized by the *tuma* causative:

(36) Umw-arimu y-a-tum-ye umu-nyeshuri
CL1-teacher CL1S-PST-make-PERF CL1-student
a-kubit-a i-meza.
CL1S-hit-IMP CL9-table
'The teacher made the student hit the table.'

The example in (36) shows that the verb *kubita* 'hit/beat' is able to be causativized by the *tuma* causative. It cannot, as shown in (35), appear with the *–ish* causative. This is evidence that *–ish* is not productive, which is further support for treating *–ish* as a lexical causative.

Not only are there lexical gaps, but *–ish* causatives are occasionally blocked by other lexical causatives, such as stem-alternating causative verbs. As noted in Section 2, Kinyarwanda has a class of verbs that alternate between transitive and intransitive, marked by the final consonant of the stem. When the stem is intransitive, the form is marked /r/, and when it is transitive it is marked /z/. For example, the verb–*ica***r***a* 'to sit (intr)' alternates with the transitive *–ica***z***a* 'to seat (tr)'.[16] Note that in Haspelmath's terminology, these are *equipollent* forms, and they pattern semantically as lexical causatives.

The verb *–icara*/*–icaza* 'sit/seat' cannot be causativized using the morpheme *–ish*, in either the intransitive nor transitive form, as shown

[16] As expected from the Comrian typology discussed in Section 2, these lexical causatives requisitely have direct causative meaning.

in (37) and (38), respectively.

(37) *Umu-gore y-icaz-ish-a aba-na.
CL1-woman CL1S-sit.INTR-CAUS-IMP CL2-children
'The woman made the children sit.'

(38) *Umu-gore y-icar-ish-a umu-kobwa aba-na.
CL1-woman CL1S-sit.TR-CAUS-IMP CL1-girl CL2-children
'The woman made the girl seat the children.'

These data show that *–ish* is blocked by the lexical causative *–icaza* 'sit.TR', suggesting that *–ish* is treated in the same grammatical space as other lexical causatives in the language.[17]

The verb *–icara*/*–icaza* 'sit/seat' can, however, be causativized in either its transitive or intransitive form using the *tuma* causative, suggesting that this causative is an analytic causative; its productivity with these lexical forms contrasts with the non-productivity of the *–ish* lexical causative.

(39) Umu-gabo y-a-tum-ye umw-ana y-icar-a.
CL1-man CL1S-PST-make-PERF CL1-child CL1S-sit-IMP
'The man made the child sit.'

(40) Umu-gabo y-a-tum-ye umu-gore y-icaz-a
CL1-man CL1S-PST-make-PERF CL1-woman CL1S-seat-IMP
umw-ana.
CL1-child
'The man made the woman seat the child."

[17]There is one stem-alternating verb that does not follow this pattern: *–egura* 'retire'. This verb has two lexical causative variants *–eguza* and *–egurisha*, which are semantically synonymous. This is the only verb elicited to date that can use both the /z/-stem and *–ish* causative. The crucial point, however, is that for all other verbs, *–ish* is not possible when there is a lexical causative, which suggests that *–ish* is also lexical.

In (39) and (40), it is shown that both forms of the verb *–icara*/*–icaza* 'sit/seat' can be causativized using the *tuma* causative. Their ability to undergo causation here shows that the ungrammaticality of the forms in (37) and (38) is not due to the inability to causativize *–icara*/*–icaza* 'sit/seat,' at all but rather that there is a blocking relationship between the *–ish* causative and lexical causatives in the language. This blocking relationship indicates that the *–ish* causative shares the same grammatical function in marking as other lexical causatives in the language, supporting the notion that *–ish* is indeed a lexical causative.

In this section, I have outlined two properties of the *–ish* causative in Kinyarwanda. First, it was shown that this form encodes a direct causal semantics. Second, this form was shown to pattern syntactically like lexical causatives. The next section outlines two previous analyses of morphological causatives; however, these analyses will not capture the Kinyarwanda data as stated because the languages they discuss are empirically different from the data in Kinyarwanda.

Section 4: Explaining the Syncretism

So far, this paper has established that the morpheme *–ish* in Kinyarwanda has two uses: as a morphological causative and an instrumental applicative. This section turns to an analysis of the causative-instrumental syncretism that can explain why these two uses would be subsumed under one grammatical form. This analysis emphasizes the semantic similarity between causation and the use of an instrument, proposing that both notions involve the introduction a new link in a causal chain. With this new causal link added, constraints on animacy and on possible event types can derive the various causative or instrumental readings of *–ish*-marked verbs.

Before I outline the full details of my analysis, I first turn to a discussion of a previous analysis of causative-instrumental syncretism put forth by Shibatani and Pardeshi (2001), who argue that the causative-instrumental syncretism results from a sociative semantic interpretation of causatives, a notion which is defined below. I show that this analysis does not quite capture the data in Kinyarwanda, and propose that what underlies the syncretism is a more general notion of instruments and causees both being intermediary thematic roles.

4.1 Sociative Causation as an Explanation for Syncretism

Shibatani and Pardeshi (2001) argue for a category of causation they call "sociative" causation, which they define as an event in which the matrix subject is highly involved in the caused event. In other words, in

a sociative causative event, a causer is required to be involved in both bringing about the caused event as well as actively participating in it. For Shibatani and Pardeshi, then, the continuum of causative meaning is as shown in (41), where sociative causation serves as a link between indirect and direct causation.

(41) Direct ———— Sociative ———— Indirect

In their cross-linguistic study, this hierarchy is crucial for understanding how different meanings are mapped to different causative forms in a particular language.

They also suggest that in cases where a syncretism exists between a causative and applicative, the causative will be restricted to a sociative interpretation (Shibatani and Pardeshi 2001:118). The intuition behind their analysis is that, to cite their example, when one uses an instrument (e.g. cutting bread with a knife), one is entailed to be sociatively acting upon the knife since the knife cannot cut meat independently.[18] Their argument, then, is that since sociative interpretation is required for the applicative, that restriction is paralleled in the interpretation of the causative.

In Kinyarwanda, however, this intermediary category of sociative causation does not make a useful distinction between causative types; sociative causation can be encoded by either morphological or analytic causatives, but it is not required by either construction. For example,

[18] I discuss only their discussion of the causative-instrumental syncretism. They have similar accounts for syncretisms with other kinds of applicatives, but whether or not their claims work for these other kinds of causative-applicative syncretism is left for future research.

recall the examples in (19) and (20) repeated in (42) and (43).

(42) Umw-arimu y-a-ndik-ish-ije umw-ana
CL1-teacher CL1S-PST-write-CAUS-PERF CL1-child
in-kuru
CL 9-story
'The teacher made the child write the story.' (*–ish* Causative)

(43) Umw-arimu ya-tum-ye umw-ana ya-ndik-a
CL1-teacher CL1S-make-PERF CL1-child CL1S-write-IMP
inkuru.
CL9-story
'The teacher made the child write the story.'(analytic Causative)

Shibatani and Pardeshi's analysis predicts that the morphological causative in (42), which is syncretistic with the instrumental applicative, must entail sociative causation. In other words, the expected interpretation based on their analysis is that the teacher must be involved in not only causing the action to take place, but also be actively participating in it, e.g. sitting with the child while the child completes the story. When native speakers of Kinyarwanda were consulted, however, they accepted interpretations of (42) and (43) in which the teacher is involved in the result state as well as those in which the teacher is not involved in the result state. In short, whether or not the teacher is involved in the result state does not affect which kind of causative is used; both morphological and analytic causatives can and cannot have sociative causative interpretations.

This analysis does not capture the synchronic facts of Kinyarwanda, though one might suggest that this analysis might explain the diachronic evolution of the syncretism. However, a brief survey of other Bantu lan-

guages in region shows that the causative in these languages is a cognate to *–ish*, while the instrumental in these languages is often some phonological variant of *ir*.[19] The analysis put forth by Shibatani and Pardeshi is that instrumental constructions requisitely encode sociative causation, which would predict that the instrumental morpheme spread to include the causative. However, this is not the case; in all the other Bantu langauges investigated, the causative is the cognate to *–ish*, suggesting that in Kinyarwnda, the causative spread to include the instrumental applicative, and not the other way around. This is the opposite direction than what would be predicted by a diachronic invocation of Shibatani and Pardeshi's theory. I therefore seek an alternative synchronic analysis that is more compatible with the facts of Kinyarwanda.

4.2 A Unified Analysis of *–ish*

I turn now to an analysis of *–ish* in Kinyarwanda in which I propose that this morpheme introduces a new causal event into the causal chain encoded by the verb. I show that this can capture the various interpretations of *–ish*, subsuming causative and instrumental uses. This unified analysis provides an explanation for the syncretic nature of the *–ish* morpheme.

