The Stacking Behavior of Valence-Increasing Verbal Extensions and Their Arguments in Shona

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Abstract

Most Bantu Languages exhibit several verbal affixes that change the meaning or argument structure of the verbs to which they attach. Two of the most cross-Bantu common of these morphemes are the applicative and causative, which are both valence-increasing, making many intransitive verbs transitive and transitive verbs ditransitive. In addition to having these affixes, most Bantu languages also exhibit the ability to stack more than one of them at once, creating more complex structures. Shona (a language of Zimbabwe), however, displays a typologically unusual restriction, allowing only two postverbal objects at the most. In addition to this descriptive generalization, this paper provides a detailed account of verbal extensions and their objects in Shona, ultimately showing that many Shona objects behave asymmetrically. Towards the latter half of this report, the focus shifts to an analysis of the argument limit and asymmetrical object phenomena involving case. In order to explain seemingly conflicting data, this paper hypothesizes the presence of three structural case-assigners in Shona, as well as proposing several criteria for prosperous case-assignment.

1 I’d like to thank my amazingly patient and insightful Shona consultant, Collence Nyazenga.
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0. Abbreviations

AGR: Agreement
APP: Applicative
AO: Applied Object
CAUS: Causative
FUT: Future
FV: Final Vowel
NEG: Negation
NEUT: Neuter
PASS: Passive
POSS: possessive
PRS: Present
PROG: Progressive
PST: Past
REV: Reversive
REC: Reciprocal
1SG: First Person Singular
1PL: First Person Plural
3SG: 3rd Person Singular
3PL: 3rd Person Plural
1: Class 1
5: Class 5
9: Class 9
I. Introduction

From as far north as Cameroon, west to Kenya, and down to South Africa, the 500 or so Bantu languages spoken by hundreds of millions of people across the African continent all share several notable linguistic attributes, including richly inflected, complex verbal morphology and the noun class system. The paper concerns the former. More specifically, I will be examining the behavior of a set of verbal affixes in Shona and what these affixes reveal about Shona’s typologically unusual argument structure.

I.1 Shona

Shona is spoken primarily in Zimbabwe, Zambia, and Mozambique, but also in diasporic communities in South Africa and Botswana (Lewis 2013). It is the most natively spoken Bantu language with 14.2 million L1 speakers, including every dialect (Lewis 2013). Like most Niger-Congo languages and by extension most Bantu languages, Shona demonstrates a consistently SVO word order. Shona is written with a Roman alphabet and taught in many public schools in Zimbabwe.

I.1.1 The Manyika Dialect

My consultant, Collence Nyazenga natively speaks Manyika, a dialect of Shona. Manyika is spoken by around eight hundred thousand people, mostly in eastern rural Zimbabwe and Mozambique (Lewis 2013). According to Nyazenga, it is a non-prestige variety. Nyazenga also learned standard Shona in school from a young age. Whether or not there are any differences between Manyika and standard Shona that are pertinent to
this paper remains somewhat ambiguous, but most differences appear to be lexical or phonological. Based on other scholars’ work on the same subject matter, it seems most likely that any data I have elicited from Nyazenga in Manyika would be consistent in the most important aspects with a parallel elicitation in standard Shona. All data are from Shona and elicited from Nyazenga by me, unless otherwise specified and cited.

1.2 Bantu Verbal Morphology

Bantu verbal morphology is rigidly ordered and often described as “agglutinative” (Hyman 2003:246) and “highly productive” (Good 2005:3). The structure of Bantu verbs consists of numerous inflectional morphemes (including ones for subject agreement, aspect, tense, mood, and modality) which affix on either side of a lexical verb stem. The fixed nature of the order in which these prefixes and suffixes can appear lends itself to a descriptive account featuring a “system of ‘slots’” (Hyman 2003:247) where each morpheme fills a position reserved for other affixes of its kind. The Shona sentence in (1) below demonstrates this structure, though with significantly fewer affixes than is possible in one verbal construction.
In this sentence the prefix \textit{a-} is the 3rd person, singular, subject agreement morpheme for Class 1 nouns, \textit{no-} is the tense affix for the present tense, and \textit{mu-} is a pronominal, gender neutral, 3rd person, singular affix which fills a direct object argument position verb-internallyootnote{\textit{Mu-} is unlike \textit{a-} because it is not an agreement morpheme. Base on my own elicitation it appears that while \textit{a-} would occur in the presence of an overt 3rd person, singular, Class 1 subject, \textit{mu-} would not occur in the presence of and overt, verb-external 3rd person, singular object. Therefore, I define \textit{mu-} as an incorporated, yet truly pronominal, entity.}. (1) is simple, compared to the maximum number of affixes this structure will allow. The sentence in (2) demonstrates several more productive affixes available in this agglutinative system.

\begin{flushright}
\textbf{(1) a- no- mu- d- a} \\
3SG (1)- PRS- him/her- love- FV\footnote{Bantu verbs obligatorily end in what is usually referred to in the literature as a “final vowel” (Matsinhe et al. 2009). It is accepted that the final vowel is in fact separate from the verb stem, because additional suffixes can occur after the stem and before the vowel. For a long time it was believed that the final vowel was a purely phonological requirement and that it did not provide syntactic or semantic information. Recently, however, the final vowel has been shown to contribute indicative or subjunctive mood (Muriungi 2008). It should be understood that in Shona a final \textit{–a} is indicative and a final \textit{–e} is subjunctive. That acknowledged, I will not be using the more detailed gloss here. Instead, I will maintain the Africanist tradition and refer to all final vowels simply as FV.} \\
‘S/he\footnote{Bantu languages do not morphologically or syntactically mark gender.} loves him/her.’
\end{flushright}

In (2) \textit{ha-} is a negation affix, \textit{va-} is the 3rd person, plural, subject agreement morpheme for Class 1 nouns, and \textit{cha-} is the future tense morpheme. \textit{Nyanyo-} is a modal morpheme meaning essentially ‘a lot’. The diagram in (3) (from Matambirofa 2003, from Matsinhe et al. 2009) demonstrates the full range of affix possibility in a Bantu verb.
This tree shows the hierarchical organization of negation, subject marking, tense, aspect, modality, object marking, and what are often called "verbal extensions" (Good 2005; 12). This paper will be focusing on verbal extensions, the position of which are bolded in (3) above. The precise function and nature of verbal extensions is described further in the following section.
II. Verbal Extensions and Their Productivity

Most Bantu Languages exhibit several verbal extensions. These morphemes are suffixes that change the argument structure of the verbs to which they affix (Good 2005:3). The most cross-Bantu common of these morphemes are the applicative and causative (Good 2005:4), but there are many others, and Bantu languages vary in the diversity and size of their verbal extension inventories. In his comprehensive 1955 grammar of standard Shona, *An Analytical Grammar of Shona*, George Fortune describes 15 verbal extensions, which he calls the “derivative stem species”: the passive, the neuter, the applicative, the perfective, the causative, the intensive, the reciprocal, the associative, the reversive, the repetitive, the extensive, the stative, the contactive, the argumentative, and the frequentative (Fortune 1955:200).

II.1 A Summary and Explanation of Verbal Extensions

Verbal extensions differ widely in their semantic and syntactic effect. What they all have in common, however, is their ‘slot’ within the Bantu verb construction. Example (4) below clarifies the location of this position between the verb stem and the final vowel.

(4) mbambaira ya- ka- bik- w- a
sweet.potato 3SG (9)- PST- cook- PASS- FV
‘The sweet potato was cooked.’

In Bantu languages the morpheme used to create passive constructions is a verbal extension and thus fits into the verbal extension ‘slot’.
While all verbal extensions change the meaning of the verbs they modify in some way, only some actually change the valence (adding or subtracting arguments) of the verbs to which they attach. For example, the, the reversive morpheme gives the verb to which it affixes an undoing-of-the-action interpretation, but it does not add or subtract any arguments. The sentences in (5) below demonstrate the reversive verbal extension.

(5) a. mai va- ka- sung- a
   mother 3PL (1) PST tie FV
   tambo dze- bhutsu dze- mwana
   rope POSS boots POSS child
   ‘The mother tied the child’s shoelaces.’

b. Mai va- ka- sung6- unur- a
   mother 3PL (1) PST tie REV FV
   tambo dze- bhutsu dze- mwana
   rope POSS boots POSS child
   ‘The mother untied the child’s shoelaces.’

In (5) the transitive verb vakasunga, ‘to tie,’ acquires the reversive affix unur- becoming vakasungunura, ‘to untie’. This example shows that the reversive extension does not add

5 Plural forms are often used in a singular context to denote respect. Nyazenga uses them inconsistently. My data is completely as elicited throughout.

6 Nyazenga’s preferred version of this construction is actually vakasunungura. The verb ‘to tie’ is a frequent target of the reversive and the stem has clearly undergone some form of lexicalization resulting in a separate verb stem sunungur, meaning ‘to untie’. However, the reversive morpheme remains productive and he was able to use it in this environment, though he obviously felt that it was a little odd to derive this form and not use the well-established, and very similar, word with the same meaning. This is probably not unlike asking an English speaker to produce a construction something along the lines of undo the tying of when she could just say untie. Nonetheless, this sentence provides a clear example of how the reversive verbal extension works.
or subtract any arguments, but merely changes the semantic interpretation of the verb to
one where the action is undone.

In contrast to the reversive extension, which does not change the valence of the
verbs to which it affixes, the applicative and causative affixes, previously noted for their
cross-familial prevalence, are both examples of the valence increasing type of verbal
extension. This is because they both add additional arguments to the verbs they join.
These valence-increasing affixes can make intransitive verbs transitive and transitive
verbs ditransitive.

II.1.1 The Applicative Suffix

The applicative verbal extension adds an indirect object, often a beneficiary or
instrument. Applied objects are frequently translated into English as prepositional
arguments or ‘with’, ‘for’, or ‘on’. Depending on the language, this affix can make many
verbs into ditransitive constructions and some into tri-transitive constructions (Bresnan et
al. 1990:149). The Shona applicative either appears as –ir or –er, depending on the final
consonant of the verb stem. A Shona applicative construction is shown in (6) below.

(6) a. Benzi ra- ka- teng- a chipo
    fool 3SG(5)- PST- buy- FV gift
    ‘The fool bought a gift.’

    b. Benzi ra- ka- teng- er- a
    fool 3SG(5)- PST- buy- APP- FV
    vasikana chipo
girls  gift.
    ‘The fool bought the girls a gift.’
In (6), the transitive verb *rakatenga* ‘buy’ has the applicative *-er* suffixed to the verb stem *teng* and is thus transformed into a ditransitive construction, now taking the beneficiary *vasikana* ‘girls’ as an additional third argument.

### II.1.2 The Causative Suffix

The causative alters the argument structure somewhat more deeply than the applicative, introducing a semantic ‘causer’ to the action of the verb that replaces the subject and turns the old subject into a causee-object. So the verb in ‘the water pot fell’ can become the single verb form in the ‘the girl caused the water pot to fall’. The Shona causative appears as either *-is* or *-es*, depending on the final consonant of the verb stem. The English example featuring the water pot is demonstrated in Shona in (7).

(7) a. Poto ye-mvura ya-donha a⁸
    Pot POSS-water 3SG fall FV
    ‘The water pot fell.’

b. Musikana a- donha es a poto ye-mvura
   girl 3SG (1) fall CAUS-FV pot POSS-water
   ‘The girl dropped the water pot.’

In (7), the intransitive verb *yadonha* ‘fall’ has the causative *-es* suffixed to the verb stem *donh* and thus becomes a transitive construction, more accurately translated

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8 Without the *ka-* past tense morpheme, verbs with just a subject agreement marker for inflectional content have a past, but most recent interpretation (Fortune 1955:278).
idiomatically\(^9\) as ‘drop,’ now with the additional argument, *musikana* ‘girl’ as the subject. The original subject, *poto yemvura* ‘water pot’, is now the object, a transformation that is made certain by the word order of (7b). Because Shona is an SVO language, the water pot’s move from before the verb to after the verb confirms its change in argument type. For clarity now, as well as later on, (8) provides a more descriptive explanation of word order in Shona.

(8) (Subject) Verb (Indirect Object/Applied Object) (Causee) (Direct Object)

In the case where a verb that is already transitive acquires a causative affix, the process is nearly identical, but with an additional argument. A causer is introduced to the argument structure and that causer is the subject. The old subject, often an agent, becomes a postverbal causee, and the direct object remains the direct object, unaffected by the causativization of the argument structure (except, perhaps, that is is pushed farther away from the verb in the word order). The example in (9) below demonstrates a causativized transitive verbal construction.

(9) a. mai va- ka- bik- a chikafu
    mother 3PL(PST)-cook- FV meal
    ‘The mother cooked a meal.’

    b. mai va- ka- bik- is- a mwana chikafu
    mother 3PL(PST)-cook-CAUS- FV child meal
    ‘The mother made the child cook a meal.’

\(^9\) Some constructions involving verbal extensions have completely compositional meanings. Compositional meanings are predictable. For example, if you affix the causative morpheme to *bik* ‘cook’ the resulting form *bikis* means ‘make cook,’ which could have been anticipated. Some constructions have idiomatic meanings, however. For example, ‘make-fall’ is not exactly the same as ‘drop’.
In (9) the transitive verb *bika* ‘cooked’ has the causative –*is* suffixed to the verb stem *bik* and thus becomes a ditransitive construction, with the additional argument *mwana* ‘child’ as a postverbal object and the causee in the sentence.

