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RESEARCH

Mbyá resultatives and the structure of causation

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In Mbyá, target state resultative predicates can only be derived from inchoative verbs. This is in contrast with target state adjectival passives in better studied languages such as English, German and Greek, which can be derived from transitive causatives. I argue that the limited distribution of Mbyá resultatives reveals a point of variation in the association between roots and external-argument introducing Voice heads: while roots of non-agentive transitive causatives need not be lexically associated to agent or causer Voice in English and similar languages, they do in Mbyá. Together with the well documented incompatibility of target state resultatives with agent/causer Voice, this difference explains the restricted distribution of Mbyá resultatives. The proposed analysis stresses the importance of the distinction between target states and resultant states in the structure of adjectival passives and related resultative predicates cross-linguistically.

Keywords: Mbyá; resultatives; adjectival passives; causativization; event structure

1 Introduction

1.1 Mbyá resultatives and valency alternations

This paper explores a point of cross-linguistic variation in the formation of resultative predicates, through a detailed study of resultatives in Mbyá Guaraní, a Tupí-Guaraní language spoken in Argentina, Brazil and Paraguay. I use the term *resultatives* to refer to stative predicates that entail the existence of a causing event,[1] such as adjectival passives in English (Wasow 1977; Levin & Rappaport Hovav 1986). Using the label *adjectival passive* would be misleading in Mbyá, since there is no participial morphology in the language and resultatives are formally distinct from passives.

My starting point is the observation that Mbyá resultatives have a more restricted distribution than English adjectival passives. In English, adjectival passives can be derived not only from inchoative verbs like *break* but also from transitive causatives that do not participate in labile alternations, like *bury*:

(1) *English*
  a. The door broke.
  b. Chris broke the door.
  c. Chris will repair the broken door.

[1] This use of 'resultative' is close to Nedjalkov and Jaxontov's (1988) use of the term. However, while I label resultant state predicate as resultatives, Nedjalkov and Jaxontov classify them as perfects, as observed by Kratzer (2000). Note that I do not discuss complex resultative predicates like *kick the door open* in this paper.

(2) *English*
a. *The body buried.
b. Chris buried the body.
c. (…) cadaver dogs found the buried body.[2]

German and Greek are similar to English in this respect.

In Mbyá on the other hand, resultatives can only be derived from inchoative verbs. As I will discuss in more detail in section 3, resultative predicates are derived by adding the suffix *-kue* or its voiced allomorph *-gue* to an inchoative verb stem.[3] Resultative derivation is ungrammatical not only with derived and underived transitive causatives, as illustrated in (4b) and (5b), but also with causative stems whose valency has been reduced with the reflexive/passive prefix *je-/nhe-*, as illustrated in (4c) and (5c), to be compared with the grammatical reflexives/passives in (4d)/(5d):

(3) a. Okẽ o-pẽ.
door A3-break
'The door broke.'

b. A-mo-ĩ porã ta okẽ o-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-break-RES
'I am going to fix the broken door.'

(4) a. João o-mo-pẽ okẽ.
João A3-CAUS-break door
'João broke the door.'

b. *A-mo-ĩ porã ta okẽ o-mo-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-CAUS-break-RES
Intended: 'I am going to fix the broken door.'

c. *A-mo-ĩ porã ta okẽ o-nhe-mo-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-PASS-CAUS-break-RES
Intended: 'I am going to fix the broken door.'

d. Okẽ o-nhe-mo-pẽ.
door A3-PASS-CAUS-break
'The door was broken.'

(5) a. A-j-aty jaixa.
A1.SG-B3-bury paca
'I buried the paca.'

b. *Jagua o-jou jaixa (j)-aty-kue.
dog A3-find paca B3-bury-RES
Intended: 'The dog found the buried paca.'

c. *Jagua o-jou jaixa o-je-aty-kue.
dog A3-find paca A3-PASS-bury-RES
Intended: 'The dog found the buried paca.'

[2] Retrieved on April 15, 2019 from: http://www.fox2detroit.com/news/local-news/body-discovered-buried-in-detroit-house-s-yard-on-west-side.

[3] This suffix is also used as a nominal temporal marker in Paraguayan Guarani (Tonhauser 2006; 2007) and in Mbyá Guarani (Thomas 2014). The relation of its temporal use to its resultative use is discussed in section 3.1.

d. Tatu o-je-aty.
tatu A3-REFL-bury
'The tatu buried itself.'

Faced with these different distributions, one may be tempted to conclude that the stativizing operators that derive resultative predicates in English and Mbyá have different properties. To the contrary, I will argue that the difference between the two languages is located not in the properties of their stativizing operators, but rather in the properties of the verbs to which they apply. More precisely, I propose that the restricted distribution of Mbyá resultatives is due to an interaction between two factors: (i) that they are, as target state resultatives, incompatible with heads that introduce agents or causers and (ii) that roots of underived transitive causatives are more tightly associated with their external arguments in Mbyá than in English, German or Greek.