To help clarify the intuition behind this analysis, I first diagram the analysis schematically. By way of example, take the sentence in (44), which describes an event of killing.

[19]For example, the causative and applicative, respectively, in a handful of Bantu langauges: Swahili *ish* and *i* (Ashton 1966), Lubukusu *–is* and *–il* (Justine Sikuku, p.c.), Chichewa *–ets* and *-er* (Alsina and Mchombo 1993), Haya *–is* and *–il* (Byarushengo et al. 1977), and Lingala *–is* and *–el* (Guthrie 1966).

(44) Umu-gabo y-ic-ije in-zovu.
CL1-man CL1S-kill-PERF CL9-elephant
'The man killed the elephant.'

In this chain, the man acts on the elephant in such a way that results in the death of the elephant. An event of killing is a chain of smaller subevents events, and this can be modeled schematically as in (45).[20]

(45) *man* → *elephant* → *(elephant)* →
CAUSE BECOME dead

In this causal chain, the man acts on the elephant via a causing event, which then results in the elephant changes state, i.e. becomes dead.

I propose that the *–ish* morpheme introduces a new causal link into the causal chain, but this causal link is not required to appear in a fixed location in the chain. This captures both the causative and instrumental uses of this morpheme. For example, in the causative sentence in (46), the woman acts on the man to cause the elephant to become dead, which is represented in (47).

(46) Umu-gore y-ic-*ish*-ije umu-gabo in-zovu.
CL1-woman CL1S-kill-CAUS-PERF CL1-man CL9-elephant
'The woman made the man kill the elephant.'

[20]For expository purposes, I take the discussion of causal chains in Croft (1990) as a preliminary background, which assumes that events involve individuals acting on other individuals, that transmission of force is asymmetric, and that simple events are non-branching causal chains. Following Croft, I assume two primitive operators, CAUSE and BECOME. CAUSE involves physical causation, while BECOME involves a change of state of the entity. The individuals in Croft's causal chains can be though of as participants of the events in the model adopted from Kratzer (2005) in Section 3.

(47) *woman* → *man* → *elephant* →

CAUSE CAUSE BECOME

(elephant) →

dead

The causal chain in (47) shows that the woman causes the man to cause the elephant to become dead. In this chain of events, the man is an intermediary actor in the bringing about of the death of the elephant. This is what traditional analyses would treat as a normal causative sentence; a new causer is added, and the former subject is moved to a lower point in the causal chain. The causal event introduced by *–ish* has been underlined in (47) for clarity.

This chain of events parallels the chain of events for the instrumental sentence in (48).

(48) Umu-gabo y-ic-*ish*-ije <u>im-bunda</u> in-zovu.
CL1-man CL1S-kill-INST-PERF CL9-gun CL9-elephant
'The man killed the elephant with the gun.'

(49) *man* → *gun* → *elephant* →

CAUSE CAUSE BECOME

(elephant) →

dead

Unlike (47), the CAUSE operator in (49) is added in the middle of the causal chain, instead of at the beginning. Note however that the chains of events in (47) and (49) are identical; an initial causer acts on an intermediary causee or instrument (which I propose are roughly animate and

inanimate variants of the same notion) to bring about a change of state. The only difference between the two is where this new causal link is added. I argue that the *–ish* causative requires exactly this kind of causal chain, but that the location of the new causal link is free to be any non-ultimate position in the chain. The two logically possible positions that *–ish* may add to the chain are either the initial or the intermediary links in this chain, and where this chain is added has an effect on the interpretation of the sentence, as I will show in detail below. Note that, by definition, causation must be followed by a further caused event, meaning that the new causal link can never be added to the end of the causal chain.

In order to make this idea more precise, I now turn to outlining an analysis of the effect of *–ish* on the structure of the described event. For convenience, I adopt the event structural notation and typology of Hovav and Levin (1998). I assume that each verb in a language is associated with an event structure, which may be built up from a well-defined set of subevents. Event structures have been used to capture the internal structure of different verb classes. An event structure is composed of an event template, which is a small set of universal elements that capture different verb types. Following Hovav and Levin (1998), I assume at least the following four event templates for activities, states, achievements, and accomplishments (p. 108).[21]

[21]Rappaport Hovav and Levin also assume a second type of accomplishment, where instead of an event, an individual precedes CAUSE:

(50) [x CAUSE [BECOME [x <*state*>]]]

(51) a. [x ACT$_{<manner>}$] activity

b. [x <*state*>] state

c. [BECOME [x <*state*>]] change-of-state

d. [[x ACT$_{<manner>}$] CAUSE [BECOME [x <*state*>]]]cause change-of-state

These templates are then combined with constants, i.e. the elements in angled brackets. Constants are the units of idiosyncratic meaning unique to each verb, and they belong to various categories, such as instrument or manner, which are also fixed in number. However the number of constants themselves is potentially infinite.

An important aspect of this theory is that certain templates are built up of various elements independently attested in other verb types. For example, an accomplishment verb like *break* is built up from various subevents. The first subevent is an activity (i.e. ACT$_{<manner>}$) which results in causing some other event.[22] The event that follows the CAUSE operator is a change-of-state.

(52) *break* [[x ACT$_{<manner>}$] CAUSE [BECOME [y <*broken*>]]]

The overall structure of the event indicates that the activity has resulted in bringing about the result state of being broken.

I assume that direct causation only allows an ACT event to be a causing event. In other words, the event that is the causing event of the CAUSE

I will assume that only events may cause other events.

[22]Beavers and Zubair (2010) argue that statives may also be the causing event of a CAUSE operator, but I leave this possibility aside.

operator can never be a BECOME or CAUSE event. As noted by Beavers and Koontz-Garboden (2013), this has been tacitly assumed in works such as Rappaport and Hovav and Levin (1998). The event that follows a CAUSE event, however, can be any event type.

Crucially, given the definition adopted from Kratzer (2005) above, direct causation requires that the causing event and result state are members of the same event. In Section 3, it was shown that *–ish*-marked causatives pattern as lexical causatives, meaning that all subevents in the event structure must be contemporaneous. In the formalism used here, the entire event structure for a verb must correspond to a single temporal unit.

With this framework in mind, I turn to an analysis of the *–ish* morpheme that captures the syncretism between causative and instrumental interpretations. I argue that *–ish* relates to its corresponding non-causative form in regular forms via the following output filter, that restricts a specific template for the *–ish* causative:

(53) [X CAUSE Y]

In this condition, X and Y are both events. Crucially, this template must unify with the base predicate event structure. Furthermore, the event structure must be composed monotonically, i.e. nothing from the base predicate may be deleted, though modification is permissible (Koontz-Garboden 2007, 2012). In addition, the subject of the sentence must always be the first element in the causal chain; in the event structural nota-

tion I use, the subject of the sentence must appear as the entity in the first subevent of the event structure. This intuitively captures the notion that elements that are more prominent syntactically must be more prominent semantically. A final condition is that the subevent in Y must come from the base predicate.

Given monotonicity, as well as the requirements that an activity must appear in X and that the subject of the sentence must appear as the first element in the causal chain, there are two possible ways of satisfying the output condition in (53) with transitive verbs marked with *–ish*. In the first scenario, Y is filled by the entire event structure of the base predicate. This requires that X be interpreted as an ACT event (with a highly unspecified manner) in order to satisfy the requirement that CAUSE must be preceded by an event. In the second scenario, portions of the base predicate are used in both X and Y, which only permits a limited number of outcomes.

I begin by looking at *–ish* forms of causative verbs. By means of example, take the verb *ndika* 'write' in (54). I assume that this is a change of state verb, with the event structure in (55).

(54) Umw-ana y-a-ndik-a in-kuru.
CL1-child CL1S-PST-write-IMP CL9-story
'The child wrote the story.'

(55) *ndika* 'write' [[child $\text{ACT}_{<writing>}$] CAUSE [BECOME [story *<written>*]]]

The event structure in (55) shows that the child's action of writing caused

a story to become written. Now, consider the sentence in (56), in which the verb *ndika* 'write' is causativized by *–ish*.

(56) Umw-arimu y-a-ndik-ish-a umu-nyeshuri
CL1-teacher CL1S-PST-write-ISH-IMP CL1-student
in-kuru.
CL9-story
'The teacher made the student write the story.'

One possible analysis of this sentence that fits with the output condition in (53) is a case where the base predicate appears in the Y slot of the output condition, and a new activity appears in the X slot in order to satisfy the requirement that every CAUSE operator is preceded by an event. This results in the structure in (57).