II.1.3 Co-Occurrence

In addition to having the applicative and causative morphemes, most Bantu languages permit the co-occurrence of both affixes (as well as others) at once, creating more complex structures. In this account, I often refer to the co-occurrence of verbal extensions as “stacking,” and to stacking potential as “stackability.” Thus the ‘slot’ metaphor, while very helpful for understanding the agglutinative nature of Bantu inflectional affixes, breaks down somewhat when it comes to verbal extensions. The single syntactic “slot” reserved for these extensions can really be thought of as many slots, or, perhaps one slot with recursive potential, where many affixes of the same syntactic category can “stack” on top of one another. This means that the verb in a sentence like ‘the woman is stirring’ can become the single applicativized and causativized verb in ‘the hunters are making the woman stir with a spoon.’ Example (10) below is taken from Larry Hyman’s article “Suffix Ordering in Bantu: A Morphocentric Approach” (2002:250). It contains a co-occurring Causative-Applicative construction in Chichewa, a language of Malawi, Zambia, Mozambique, and Zimbabwe.

(10) alenjē a- ku- tákäs- its- il- a mkāzi mthiko Chichewa
hunters 3PL- PROG- stir- CAUS- AP- FV woman spoon (Hyman 2002:250)
‘the hunters are making the woman stir with a spoon’
In this sentence the verb akutákása has the causative –its and the applicative –il suffix sequentially onto its verb stem tákás and thus acquires two new arguments as well as a reconfigured argument structure. The result is a very complex verbal construction with a new subject and an old-subject-turned-object.

Unlike Chichewa and many of its other Bantu siblings, Shona demonstrates a peculiar restriction on the co-occurrence of some of its verbal extensions, exhibiting an inability to stack the applicative and the causatives in sentences where their co-occurrence would cause the argument count to exceed three. The persnickety nature of causative-applicative stackability in Shona is typologically interesting, but only if the affixes are genuinely productive. In the following section, I will examine the productivity of several verbal extensions, including the causative and the applicative. The stackability and stacking behavior of Shona’s valence-increasing extensions is ultimately the subject of this analysis, and once productivity has been well established, I will discuss Shona’s unusual restriction in much greater detail in section III.

II.2 The Productivity of Verbal Extensions in Shona

Below are the results of a wug test I performed, indicating that the causative, the applicative, the passive, the neuter, and the reversive are all productive in Shona. For the sake of concision, I did not test all 15 verbal extensions detailed in Fortune, but I did make sure my selection included at least one verbal extension of each of the three major types: affixes that add arguments, affixes that take away arguments, and affixes that do neither.
II.2.1 Baking Chocolate-Chip Cookies

To perform this wug test, I created the nonce stem *mung* ‘to bake chocolate-chip cookies’. It is important to note that, although it only takes one argument, the intransitivity of this verb remains highly suspect. While the cookies being baked are implied by the stem alone, just the suggestion of their presence is apparently enough to significantly disrupt the semantic structure of this verb. For the testing of individual affixes this peculiarity is of no consequence, but, later, in its various stacked forms *munga*’s true nature reveals itself. Example (11) is a simple conjugated form of this nonce verb.

(11) a- ka- mung- a
   3SG- PST- bake.chocolate.chip.cookies- FV
   ‘S/he baked chocolate-chip cookies.’

II.2.2 Applicative Productivity

The applicative -ir proves to be productive in (9) below.

(12) mwana a- ka- mung- ir- a mai
    child 3SG (1)- PST- bake.chocolate.chip.cookies- APP- FV mother
    ‘The child baked chocolate-chip cookies for the mother.’

Here, the nonce verb *akamunga* ‘s/he baked chocolate-chip cookies’ has the applicative –ir suffixed to its verb stem *mung* and thus acquires the beneficiary *mai* ‘mother,’ proving that –ir is a productive verbal extension in Shona.

II.2.3 Causative Productivity

The causative –is proves productive in (13) below
(13) mai a- ka- mung- is- a mwana
mother 3SG (1)- PST- bake.chocolate.chip.cookies- CAUS- FV child
‘The mother made the child bake chocolate-chip cookies.’

Here, the nonce verb akamunga ‘s/he baked chocolate-chip cookies’ has the causative -is suffixed to its verb stem mung and thus acquires a new subject, the causer mai ‘mother,’ as well as a new object mwana ‘child,’ proving that -is is a productive verbal extension in Shona.

II.2.4 Passive Productivity

The passive proves productive in (14) below.

(14) a- ka- mung- w- a
3SG (1)- PST- bake.chocolate.chip.cookies- PASS- FV
‘The chocolate-chip cookies were baked’

In example (14), the nonce verb akamunga ‘s/he baked chocolate-chip cookies’ has the passive -w suffixed to its verb stem mung and thus acquires a passive reading where the baking of cookies took place, proving that -w is a productive verbal extension in Shona. It should be noted that Nyazenga’s acceptance of this form was a little unusual because he does not accept other impersonal passives, including passive forms of ‘dance’ and ‘sleep’.

10 My consultant indicated here that the ka- past tense prefix gives this sentence a reading where the cookies were baking for a long time before they were finished.
II.2.5 Neuter Productivity

The neuter\textsuperscript{11} is a verbal extension that gives the verb to which it affixes a reading of ease or do-ability. The neuter proves productive in example (15).

(15) a- ka- mung- ik- a
3SG (I)- PST- bake.chocolate.chip.cookies- NEUT- FV
‘The chocolate-chip cookies were bake-able’

In Example (15), the nonce verb \textit{akamunga} ‘s/he baked chocolate-chip cookies’ has the neuter \textit{-ik} suffixed to its verb stem \textit{mung} and thus acquires an ‘ease’ reading where the implied object of the verb ‘cookies’ becomes the subject and the action of the verb is presumed easy to accomplish, proving that \textit{-ik} is a productive verbal extension in Shona.

II.2.6 Reversive Productivity

The reversive is a verbal extension that indicates an un-doing of the action of the verb it modifies. The Reversive proves productive in example (16).

(16) mwana a- ka- mung- unur- a
child 3SG (I)- PST- bake.chocolate.chip.cookies- REV- FV
‘The child un-baked the cookies.’\textsuperscript{12}

Here, the nonce verb \textit{akamunga} ‘s/he baked chocolate-chip cookies’ has the reversive \textit{-unur} suffixed to its verb stem \textit{mung} and thus acquires a semantically peculiar reading where the implied object of the verb ‘cookies’ is un-baked, proving that \textit{-unur} is a productive verbal extension in Shona.

\textsuperscript{11} The nomenclature for this affix is well-established (Fortune 1955, Dembetembe 1987, Lodhi 2002) and also has nothing to do with gender-marking.

\textsuperscript{12} It should be noted that, while my consultant did accept the form, saying that “it looks right,” he was uncomfortable with the very peculiar semantics of the sentence being formed, because it is, of course, quite impossible to un-bake chocolate-chip cookies.
II. 2. 7 Combination Productivity

Because understanding stackability and acceptable stacking environments is the ultimate goal of this investigation, I attempted to elicit several verbal extension combinations for the nonce verb. However, recall that combination testing exposed *munga*’s mysterious semantics. The stacking results of *munga* were compromised and atypical, which makes them an inadequate base for any useful descriptive generalizations about stacking behavior in Shona. This data alone provides no obvious unified account that would reliably predict what affixes can stack and in what circumstances they can stack. Even so, the wug test should be considered by no means a waste. The individual productivity of these affixes is essential to relevance of this work.

With an aim towards making useful generalizations, the following section of this paper provides a more detailed description of verbal extension stacking. A more in-depth analysis of the wug test combination results will be explored much later, towards the close of this account.
III. Stacking and Stackability of Verbal Extensions in Shona

III.1 What Stacks and What Doesn’t?

In this section I will discuss stacking data and possible generalizations about the grammatical and ungrammatical co-occurrence of valence changing affixes in Shona.

III.1.1 What Stacks

As I have mentioned previously, Shona exhibits a restriction on stacking causatives and applicatives with one another, but it has no trouble with other stacked verbal forms. Examples (17) and (18) below demonstrate two trivial stacking maneuvers in Shona.

(17) mai va- ka- sung- unur- is- a
mother 3PL (I) PST- tie- REV- CAUS- FV
mwana tambo dze- bhutsu
child rope POSS- boots

‘The mother made the child untie the shoelaces.’

In (17) the causative morpheme is- stacks with the reversive morpheme unur- onto the radical sung ‘tie,’ so that the entire construction acquires an additional argument mwana ‘child’ to be the causee and a “undoing” interpretation. This instance of stacking is completely licit and without incident.

(18) Tatenda na- Tendai
Tatenda and- Tendai
va- ka- teng- er- an- a zvipo
3PL (I) PST- buy- APP- REC- FV gifts
‘Tatenda and Tendai bought gifts for each other.’

In (18) the applicative morpheme er- stacks with the reciprocal morpheme an- onto the verb stem teng ‘buy,’ so that the entire construction simultaneously gains and loses an argument, but retains the beneficiary semantics expected from an applicative form. This happens because the applicative adds an argument position for an applied object, in this case a beneficiary, but the reciprocal affix takes away an object position, creating an interpretation of reciprocal action. For this reason, the reciprocal verbal extension may only affix to verbs that have an argument to sacrifice. The examples in (19) demonstrate this limitation.

(19) a. Tatenda na- Tendai
    Tatenda and- Tendai
    va- ka- teng- an- a
    3PL (1)- PST- buy- REC- FV
    ‘Tatenda and Tendai bought each other.’

b. *Tatenda a- ka- tamb- an- a
    Tatenda 3SG (1)- PST- dance- REC- FV
    ‘Tatenda danced himself.’

In (19a) the reciprocal removes the only available argument, the object of purchase, leaving a strange and not altogether felicitous interpretation, though it is nonetheless a grammatical utterance. The sentence in (19b), however, is quite ill-formed and not at all grammatical. The reciprocal affix has no argument to remove and is thus not licensed by the intransitive argument structure of the verb tamba ‘dance’.
III.1.2 What Doesn’t

It is apparent from the data in (17) and (18) that the causative and applicative are stackable with other verbal extensions in Shona. Yet, they are often not stackable with each other. Example (20) demonstrates this restriction.

(20) a. Ta- sung- a mbudzi
    1PL (1)- tie- FV goats
    ‘We tied the goats.’

b. *Ta- sung- is- ir- a
    1PL (1)- tie- CAUS- APP- FV

    vavhimi vasikaná mbudzi
    hunters girls goats

    ‘We made the hunters tie the goats for the girls.’

c. Ta- ka- ita kuti vavhimi
    1PL (1)- PST- make that hunters

    va- sung- ir- e vasikaná mbudzi
    3PL (1)- tie- APP- FV girls goats.

    ‘We made the hunters tie the goats for the girls.’

d. Ti- na- mang- its- ir- a
    1PL (1)- PST- tie- CAUS- APP- FV

    atsikaná alenje mbuzi
    girls hunters goats

    ‘We made the hunters tie the goats for the girls.’

13 While the elicitation is mine, the prompting sentence comes from Jeff Good’s 2005 article “Reconstructing morpheme order in Bantu: The case of causativization and applicativization” (Good 2005:5).
In (20a) and (20b), the verb *tasunga* ‘we tied’ acquires the causative *is-* and the applicative *ir,* yielding the verb form *tasungisira* ‘we made tie for’. However, (20b) is ungrammatical, and (20c) is the correct form, employing two verbs in a strategy not unlike English’s in order to create the intended meaning. The example in (20d) shows that a sentence almost identical to (20b) *is* grammatical in Chichewa. While it is true that the word order differs slightly in (20b) and (20d), it should be noted that during elicitation I tried every possible order of the three objects, *vavhimi* ‘hunters,’ *vasikana* ‘girls,’ and *mbudzi* ‘goats,’ and Nyazenga accepted none of them.

From this data alone, it might appear that Shona’s restriction is templatic. Under this account verbs would have only one “slot” for each verbal extensions that increase valence (the causative and the applicative), and an additional slot for each of the other extensions, as oppose to an explanation where there is one recursive slot for all verb extensions. In this analysis the causative and the applicative would be competing for the same slot. However, this hypothesis is easily disproven. The sentence in (21) below proves that there cannot be only one space for valence-increasing affixes.

(21) Musikana a- donh- es- es- a Tinotenda
girl 3SG (I)- fall- CAUS- CAUS- FV Tinotenda

* poto ye- mvura
  pot POSS- water

‘The girl made Tinotenda drop the water pot.’

In (21) two causatives stack, first turning the root *donh* ‘fall’ into *donhes* ‘drop,’ and then turning *donhes* into *donheses* ‘make drop’. If two causative affixes can co-occur grammatically, then the templatic hypothesis must be false. Furthermore, it turns out that
applicatives and causatives can stack under certain circumstances. The sentence in (22) below also proves that a templatic restriction is not the problem.

(22) a. *Mai va- ka- sung- is- ir- a
     Mother 3PL (1)- PST- tie- CAUS- APP- FV
     Mwana munin’ina tambo dze- bhutsu
     child little.brother rope POSS- boots
       ‘The mother made the child tie the shoelaces for the little brother.’

b. Mai va- ka- sung- is- ir- a
   Mother 3PL (1)- PST- tie- CAUS- APP- FV
   munin’ina tambo dze- bhutsu
   little.brother rope POSS- boots
   ‘The mother had the shoelaces tied for the little brother (by someone).’