Regarding the first of these two factors, I argue following much previous work (see Rapp 1996; Schlüker 2005; Gehrke 2011; Meltzer-Asscher 2011; McIntyre 2013; Alexiadou et al. 2015) that target state resultatives are incompatible with the expression of agents or causers that are not participants in the result state. Following Alexiadou et al. (2015), this is interpreted as evidence of the incompatibility of target stativizers with agentive or causative Voice heads.

Regarding the second factor, it will be shown that all alternations involving external arguments must be marked morphosyntactically in Mbyá. Moreover, we will see that anticausative and labile alternations are unattested. Building on these observations, I will argue that the roots of all underived transitive causatives in Mbyá must be realized in syntactic frames that introduce an external argument. In the analytical framework adopted in this paper, this means that these roots must co-occur with an agent or causer Voice head.

The incompatibility of Mbyá resultatives with transitive causative verbs then follows from the incompatibility of target state resultatives with agent or causer Voice heads, together with the fact that these verbs require the presence of such a head in their syntactic frame, either lexically or through morphological causativization.

In languages like English, German or Greek, on the other hand, target state resultatives can be derived from non-alternating transitive causative verbs like *bury* in (2), because the roots of these verbs do not require the presence of agent or causer Voice head in their syntactic frame, despite the fact that they do not participate in labile alternations. More precisely, we will see in section 4 that target state resultative formation with transitive causatives in these languages is only excluded with verbs that select agents as their external arguments, as argued by Alexiadou et al. (2015) and Anagnostopoulou (2017).

In sum, I will argue that the difference between Mbyá on the one hand and better studied languages like English, German or Greek on the other hand is located not in the properties of their stativizers, but in the more stringent selectional restrictions that Mbyá roots impose on their argument structure.

The contributions of the paper are threefold. First, it contributes to the cross-linguistic study of resultative predicates, by providing a fine grained description and analysis of the grammar of resultatives in Mbyá. Second, it reveals a point of variation in the association between roots and external-argument introducing Voice heads across languages: it will be argued that Mbyá differs from English, German and Greek in the range of roots that are required to co-occur with an agent or causer Voice head. Finally, the paper presents new empirical support for the analysis of causative/inchoative alternations as Voice alternations of Kratzer (2005) and Alexiadou et al. (2006) and the related observation that resultant and target stativizers differ with respect to their syntactic height relative to Voice heads (Alexiadou et al. 2015; Anagnostopoulou 2017).

1.2 Theoretical assumptions

My analysis is grounded in constructivist theories of argument structure, which spring from the seminal work of Hale and Keyser (2002), and are represented by studies such as Ramchand (2008), Harley (2012) and Marantz (2013). In this tradition, the event structure and argument structure of verbs is built syntactically, through the combinations of roots with functional heads that enrich their event structure and introduce their arguments.

On the semantic side, I adopt a Neo-Davidsonian analysis of event descriptions, with full syntactic decomposition. In particular, I will assume that verb roots introduce predicates of events or states, and arguments are introduced by separate thematic heads. For a defence of thematic separation in syntax, see Borer (2003; 2005). For a review of semantic arguments in favour of thematic decomposition, see Williams (2015: Chapter 9).

Finally, I will adopt a realizational analysis of morphology, according to which syntax acts as a generative engine that builds abstract representations that are then spelled out phonologically. In section 5, I will argue that restrictions on the distribution of Mbyá resultatives are elegantly captured in a spanning theory, which holds that sequences of non-terminal nodes in a linearized syntactic structure can be realized as single morphemes, see in particular Haugen and Siddiqi (2016).

1.3 Ethics and data sources

Mbyá examples, judgments of grammaticality and truth-value were elicited by the author with two native speakers of Mbyá from Paraguay and one speaker living in the state of Rio de Janeiro in Brazil in July 2017 and July 2018. The author sought the informed consent of the consultants prior to elicitation. The three consultants authorized the author to publish the contents of these elicitation sessions in scientific communications. This study also relies on Robert Dooley's (2015; 2016) description of Mbyá. Dooley (2015; 2016) provided a translation of his examples into Brazilian Portuguese. I have (re-)glossed these examples and I have provided an English translation. Unless indicated otherwise, all Mbyá examples provided in the paper were elicited by the author.

1.4 Caveat lector

Mbyá is spoken on a large territory that includes the Misiones province in Argentina, parts of Paraguay and several states in Brazil. Therefore, it goes without saying that regional variation is expected, and I can only claim that the description of resultatives presented in this paper reflects the usage of the three consultants I worked with. However, it is worth noting that this description is consistent with Dooley's (2015; 2016) own description of Mbyá resultatives, which is based mainly on data collected in the Rio das Cobras community, in the state of Paraná in Brazil.