(57) [[teacher $\text{ACT}_{<manner>}$] CAUSE [[child $\text{ACT}_{<writing>}$] CAUSE [BECOME [story <written>]]]]

Here, the structure says that the teacher does something that causes the child to write, which results in the story becoming written. In this scenario, the manner is unspecified and could be any action. Crucially, the student is the one who is the actual writer *per se* in the writing event because he is the actor of the writing event, i.e. the child is semantically the subject of the base verb. In terms of the output condition in (53), Y has been filled by the entire base predicate, and X has been filled by a "dummy" event to satisfy the requirement that CAUSE is preceded by an event. This is a traditional causative.

Another possible scenario is one in which there is an instrumental

(i.e. inanimate) causee, as in (58).

(58) Umw-arimu y-a-ndik-ish-a i-karamu in-kuru.
CL1-teacher CL1S-PST-write-ISH-IMP CL6-karamu CL9-story
'The teacher wrote the story with a pen.'

This can be analyzed as an example where part of the base predicate appears in both X and Y. The only possible subevent from the base predicate to fill X is the ACT, given the constraint discussed above that requires that the initial causing event be an activity.

(59) [[teacher $\text{ACT}_{<writing>}$] CAUSE [[pen $\text{ACT}_{<manner>}$] CAUSE [BECOME [story <written>]]]]

In this event structure, the teacher acts on a pen to cause the story to become written. The event in X is the ACT event from the base predicate, and Y is composed of an event of the pen writing the story. Crucially, the teacher is the one who is the writer *per se* since he or she is the actor of the writing event, and the pen is performing whatever action the causer initiates, which in turn leads to the story being written. The structure in (59) corresponds to an instrumental applicative reading.

Note that the crucial difference between the event structures in (57) and (59) is whether or not the ACT predicate in X comes from the base predicate. In (57), X is interpreted as a generic ACT event, while in (59), it is the ACT event from the base predicate. This difference corresponds to a semantic difference in which individual in the causative is interpreted as the actor of the base predicate. In (57), the person writing the

story is the child, while in (59), the person writing the story is the teacher. Another way of thinking of this operation is in terms of where the new CAUSE operator is added into the event structure of the base predicate. In (57), the new CAUSE operator is added before the CAUSE in the lexical base, while in (59), the new cause operator is added after the CAUSE in the lexical base.

Parallel to (57) is the situation in which there is an animate individual in place of the pen, which on the surface appears the same as the sentence in (56), repeated in (60).

(60) Umw-arimu y-a-ndik-ish-a umu-nyeshuri
CL1-teacher CL1S-PST-write-ISH-IMP CL1-student
in-kuru.
CL9-story
'The teacher made the student write the story.'

The structure in (57) provides a reading in which the teacher causes the student to write the story. In that structure, the event in X is not from the base predicate, meaning that the teacher is not the one writing the story. An alternative, however, is the one in (61), in which the event in X is taken from the base predicate.

(61) [[teacher ACT$_{<writing>}$] CAUSE [[student ACT$_{<manner>}$] CAUSE [BECOME [story <written>]]]]

This structure—similarly to the structure in (59)—is one in which the actor of the writing event is the teacher. However, the intermediary causee is animate. This results in a reading in which the teacher is using the stu-

dent to write the story, i.e. dictating the story to the student very closely or even guiding the student's hand. This is a type of sociative causation, as described in Section 5.1. This reading is important to understanding the nature of *–ish*, because it is not simply the animacy of the argument that determines whether the reading is causative or instrumental, but rather the crucial difference hinges on which of the arguments is interpreted as the actor of the base predicate. When that actor of the writing event is the causee, a traditional causative reading obtains, but when the actor of the writing event is the causer, a dictation type reading arises. This dictation reading parallels instrumental applicatives, in that in both of these scenarios, it is the ultimate causer that is the actor of the writing event, i.e. a subevent from the base predicate appears in X.

It should be noted that, traditionally, morphological causatives have been understood as subject-adding operations, while applicatives have been understood as object-adding operations. The morpheme *–ish* in Kinyarwanda subsumes both of these possibilities; the present analysis argues that instead of a subject- or object-adding operation, the function of *–ish* is merely to restrict the output such that the chain of events contains the correct number of links in the causal chain.

Turning to intransitives, the only option is a reading where Y is filled by the entire base event, and X is the "dummy" action required by CAUSE. Unlike causative verbs, it is not possible to have a subevent in the base predicate appear in X due to the requirements on what can be the first event in the causal chain. For example, consider the unaccusative and

unergative verbs *sakura* 'scream' and *bumbura* 'bloom' in (62).[23]

(62) a. Aba-na ba-a-sakuy-e.
CL2-children CL2-PST-scream-PERF
'The children screamed.'

b. In-dabyo z-a-bumbuy-e.
CL10-flowers CL11S-PST-bloom-PERF
'The flowers bloomed.'

For the verbs *sakura* 'scream' and *bumbura* 'bloom' in (62), I assume that they are an activity verb and a change-of-state verb, respectively. Given these classifications, these base predicates have the event structures in (63a) and (63b).

(63) a. *scream* [children ACT$_{<screaming>}$]

b. *bloom* [BECOME flowers <bloomed>]

The causativized variants of verbs in (62) are provided in (64).

(64) a. Aba-na ba-a-sakur-ish-ije umu-gore.
CL2-children CL2-PST-scream-CAUS-PERF CL1-woman
'The children made the woman scream.'

b. I-mana y-a-bumbur-ish-ije in-dabyo
CL9-God CL9S-PST-bloom-CAUS-PERF CL11-flowers
'God made the flowers bloom'

Provided these event structures in (63b) and (63a), one available structure for these forms when they are causativized using *–ish* are those in

[23]There is a phonological change on the verb *sakura* 'bloom' when it it appears in the perfective aspect. The /r/ is realized as [j], represented orthographically as 'y.'

(65a) and (65b). In these sentences, the entire event from the base predicate appears in Y, and X is interpreted as a dummy [x ACT] event. Note that generic ACT events do not include the subscripted description of their manner; this is because it is assumed that the manner is unspecified for these actions.

(65) a. [[children ACT$_{<manner>}$] CAUSE [woman ACT$_{<scream>}$]]

b. [[God ACT$_{<manner>}$]CAUSE[BECOME flowers <bloomed>]]

These structures capture the readings in the English glosses in (64), where a new causer is added to the causal chain. Crucially, these are the only structures that are available for intransitive type sentences. Although it is logically possible to have the structures in (66)—where the base predicate appears in X and the "dummy" ACT event appears in Y—these are ruled out because of the requirement that subevent in Y come from the base predicate.

(66) a. # [[woman ACT$_{<scream>}$] CAUSE [children ACT$_{<manner>}$]]

b. # [[BECOME flowers <bloomed>]CAUSE[God ACT$_{<manner>}$]]

In these structures, the base predicate is placed in X. Due to the nature of intransitive verbs, however, there is only one possible subevent to take from the base predicate. This means that there is no subevent from the base predicate to appear in Y.

This correctly predicts that the readings in (67a-b) are never permissible readings for the sentences in (62b) and (63b), respectively.

(67) a. # The woman's screaming caused the children to act.

b. # The flowers blooming caused God to act.

The impossibility of meanings of the type in (67) means that when *–ish* is used on intransitives, it is necessarily interpreted as a causer addition, as in (57); the causee addition option is not available.

The requirement for a subevent from the base predicate to appear in Y also rules out the instrumental use of *–ish* on intransitives. One possible way to monotonically build an event structure for the instrumental-marked intransitives is to have the subevent from the base predicate appear in X. This, as was the case in (66), is not acceptable because there is no subevent from the base predicate available to appear in Y.

(68) # [[children $\text{ACT}_{<scream>}$] CAUSE [microphone $\text{ACT}_{<manner>}$]]

The other logically possible structure is to leave the subevent from the base predicate remain in Y, introducing the dummy act event into X. This, however, violates the requirement that the first element in the event correspond to the subject. This rules out the event structure in (69), where the dummy element is inserted in X.

(69) # [[microphone $\text{ACT}_{<manner>}$] CAUSE [children $\text{ACT}_{<scream>}$]]

The constraints on ordering of nominals as well as the preservation of a part of the base predicate in Y rule out all available interpretations of instrumental-marked intransitives, which are always ruled out in the language:

(70) a. *Aba-na ba-a-sakur-ish-ije mikoro.
CL2-children CL1-PST-scream-CAUS-PERF microphone
Intended: 'The children used the microphone to scream.'

b. *In-dabyo zi-ra-mbur-ish-ije
CL10-flowers CL10S-PST-bloom-ISH-PERF
ibi-babi.
CL8-leaves/petals
Intended: 'The flowers used their petals to bloom.'

This template approach can capture the grammaticality facts of *–ish* both transitive and intransitive verbs, as well as predict where the instrumental reading is permitted. Furthermore, it captures more nuanced readings, where animates are treated as instruments and are dictated to. Instead of traditional approaches which assume that causation is an operation where a new causer is added, this approach claims that a new event is added to the causal chain, and that requirements on possible structures of events resolves the possibilities for the combination licensing in some cases both causative and instrumental readings.