Given the example in (20b) it is not surprising at all that (22a) would be ungrammatical, but (21b) is somewhat startling. It would appear that the problem is not the affixes themselves. What (20b) and (22a) demonstrate is not a restriction of verbal extension stackability, but instead a restriction on the number of arguments that a given verb form is able to support. When the child, the actual causee, in (21) is removed, the sentence is perfectly grammatical and retains a causative interpretation.

III.I.3 What’s the Deal?

In this section, I intend to account for the varied stacking data I’ve presented thus far by proving that the following generalization in (23) is true.
(23) **Shona Argument Cap (SAC):** Shona verbs can maintain no more than three DP-arguments. Any construction that exceeds three DP-arguments is ungrammatical.

If SAC is an accurate generalization, I would expect intransitive verbs to allow no more than two additional arguments, transitive verbs to allow no more than one extra argument, and ditransitive verbs to be unable to acquire even one additional argument. I will now provide data that verifies the accuracy of each of these predictions, beginning with the stacked affixation of intransitive verbs.

If the verb is intransitive, the causative and applicative may stack with all of the anticipated arguments present. (26) shows an example of this allowance.

(24) mai a- ka- rar- is- ir- a baba mwana
mother 3SG (1)- PST- sleep- CAUS- APP- FV father child
‘The mother made the child go to sleep on behalf of the father.’

In (24) both the applied object and the causee are present in a grammatical causative-applicative stacked construction. Because the verb was intransitive to begin with, however, the verb form in (24) is still only a three-place predicate after enduring the introduction of two additional arguments. This means that interaction of the applicative and the causative in and of itself is not a problem, but rather causative-applicative stacking on transitive radicals is ungrammatical because these forms exceed the argument limit outlined by SAC in (23).

The sentences in (25) and (26) are more examples of grammatical causative-applicative stacking on intransitive verb roots.
(25) Tinotenda a- ka- donh- es- er- a

Tinotenda 3SG (1)- PST- fall- CAUS- APP- FV

Tatenda poto ye- mvura
Tatenda pot POSS- water

‘Tinotenda dropped the water pot for/on Tatenda.’

(26) Tinotenda a- ka- tamb- is- ir- a Tendai Tatenda

Tinotenda 3SG (1)- PST- dance- CAUS- APP- FV Tendai Tatenda

‘Tinotenda made Tatenda dance for Tendai.’

In both (25) and (26), SAC is upheld when two arguments are added grammatically to a single argument predicate. Neither (25), nor (26) exceed three arguments, and both are completely acceptable. It should also be noted that, although not a causative-applicative construction, the causative-causative form in (21), *donhesesa*, also supports my generalization. Both causatives add an additional causer to the sentence and both of these DPs are licit because the argument count is still only three.

Example (27) shows an overextended intransitive to be ungrammatical as predicted by SAC.

(27) *Tinotenda a- ka- donh- es- es- er- a Tatenda

Tinotenda 3SG (1)- PST- fall- CAUS- CAUS- APP- FV Tatenda

Tendai poto ye- mvura
Tendai pot POSS- water

‘Tinotenda made Tendai drop the water pot for Tatenda.’

In (27) an intransitive radical *donha* ‘fall’ acquires three valence-increasing extensions, as well as their corresponding arguments, two causees and a beneficiary. This brings the argument count of (27) to four, which under the current theory is one too many, making the sentence ungrammatical.
SAC predicts that transitive verbs can have their valence increased by only one place. This is demonstrated in (22a) and (20b), but I will repeat the experiment for clarity and reinforcement in (28).

(28) a. *mai va- ka- bik- is- ir- a mwana
mother 3PL (I)- PST- cook- CAUS- APP- FV child

mukoma chikafu14
brother meal

‘The mother made the brother cook the meal for the child.’

b. mai va- ka- bik- is- ir- a mwana chikafu
mother 3PL (I)- PST- cook- CAUS- APP- FV child meal

‘The mother had a meal cooked for the child (by someone).’

In (28a) the causative and the applicative affix to the transitive verb *bika ‘cook’ and it acquires both semantically anticipated arguments, a beneficiary *mwana ‘child’ and a causee *mukoma ‘brother’. In keeping with SAC, however, the construction is ungrammatical. While it would not be a bad hypothesis that the new causative-applicative verb form *bikisira ‘make-cook-for’ is the problem in and of itself, I have shown now through several examples, including the one in (28b), that this cannot be the case. It has been suggested in the literature that these valence-increasing verbal extensions are not stackable (Bliss 2009), but this example shows clearly that the issue of stackability per se is no longer at stake. This is because it cannot be contested. The stacking potential of different verbal extensions is an empirical question and this data suggests that affixation itself is in theory infinitely recursive. The causative and applicative are both clearly stackable, and furthermore stackable with one another. I’ve shown this on intransitive

14 As for similar sentences, I elicited every possible order of the postverbal objects and no configuration proved acceptable.
verbs and on transitive verbs where one of the anticipated arguments is omitted. In (28b) *bikisira* is completely licit, meaning that the construction itself must be well formed. The difference is in the environment. While the verb in (28a) occurs ungrammatically in a four argument environment, the very same verb is completely grammatical in the three argument environment of the sentence in (28b).

In this description I have only presented a well-formed causative-causative construction, but are all causative-causatives model citizens? SAC predicts that causative-causative stacking on transitive verbs with all the anticipated arguments would not be licit. The validity of SAC holds, and it turns out that causative-causative stacked verb forms are capable of behaving just as badly as their causative-applicative cousins. (29) below demonstrates an ungrammatical causative-causative construction.

(29) a. Tinotenda a- ka- teng- es- a Tatenda chipo
    Tinotenda 3SG (!)-PST- buy- CAUS- FV Tatenda gift
    ‘Tinotenda sold Tatenda a gift.’

b. *Tinotenda a- ka- teng- es- es- a Tatenda
   Tinotenda 3SG (!)-PST- buy- CAUS- CAUS- FV Tatenda

   Tendai chipo
   Tendai gift

   ‘Tinotenda made Tatenda sell Tendai a gift.’

In (29a) the causative morpheme affixes to the radical *teng* ‘buy’ giving the whole construction the idiomatic meaning ‘sell’. It is important to understand that the verb *tenga* ‘buy’ is transitive unlike the English *buy*, which is ditransitive. Thus the affixation in (29a) turns a two place predicate into a three place predicate grammatically and without incident. In (29b), however, two causative morphemes affix to the stem *teng* giving the
whole construction the somewhat idiomatic, somewhat compositional meaning ‘make sell’. The affixation in (29b) turns a two place predicate in a grammatical construction into a four place predicate in an ungrammatical construction. It bears acknowledgment that the productivity of both causative affixes in (28b) is somewhat suspect. Tenges may be a lexicalized root, though it is hard to definitively judge. Regardless of whether the construction in (29b) is a truly causative-causative manifestation, the data is nonetheless supportive of SAC.

The current generalization predicts that ditransitive verbs would have no valence-increasing potential. The examples in (30) and (31) shows ditransitives acquiring fourth arguments unsuccessfully as hypothesized.

(30) *Tinotenda a- ka- teng- es er- a musikana
    Tinotenda 3PL PST buy CAUS APP FV girl
    benzi chipo
    fool gift

   ‘Tinotenda sold the fool a gift for the girl.’

The construction in (30) is actually very similar to (29b). Tenges may or may not be the radical of a ditransitive verb, but there are very few unambiguous ditransitives in Shona. Many of the radicals of three place predicates, like tumira ‘send’ for instance, appear to include either a causative or applicative verbal extension that may or may not be lexicalized. The sentences in (31) exhibits another ambiguous example of a ditransitive Shona verb.

(31) a. *Tinotenda a- ka- pis- a Tatenda Tendai chipo
    Tinotenda 3PL PST bum FV Tatenda Tendai gift
    ‘Tinotenda bummed Tatenda a gift off Tendai.’
b. *Tinotenda *a- ka- ip- is- a Tatenda Tendai
   Tinotenda 3PL (I) - PST - give - CAUS - FV Tatenda Tendai
   chipo
gift

   ‘Tinotenda made Tendai give Tatenda a gift.’

In (30a) the radical pisa 'bum,' obviously derived from the causativized form of ipa 'give' which is ip-is-a 'make-give,' fails to support all four anticipated arguments. In (31b), I attempted to elicit a proper causativized form of ip, but failed at the morphological level. Nyazenga vehemently rejected the form, insisting that it was not a Shona word at all, which is why I have marked both the sentence as a whole and the ill-formed word itself. While the data in (30) and (31) are imperfect, still, the current generalization predicts the grammaticality of the sentences, save perhaps for (31b) which contains an accidentally nonexistent lexical item. The argument count exceeds three in each of the examples, and the constructions are impermissible.

There is another situation in which SAC proves quite reliable. I demonstrated earlier in (22b) and (28b) that arguments may sometimes be omitted in order to ease the burden of stacked valence-increasing affixes on a verb. These examples are replicated below for convenience.

(22) b. Mai va- ka- sung- is- ir- a
   Mother 3PL (I) - PST - tie - CAUS - APP - FV
   munin’ina tambo dze- bhutsu
   little.brother rope POSS - boots

   ‘The mother had the shoelaces tied for the little brother (by someone).’
These examples show that when there are too many arguments anticipated by the verb and its affixed verbal extensions, omitting some to get the argument count back down to three solves the problem entirely. This supports SAC because although both (22b) and (28b) are causative-applicative stacked transitives, the omission keeps their count within the current generalization of only three DP-arguments. In (22) and (28) the arguments omitted are the causees. This appears to be the preferred strategy of deletion, and I will discuss the topic further in section IV.

For intransitives, transitives, ditransitives, and omissions I have shown that SAC is accurately descriptive of the data. This three-argument-limit generalization lends itself to an analysis of Shona involving case-assignment and argument structure. The space for verbal extensions itself appears to offer theoretically unhindered recursion. It is the number of corresponding arguments that poses a problem to this infinite productivity. In section IV, I will argue that these affixes assign theta-role, but not case, and that there are only three available case assigners in Shona, causing the three-argument restriction I have outlined with SAC.
IV. Shona Argument Structure

Thus far, this account has been an entirely descriptive endeavor. I have proposed, and supported the validity of an important generalization that there is a hard three DP-argument cap in Shona. This section will be analytical in nature and I will focus on possible structural causes for SAC. A brief overview and discussion of the data I have already presented will show that an analysis involving case-assignment is not an arbitrary theoretical decision, but in fact, the most compelling direction in which to move this account. Here are the most obviously appealing theories that the data I’ve already provided rule out:

1. A templatic stacking limitation that prohibits specific verbal extension co-occurrence.

I a model like this, there would either be an individual “slot” for each verbal extension or each kind of verbal extension. If there were slots for different kinds of extensions, all of the valence-increasing affixes (the causative and applicative) would be competing for the same position, and the valence decreasing affixes (the passive, neuter, and reciprocal) would be competing for another. If there were one slot for each verbal extension individually, many stacked forms would be possible, but the number of any given affix would be limited to one. I have proven both of these templatic accounts empirically false. The sentence in (28b) has a grammatical verb form with both the applicative and causative stacked on the root. This means that applicatives and causatives do not compete for a single slot, and that a templatic account where categories of verbal extensions share
a single position in unsustainable. A template where each verbal extension has its own 
position is no better. The example in (21), reproduced below, demonstrates this fact.

(21) Musikana a- donh- es- es- a Tinotenda
   girl 3SG (I)- fall- CAUS- CAUS- FV Tinotenda

   poto ye- mvura
   pot POSS- water

   ‘The girl made Tinotenda drop the water pot.’

If multiple causatives can ever co-occur they must not be competing for the same slot.
Thus a template is not a feasible explanation of the data in this description. The verbal 
extension affix position must be one with recursive potential.

2. Bad morphology or ill-formed verbal constructions

In a bad morphology analysis, the affix stacking would cause the verb forms themselves 
to be ill-formed. This very closely related to related to the previous theory and it is very 
easily disproven. The two sentences in (28), replicated below, show that bad morphology 
cannot explain the ungrammaticality of a stacked verb form.

(28) a. *mai va- ka- bik- is- ir- a mwana
   mother 3PL (I)- PST- cook- CAUS- APP- FV child

   mukoma chikafu
   brother meal

   ‘The mother made the brother cook the meal for the child.’

b. mai va- ka- bik- is- ir- a mwana chikafu
   mother 3PL (I)- PST- cook- CAUS- APP- FV child meal

   ‘The mother had a meal cooked for the child (by someone).’
The verb *akabikasira* appears in a grammatical environment in (28a) and in an
ungrammatical one in (28b), proving that its morphological formation cannot be the
culprit.

The validity of SAC and the fact that the problems with co-occurrence are not
templatic or morphological make issues involving case assignment the most likely cause
of ungrammaticality in the stacked forms I’ve presented. For this reason, the following
section addresses case-assignment in Shona.