1.5 Structure of the paper

Sections 2 and 3 present the core Mbyá data to be analyzed. Section 2 focuses on valency alternations, and section 3 on resultative predicates. I argue in section 3 that Mbyá resultatives denote properties of target states rather than of resultant states. In section 4, I compare the distributions of target state resultatives in Mbyá, English, German and Greek, and I argue that the restricted distribution observed in Mbyá is due to the more stringent constraints that Mbyá roots impose on their syntactic frame, in combination with the cross-linguistically attested incompatibility of target stativizers with agent or causer Voice heads. Section 5 presents an implementation of the analysis in a realizational theory of

morphology with insertion at non-terminal nodes, and compares it to an implementation in Distributed Morphology. Section 6 concludes.

2 Valency alternations in Mbyá

2.1 Split intransitivity in Mbyá

In order to discuss valency alternations in Mbyá, it is important to give an overview of agreement in the language. Mbyá verbs are uninflected for tense and aspect (Dooley 2015: §12.3). Bare verbs are interpreted with a non-future reference time, and are underspecified for viewpoint aspect.[4] By contrast, subjects and/or objects are cross-referenced on the verb, following a split-S system. Two paradigms of cross-reference markers are used, which I refer to as class A and class B markers (see Table 1).

Some intransitive verbs cross-reference their subject with class A markers, others with class B markers. Intransitive verbs that use class A markers are known as *active*, while those that use class B markers are known as *inactive*. Transitive verbs cross-reference either their subject or their object, with the exception of combinations of first person subjects and second person objects, which are cross-referenced with the portmanteau prefix *ro-*.[5] With all other combinations of persons, a person hierarchy is used to determine which argument is cross-referenced (where "n > m" stands for "n wins over m"):

(6) Mbyá person hierarchy: 1 > 2 > 3

Transitive subjects are cross-referenced with class A markers, while objects are cross-referenced with class B markers. With two third person arguments (e.g. third person subject and third person object), the subject is cross-referenced.[6] In other configurations, the highest argument on the hierarchy is cross-referenced. The following constructed examples illustrate:

(7) a. A-exa.
A1.SG-see
'I saw her/him/them/it.'

Table 1: Cross-reference markers in Mbyá.

	Class A	**Class B**
1st singular	*a-*	*xe-*
2nd singular	*(e)re-*	*nde-/ne-*
1st plural inclusive	*ja- / nha-*	*nhande-nhane*
1st plural exclusive	*(o)ro-*	*ore-*
2nd plural	*pe-*	*pende-/pene-*
3rd	*o-*	*i-/(i)j-/(i)nh-, h-, ∅*

[4] Unless required by the context of an example, I will translate bare achievements and accomplishments with past perfective English verbs, and bare activities and states with present (progressive) English verbs or adjectives.

[5] Note that, contrary to Paraguayan Guarani, Mbyá does not have different portmanteau prefixes for singular and plural second person objects.

[6] A subset of transitive verbs cross-reference both their subject and object, when the latter is third person. Following Dooley (2015), I analyze the *i-* and *j-* prefixes in word forms such as *o-j-aty* ('A3-B3-bury') and *o-i-kuaa* ('A3-B3-know') as third person cross-reference markers.

b. Xe-r-exa.
B1.SG-R-see
'She/he/they/it saw me' or 'You saw me.'

The nature of the cross-referencing system of Guaraní languages has been the subject of some theoretical debates, see in particular Velázquez-Castillo (2002a) and Zubizarreta & Pancheva (2017a) on Paraguayan Guaraní.

One fact that bears mentioning in this section is that the distinction between intransitive verbs that select class A markers and those that select class B markers is orthogonal to the distinction between intransitive verbs that support resultative derivations and those that don't. The following examples show that resultative predicates can be derived from either class of verbs:

(8) a. Xo'o o-jy-kue.
meat A3-cook-RES
'The meat is cooked.'

b. Xe-po i-ruru-kue.
B1.SG-hand B3-swell-RES
'My hand(s) is/are swollen.'

Consequently, the opposition between class A and class B markers will not play a direct role in my analysis of Mbyá resultatives.

2.2 Stative/inchoative alternations

In Mbyá, stative verbs may alternate between their stative interpretation and a dynamic, inchoative interpretation without morphological marking. This is illustrated in (9) and (10), where adverb choice in context forces a stative versus dynamic interpretation of the verb, respectively:

(9) Context: *I left my shirt outside, and it started to rain. I am worried that it got wet, so after the rain, I ask you to go have a look. You come back to me and say*:
Kamixa i-piru teri.
shirt B3-dry still
'The shirt is still dry.'