Given the data so far, the traditional causer addition analysis may seem like a tenable alternative to *–ish* causatives. Namely, an analysis in which *–ish* introduces a new causer to a preserved base. However, this alternative is ruled out because in certain cases, the putative bases themselves would not be grammatical, as in (71).

(71) *I-karamu y-andik-a in-kuru.
CL6-pen CL6-write-IMP CL9-story
'The pen wrote the letter.'

a. *I-kanya y-ari-ye ubu-gari.
CL5-fork CL5-eat-PERF CL14-ugali
'The fork ate the ugali.'

Here, instruments such as *ikaramu* 'pen' and *ikanya* 'fork' cannot be used as subjects. However, they can appear as objects when the verb is marked with *–ish*.

(72) a. Umu-gabo y-andik-ish-a i-karamu in-kuru.
CL1-man CL1-write-ISH-IMP CL6-pen CL9-story
'The man wrote the letter with a pen.'

b. Umu-gabo y-ari-ish-ije i-kanya ubu-gari.
CL1-man CL1-eat-ISH-PERF CL5-fork CL14-ugali
'The man ate the ugali with a fork.'

The data in (72a-b) are the *–ish*-marked variants of (71a-b), respectively. What these data show is that although instruments can appear as objects, they cannot appear as subjects of the base predicate. This is problematic for the traditional causer addition analysis, which assumes that when *–ish* is used, the underlying subject is demoted to object. This incorrectly predicts that if sentences of the type in (71) are ungrammatical, then derived forms as in (72) should also be ungrammatical. In other words, there is no possible transitive base to serve as the input for the base predicate for instrumental subjects in (72). For the current approach, on the other hand, there is no requirement that causativization demotes the underlying subject.[24]

[24]The only way that this kind of sentence might be possible is under certain "magical pen" contexts, where the pen is seen as an animate actor of some sort. The availability of these readings has not been able to be

Turning to the semantics of *–ish* causatives (which are requisitely direct), It was noted above that I assume that each event structure corresponds to a single, temporally inseparable event. Namely, each monomorphemic verb corresponds to a single event structure, and the all the subevents in this event structure correspond to a single event in time .

This captures the ungrammaticality of sentences like (73), repeated from (21), in which the causing event and result state cannot be separated temporally.

(73) #Ejo hashize umw-arimu y-a-ndik-ish-ije
Yesterday CL1-teacher CL1S-PST-write-CAUS-PERF
umw-ana in-kuru, ariko umw-ana a-ya-ndik-a
CL1-child CL 9-story, but CL1-child CL1S-CL9O-write-IMP
uyu munsi.
today
'Yesterday, the teacher made the child write the story, but the child wrote it today.'

Example (73) shows that *–ish*-marked verbs are unable to have temporally separable subevents. This follows from the fact that all the subevents in the event structure in (59) correspond to a single event. This contrasts with *tuma* causatives, in which the causing event and result state can be temporally separated, as shown in (74), repeated from (22).

(74) Ejo hashize, umw-arimu ya-tum-ye umw-ana
Yesterday CL1-teacher CL1S-make-PERF CL1-child
ya-ndik-a inkuru, ariko umw-ana
CL1-write-IMP CL9-story, but CL1-child

reliably elicited. The crucial point here is that traditional inanimate instruments are not possible as subjects, which is problematic for an analysis where the subject is demoted to object (i.e. traditional analyses of causer addition).

a-ya-ndik-a uyu munsi.
CL1S-CL9O-write-IMP today
'Yesterday, the teacher made the child write the story, but the child wrote it today.'

This follows from the fact that there are two separate verbs in this causative construction, which means that each may have a temporally separate event.

I notate the relationship in *tuma* causatives with conjunction operator ($\wedge$), which I propose can link two events or represent causation between two events. Crucially, the two verbs (i.e. *tuma* 'make' and *ndika* 'write') have independent event structures that correspond to separate moments in temporal space, and are linked by the coordination operator $\wedge$. Wunderlich (1997) proposes a similar operator (&) which also either links two events or represents causation; however, his operator is designed for direct causation, while the operator I propose is crucially used for the linking of two separate event structures. In other words, based on the semantic facts outlined throughout this paper on the indirect nature of *tuma* causatives, the operator $\wedge$ does not require that the events be temporally coterminous.

(75) [John ACT$_{<cause>}$ Mary] $\wedge$
[[Mary ACT] CAUSE [BECOME [story <written>]]]

Because there are two verbal elements, there are two separate event structures, which correspond to two separable moments in time. This results in the ability for the two events to be temporally separable, as in

(74).

Note that it is possible for the two events to overlap; namely, they are temporally separable, but there is no requirement that they must occur at separate times. For example, speakers allow both a direct causative reading with analytic causatives as well as an indirect reading. The operator $\wedge$ only requires that the first event bring about the second event. This leaves open the possibility of indirect or direct causation, depending on context. The *–ish* causative, however, crucially lacks this flexibility; because it operates at a sub-lexical level (i.e. within the domain of a single verbal unit), its semantics is always direct.

4.3 The Argument Structure of *–ish*

The argument structure of the two uses of *–ish* (i.e. causative and instrumental applicative) can also be unified under one operation; in both uses, the result is a double-object construction (when *–ish* is used on a transitive base predicate). I assume, following Hovav and Levin (1988), that event structures of the kind outlined above correspond to what I, using their terminology, call predicate argument structures. The predicate argument structure notates the relationship between different arguments of a verb. For example, the predicate argument structure for the verb *ndika* 'write,' is that in (76). I assume, the sake of simplicity, that all internal arguments, in the absence of a preposition, are direct arguments.

(76) *ndika* 'write' : x<y>

What this argument structure encodes is that the verb selects for two arguments, and the variable *x* is the external argument, while the *y* variable inside the brackets is an internal argument.[25]

In terms of argument structure, *–ish* increases the valency of the verb by one. All verbs have at least an external argument, and may optionally have more internal arguments, which is schematized in (77), where zero or more internal arguments may appear in the ellipses inside the angled brackets.

(77) x < ... >

What *–ish* does is take the argument structure of a verb, and requires the structure in (78), where an additional argument is added. This requires that there is minimally a subject and an object.

(78) x < y ... >

As in (77), the ellipses in (78) may either be empty or contain other arguments, which captures different verb types. When the base predicate is intransitive, *–ish* results in a transitive, and when the base predicate is transitive, *–ish* results in a ditransitive.[26] The structure in (78) is then mapped to event structures, where x is the actor in the highest cause event, and y is the next participant in the chain.

Note that argument structurally, there is no difference between the two uses of *–ish*; the morpheme simply increases the valency of the verb

[25]For the purposes of the present analysis, the external element is mapped to subject in the syntax, and the internal element is mapped to object.

[26]Ditransitive base predicates have not been elicited.

by one, but the difference in interpretation follows from the event structural relationship between the arguments. This predicts that argument structurally, causative and instrumental uses of the *–ish* morpheme are identical.

One way to show that the two indeed pattern the same is to test their behavior with object symmetry. Bantu languages vary with respect to whether they treat multiple objects as symmetrical or asymmetrical, but, it has been noted that both causative and instrumental uses of *–ish* are symmetrical in Kinyarwanda (Kimenyi 1980). What drives symmetry in different languages is a topic that I do not discuss here. The crucial point is to show that the causer and causee addition operations are identical with respect to their argument structural properties.

Kimenyi uses the sentence in (79) to illustrate the objecthood properties of objects in sentences with a morphological causative.[27]

(79) Umu-gabo a-rubak-ish-a aba-kozi
CL1-man CL1-PRES-build-CAUS-ASP CL2-workers
in-zu.
CL9-house
'The man is making the workers build the house.' Kimenyi (1980:170,(65b))

This sentence contains the morphological causative *–ish*, which introduces the causee object *abakozi* 'workers,' as well as the patient *inzu* 'house.' If the object *abakozi* 'workers' is indeed an object, it should

[27]I have slightly modified Kimenyi's examples in order to indicate class marking on nouns. I have transferred his data into standard Kinyarwanda orthography as opposed to the phonetic transcription given in the grammar.

be able to passivize as well as incorporate onto the verb, which are both standard tests for objecthood in the literature on objects in Bantu ((Baker 1988, Bresnan and Moshi 1990, Alsina 1992, McGinnis 2001, McGinnis and Gerdts 2003, Jerro 2013). The sentences in (80a-b) show that both the causee object and patient can be promoted to subject in a passive, respectively. In order to passivize in Kinyarwanda, the morpheme *–w* is marked on the verb, and the object is promoted to subject. The previous subject is demoted to an oblique.[28]

(80) a. Aba-kozi ba-r-ubak-ish-w-a in-zu
CL2-workers CL2-PRES-build-CAUS-PASS-ASP CL9-house
n'umugabo.
by'CL1-man
'The workers were made to build the house by the man.'
Kimenyi (1980:170,(66a))

b. In-zu i-r-ubak-ish-w-a aba-kozi
CL9-house CL9-PRES-build-CAUS-PASS-ASP CL2-workers
n'umu-gabo.
by'CL1-man
'The house is built by the workers, who are caused to build it by the man.' Kimenyi (1980:171,(66b))

These data show that both the causee and the patient can be passivized.