**IV.1 Case Assignment in Shona**

In syntax, there are two major forms of case that are often discussed:
morphological and abstract (Poole 2011:99). Morphological case is the overt marking of
DPs to designate type of argument (e.g. *me* and *I* in English). Abstract case is a
theoretical account that describes the distribution and organization of DPs in a
construction (Bliss 2009:103). It is a common conceit that without abstract case a DP
cannot be licensed, and the presence of an unlicensed DP will cause its host clause to be
ungrammatical (Poole 2011:99). Within abstract case there are two addition major kinds
of case: structural and non-structural. Non-structural case includes lexical case and
inherent case. (Woolford 2007:1). Lexical case is assigned by certain lexical items, like
verbs and prepositions, and inherent case is assigned in conjunction with encoded
semantic designations called theta-roles (Poole 2011:91, Woolford 2007:2). Structural
case, however, is assigned by the heads of functional projections in the phrase structure:
inflectional heads usually assign nominative case (for subjects), and verb heads often
assign accusative case (for direct objects), for instance (Woolford 2007:1).
These data have shown fourth DP-arguments rendering sentences ungrammatical. Because of the widely accepted theory of case that I have outlined above, I am making the practical assumption that these arguments are not licensed. There are two ways in which they might fail to be licensed. A rogue DP might not have a theta-role assignment, or it might not have case-assignment.

Given that these verbal extensions appear to alter the semantic structures of the verbs to which they affix, even when their anticipated correlative arguments are not present, I’ll assume that the problem is not in lack of theta-role assignment. This means that the unlicensed DPs are most likely case-less and that the problem in these ungrammatical sentences featuring stacked valence-increasing extensions has to do with case assignment and case-assigners. More specifically, I hypothesize the following in (32).

(32) **Three Structural Case Assigners Hypothesis (TSCAH):** I propose that there are three structural case-assigners available to the DP-arguments of Shona verbs. Case-assigner one (CA1) traditionally assigns case to the subject, case-assigners two and three (CA2 and CA3) assign case to the verbal objects. In this theory TSCAH would be the structural cause of SAC. There can’t be more DP-arguments than there are case-assigners, because DPs without case are not licensed and will render the sentence ungrammatical.

Based on the data I’ve provided thus far, this theory seems straightforward enough. What is there left to account for? A DP will get case from one of the case-assigners if it is available and one will be as long as there aren’t too many DP-arguments.
More data, however, reveals that the number of DP-arguments is not the only factor that determines prosperous case assignment. In the subsection entitled ‘Not All Arguments Are Created Equal,’ I will demonstrate that Shona’s treatment of its postverbal objects is very asymmetrical. Essentially CA2 and CA3 have preferences, and not all manner of DP-arguments are equally eligible for case from all available case-assigners.

There are two major analytical possibilities for handling case assignment and asymmetricality that I intend to refute in favor of TSCAH. These theories are as follows:

1. Causees and applied objects necessarily compete for case from the same case-assigner, whatever it may be.

This is essentially the explanation that Heather Bliss asserts in her 2009 article “Comparing APPLs and Oranges: The Syntax of Shona Applicatives.” I will discuss this model of case assignment in the subsection ‘Bliss’s Theory,’ and I will ultimately argue against it.

2. Related to the theory #1, is the potential argument that the restriction only applies to additional arguments.

This is attractive, but ultimately also unsatisfying. While it is true that the maximum number of additional arguments is, for all intense and purposes, two, it is a more honest characterization to describe a global argument limit. Furthermore, as I will show later on in this section, taking away an argument can sometimes make room for another, creating a possibility for three additional arguments. That said, argument type is still not irrelevant. Different kinds of objects are treated, as previous mentioned, very asymmetrically.
In the following sections I will argue against these two analyses, present the asymmetrical data, and finally propose a more complete version of TSCAH as an analysis of my own. Because she is one of the only scholars to offer a case-based account of verbal extension stacking in Shona, and because I owe much of the basis for my own theory to her analysis, I will turn now to a detailed discussion of Bliss’s argument (2009).

IV.1.1 Bliss’s Theory (2009)

As I stated before in the summary of theories that conflict with TSCAH, Bliss argues for a model of case-assignment where applied objects and causees necessarily compete for case from the same licensor. As a brief aside, it should be recognized that although I will ultimately argue against her account, both empirically and theoretically, the dialect of Shona Bliss describes might differ from Manyika. Furthermore, Bliss and I share many of the same observations and concerns, and the expanded version of TSCAH will resemble Bliss’s analysis in several key ways.

The major limitation of Bliss’s account is that she does not examine intransitive verbs. While she acknowledges this lack early on in the article, her analysis assumes that intransitives with stacked causatives and applicatives would be ungrammatical. She writes that, “when the applicative and the causative co-occur, the causee is necessarily omitted, unless the applied object is locative” (Bliss 2009:107). While the exception she states is of interest, I will put it aside for the time being and discuss it later on in this section. For now though, I am interested in her former claim, which proves to be empirically false on two counts.
The first is that applicatives and causatives can occasionally co-occur grammatically when the applied object, rather than the causee is omitted. The sentence in (33) below demonstrates this phenomenon.

(33) Tinotenda a- ka- tamb- is- ir- a Tendai
    Tinotenda 3SG (I)- PST- dance- CAUS- APP- FV Tendai
    ‘Tinotenda made Tendai dance for someone.’
    Cannot mean: ‘Tinotenda made someone dance for Tendai.’

In this sentence, the ‘someone’ who is the beneficiary of Tendai’s dancing is implied by the applicative affix, but not overtly identified. Nyazenga judged this interpretation to be the only felicitous one, rejecting ‘Tinotenda made someone dance for Tendai.’ Shona, like all Bantu languages, cannot omit the causee in a causativized intransitive verb (Alsina 1992:519). Alex Alsina explains in his 1992 article “On the Argument Structure of Causatives,” that this is because in Bantu only causees that could be expressed obliquely (using a prepositional construction verb-externally) can be omitted (1992:519). The sentence in (34) below is a good example of an omitted causee that could have been expressed obliquely.

(34) Mai va- ka- sung- is- a
    Mother 3PL (I)- PST- tie- CAUS- FV
    tambo dze- bhutsu
    rope POSS- boots
    ‘The mother had the shoelaces tied (by someone).’

Here, it is grammatical to omit the causee because its oblique expression would have been possible (e.g. ‘The mother had the shoelaces tied by the child’). In Bantu languages where object causees (as oppose to oblique causees) are the only option for causativized
verbs, the causee can never be omitted. Because the causee of causativized intransitives must be present, this imperative forces a causee reading of the only eligible DP Tendai in (34). What remains unclear, however, is why eliding the applied object is licit in this construction. (34) below, when compared with (34), clarifies the nature this conundrum.

(35) *Tinotenda a- ka- donh- es- er- a poto ye- mvura
   Tinotenda 3SG (1)- PST- fall- CAUS- APP- FV pot POSS- water
   ‘Tinotenda dropped the water pot for someone/some purpose.’

In (35), like in (33), the causative and applicative affix to an intransitive radical, giving the new verbal construction two additional argument places. Both constructions have no alternative configurations where their causees could be expressed obliquely, and thus both constructions obligatorily include the causative object. It is also the case that in each example the applied object has been omitted, but with differing grammaticality outcomes. (35) is ungrammatical, whereas (33) is just fine. So while it makes sense that a single argument would necessitate a causee reading, it is unclear why in one sentence the omission of the applied object would be licit, while in another it was unacceptable. I will explore possible explanations for this asymmetry later on when I describe and discuss other, equally puzzling, asymmetricalities.

Regardless of this perplexing puzzle, it remains true that this data contradicts Bliss’s claim that only the causee can be elided.

The second count on which Bliss’s generalization is false is, by now, very familiar to this report. If the verb is intransitive, the causative and applicative may stack with all of the anticipated arguments present. This somewhat revelatory phenomenon is
demonstrated several times over in (24), (25), and (26), one of which is repeated below for clarity.

(26) Tinotenda a- ka- tamb- is- ir- a Tendai Tatenda
Tinotenda 3SG (1)- PST- dance- CAUS- APP- FV Tendai Tatenda
‘Tinotenda made Tatenda dance for Tendai.’

Bliss’s proposal does not account for this stacked intransitive data, because in her analysis there are only two places from which verbs in Shona receive structural case, one for subjects and one for direct objects. She uses the sentence in (36a) and the phrase structure tree in (36b) to demonstrate how this works for transitive constructions.

(36) a. Shingi a- ka- bik- a manhanga
Shingi 3SG (1)- PST- cook- FV pumpkins
‘Shingi cooked pumpkins.’

b. (Bliss 2009:105)

This analysis is pretty noncontroversial. T/TP is typically thought to assign nominative case and here it does to the DP Shingi which moves from the spec of vP to the spec of TP and is the subject of the sentence. This movement makes room for the direct object DP manhanga ‘pumpkins’ to raise from its VP internal position to the spec of vP where it checks for and receives accusative case. Thus, Bliss has set up an account of Shona with
only two structural case-assigners: one for a subject and one for an object. This could be problematic for any ditransitive construction, causativized, applicativized, or natural, but Bliss has a solution which is shown in (37) below.

(37) a. Nda-ka-bik-ir a Shingi keke (Bliss 2009:101)
   1SG(1)-PST-cook-APP-FV Shingi cake
   ‘I baked a cake for Shingi.’

b. (Bliss 2009:105)

The tree in (37b) is not complete, as it does not include the TP or nominative case assignment. Shona is a pro-drop language so the agreement morpheme *nda* implies the presence of a first person singular subject. According to Bliss, the applied object moves up for accusative case and the direct object stays in situ receiving inherent case as a “last resort” (Bliss 2009:105). This is also her proposed account for all other ditransitive constructions: the second objects gets accusative case and the direct object stays in situ for inherent case.

When causees are introduced into this equation there becomes a problem. Who gets the highly sought after spec vP position and receives accusative case, the applied object, or the causee? The tree in (38) shows Bliss’s answer.
In (38) the cause moves up to spec vP for accusative case, leaving the applied object caseless. This, Bliss argues, is why the causee must be omitted when it co-occurs with an applied object. However, Bliss conceded that there is an exception to this generalization. In the case of applied locatives, causees need not sacrifice their case assignment. This is because locative DPs have “preprefixes” that, similar to prepositions, assign lexical case and license their presence (Bliss 2009: 106). Thus applied locatives do not need to check for accusative case. In these constructions the causee is free to move up for case and all four DPs are licit. However, I would not consider this a violation of SAC. This is because in my generalization, the arguments limited in number by SAC are all DPs, and while the applicative morpheme affixed to the verb stem may assign a theta-role to the locative, I do not think it’s accurate to characterize an applied locative object as a DP. Because there is a pronounced lexical item, the preprefix, licensing the applied locatives in a strategy observed to be very reminiscent of case-assignment within prepositional phrases, I think it is better to analyze them as PP-arguments of the verb.

Overall, there are several problems with Bliss’s argument. Setting aside the fact that I’ve shown empirical evidence in (33) that causees aren’t necessarily the arguments
that have to be omitted in causative-applicative constructions and furthermore that
causees and applied objects can co-occur on intransitive verb stems, her theory doesn’t
actually account for the ungrammaticality of most sentences that attempt to omit the
applied object rather than the causee. It follows from her analysis that something would
have to be omitted, but why is it so disproportionately weighted against causativized
objects? While (33), repeated below as a reminder, is an interesting example, it is an
outlier.

(33) Tinotenda a- ka- tamb- is- ir- a Tendai
  Tinotenda 3SG PST- dance CAUS APP FV Tendai
  Tinotenda made Tendai dance for someone

Theoretically, either of the additional arguments should be able to sacrifice their position
for the other, but in reality that does not prove to be the case. Causees appear to
mystifyingly disfavored.

In addition to glossing over this asymmetricality (which I will discuss in more
detail in the next subsection), Bliss’s analysis does not solidify the conditions under
which Shona DPs qualify for inherent case. If, as Bliss writes, the direct object can get
case “by virtue of its theta-position” as “a last resort” (2009:105), why can’t the applied
object do the same when it is pushed out spec of vP by a causee? In fact, by Ellen
Woolford’s account (2007), the applied object is perhaps an even better candidate for
inherent case than the stranded DP in Bliss’s example in (37b). This is because, according
to Woolford, there are only two inherent cases, dative and ergative. Dative is most
typically assigned to goals and experiencers and keke ‘cake’ is neither in (37a).
The recurring problem here is that Bliss identifies only one structural source of case for objects in Shona. In her analysis even direct objects compete with applied objects for case. It’s just not a problem because direct objects also happen to have an alternative strategy in emergencies. By proposing TSCAH, I intend to argue that there are two structural case assigners for objects, one that usually assigns case to the direct object and another for applied objects, indirect objects, or causees. For intransitive radicals with stacked causative-applicative affixation, causees can receive case from the available case-assigner that usually licenses the direct object. This analysis is more consistent because direct objects always receive case with the same strategy.

In many important ways my proposal is not too dissimilar from Bliss’s. In each account, problems arise clearly because causees and applied objects do, at times, compete for case. Locatives, for example, are analyzed identically in both the one object case assigner theory (hers) and the two object case-assigner theory (mine). Applied locatives never compete for case with verbal arguments, because they are licensed by preprefixes. While I have shown that a dual case assigning system has several advantages, it does not solve every puzzle these data present.

Both Bliss’s analysis and mine hinge on very similar observations. We see asymmetry in the way different Shona objects behave and are interested in their origin. So far my theory, in its simplest under-specified form, solves one major problem. A three case-assigner model predicts and explains the existence of SAC, which I have already proven robust, in a way that Bliss’s analysis simply does not. But my theory also clearly needs more beyond the addition of another structural case assigner. Neither Bliss, nor I,
have yet explained why causees and applied objects are not on equal footing when it comes to the competition that both of us have observed taking place. The following subsection outlines all of the relevant asymmetries I have discovered. Later I will argue that there is a discernible pattern of discrimination having to do primarily with theta-role and locality rather than the “type” of object (indirect, direct, applied, or causativized).