Another test for objecthood is the ability to incorporate the object as an object pronoun onto the verb. These incorporated objects are in complementary distribution with the free-standing objects. The sentences in (81a-b) show that both of the objects in (79) can be incorporated onto

[28]The English gloss for (80b) is the one provided by Kimenyi (1980).

the verb.

(81) a. Umu-gabo a-ra-b-ubak-ish-a
CL1-man CL1-PRES-CL2.OBJ-build-CAUS-ASP
in-zu.
CL9-house
'The man is making them build the house.' Kimenyi (1980:171,(64a))

b. Umu-gabo a-ra-y-ubak-ish-a
CL1-MAN CL1-PRES-CL9.OBJ-build-CAUS-ASP
aba-kozi.
CL2-workers
'The man is make the workers build it.' Kimenyi (1980:171,(64b))

These data indicate that the causee and the patient can both be incorporated onto the verb, following from the prediction that both are objects of the verb.

The instrumental use of the *–ish* morpheme has the same object properties as the causative use; both objects can be passivized, as shown in (83a-b), and incorporated, as shown in (84). Semantically, this is an operation of causee/instrument addition.

(82) Umu-gabo a-ra-ndik-ish-a i-baruwa i-karamu.
CL1-man CL1-PRES-write-INST-imp CL9-letter CL9-pen
'The man is writing a letter with a pen.'

(83) *Passivization:*

a. I-karamu i-ra-andik-ish-w-a i-baruwa
CL9-pen CL9-PRES-write-INST-PASS-IMP CL9-letter
n'umugabo.
by'CL1-man
'The pen is used to write the letter by the man.'

b. I-baruwa i-ra-andik-ish-w-a i-karamu
CL9-letter CL9-PRES-write-INST-PASS-IMP CL9-pen
n'umugabo.

'The letter is being written with a pen by the man.'

(84) *Pronoun Incorporation:*

a. Umw-alimu a-ra-y-andik-ish-a i-baruwa.
CL1-teacher CL1-PRES-OBJ.9-write-INST-IMP CL9-letter
'The teacher is writing a letter with it.'

b. Umu-gabo a-ra-y-andik-ish-a i-karamu.
CL1-man CL1-PRES-OBJ.9-write-INST-IMP CL9-pen
'The man is writing it with a pen.'

These data show that the instrumental use of the *–ish* morpheme treats objects the same as the causative use of the *–ish* morpheme, supporting the present proposal for a unified analysis of the two. The crucial point of this argument structural distinction is that regardless of which semantic use of the *–ish* morpheme is used, the argument structural facts are identical, supporting the central thesis of this paper that both uses of *–ish* are subsumed under one single operation.

The situation of *–ish* contrasts with the analytic causative, for which I assume that one argument structure is embedded within another, and

the intermediary argument (i.e. causee) is linked between the higher and lower predicates (cf. Alsina (1992)). The base predicate for *ndika* 'write' in (76) is embedded within the argument structure for cause. I use curly braces around the embedded base predicate for visual clarity.

(85) *tuma* 'cause' : x < z {*ndika* 'write' z < y >} >

In this embedded argument structure, the verb *tuma* 'cause' has an external and internal argument, and embeds the base predicate beneath it. The base predicate is completely preserved. The z argument, which eventually maps to being the causee, is shared between both the higher and lower verbs.

The z argument is shared between both verbs, which predicts that it can show agreement with either the higher or lower verb. In (86), the causee *umwana* 'child' shows subject agreement on the lower verb, while in (87), it appears as an object marker on the higher verb. In these examples, the agreement morpheme that shows agreement with the causee is underlined.

(86) Umu-gabo ya-tum-ye umw-ana a-kubit-a
CL1.man CL1S-make-PERF CL1-child CL1.S-beat-IMP
in-ka.
CL9-cow
'The man made the child beat the cow.'

(87) Umu-gabo ya-mu-tum-ye gu-kubit-a in-ka.
CL1-man CL1S-CL1O-make-PERF INF-beat-FV CL9-cow.
'The man made him/her/them(sg.) beat the cow.'

The data in (86) show that the causee *umwana* 'child' triggers subject agreement with the embedded verb *–kubita* 'beat,' and the data in (87) shows that it may also serve as the object of the verb *tuma* 'make.' This is predicted from the analysis given in (85), where the causee is shared between the two verbs.

What is predicted to not be allowed, however, is the object of the lower verb (i.e. *inka* 'cow') to appear as an object marker on the higher verb. This prediction is borne out:

(88) *Umu-gabo ya-yi-tum-ye umw-ana a-kubit-a.
CL1-man CL1S-CL9O-make-PERF CL1-child CL1-beat-IMP

'The man made the boy beat it (i.e. the cow).'

The data in (88) show that *inka* 'cow' cannot be object marked on the higher verb. This predicted by the analysis in (85), where the object of the lower verb has no relation to the higher verb.

Section 5: Previous Approaches to Causatives and Applicatives

Having outlined the empirical phenomena in Kinyarwanda and an analysis that captures the syncretistic nature of the *–ish* morpheme, I turn now to a summary of previous approaches to morphological causatives in order to show that these are not designed to capture syncretisms of this kind. After outlining two such analyses, I then compare the present analysis to an analysis of syncretistic causative-applicative morphology in Javanese, showing that the analysis presented there does not adequately capture the data for Kinyarwanda.

5.1 The Minimalist Treatment of Japanese *–sase–*

One approach to causatives in Minimalism comes from Harley (2008), who builds on the tenets of Distributed Morphology, proposed by (Halle and Marantz 1993).[29] In this work, Harley implements a purely syntactic analysis of both lexical and analytic readings of the morphological causative *–sase–* in Japanese.In her analysis, the crucial distinction for which reading is obtained depends on whether or not the causative head applies in the same vP as the predicate.

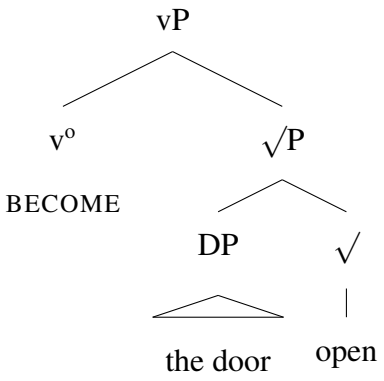
In Distributed Morphology, abstract feature bundles are introduced into the derivation, and they are not realized with phonological material until Spell-Out. At this point, these abstract feature bundles are sent

[29]Though see Jeong (2007), Pylkkänen (2008) and Blanco (2011) for alternative Minimalist accounts of causatives.

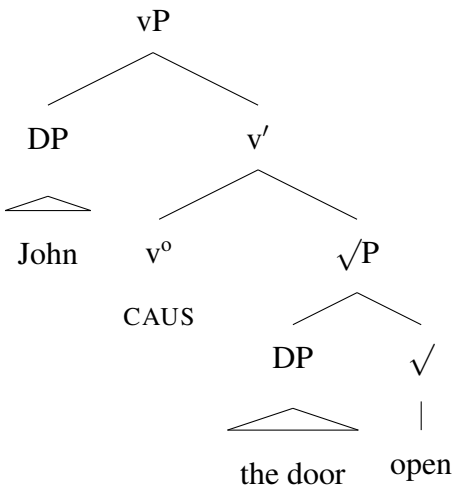
to PF (Phonological Form) and LF (Logical Form). At PF, a variety of Vocabulary Items compete to become phonological realizations of the abstract feature bundles; at LF, interpretations are inserted from encyclopedic knowledge. This process is referred to as Late Insertion. For example, throughout the derivation, the syntax only handles abstract feature bundles such as [+1,+PL,+NOM], and it is only at Spell-Out that this is matched with the Vocabulary Item *we* in English. Crucially, the Vocabulary Item that succeeds in realizing the terminal node is the most highly specified Vocabulary Item. For example, though *I* and *it* match some of the features in the bundle, above, *we* is the Vocabulary Item that is most highly specified; therefore, this is the form that is realized.

Building on work by Hale and Keyser (1993), Harley (1995), Marantz (1997), Harley introduces two different interpretations for v^{o}: BECOME and CAUS. These two syntactic operators can be used to model the difference between causative and inchoative verbs in Minimalism:

(89) a. Inchoative Verb



b. Causative Verb



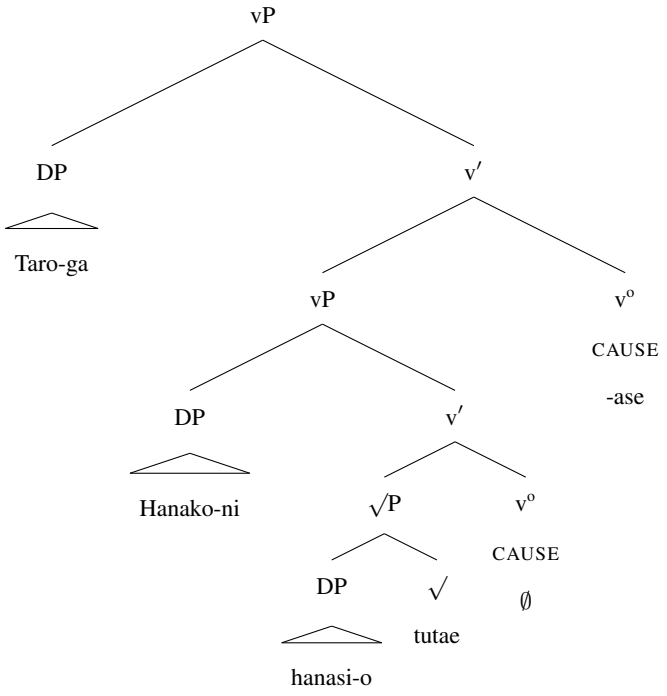
In these structures, the root phrase ($\sqrt{}$P) indicates a result state obtaining for a patient argument 'the door.' The root *open* in both cases raises to the v° node and merges with either the BECOME or CAUS. The difference between the two types of v is that the BECOME v only indicates that the $\sqrt{}$P state came about, while the CAUSE v indicates that it came about and was caused by the the causer "John." Harley uses this typology of v° heads to capture the variety of lexical causatives in a Japanese, the details of which are not relevant for the present discussion. What is crucial is that lexical causatives, as in (89b), involve multiple separate heads. This leaves an interesting question for how to treat truly syntactic causatives—i.e. analytic causatives—as distinct from lexical causatives in this framework.

The answer that Harley presents is that in the analytic causative, the matrix CAUS v° will be separated from the root by another empty v°

head. So for the Japanese causative sentence in (90a), Harley proposes the structure in (90b).

(90) a. Taroo-wa Hanako-ni hanasi-o tutae-*sase*-ta.
Taro-TOP Hanako-DAT story-ACC convey-CAUS-PST
'Taro made Hanako convey the story.'

b.



In this structure, the root *tutae* 'convey' moves cyclically to the two v° heads, merging with ∅ and *–sase*. This contrasts with the derivation of the lexical causative, where the lexical variant of *–sase* is within the same vP as the root. The extra structure between the root and the higher CAUS v° forces an analytic causative interpretation; the lower v° always accompanies the root, and is interpreted as a lexical causative. As a side note, although she does not explicitly state how her theory would han-

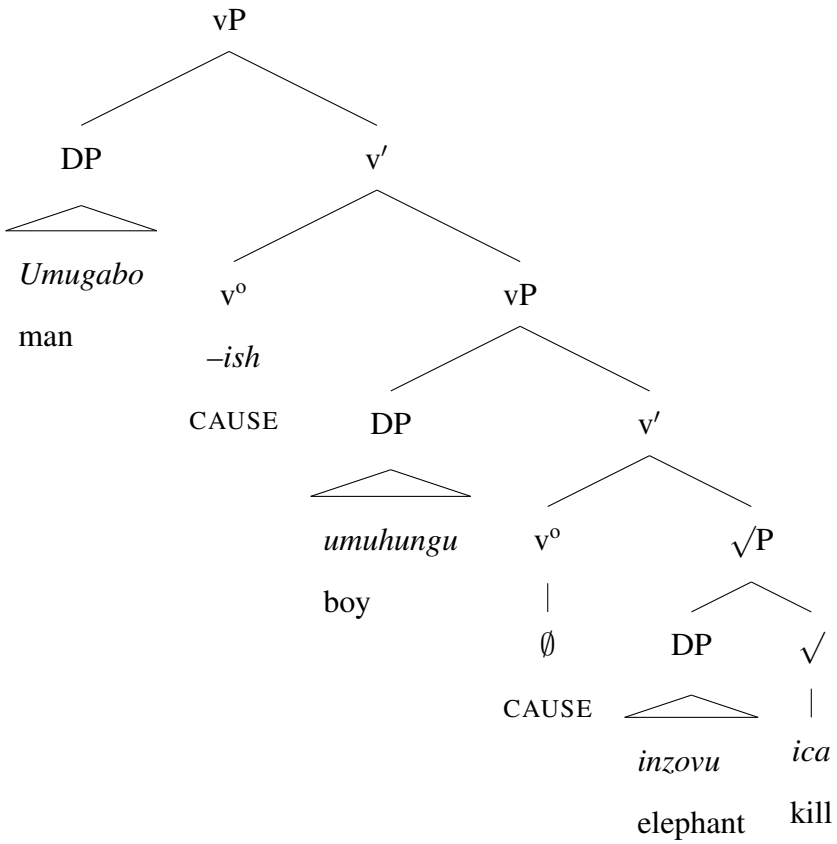
dle causativized unergatives or statives, her analysis predicts that when causativized, these verbs would have to behave as lexical causatives; these verbs presumably do not come with a v^{o} head, which means that the *–sase* morpheme will apply and be the closest head, which her theory predicts to be the trigger for lexical causation. Whether this prediction is borne out in Japanese is left for future research.

This analysis predicts that all causativized transitives must be analytic, i.e. not lexical. This prediction is presumably correct for the Japanese data; Harley states that in Japanese "only intransitive roots with no other transitive form can behave lexically with *–sase*" (p. 19). High, i.e. analytic, *–sase* productively applies to verb roots in Japanese. She shows that this is the case by a variety of tests, such as the fact that V+*sase* forms do not permit adversity causatives and that they are not guaranteed to participate in idioms. This contrasts with the lexical, or low *–sase*, which both permits adversity causative interpretations as well as creates idioms.

However, this analysis does not fit the empirical facts for Kinyarwanda, where causativized transitives are always lexical, cf. Section 3. The analysis for a transitive causativized verb, such as in the sentence in (91), would be the kind of structure provided in (92), where two vP shells introduce the two internal arguments.

(91) Umu-gabo y-ic-*ish*-ije umu-hungu in-zovu.
CL1-man CL1S-kill-CAUS-PERF CL1-boy CL9-elephant
'The man made the boy kill the elephant.'

(92)



In order to capture the ditransitive structure of the sentence, it is required in this analysis that two functional heads introduce the DPs *umugabo* 'man' and *umuhungu* 'boy'. Due to the semantics and the root, both would be CAUSE v. The verb root *–ica* 'kill' would raise cyclically to the v° heads and merge with ∅ and *–ish*.

This structure, given Harley's assumptions, predicts that the morphological causative in Kinyarwanda will be a productive analytic causative—like the morphological causative in Japanese, since there would be two vP shells over the √P. This, however, is empirically incorrect for the behavior of *–ish* in Kinyarwanda, which is always lexical, as discussed

extensively above. It is not clear how Harley's analysis as given could be amenable to the data for Kinyarwanda, where causativized transitive roots are also lexical.

In short, the machinery of the framework imposes functional structure in causative verbs that, when used in ditransitive constructions like *–ish* causatives, requires multiple causative heads. This is problematic because this predicts that the structure should not be lexical, which is contrary to the data in Kinyarwanda.

5.2 The Morphological Causative in Chichewa

Alsina (1992) provides an account of the morphological causative morpheme *–its* in Chichewa, the cognate form of the Kinyarwanda *–ish*. Chichewa, unlike Kinyarwanda, has a productive alternation between the bare and oblique realization of the causee. These are provided in (93a) and (93b), respectively.

(93) a. Nungu i-na-phík-íts-a kadzidzi
CL9.porcupine CL9S-PST-cook-CAUS-FV CL1A.owl
maûngu.
CL6.pumkins
'The porcupine made the owl cook the pumpkins.'

b. Nungu i-na-phík-íts-a maungu
CL9.porcupine CL9S-PST-cook-CAUS-FV CL6.pumkins
kwá kádzīdzi.
to CL1A.owl
'The porcupine had the pumpkins cooked by the owl.'Alsina (1992:523,(12))

The important intuition is that that when the causee is realized as a bare object, it is the patient of the verb, meaning that it is affected by the action. When realized as an oblique, it is not affected by the action; instead, it is the original patient object that is affected. Although the semantics of affectedness is not formally defined by Alsina, the intuition is that when the causee is affected, the intention of the causer is to have the causee perform a specific action. When unaffected, the causer intends for an action to be performed, and employs the causee to bring about this action.