IV.1.1 Not All Arguments Are Created Equal

Thus far, I have made a generalization, SAC, and proposed a theoretical solution, TSCAH. Although TSCAH is still only vaguely defined, I have supported its utility in the previous section by refuting Bliss’s proposal that causees and applied objects necessarily compete for case and thus demonstrating the necessity of three case-assigners.

I have proposed that there are only two case assigners available to postverbal objects. But even there I’ve gotten a little ahead of myself. What about subjects? They too, of course, are verbal arguments. Can they sacrifice their case for a third object and be omitted? I elicited the sentence in (39) in order to shed light on this question.

(39) *a- ka- sung- unur- is- ir- a mwana mukomo
    3SG (1)- PST- tie- REV- CAUS- APP- FV child brother

    tambo dze- bhutsu
    rope POSS- boots
    ‘She/he made the brother untie the shoelaces for the child.’

In (39) the case-assigner that usually licenses the subject fails to be generous to the caseless causee. Although it’s important to establish, this fact is not revelatory. Case, in this circumstance, is probably not reallocated because little pro is thought to require case even though it is not pronounced (Poole 2011).
This test was unfortunately inconclusive. For all of the data present in this report, however, the case-assignment from CAI is un-severable from the subject, whether pronounced or not. This means that within the present analysis, the three-argument cap is essentially equivalent to a two-object cap.

Among objects, some DPs appear to be, as Bliss (2009) and I have both noted, at a significant disadvantage for acquiring structural case-assignment. Causees are the major example of this phenomenon. For transitive verbs that are of causative-applicative stacked constructions, omitting the causee is the only deletion option for grammaticality. (40) demonstrates this constraint.

(40) a. *mai va- ka- bik- is- ir- a mwana
    mother 3PL(I)- PST- cook- CAUS- APP- FV child

    mukomo chikafu
    brother meal

    ‘The mother made the brother cook a meal for the child.’

b. *mai va- ka- bik- is- ir- a mwana
    mother 3PL(I)- PST- cook- CAUS- APP- FV child

    mukomo
    brother

    ‘The mother made the brother cook for the child.’
c. mai va- ka- bik- is- ir- a
mother 3PL (1)- PST- cook- CAUS- APP- FV child

mukomo
brother

Cannot mean: ‘The mother made the brother cook a meal (for someone).’
Can only mean: ‘The mother had a meal cooked for the brother (by someone).’

d. mai va- ka- bik- is- ir- a mwana
mother 3PL (1)- PST- cook- CAUS- APP- FV child

chikafu
meal

‘The mother had a meal cooked for the child (by someone).’

In (40a) I’ve demonstrated a familiar story. There is one object too many, meaning there are three postverbal arguments and four arguments total which violates SAC and is ungrammatical. The sentence in (40c) shows that omitting the applied object does not make room for the causee to get case, as we might expect from the current generalization and working theory. (40b) is also very peculiar. Taking away the direct object in this construction does not allow the causee to steal its case either, which is surprising because my theory assumes that for causative-applicative stacked intransitives this is precisely the process taking place; the causee gets case from the case-assigner that would have given the direct object case.

It is impossible to draw a conclusion about asymmetry in Shona from these data alone. The examples here are tricky, they are convoluted, and they are not definitive. There are two potential sources for ungrammaticality, and isolating the problem is key to understanding the nature of these asymmetries. Either omitting the applied objects and

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direct objects did not successfully unencumber their case-assigners so that the causee
could receive case, or omitting applied objects and direct objects is always
ungrammatical for an unrelated reason. First I will determine whether or not omitting the
direct object is ever acceptable. (41) shows that it is.

(41) mai va- ka- bik- a
    mother 3PL (1)- PST- cook- FV
   ‘The mother cooked.’

From the example in (41), it is clear that omitting a direct object is licit and that alone
cannot be the violation rendering (40b) ungrammatical. This means that direct objects can
be omitted, but that their case-assigner is not available to causees.

Now I will determine whether or not applied objects can grammatically be
omitted. The examples in (42) below indicate that they cannot.

(42) a. *mai va- ka- bik- ir- a chikafu
    mother 3PL (1)- PST- cook- APP- FV meal
   ‘The mother cooked a meal (for someone).’

b. *mai va- ka- bik- ir- a
    mother 3PL (1)- PST- cook- APP- FV
   ‘The mother cooked (for someone).’

c. *Tinotenda a- ka- teng- er- a chipo
    Tinotenda 3SG (1)- PST- buy- APP- FV chipo
   ‘Tinotenda bought a gift (for someone).’

Thus, within the original asymmetry there arise several more. Direct objects and causees
form one category in that they can both be grammatically deleted, while applied objects
cannot. There is another system of division, however, because while the omission of
causees allows for case-assignment to another postverbal object, the omission of direct
objects does not. In addition to the two typologies I’ve just outlined, these data are important for one more reason. Applied objects cannot be omitted in any environment, regardless of whether or not the direct object is present. The omission of an applied object can never make room for a direct object to receive case, and the omission of a direct object can never make room for an applied object to receive case. These two kinds of objects (applied and direct) do not interact within the system at all. Applied objects and direct objects are never in competition for the same case-assigner’s attention. This proves that CA2 and CA3 are not anonymous theoretical entities that take turns assigning case arbitrarily to objects in need. Until now, I have remained silent as to the identities and roles of CA2 and CA3, because I wanted to show that their individuality is empirical. I have not presented them as separate in service of neatening my theory. Rather my theory is neatened by the natural cleaving of their functions. Although nomenclature is arbitrary, I propose that the case-assigner for direct objects is CA2, and that the case-assigner for applied objects is CA3.

Now that I have named and distinguished between CA2 and CA3, I will return to discussing the asymmetricality of omission. The high rate of discriminatory case assignment against causees and in favor of applied objects is the most salient inequality that emerges in this project of categorization. Causees are the only objects that do not hog case in omission, and it appears that they do not hog it, because in many circumstances they were never able to receive it in the first place. As the objects that consistently fail to earn case-assignment, they are the logical target of omission. Causees are clearly less
eligible, by some measure, for case than the other objects with which they compete. I will argue in a later section that this eligibility is determined by locality and theta-role.

There is one more major puzzle regarding the omission of applied objects. Recall that in (33), repeated below, an applied object was omitted grammatically.

(33) Tinotenda akatambisira Tendai
Tinotenda 3SG (1)- PST- dance- CAUS- APP- FV Tendai
‘Tinotenda made Tendai dance for someone.’

Previously, I entertained the possibility that this omission was authorized by a separate constraint that requires all causees of intransitives to be present. This, however, still wouldn’t explain why the applied object was omitted. I have provided compelling evidence that there are two case-assigners available to Shona objects, so why exactly the causee cannot be obligatorily present, accompanied by an equally obligatorily present applied object, remains enigmatic. The verb tamba ‘dance’ is intransitive, so the number of DP-arguments in such a construction would not violate SAC by exceeding the limit. I assert that given the almost ubiquitous disallowance of applied object omission, the most logical explanation for an applied object being omitted is that it somehow failed to receive case from CA3. Assuming this assertion is fact, it follows that the sentence of (33) is a rare example of a causee successfully competing for case with an applied object.

I have shown that applied objects and causees can grammatically co-occur, and because applied objects exclusively receive case from CA3, it cannot also be true that causees exclusively receive case from CA3.

Yet another asymmetricality rears its head. Not all causees are the same, so what factors differentiate them? An easy guess would be that the causees of intransitives are
somehow more elite than the causees of transitive constructions. However, the data that appeared in (35), reprinted here for convenience, frustrates this explanation.

(35) *Tinotenda a- ka- donh- es- er- a poto ye- mvura
    Tinotenda 3SG (1) PST fall CAUS APP FV pot POSS water
    ‘Tinotenda dropped the water pot for someone/some purpose.’

The verb donha ‘fall’ is just as intransitive as tamba ‘dance,’ and yet, because the omission is ungrammatical, it must be the case that the causee of donha receives case from CA2 and thus does not compete for case-assignment with the applied object. If, like I suggested above, applied objects can only be omitted when they would have failed to receive case from CA3, we can assume that when a causee is present, but an applied object is not, like in (33), it is because that causee was somehow more eligible for case than the potential applied object. This means that the causee poto yemvura ‘water pot’ of donha ‘fall’ is not eligible for case from CA3 like Tendai in (33) is. If the causee of donha ‘fall’ does not receive case from CA3, I have proved, assuming the legitimacy of TSCAH, that its case-assigner is CA2.

The examples in (35) and (33) are very structurally similar. They both feature intransitive verbs with stacked causative-applicative morphology and an omitted applied object. Therefore, the only factor left to analyze is the divergence between the verbs themselves. According to this line of reasoning, the difference between the causee of tamba ‘dance’ and the causee of donha ‘fall’ is likely attributable to a difference between tamba and donha.

The most salient difference between these two intransitive verbs, as they appear here, is their semantic structure. Poto yemvura ‘water pot’ has an interpretation that is
more like a direct object than an agent-causee. Although the potential bias of English translation warrants concern in this circumstance, I have shown that the causee of *donha* ‘fall’ is licensed by CA2, which primarily assigns case to direct objects. In the following section, I argue that this is not a coincidence, that CA2 and CA3 prefer to assign case to objects with specific theta-roles, and that the difference in semantic structure between *tamba* ‘dance’ and *donha* ‘fall’ fully accounts for their dissimilar experience of case-assignment.

Before moving on, however, I will provide a comprehensive list of the asymmetrical phenomenon explored and described in this section.

1. Perhaps obviously, neither CA2, nor CA3, are available to all objects. Their preferences appear to be the driving force behind many of the other asymmetricalities observed in this overview.

2. Some objects may only be omitted if they have not received case (applied objects), while others may be omitted at any time (direct objects, causees, and subjects).

3. Related to the number two above, some objects take their case assignment with them when they undergo deletion sentence (direct objects, applied objects), but some objects’ departures (causees) unburden their case-assigners and free up case for other unlicensed arguments. The data on omission that I’ve presented thus far hasn’t exactly painted a picture where causees have case and generously give it up. Rather, it appears more that causees never get case and are thus targeted for omission in a finding-the-weakest-link model of elimination. While it is probably the case that many causees are omitted in this exact fashion, I maintain that a description of causees as able to sacrifice
case is an accurate one. The sentence in (43) and its two viable interpretations
demonstrate the giving-spirit of causees’ on their best behavior.

(43) Tinotenda a- ka- teng- es- es- a Tatenda chipo
     Tinotenda 3SG PST buy CAUS CAUS FV Tatenda gift
     ‘Tinotenda had a gift sold to Tatenda (by someone).’
     ‘Tinotenda had Tatenda sell a gift (to someone).’

The example in (43) is an interesting example of an idiomatic meaning. Because
the derivation comes from a causativized transitive, the direct object of the original
radical *tenga* ‘buy’ remains the direct object. One of the causees here becomes a
benefactor, making it as eligible for case from CA3 as an applied object. Because there
are two causatives in (43), however, there are also two interpretations. In the first
meaning, the causee-seller gives up its case-assignment from CA3 and is omitted on
behalf the other causee’s licensing. In the second, the causee-benefactor returns the favor,
and the two causees are thus completely capable of alternating in symmetrical harmony.

4. Causees are disadvantaged in a system of case-assignment weighted against
them. They are disproportionately infrequent recipients of case, both from CA2 and CA3.

5. There are two kinds of causees. The exhibit separate behaviors and are
licensed differently from each other, which brings this recap to its final asymmetricality.

6. The two species of causee represent two species of verbs that have distinct
stacking outcomes and case-assignment needs.
IV.2. Theta-Roles and Unaccusativity in Shona

IV.2.1 Unaccusativity Re-accused?

It is generally accepted that there are two types of intransitive verb. The distinction is both semantically and syntactically informed and has to do with differing strategies of case-assignment for the verbs' single-argument structures. The two kinds are the unergative and the unaccusative. The unergative verb has, as Levin and Hovav (1995) describe, "an external argument but no internal argument" (Levin & Hovav 1995:3). The tree in (44) provides a visual realization of this structure.

(44)

Tamba 'dance' would be considered an unergative verb because it takes an agent as its sole argument. I follow Kratzer (1996) and assume that the agent originates in spec of little v, and for case assignment, I assume that the agent moves upwards to check for nominative case from the inflectional/tense head in its spec. I'll explain the presence of the second lower vP in my summary of unaccusative verbs.
Unaccusative verbs, perhaps unsurprisingly, have an opposite structure with "a direct internal argument but no external argument" (Levin & Horvay 1995:3). (45) demonstrates this alternative intransitive configuration.

(45)

\[ \text{Donha 'fall' would be considered an unaccusative because it assigns a theta-role typical of a direct object (a patient, or perhaps a theme) in an accusative transitive construction. Unaccusatives notably have a peculiar mode of case- assignment, in that they cannot take an accusative argument (Levin & Horvay 1995:3). Although an unaccusative's sole argument has a theta-role much like a direct object's, these verbs are considered unaccusative because their ability to assign accusative case is nonexistent.}

I assume that the lower little \( v \) typically assigns accusative case and that the higher one houses the agent before it moves up for nominative case-checking. The phrase structure in (45) represents a standard unaccusative analysis of the verb \textit{donha} 'fall'. The
object of fall moves up and, because the lower little v cannot assign accusative case, 

skips the spec of the defunct vP, continuing upward for ultimately successful nominative 
checking in the spec of T.

In the previous section about asymmetricality, I asserted that the causees of *tamba* 
‘dance’ and *donha* ‘fall’ were fundamentally different. As outlined at the start of this 
report, causative constructions are formed by adding a causer to be the new subject, and 
by transforming the old subject into the causee. If the subjects of these verbs have 
inherently different theta roles because of their inherently different semantics, it follows 
that they would have inherently different causees when causativized.

This is a promising analysis and *could* account for why the causee of *donha* ‘fall’ 
is licensed by CA2 and the causee of *tamba* ‘dance’ gets case from CA3, except for one 
big remaining issue. CA2 usually assigns case to direct objects, which suggests that it is 
an accusative case-assigner. Although I have yet to identify CA2 with a familiar element 
in the phrase structure, it seems likely enough, at least for the current endeavor, that CA2 
is the lower little v. The accusative case-assigner in unaccusative verbs is supposed to be 
defunct (Levin & Horvav 1995). I argue, however, that the supposedly troubled analysis 
of the dissimilarity between *donha* ‘fall’ and *tamba* ‘dance’ is indeed promising, that the 
accusative assigning capability of little v in Shona’s word for ‘fall’ isn’t defunct at all. In 
this proposal, *donha* ‘fall’ is not unaccusative, but instead just plain accusative.

There is only one significant theoretical obstacle to the prosperity of this account, 
and it’s the fact that the argument of *donha* ‘fall’ does move up into a subject position 
when the verb is not causativized. All is not lost, however, because while this argument
raising is not ideally supportive evidence for the just-plain-accusative analysis, it isn’t prohibitive of it either. Movement can be motivated by any number of things. Many languages, for instance, have an obligatorily filled subject position, and Shona could easily be one of them.

While there may be a small amount of evidence to indicate this is not a robust analysis, there is much more evidence to indicate that it is. In the previous section I demonstrated that a characteristic of direct objects is they are members of the selfish group of objects that cannot relinquish case even in their own omission. The example in (40b), replicated below, shows that deleting the direct object does not free up CA2 to license either the applied object or causee.

(40b). *mai va- ka- bik- is- ir- a mwana
   mother 3PL (1)- PST- cook- CAUS- APP- FV child
   mukomo chikafu
   brother meal

   ‘The mother made the brother cook for the child.’

I have described this phenomenon as one that applies to direct objects, but it appears to be a quality shared by all DPs that acquire accusative case from CA2 (little v). The example in (46) shows that the causee of *donha ‘fall’ does not make room for the case-assignment of an applied object when it is omitted.
(46) Tinotenda a- ka- donhesesera a Tatenda
Tinotenda 3SG (1) PST- fall- CAUS- CAUS- APP- FV Tatenda

Tendai
Tendai

Cannot mean: ‘Tinotenda made Tendai drop (something) for Tatenda’
Can only mean: ‘Tinotenda had someone make Tendai fall on behalf of Tatenda.’

The second causee of the double causativized *donhesesera* has more traditional semantics than the first. This example provides an especially clear picture of causee asymmetricality as it occurs within the semantic of one verb. The direct object causee of *donhesesera*, from the first part of its causativization, clearly receives case from CA2. I have asserted that the applied object, in this case Tatenda, exclusively receives case from CA3. The fact that the second causee, a more traditional agent-assigned argument, cannot co-occur with Tatenda, indicates that it too aspires for CA3’s attention. Furthermore, this data shows that the first causee, the direct object-type argument of fall, can co-occur with Tatenda, means that it does not compete with the applied object for case from CA3. And if it doesn’t get case from CA3, it gets case from CA2, which in turn entails that it gets accusative case. Thus the accusative-case-assigning capability of the little v of *donha* ‘fall’ remains intact, supporting my asserting that the verb is simply accusative, rather than unaccusative.

Following this analysis, certain outcomes are predictable. If my claim about the accusativity of *donha* ‘fall’ is accurate, then double causativization would be licit, but *not* for unergative verbs. This holds up in (21), reproduced for clarity, and (47) below.

(21) Musikana a- donhesesera a Tinotenda
 Girl 3SG (1) PST- fall- CAUS- CAUS- FV Tinotenda
poto ye- mvura
pot POSB- water

‘The girl made Tinotenda drop the water pot.’

(47) *Tinotenda a- ka- tamb- is- is a
   Tinotenda 3SG (1)- PST- dance- CAUS- CAUS- FV

Tatenda  Tendai
Tatenda  Tendai

‘Tinotenda made Tatenda make Tendai dance.’

This is a significant instance of difference in the behavior of the two verbs. While *donha* ‘fall’ can be doubly causativized, *tamba* ‘dance’ cannot. This is the second time in this analysis where *tamba* ‘dance’ appears in a stacked construction that parallels the structure in another sentence where *donha* ‘fall’ is the extended root (examples (33) and (35) show causative-applicative stacked forms of *donha* ‘fall’ and *tamba* ‘dance’). Both causees, *Tatenda* and *Tendai*, in (47) are traditional agent-causees and they compete for case from CA3 with one another, making their simultaneous presence untenable. In contrast, (21)’s causees, *poto yemvura* ‘water pot’ and *Tinotenda*, co-occur without incident, suggesting that one of them receives case from CA3 and the other is licensed by CA2. I have already demonstrated which causee is which by providing the omission data in (46) in conjunction with my corresponding analysis.

IV.2.2 Donhedza to the Rescue

When it comes to the judgments necessary in this kind of analysis about theta-roles and kinds of arguments, it is important to avoid a translation-based explanation.

Even though the object of the verb *fall* in English, a direct object-type theta-role, we
cannot assume that the Shona verb *donha* ‘fall’ has the same structure. In order to establish that this is not a translation-based analysis, I have provided evidence consistent with the accusative-case assignment of *donha*’s original, sole argument. For certainty’s sake, however, I’m introducing a new, and important, verb radical in (48).

\[(48) \text{Tinotenda a- ka- donhedz- a poto ye- mvura} \]
\[\text{Tinotenda 3SG (I)- PST- drop- FV pot POSS- water} \]
\[\text{‘Tinotend dropped the water pot.’} \]

The verb stem *donhedz* probably looks oddly familiar or redundant. Historically, *donhedz* and *donh* were the same root. Based on historical morphological analysis, it appears the proto-Bantu, or perhaps even proto-Shona, had an additional valence-increasing affix, phonologically realized as some form or palatalization or a palatalized consonant (Fortune 1955, Good 2005). Many Bantu languages have lost the productive manifestation of this suffix, including Shona, but some retain it as an active equal member of their verbal extension inventories. Good (2005) refers to this lost palatalized extension as the “transitive” and Fortune (1955) refers to it as “the causative.” Both scholars assert -*es/is and -*edz/idz*, another causativizing affix, are derivative forms representing lexicalized combinations of the palatalized morpheme and other verbal extensions. While it is agreed in the literature that the palatalized extension is no longer productive in Shona (Fortune 1955, Good 2005), the productivity of -*edz/idz*, one of its two descendants (-*es/is being the other), is controversial. Based on my own research, I consider the form to be as dead as the older palatal morpheme that Good (2005) and Fortune (1955) assert comprises half of its pronounced manifestation.
In Manyika, at the least, *-edz/idz* is not a productive affix. I have concluded that it is not productive for three reasons. The first is that I have had limited success eliciting causative constructions that employ this affix. Overall, I have discovered no predictive factors for where its affixation will be permissible, leading me to believe that its sparse distribution is due entirely to lexicalization. Furthermore it tends to occur on stems that have a idiomatic causative meanings, adding to its irregularity and increasing the likelihood of its non-productivity. The second reason I believe that *-edz/idz* is no longer productive is that it cannot be doubled on the stem *donh* which does allow doubling of *-es*, as I’ve shown in (21). (49) shows this problematic formation.

(49) *Musikana a- donh- edz- edz- a Tinotenda*  
girl 3SG (1)- fall- CAUS- CAUS- FV Tinotenda  
poto ye- mvura  
pot POSS- water  

‘The girl made Tinotenda drop the water pot.’

(49) is ungrammatical because its verb is ill-formed. Much like his judgment of the verb in (31b), Nyazenga rejected the morphology itself, saying it was not a possible verb form. Like in (31b), I have again marked both the sentence and the illegitimate lexical item. The inability of the *-edz/idz* affix to stack in a manner parallel to the other causative extension supports my theory that it is no longer productive in Shona.

The last reason I have for suspecting the productivity of *-edz/idz* is that Nyazenga rejected its affixation of the nonce verb *mung* during my wug test, overviewed earlier in this analysis. This ungrammatical result appears in (50) below.
Failure to elicit a form during a wug test is an established indicator of non-productivity and I conclude the obvious from this outcome, especially when it is compared to the abundantly productive life of the affix –es.

Now that I’ve identified –edz/idz and its non-productivity, I’ll suggest that its appearance in the example in (48) affixed to the familiar intransitive donh radical is simply lexicalization. A historical development of donhedz is easy to speculate. The word for fall exists and is sometimes used in a causative construction ‘cause to fall’. The usefulness of a word which means essentially ‘to drop’ is so great that that the construction is used more and more frequently. Eventually, donhedz becomes its own verb stem meaning ‘to drop’.

During data collection, for every sentence including a causativized form of donha ‘fall’, I elicited an identical construction using the alternative transitive stem donhedz ‘drop’. The grammaticality judgments were consistently identical between the two sets of data. This information is useful in two major ways. The first is that it provides yet another confirmation of SAC and this analysis’ path in general. In a model, like Bliss’s, that suggests causees and applied objects are licensed by the same structural case-assigner, and by extension asserts an “additional” object limit, rather than a flat object limit, one would expect donhedz and donh-es to behave differently, at least some of the time. This
kind of theory anticipates that the causee of *donh-es*, a causativized intransitive, necessarily gets structural case from a different source than the object of *donhedz*, a transitive radical. But when manipulated both objects exhibit the same limitations, asymmetricalities, and semantic interpretations. The fact that they *never* differ forces a shift of perspective on what’s important in Shona argument structure. The morphological source of an argument is irrelevant. The inequities come from theta-role assignment and the verb’s inherent semantic structure.

The second, very related utility of these twin data sets is that they allow me to reliably map an unfamiliar verb form onto a more familiar one for reference. This is why it was so crucial that I establish *donhedza’s* identity as its own separate, transitive verb. The thorough account of *donhedza’s* nature and history dispels any potential for an English-centered interpretive bias. Because *donh-es* is exactly like *donhedz*, I know that the analysis here is based on the semantic structure in Shona and not in the semantic structure of the most accurate-seeming English translation. The causee of *donhes* exhibits all of the same characteristics and quirks of the direct object of *donhedz*, meaning that they do in fact share theta-role assignment *in* Shona. The example in (51) concretizes the analytical value of this mapping.

(51) a. Tinotenda a- *donh-* es- es- er a  
   Tinotenda 3SG (1)- fall- CAUS- CAUS- APP- FV

   Tatenda poto ye- mvura
   Tatenda pot POSS- water

   ‘Tinotenda had the water pot dropped for/on Tatenda (by someone).’
   Cannot mean: ‘Tinotenda made Tatenda drop the water pot (for someone).’

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b. Tinotenda a- donh- edz- es- er a
   Tinotenda 3SG 1SG- fall- CAUS- CAUS- APP- FV

   Tatenda poto ye- mvura
   Tatenda pot  POSS- water

   ‘Tinotenda had the water pot dropped for/on Tatenda (by someone).’

These parallel examples show just how disingenuous it would be to describe (51a) as having two implied causees and (51b) as having only one. In both (51a) and (51b) the water pots are assigned a direct object-type theta role and accusative case from CA2. These examples provide more evidence to support that as long as it has a prioritized direct-object-like theta-role, a causee will not be treated differently than a direct object. Thus, a potential hierarchy of eligibility for case-assignment, as well as an order for that case assignment has begun to emerge from this account.

The non-direct object causees in both sentences are agents, and neither competes successfully for case, reiterating the inequity of object case-assignment eligibility that I discussed previously in the subsection on asymmetrical object behaviors.

It’s also worth noting of this data that the applied object in neither (51a) or (51b) could be omitted to allow case assignment from CA3 to the agent-causee. Thus, the puzzle of what can make a causee win case from CA3 over an applied object has still not been full resolved. However, recall the most prevalent different between tamba ‘dance’ and donha ‘fall’ is that they are unergative and accusative respectively. Tamba ‘dance’ cannot assign direct object-type theta roles to its causees, meaning that all of its objects are theoretically in competition for case from CA3 in away that donha’s ‘fall’ causees are not. As I alluded before in the section on asymmetricality, this is most likely the
explanation of why *tambisira*'s ‘make-dance-for’ applied object in (33) can be omitted but *donhesera*'s ‘drop for’ in (35) cannot. Both examples printed again below.

(33) Tinotenda a- ka- tamb- is- ir- a Tendai
Tinotenda 3SG (I)- PST- dance- CAUS- APP- FV Tendai
‘Tinotenda made Tendai dance for someone.’
Cannot mean: ‘Tinotenda made someone dance for Tendai.’

(35) *Tinotenda a- ka- donh- es- er- a poto ye- mvura
Tinotenda 3SG (I)- PST- fall- CAUS- APP- FV pot POSS- water
‘Tinotenda dropped the water pot for someone/some purpose.’

In this analysis of the asymmetrical data, the causee in (33) steals CA3 case-assignment from the potential applied object, but the causee in (35) leaves CA3 wide open. There still several problems with this explanation. First of all, it does not account for the fact that, in almost all other circumstances, causees are at a disadvantage for receiving case and cannot successfully compete with applied object. And secondly, there is still no firm of theory as to why applied objects resist omission so intensely.