Alsina analyzes this as an operation of argument fusion, whereby the matrix patient is fused with one of the embedded arguments. When fused with the embedded agent, as in (94a), the causee is affected by the action; alternatively, when fused with the embedded patient, as in (94b), the causee is not viewed as affected by the action. The diagrams in (94a) and (94b) correspond to the sentences in (93a) and (93b).

(94) a. $<$ ag pt $<$ ag pt $>$ $>$

b. $<$ ag pt $<$ ag pt $>$ $>$

After the fusion of arguments, the causativized verb is a three-place predicate, involving a causer, causee, and a patient.

The structures in (94a-b) are then used to map the thematic roles to various grammatical functions using Lexical Mapping Theory (LMT). The matrix agent in both is mapped to subject, unless this argument is suppressed, e.g. via passivization. The leftmost patient in each of the diagrams in (94) is mapped to object, and whichever embedded argument

is fused with it will then be realized as the object. The unfused argument will be mapped to either a thematic object, as in (94a) or an oblique, as in (94b). Alsina explains that the agent in (94b) is mapped to oblique because as an external argument it cannot be realized as an object at all.

However, due to grammatical differences between the languages, Alsina's analysis of Chichewa cannot be directly applied to Kinyarwanda. Causees cannot be productively be realized as obliques in Kinyarwanda as they can in Chichewa. Recall from Section 3 that oblique marking of causees is highly idiosyncratic, only appearing with two verbs: *ndika* 'write' and *–teka* 'cook,' and when the oblique form is used with these verbs, they do not require that the causee be the affected argument. In short, the variant in (94b) is not available in Kinyarwanda. It is possible that different languages systematically differ in their ability to realize causees with oblique marking, and in this regard, Alsina's analysis may be able to extend to Kinyarwanda. However, the issue is that his analysis has no way of explaining the idiosyncratic use of oblique marking on only a small subset of verbs in Kinyarwanda. If his analysis were directly applied, one would expect (1) that oblique realizations of causees are productive in Kinyarwanda, and (2) oblique-marked causees in Kinyarwanda should be more affected than their bare-object counterparts, which is not the case.[30]

Finally, one thing neither Alsina's nor Harley's analyses will be able to capture is the syncretism between the causative and instrumental ap-

[30]Elicitations found no differnece in the meaning of bare-object and oblique-marked objects in Kinyarwanda.

plicative. Both analyses ultimately posit an operation in which the argument structure of the base lexical predicate is preserved, with a new causer added as a subject, which results in the erstwhile subject losing its subject properties. This is not compatible with the fact that instrumental applicatives are object-adding operations, as I clarified in my analysis.

5.3 Causative-Applicative Polysemy in Javanese

Hemmings (2013) discusses the morphemes *–i* and *–aké* in Javanese, which she argues are polysemous between causative, applicative, and aspectual interpretations, though I will only focus on the former two uses[31] Both *–i* and *–aké* can have an applicative use, with the former having a locative meaning, and the latter having a benefactive meaning.

(95) a. pelem nyeblòk-i gentèng ómah-ku
mango (A) AV.fall-APPL roof (O) house-1SG.POSS
'a mango fell on the roof of my house' Hemmings (2013:168,(2b))

b. aku masak-aké Karolina jajan
1SG (A) AV.cook-APPL Karolina (O) cake
'I baked Karolina a cake' Hemmings (2013:168,(3b))

Both morphemes can also be used as causative markers:

(96) a. aku mangan-i kucing iwak.
1SG (A) AV.eat-CAUS cat (O) fish
'I fed the cat fish.' Hemmings (2013:169,(6b))

[31] She uses the term "polysemy" in her discussion of these morphemes, but she is essentially arguing for a unified analysis of various functions of the same linguistic form, i.e. a syncretism as defined in footnote 4.

b. aku mangan-aké iwak men yang kucing.
1SG AV.eat-CAUS fish towards cat
'I fed the fish to the cat.' Hemmings (2013:170,(10a))

Hemmings states that *–i* is used as marker of direct causative meaning, while *–aké* sometimes has an indirect causative meaning, though she does not explicitly definite direct and indirect causation, nor does this figure prominently into her analysis of these morphemes.

Building on work by Alsina (1992), Hemmings uses LFG's Lexical Mapping Theory to propose an analysis that captures the syncretistic nature of these morphemes in Javanese. Following Alsina, she assumes that causation is a three-place predicate, where an embedded argument is linked with an element in the cause predicate.

(97) CAUSE $<$ ag pt PRED $<$ ... θ ... $>>$

Following Austin (2005), Arka et al. (2009), Hemmings assumes that applicatives can also be treated as embedded three-place predicates. Because causatives and applicatives are both treated as three-place predicates, the a-structures of the argument structures is the same. Argument fusion is underspecified, and different realizations predict the different syntactic structure—be it causative or applicative. The a-structure she proposes is in (98), where the first argument (ARG_1) is the agent and the second argument (ARG_2) is the applied/causative element.

(98) $\text{PRED}_1 < \text{ARG}_1, \text{ARG}_2, \quad \text{PRED}_2 < ... >>$

For the verb *ceblòk* 'to fall,' the *–i* behaves as an applicative, while the –

aké behaves as a causative, modeled in (99). For the *–i* morpheme, ARG_2 is a locative argument, while for the *–aké* morpheme, ARG_2 is a benefactive/argument.

(99) a. *-i* $< \text{ARG}_{(ag)}, \text{ARG}_{(loc)}, \text{fall} << \text{ARG}_{(th)}, \text{ARG}_{(loc)} >>$

b. *-aké* $< \text{ARG}_{(ag)}, \text{ARG}_{(ben/pt)}, \text{fall} << \text{ARG}_{(th)}, \text{ARG}_{(loc)} >>$

Crucially, Hemmings assumes that like arguments will fuse. Hence, in (99a), the two locative arguments (one locative argument in the cause predicate and one in the embedded predicate) are fused, and the theme is left to fuse with the agent; this results in a locative applicative interpretation. In (99b), the embedded theme fuses with the patient of the cause predicate, and the Agent is left unfused, resulting in a causative interpretation. In other words, this introduces a new causer into the a-structure.

The example in (99) outlines the applicative realization for the *–i* morpheme and the causative realization for the *–aké* morpheme, though the reverse derivations are possible with different verbs. I refer the reader to Hemmings (2013) for a detailed account of how the fusion of different arguments derives the desired results for different verb classes. In short, what this analysis does to capture the causative/applicative syncretism is to treat applicatives as three-place embedded predicates where arguments of the cause predicate are fused with arguments of the embedded predicate.

Although it captures the empirical facts for Javanese, there are some issues with using this approach to capture the data for Kinyarwanda. First, it is not clear why a causative would have a locative or benefactive argument in its argument structure. Looking at (99), the higher predicate (i.e. the causative predicate) has either a locative or benefactive argument. In as much as this is an adaptation of Alsina's analysis for Chicheŵa, it is not clear why a causal predicate selects for the thematic roles of locative or benefactive. Furthermore, its not made clear why the embedded locative in (99b) is not fused with the matrix agent.

Second, the analysis assumes that the causative interpretation in (99b) is one in which a new causer is added to the argument structure, i.e. an analysis of causer addition. Data from Kinyarwanda, however, show that there are two kinds of causative readings of the morphological causative *–ish*: one of causer addition (i.e. a new causer is added to the structure of the base predicate) and one of causee addition (i.e. a new causee is added to the structure of the embedded predicate), and these two structures correspond to different semantic interpretations. It is not clear how Hemming's analysis could be modified to fit the Kinyarwanda data.

Finally, the analysis of Javanese is impressive in its ability to capture a wide range of verb classes and various interpretations, but it is not a goal of the paper to intuitively explain the nature of causative-applicative syncretism. The present paper, on the other hand, offers an explanation for why a syncretism might exist between causatives and instrumental applicatives; namely, both causatives and instrumental applicatives share

a semantic structure of a subject acting on an intermediary element that brings about some action. This similarly in meaning and function of the two uses naturally explains why both would be subsumed under the same morphological marking.

Section 5: Conclusion

In this paper, I have shown that the morphological causative in Kinyarwanda patterns as a lexical causative, and as such, it conveys a direct causative meaning. I have also provided a syntactic and semantic analysis using event structural notations that captures the syncretistic nature of this causative with the instrumental applicative, which shows that the shared semantics of causatives and instruments underlies the syncretism.