At this moment of simultaneous progress and impasse, I’d like to turn to some seemingly unrelated data. Earlier in this account I mentioned that arguments can be removed by certain verbal extensions, allowing for more “additional” objects than is possible in forms where all arguments original to the semantic structure remain present. On of these verbal extensions is the reciprocal, which forces a “to one another” interpretation of the verb’s action. The data in (52) demonstrate two circumstances where the reciprocal alleviates case assignment pressure from the two sources of structural case, and one example where it does not.
(52) a. Tinotenda a- ka- donh- es- es- er- an- a
   Tinotenda 3SG (1)- PST- fall- CAUS- CAUS- APP- REC- FV

   Tatenda na- Tendai poto dze- mvura
   Tatenda and- Tendai pot POSS- water

   ‘Tinotenda made Tatenda and Tendai drop water pots on/for each other.’

b. Tinotenda a- ka- tengen15- es- er- an- a
   Tinotenda 3SG (1)- PST- buy- CAUS- APP- REC- FV

   Tatenda na- Tendai zvipo
   Tatenda and- Tendai gifts

   ‘Tinotenda made Tatenda and Tendai buy gifts for each other.’

c. *Tinotenda a- ka- tuk- an- is- ir- a
   Tinotenda 3SG (1)- PST- scold- REC- CAUS- APP- FV

   Tatenda na- Tendai Chipo
   Tatenda and- Tendai Chipo

   ‘Tinotenda made Tatenda and Tendai scold each other on behalf of Chipo.’

For this analysis, I assume that the reciprocal suffix –an does not need case, but can be
assigned a theta-role. In (52a) and (52b) the reciprocal is assigned the theta role of
benefactor and its presence allows all the other DPs to receive case, making the sentences
into grammatical three-argument constructions. In (52c), however, the reciprocal is
assigned a direct object-type theta role and its presence does not seem to alleviate the
licensing pressure on CA2 and CA3. This phenomenon is familiar. I have already shown
that a major asymmetricality in Shona comes from the unequal status of its two kinds of
causees, agents that receive case from CA3 and the direct object-type arguments that

15 Nyazenga modified the stem in an unfamiliar fashion. When elicited without this
modification, he rejected the construction.
receive accusative case from CA2. This discrimination is exhibited most pointedly, as previously discussed, in the disparate outcomes of omission for the two kinds of causative objects: omitting direct objects or causees with direct object-type theta-roles does not free up the obligation of CA2 so that it can license agent-causees, in this circumstance the conjoined DP Tatenda naTendai. It is unclear if the reciprocalization of an argument can be characterized as omission, though if it can, the grammaticality of the sentences in (52a) and (52b) would be surprising because the applicative appears to assign its beneficiary theta-role to the reciprocal semantics of the sentence. In these examples, the applied objects, the beneficiary of the action, is the argument absorbed into the verb by the reciprocal interpretation that comes from the affixation of -an.

Now that I have fully impressed the importance of semantic structure in considering object asymmetries in Shona, I will argue for a specific unified analysis of all the puzzling data presented thus far. The following section will be devoted to the facts, strengths, and weaknesses of my proposal.

IV.3 A Unified Account

At this point in my account of valence-increasing affixes and their arguments in Shona, I have already hinted at or overtly proposed much of what constitutes my analytical exposition of the data appearing in this report. The major remaining project of this work is thus synthesizing and testing the discrete parts of a theory that, for the most part, has already been suggested in small pieces over time.

Much of the material in the prior sections has been dedicated to describing and discussing asymmetrical data. Now that I have reached a place in this account where all
IV.3.1 My Proposal

My proposed analysis has two parts. The first is a checklist of potential criteria for prosperous case assignment in Shona. The second is a detailed explanation of what I call case eligibility. Essentially I provide a hypothesis for the hierarchy of case assignment in Shona, and I attribute case-assigner preference to theta-role and location (in the phrase structure).

Before I provide my two-part proposal in full, however, I need to establish one very important assumption and also acknowledge and discuss an area of uncertainty in my theory. I’ll touch upon the uncertainty, which has to do with CA3, first. The identity of CA3 remains unaccounted for and unknown. I do not plan to suggest or speculate about any suspects. This is because picking out the character of CA3 is not the main concern of this work. I have provided strong evidence that it exists, and, for now, what it is precisely is not relevant to the present analysis. What is relevant, however, is its location in the phrase structure and the fact that its identity is clearly separate from either of the valence-increasing verbal extensions themselves (if either the applicative or causative were case-assigners, we would not, as I have shown, expect SAC to be true). CA3’s exact placement remains largely mysterious, but in order to bolster clarity of the explication at hand I have settled on a single spot for convenience, a decision the specifics of which I will detail more thoroughly later on.
Now for my assumption. It is my conjecture that, in Shona, case can be assigned to unpronounced entities when they are eligible by virtue of their theta-role and position in the phrase structure. Furthermore, CA2 automatically assigns case to any eligible entity, regardless of whether or not it is a pronounced DP.

Below are the two parts of my unifying analysis for case assignment in Shona.

(53) **Criteria for Prosperous Case Assignment in Shona:**

1. The number of DPs does not exceed the number of case assigners.
2. Every pronounced DP receives case.
3. If an unpronounced entity would have received case from CA3 were it a fully realized DP than it must have some pronounced manifestation.
4. Every entity assigned case must be the best candidate (most eligible) for its case assignment.

(54) **Working Definition of Case-Eligibility in Shona:**

1. CA1 prioritizes the case-assignment of the closed DP with an agent theta-role.
2. CA2 prioritizes the case-assignment of the closest entity, regardless of its realization at the pronounced level of speech, with a direct object-type theta-role.
3. CA3 prioritizes the case-assignment of the closest DP with either a benefactor or agent theta-role

**IV.3.2. Utility and Application**

Now that I have made my proposal I will demonstrate its ability to account for the data, especially the asymmetries, I’ve presented in this report.

My unified proposal provides a consistent analysis for which verbs can and cannot undergo double causativization. The phrase structure tree in (55) below represents how my analysis accounts for the sentence that appeared earlier in (21), reprinted for reference.
In (55), first the subject *musikana* ‘girl’, an agent introduced by the first causative phrase, gets case from CA1 (TP) by virtue of being the closest agent and thus eligible to move to spec TP for nominative case. Then CA2 (lower little v) licenses the DP *poto yemvura* ‘water pot’ and the DP moves up from its VP internal position to check for accusative case in the spec of little v. Finally, *Tinotenda*, a causer DP introduced by the second CausP moves up to the spec of CA3P to check for case. The number of DPs present does
not exceed the number of case assigners (three), every pronounced DP gets case, and every DP that received case was the most eligible candidate for the case it received, as determined by locality and theta-role.

The tree in (56) shows the problem with the ungrammatical sentence in (47), as the current analysis conceives it.

(47) *Tinotenda a-ka-tamb-is- is a
   Tinotenda 3SG(1)- PST- dance- CAUS- CAUS- FV

   Tatenda Tendai
   Tatenda Tendai

   ‘Tinotenda made Tatenda make Tendai dance.’

(56)
In (56), first the subject *Tinotenda* gets case from CA1, eligible in the same way as before in (55). Then CA2 (lower little v) skips its turn because there are no entities that have a direct object-type theta role. The causer DP *Tatenda* moves up to get case in the spec CA3P. Unfortunately this leaves the original subject, the agent *Tendai* (bolded for clarity) that was generated in the spec of the higher little v of *tamba* ‘dance’, stranded in its same old position, unable to receive case because all of the assigners are occupied. The number of DPs does not exceed the number of present case assigners, every entity assigned case is the best candidate for that case (as determined by locality and theta-role), but not every DP pronounced out loud ends up receiving case, rendering the sentence in (47) ungrammatical.

This model also provides a consistent account of what happens to intransitives and transitives when they appear in stacked constructions. (57) is a tree that shows the problematic structure implied by the unacceptable sentence in (20b), repeated for below for reference.

(20) b.*Ta-sung-is-ir-a
   1PL (1)-tie-CAUS-APP-FV

*vavhimi vasikana mbudzi
hunters girls goats

‘We made the hunters tie the goats for the girls.’
The problem here is in the bottom half of the phrase structure. There is no available case assigner for the original agent, the DP *vavhimi* ‘hunters’ (bolded for emphasis), in the spec of the higher little v. The number of DPs exceeds the number of case-assigners and consequently not all DPs get case.

The tree (58) demonstrates the successful causative-applicative stacking that takes place in the sentence in example (25), copied for clarity.

(25) Tinotenda a- ka- donh- es- er- a
Tinotenda 3SG(1)- PST- fall- CAUS- APP- FV

Tatenda poto ye- mvura
Tatenda pot POSSESS- water

‘Tinotenda dropped the water pot for/on Tatenda.’
There are no problems with case-assignment here. Every DP moves upwards for appropriate case-checking. All of the proposed criteria in (53) are met.

Interestingly enough, the current theory cannot account for a very similar structure however. The tree in (59) shows the inadequacy of my proposal in accounting for the sentence in (26), replicated for convenience.

(26) Tinotenda a- ka- tamb- is- ir- a Tendai Tatenda
Tinotenda 3SG(1)- PST- dance- CAUS- APP- FV Tendai Tatenda
‘Tinotenda made Tatenda dance for Tendai.’
Nyazenge judged the sentence in (26) to be grammatical, but although the number of DPs does not exceed the number of case-assigners, my theory predicts that not all DPs would be able to receive case. Specifically, lower little v assigns accusative case, which, an agent, the DP *Tendai* (bolded for clarity) should not be eligible for. While it's possible that desperate times call for desperate measures, if that were the case, if Shona allowed the lower little v to assign accusative case to agents in the spec of the higher little v in situations of emergency, it should also follow that the sentence in (47) with the twice causativized form of *tamba* 'dance' would be grammatical, except that it isn't.

Unfortunately, I have no solution to this gap in my theory. For the time being, this analysis will have to continue, in spite its disappointments.
It is a little ambiguous how well my proposal accounts for some of the peculiar applied object asymmetry. The tree in (60) demonstrates the structure of the grammatical deletion of an applied object in example (33), repeated for easy comparison.

(33) Tinotenda a- ka- tamb- is- ir- a Tendai
Tinotenda 3SG(1)- PST- dance- CAUS- APP- FV Tendai
‘Tinotenda made Tendai dance for someone.’
Cannot mean: ‘Tinotenda made someone dance for Tendai’

(60)

Here there is no applied object present, so the original agent in spec of little v, the DP Tatenda, is the most eligible candidate for case from CA3. On this count, everything is in the clear. The number of DPs does not exceed the number of case-assigners (in fact, there
are fewer DPs than case assigners in this sentence), and all DPs get case. What’s suspect, however, is whether or not the third criterion in (53) is met. It looks a lot like the omitted applied object (bracketed in spec AppP) would have beat out the agent lower down. A possible explanation is that the restriction on omitting the causees of intransitive verbs might cause some form of eligibility that overrides locality. Regardless, though, my analysis does not currently provide the most satisfying answer to the ongoing question of when applied objects may be omitted.

So far, there are some wrinkles, but my proposal has proved fairly consistent and comprehensive. It even provides a working analysis for the asymmetrical reciprocal data. However, because my trees for these data are particularly complicated, I had a lot of structural choices to make. I’m going to take a moment, before explaining the varying grammaticality of the reciprocal data, to discuss the decisions I have made pertaining to all of the trees I have provided.

The first practical constraint is that the CausP has to be higher than the vP so that the agent introduced as the causer is closer to T and thus more eligible for nominative case, not by theta-role assignment, but by locality. Similarly the AppP needs to be above the CausP in order to reflect the disadvantage I have demonstrated that agent-causees have in competing for case from CA3. The CA3P needed to be above the AppP in order to have case-checking work well and also for word-order reasons. Although word order is not very well preserved in my trees as they are presented here, assuming that verbal morphemes combine with one another in a steady movement up the phrase structure until
they make a permanent home with T in the TP, the word orders yielded in my trees are accurate.

Deriving the correct affix order, however, is a nontrivial task and, in fact, a highly contested topic in the literature. Since Larry Hyman published his game-changing article, “Suffix Ordering in Bantu: A Morphocentric Approach” in 2003, syntactic treatments--or at least wholly syntactic treatments-- of Bantu verb morphology have become significantly less popular. This is because his article focused largely on refuting Baker’s “Mirror Principle” (1988), which states that “Morphological derivations must directly reflect syntactic derivations (and vice versa)” (13). Whether or not verbal affixes are ever arrange compositionally, rather than templatically, it still under debate. On the one hand, scholars like Hyman (2003) have a provided a wealth of evidence showing that at least some affixes always occur in the same order. However, even in this account there is some data that suggests a more compositional derivation. The affixation of the reciprocal morpheme differs between the ungrammatical example I provided in (52c) where it is affixed close to the verb root and the grammatical sentences in (52a&b) where it occurs close to the final vowel instead. It should be noted, however, that I have good reason to believe that the morpheme order in (52c) is definitively not the cause for the sentence’s ungrammaticality. This is because when I attempted to elicit every potential affix order, Nyazenga rejected all but the one that appears in (52c), saying the verb form itself was correct, but the sentence was wrong.