Finally, I have shown that the treatment of the morphological causative in Kinyarwanda is problematic for the traditional view of causer addition, which cannot capture the behavior of the instrumental use of the *–ish* morpheme.

Many genetically and areally unrelated languages show similar patterns of syncretism,[32] and many of these patterns involve syncretisms with different thematic applicatives, such as benefactives and comitatives. The current analysis only concerns itself with the syncretism between instrumental and causative, but it is hoped that future work can find a unified semantics that underlies all syncretistic causative-applicative morphology.

[32]Petersen (2007) mentions Hualapai, Shoshone, and Guaraní, while Hemmings (2013) gives dozens of examples from the Salish, Atlantic, Hokan, Muskogean, and Papuan language families.

References

Alsina, A., 1992. On the argument structure of causatives. Linguistic Inquiry 23, 517–555.

Alsina, A., Mchombo, S., 1993. Object asymmetries and the Chichewˆa applicative construction. In: Mchombo, S. (Ed.), Theoretical Aspects of Bantu Grammar. Stanford: CSLI Publications, pp. 17–45.

Arka, I., Dalrymple, M., Meladel, M., Suriel, M., Avery, A., Simpson, J., 2009. A linguistic and computational morphosyntactic analysis for the applicative *–i* in indonesian. In: Proceedings of the LFG09 Conference. Stanford: CSLI Publications, pp. 85–105.

Ashton, E., 1966. Swahili Grammar. Longmans.

Austin, P., 2005. Causative and applicative constructions in australian aboriginal languages. Unpublished ms, SOAS.

Baker, M., 1988. Theta theory and the syntax of applicatives in chichewa. Natural Language and Linguistic Theory 6, 353–389.

Beavers, J., Koontz-Garboden, A., 2013. Manner and result in verbal meaning. Linguistic Inquiry 43, 331–369.

Beavers, J., Zubair, C., 2010. The interaction of transitivity features in the sinhala involitive. In: Transitivity Form Meaning Acquisition and Processing. Amsterdam: John Benjamins, pp. 69–92.

Bittner, M., 1999. Concealed causatives. Natural Language Semantics 7, 1–78.

Blanco, M. T., 2011. Causatives in Minimalism. Amsterdam: John Benjamins.

Bresnan, J., Moshi, L., 1990. Object asymmetries in comparative bantu syntax. Linguistic Inquiry 21, 147–185.

Byarushengo, E., Duranti, A., Hyman, L., 1977. Haya Grammatical Structure. University of Southern California Press.

Comrie, B., 1985. Causative verb formation and other verb-deriving morphology. In: Shopen, T. (Ed.), Language Typology and Linguistic Description III. Cambridge: Cambridge University Press, pp. 309–348.

Comrie, B., 1989. Language Universals and Linguistic Typology. Chicago: Chicago University Press.

Cooper, R., 1976. Lexical and non-lexical causatives in bantu. In: Shibatani, M. (Ed.), Syntax and Semantics Vol. 6. New York: Academic Press, pp. 312–24.

Croft, W., 1990. Possible verbs and event structure. In: Tsohatzidis, S. L. (Ed.), Meanings and Prototypes: Studies on Linguistic Categorization. London: Routledge, pp. 48–73.

Dixon, R., Aikhenvald, A., 1997. A typology of argument-determined constructions. In: Bybee, J., Haiman, J., Thompson, S. (Eds.), Essays

on Language Function and Language Type: Dedicated to T Givón. John Benjamins: Amsterdam, pp. 71–113.

Dowty, D., 1979. Word Meaning and Montague Grammar. Dordrecht.

Fodor, J., 1970. Three reasons for not deriving 'kill' from 'cause to die'. Linguistic Inquiry 1, 429–38.

Ginet, C., 1990. On Action. Cambridge Cambridge University Press.

Guthrie, M., 1966. Grammaire et Dictionnaire de Lingala. Gregg Press Ltd.

Haiman, J., 1980. The iconicity of grammar: Isomorphism and motivation. Language 56, 515–540.

Haiman, J., 1983. Iconic and economic motivation. Langauge 59, 781–819.

Hale, K., Keyser, S., 1993. On argument structure and the lexical expression of syntactic relations. In: Hale, K., Keyser, S. (Eds.), The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger. Cambridge: MIT Press, pp. 53–109.

Halle, M., Marantz, A., 1993. Some key features of distributed morphology. In: MIT Working Papers in Linguistics 21. Camdridge: MIT Press, pp. 275–288.

Harley, H., 1995. Sase bizarre: The structure of Japanese causatives.

In: Koskinen, P. (Ed.), Proceedings of the Canadian Linguistic Society Meeting.

Harley, H., 2008. On the causative construction. In: Handbook of Japanese Linguistics. Oxford: Oxford University Press, pp. 20–53.

Haspelmath, M., 1993. More on the typology of inchoative/causative verb alternations. In: Comrie, B., Polinsky, M. (Eds.), Causatives and Transitivity. Amsterdam: John Benjamins, pp. 87–120.

Hemmings, C., 2013. Causatives and applicatives: the case for polysemy in Javanese. In: SOAS Working Papers in Linguistics, vol. 16. pp. 167–194.

Hinton, L., 1982. How to cause in mixtec. In: BLS 8. pp. 354–363.

Hovav, M. R., Levin, B., 1988. What to do with θ-roles. In: Wilkins, W. (Ed.), Syntax and Semantics Vol. 21. New York: Academic Press, pp. 7–36.

Hovav, M. R., Levin, B., 1998. Building verb meanings. In: Butt, M., Geuder, W. (Eds.), The Projection of Arguments: Lexical and Compositional Factors. Stanford: CSLI Publications, pp. 97–134.

Jeong, Y., 2007. Applicatives: Structure and Interpretation from a Minimalist Perspective. Amsterdam:John Benjamins.

Jerro, K., 2013. Revisiting object symmetry in bantu. Unpublished ms. University of Texas at Austin.

Kimenyi, A., 1980. A Relational Grammar of Kinyarwanda. University of California Press.

Koontz-Garboden, A., 2007. States, Changes of State, and the Monotonicity Hypothesis. PhD Dissertation, Stanford University.

Koontz-Garboden, A., 2012. The monotonicity hypothesis. In: McNally, L., Demonte, V. (Eds.), Telicity Change and State: A Cross-categorial View of Event Structure. Oxford: Oxford University Press, pp. 139–161.

Kratzer, A., 2005. Building resultatives. In: Maienborn, C., Wöllstein-Leisten, A. (Eds.), Events in Syntax, Semantics, and Discourse. Niemeyer, pp. 177–212.

Lewis, D., 1973. Causation. Journal of Philosophy 70, 556–567.

Marantz, A., 1997. No escape from syntax: Dont try morphological analysis in the privacy of your own lexicon. In: U. Penn Working Papers in Linguistics, vol. 4. pp. 201–225.

McCawley, J., 1978. Conversational implicature and the lexicon. In: Cole, P. (Ed.), Syntax and Semantics Vol. 9. New York: Academic Press, pp. 245–59.

McGinnis, M., 2001. Variation in the phase structure of applicatives. Linguistic Variation Yearbook 1, 105–146.

McGinnis, M., Gerdts, D., 2003. A phase-theoretic analysis of kinyarwanda multiple applicatives. In: Proceedings of the 2003 Canadian

Linguistic Association Annual Conference Department of Linguistics. Université du Québec à Montréal, pp. 154–165.

Nedjalkov, V., 1969. Nekotorye verojatnostnye universalii v glagolnom slovoobra-zovanii [some statistical universals in verbal word-formation]. In: Jazykovye universalii i lingvističeskaja tipologija [Language universals and linguistic typology]. Moscow: Nauka, pp. 106–114.

Petersen, D., 2007. Applicative Constructions. Oxford: Oxford University Press.

Pylkkänen, L., 2008. Introducing Arguments. Cambridge: MIT Press.

Shibatani, M., 1973. Semantics of japanese causativization. Foundations of Language 9, 327–373.

Shibatani, M., 1976. The grammar of causative constructions: A conspectus. In: Shibatani, M. (Ed.), Syntax and semantics Vol. 6. New York: Academic Press, pp. 1–40.

Shibatani, M., Pardeshi, P., 2001. The causative continuum. In: Shibatani, M. (Ed.), The Grammar of Causation and Interpersonal Manipulation. Amsterdam: John Benjamins, pp. 85–126.

Smith, C., 1970. Jespersens 'move and change' class and causative verbs in english. In: Jazayery, M. A., Polomé, E. C., Winter, W. (Eds.), Linguistic and literary studies in honor of Archibald Hill Vol. 2. The Hague: Mouton, pp. 101–109.

Wunderlich, D., 1997. Cause and the structure of verbs. Linguistic Inquiry 28, 27–68.