On top of all this complication, there is one more major site of controversy which is how precisely the affixes join together with each other and then also the verb radical to
create a single word. Some scholars prefer affix-hopping, but Harley (2011) notably prefers the Merger Under Adjacency model (Bobaljik 1994 in Harley), which allows the merging of morphemes next to one another, across phrase boundaries, but not across any intervening lexical items. In (61) below, Harley provides an English example of how the MUA works.

(61)

Here, -ed and kick are next to one another with no intervening lexical items. It is very important to note, however, that that headedness is still relevant in the MUA model of affixation. In (61), for example, it is crucial that kick merge left of -ed. Still, Harley argues that parameterization could account for more peculiar affix ordering. This is a vital allowance, given that both right and left adjunctions are required for Bantu constructions involving both derivational morphology (like the verbal extensions), which are all suffixal, and inflectional morphology, which is all prefixal (Mkanganwi 2002).

With all of this to consider, I decided to order the causative and applicative in a way that supported the locality-driven preferences I have observed for case-assignment
the data. For the reciprocal, I chose to place it compositionally, because I believe that a semantic motivation for its affixation position is the simplest and most appealing account. Having fully justified the construction of my tree diagrams, I will now discuss the tree I have drawn in figure (62) to represent the grammatical acquisition of three additional arguments in the example in (52a).

(52) a. Tinotenda a- ka- donh- es- er- an- a
    Tinotenda 3SG(1)- PST- fall- CAUS- CAUS- APP- REC- FV

    Tatenda na- Tendai poto dze- mvura
    Tatenda and- Tendai pot POSS- water

    ‘Tinotenda made Tatenda and Tendai drop water pots on/for each other.’

(62)
In (62) the DP *poto dzemvura ‘water pots’ check for accusative case in the spec of the lower vP. The causer, *Tinotenda, in the first CausP moves up for nominative case in spec TP, and the second causer, the conjoined DP *Tatenda na*Tendai gets case from CA3. The benefactor theta-role is assigned by the applicative to the reciprocal, which can absorb theta roles, but does not need case. Thus the number of DPs does not exceed the number of case-assigners, every pronounced DP receives case, and every entity that receives case is the best candidate for that case assignment. Again, the third criterion is peculiar. The applied object omitted through reciprocalization appears as if it would have beaten the conjoined causer DP out for case because of locality-related eligibility. And yet, perhaps an- qualifies as a “pronounced manifestation.”

The tree in (63) provides a visualization of the structural problems with the ungrammatical stacked reciprocal construction in (52c), replicated below for easy access.

(52) c. *Tinotenda a- ka- tuk- an- is- ir- a  
                 Tinotenda 3SG (1)- PST- scold- REC- CAUS- APP- FV  
                 Tatenda na- Tendai Chipo  
                 Tatenda and- Tendai Chipo  

‘Tinotenda made Tatenda and Tendai scold each other on behalf of Chipo.’
Because CA2 (lower little v) assigns case simultaneously with theta-role assignment, non-DP entities, even when they don’t need it, can sometimes acquire accusative case. In (52c) the reciprocal gets theta-role assignment from the verb tuka ‘scold’ and unnecessary case from little v. The DP Chipo gets case from CA3 and the causer Tinotenda gets case as per usual in the spec of TP. The conjoined causee DP Tatenda naTendai (bolded for clarity), however, has nowhere to move to for case-assignment. Thus the sentence is ungrammatical because not every pronounced DP receives case.

My theory also offers some explanation for the peculiar combination results of my wug test. The problem lies in the fact that the argument structure of munga ‘bake
chocolate-chip cookies’ is quite peculiar. It is an intransitive verb, but with a semantically implied direct object (chocolate-chip cookies). I have established that CA2 automatically assigns accusative case to any eligible entity with a direct object-type theta-role. Therefore, the wug test results for causative-applicative combined morphology more closely resemble those I have shown for transitive stacked verb forms. The example in (64) below shows that the causative and applicative cannot co-occur when affixed to the nonce verb *munga.

(64) *mai a- ka- mung- is- ir- a
mother 3SG (1)- PST- bake.chocolate.chip.cookies- CAUS- APP - FV

mwana mukoma
child brother

‘The mother made the brother bake chocolate-chip cookies for the child.’

In (64), the nonce verb *munga ‘s/he baked chocolate-chip cookies’ acquires the causative *is- and the applicative *ir-, giving the verb two additional arguments. Its ungrammaticality is surprising given that the total argument count still does not exceed three after the addition of *mwana ‘child’ and *mukoma ‘brother’. But CA2 is most likely occupied by the implied direct object ‘cookies’ even though it doesn’t need case. Thus, the causee *mukoma ‘brother’ is unable to receive case from anywhere because CA3 licenses *mwana ‘child’ and CA2 has already assigned case to the implied chocolate-chip cookies where it is not necessary. Because they are not immediately applicable to this analysis, I have included the remaining results of my wug test in the appendix following my concluding section.
Overall, my unified proposal has proved fairly successful, running into a few snags, but mostly accounting for the data that was so bewildering before in a consistent analysis. Before wrapping up, I will briefly acknowledge and discuss some weaknesses in my theory, as well as areas that could be improved by further research.

IV.3.3 Potential Draw-Backs and Unresolved Issues

This analysis has demonstrated several limitations. One of its more egregious failings is the fact that, in its current form, it can provide no account for the licit co-occurrence of applied objects and causees in unergative verb constructions. This kind of sentence occurs twice in this description, in (24) with *rara* ‘sleep’ and in (26) with *tamba* ‘dance’. The fact these forms find no explanation in this report is definitely a draw back of my proposal.

Another issue concerns the third criterion, “If an unpronounced entity would have received case from CA3 were it a fully realized DP then it must have some pronounced manifestation,” in (53). This criterion is not very compelling and is mostly just a way accounting for the restriction on omitting applied objects in most verbal environments. Still this odd requirement does have some unexpected pay-offs, especially in accounting for the peculiar causative-applicative combination results of the wug test, as discussed in the section prior to this one. (65) and (66) below demonstrate another unexpected advantage.
‘The mother untied the shoelaces for the child’

Note that this construction does not explicitly indicate that the shoes are the child’s shoes, but it is implied from context. There is another construction where *mwana* ‘child’ is omitted from the applied object position (immediately following the verb) and moved into the DP *tambo dzebhutsu* ‘ropes of the boots’, producing an almost identical interpretation. (70) shows this alternative strategy.

‘The mother untied the child’s shoelaces (for him).’

The strategy employed in (66) is not unlike English’s, and of the two translations for (65) and (66), (66) is most certainly the more natural way for an English speaker to convey this meaning. It is important to understand that *mwana* ‘child’ here is not an applied object, but a possessor in the complex DP *tambo dzebhutsu dzemwana* ‘the ropes of the boots of the child’. While it is implied that the child is the omitted beneficiary evoked by the applicative affix in this construction, the connection is not explicit and could be negated with context inside a longer discourse. It could be argued, though in a sort of round-about way, that the pronunciation criterion is actually licensing this applied object omission in (70). This is because, while *mwana* does not receive case from case assigner
three, the entity that case assigner three ends up giving case to is the child, meaning that the case assigned entity does in fact get pronounced. The current theory would predict, however, that were the benefactor indicated to be someone other than the child in discourse, the sentence in (66) would become ungrammatical because the entity with case from case assigner three would no longer be pronounced in any fashion, even indirectly.

This account could also benefit from expansion in two significant ways. The first is that the nonce verb *munga* proved to be far less than ideal for eliciting stacked forms in my wug test. Its peculiar semantic structure with an implied direct object compromised the practical utility of the results and hampered my ability to analyze the productivity of verbal extension stacking in Shona. Second, this analysis suffers from a somewhat regretful descriptive lack in that there is a dearth of passive data and experimentation. For example, it is possible that the arguments that can sacrifice case in omission are all agents, but I cannot conclude that without removing the subject of a sentence completely. To do this, I would need to elicit a passive construction, because simply eliding the subject does not equal true argument deletion in a pro-drop language like Shona. This is because the Agr morpheme stands in for the lost DP and acquires its nominative case-assignment.
V. Conclusions

In this account, I have provided extensive descriptive material on the stacking behavior of verbal extensions and their corresponding additional arguments in Shona. I have proposed and rigorously supported one major generalization about Shona argument structure with the Shona Argument Cap (SAC). I have also developed a fairly compelling analysis of that generalization through the Three Structural Case-Assigners Hypothesis (TSCAH) and my criteria for prosperous case-assignment.

I have argued that the first case-assigner, CA1, is T and that it assigns nominative case to the nearest agent-DP. In my analysis the two remaining case-assigners of TSCAH are reserved for postverbal objects. CA2, which I propose is lower little v, assigns accusative case to objects with direct-object type theta-roles. This includes both the direct objects of transitive verbs as well as the causees of intransitive verbs that assign accusative case, like *donha* ‘fall’. Although I do not suggest a firm identity of CA3, I provide evidence that it exists nonetheless. I argue that, in order to account for ditransitive constructions and certain object asymmetries, there must be a third case-assigner for indirect objects, applied objects, and agent-causees. Locality is especially relevant to this analysis when it is involved in CA3’s case-assigning. I argue that CA3 assigns case to the closest DP with either a recipient or agent theta-role. Because I have shown that agent-DPs are significantly disadvantaged for case-assignment compared to applied objects, I propose that this asymmetry is due to applied object’s higher position in the phrase structure.
This analysis is an important starting explanation for the even more important observation I make with SAC. Evidence of structural case-assignment in languages without morphological case is exciting and significant to understanding case theory more generally and how it might apply to all languages. Analyses of Bantu verbal extensions and their corresponding additional arguments that employ case are sparse in the literature. The analysis here is thus new and somewhat flawed, but the descriptive portion of this account provides abundant material for investigation in future expanded research, out of which a more complete explanation and theory could very well arise.
VI. Appendix: Wug Test Stacking Results

Below I provide a brief discussion of the wug test stacking results that were not included in the body of this paper.

Nyazenga rejected the neuter-causative affix combination for the nonce verb stem *mung*. This is demonstrated in (67) below.

(67) *Mai a- ka- mung- is- ik- a
mother 3SG (1)- PST- bake.chocolate.chip.cookies- CAUS- NEUT- FV
‘The mother made the cookies bake-able/easy to bake.’

The problem with this construction is unlikely to be the combination of affixes itself. In fact the trouble in this sentence may not be very related to this analysis at all. It is probable that this form is simply an instance of a causee not being explicitly present in a causativized intransitive, rendering the entire sentence ungrammatical, an outcome predicted by Alsina (1992), and which I already discussed at length in this report.

Nyazenga judged the triple formation causative-applicative-reversive to be ungrammatical for the nonce verb. This is demonstrated in (68).

(68) *Mukoma
brother

a- ka- mung- unur- is- ir- a
3SG (1)- PST- bake.chocolate.chip.cookies- REV- CAUS- APP- FV

mwana mai
child mother

‘The brother made the child un-bake the chocolate-chip cookies for the mother.’
This judgment is hardly surprising, given that the causative-applicative affixation of this verb without the reversive is also ungrammatical.

The neuter-applicative combination proved acceptable. This is shown in (69)

(69) a- ka- mung- ir- ik- ir- a  
3SG (1)- PST- bake.chocolate.chip.cookies- ?- NEUT- APP- FV

Mai
mother

‘The chocolate-chip cookies were bake-able for the mother.’

The only peculiar aspect of (69) is what appears to be an extra applicative morpheme. Nyazenga refused the sequences *ir-ik* and *ik-ir* both, insisting this was the only way to produce a construction with this meaning and using these verbal extensions. What appear to be extraneous verbal extensions can often be explained by lexicalization (Good 2005: 22), but given that this is a nonce verb, the extra applicative affix remains a mystery.

The causative-reversive proved grammatical, as demonstrated in (70) below.

(70) Mai a- ka- mung- unur- is- a  
Mother 3SG (1)- PST- bake.chocolate.chip.cookies- REV- CAUS- FV

mwana
child

‘The mother made the child un-bake the chocolate-chip cookies.’

The grammaticality of this construction is not particularly of note. The reversive is not an argument-adding or subtracting affix, so its cooperation with the causative supports the observations I’ve made thus far.
Nyazenga also judged the applicative-passive combination to be acceptable. This is exhibited in example (71).

(71) a- ka- mung- ir- w- a
3SG (1)- PST- bake.chocolate.chip.cookies- APP- PASS- FV

mai
mother

‘The chocolate-chip cookies were baked for the mother.’

This data is consistent with other scholarship on Bantu argument structure. In their highly influential 1990 article “Object Asymmetries in Comparative Bantu Syntax,” Joan Bresnan and Lioba Moshi proposed a widely adopted typology, suggesting that nearly all Bantu languages are either what they call “asymmetrical object type” or “symmetrical object type.” Defining the two groups, they write that in “the asymmetrical object type language only one of the postverbal DPs exhibits ‘primary object’ syntactic properties... [and] in the symmetrical object type language more than one DP can display ‘primary object’ properties” (Bresnan and Moshi 1990:147). To the authors, “primary object properties” include passivaizability, object agreement, adjacency to the verb, and the like” (1990:147).

Shona is broadly acknowledged as an anomaly in this typology, demonstrating mostly symmetrical treatment of its objects, but with some asymmetrical behaviors as well (Bresnan and Moshi 1990, Bliss 2009, Aranovich 2013). One way in which it is considered symmetrical, is its passivization of applied objects. For the purposes of this summary, the importance of the example in (71) is merely that the results of my wug test support current scholarly consensus on the behavior of applied objects in Shona.
VII. References


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