(10) Context: *I left a wet shirt to dry in the sun fifteen minutes ago. I went back to the shirt and I see that it is now dry. I exclaim:*
Kamixa i-piru reve'i.
shirt B3-dry quickly
'The shirt dried quickly.'

Note that not all inchoative verbs have roots that can be argued to describe pure states. Some verbs like *pẽ* ('break') appear to be predicates of events that lead to an associated result state:

(11) Okẽ o-pẽ.
door A3-break
'The door broke.'

2.3 Causative alternations and causative verbs

Alternations between intransitive and causative uses of a verb are marked by the causative prefix *mbo-* and its allomorph *mo-*:[7,8]

(12) João o-mo-mbiru kamixa.
João A3-CAUS-dry shirt
'João dried the shirt.'

(13) João o-mo-pẽ okẽ.
João A3-CAUS-break door
'João broke the door.'

Causativization with *mo-/mbo-* targets all intransitive predicates, including unergative predicates:

(14) a. Anguja o-nha.
rat A3-run
'The rat was running.'

b. Ava o-mo-nha anguja.
man A3-CAUS-run rat
'The man made the rat run.'

There are also non-alternating causative verbs in Mbyá, as illustrated by the verbs *juka* and *aya*:

(15) a. João o-juka jaixa.
João A3-kill paca
'João killed the paca.'

b. Jaixa o-juka.
paca A3-kill
'She/he/they/it killed the paca.' (Not: '#The paca died.')

c. João o-j-aya o-po.
João A3-B3-cut 3.POSS-hand
'João cut his hand(s).'

d. O-po o-*(j)-aya.
3.POSS-hand A3-B3-cut
'She/he/they/it cut his/her/their hand(s).' (Not: '#Her/his/their hand(s) got cut.')

As examples (15b) and (15d) illustrate, verbs stems like *juka* and *aya* have no intransitive uses. In particular, they do not participate in labile alternations.

[7] The allomorph *mo-* is used with nasal roots. With oral roots, the allomorph *mbo-* is used, unless the first segment of the root is a voiceless stop, in which case this segment may be prenasalized and the allomorph *mo-* is used. Root prenasalization by the causative prefix appears to be a lexical phenomenon that does not affect all roots. See for instance *mo-* + *piru* → *mo-mbiru* ('to dry [something]') but *mo-* + *pi* → *mbo-pi* ('to flog [someone]').

[8] For a discussion of causativization in Paraguayan Guarani, see Velázquez-Castillo (2002b).

Finally, it should be mentioned that *mo-/mbo-* is not the only causative marker attested in Mbyá. Transitive verbs are causativized by the suffix *-uka*, and sociative causatives (cf. Shibatani & Pardeshi 2002; Guillaume & Rose 2010) are built with the prefix *(gu)ero-*, see Dooley (2015: §13.2). Since causatives of transitives and sociative causatives are not directly relevant to the argument that will be developed in the rest of the paper, I will not discuss them.

2.4 Valency reduction with je-/nhe-

The valency of transitive verbs may be reduced with the prefix *je-* and its nasal allomorph *nhe-*, which I will argue has both reflexive and passive uses (see Velázquez-Castillo 2002a for a brief description of this prefix in Paraguayan Guaraní). The reflexive use of *je-/nhe-* is the most frequent according to Dooley (2015: §13.2), and is illustrated in (16). In this example, the agent of the killing must be the subject:

(16) João o-je-juka.
João A3-REFL-kill
'João killed himself.' (not: "#João was killed.')

But *je-* is also attested in what may initially appear to be marked anti-causative constructions:

(17) Okẽ o-nhe-mo-pẽ.
door A3-PASS-CAUS-break
'The door was broken.'

However, such constructions differ crucially from inchoative verbs in implying the existence of an external argument. A first piece of evidence of this contrast is provided by the impossibility to deny the existence of an agent or causer with passivized causatives, as opposed to inchoatives:[9]

(18) a. Kamixa i-piru reve'i va'eri, avave n-o-mo-mbiru-i.
shirt B3-dry quickly although nobody NEG-A3-CAUS-dry-NEG
'Although the shirt dried quickly, nobody dried it.'

b. (#Kamixa o-nhe-mo-mbiru reve'i va'eri), avave
shirt 3-PASS-CAUS-dry quickly although nobody
n-o-mo-mbiru-i.
NEG-A3-CAUS-dry-NEG

(19) a. Okẽ o-pẽ va'eri, avave n-o-mo-pẽ-i.
door A3-break although nobody NEG-A3-CAUS-break-NEG
'Although the door broke, nobody broke it.'

b. (#Okẽ o-nhe-mo-pẽ va'eri), avave n-o-mo-pẽ-i.
door A3-PASS-CAUS-break although nobody NEG-A3-CAUS-break-NEG
Comment: "It sounds like you said someone broke it, but then your corrected yourself."

[9] This test is reminiscent of the *by itself* modification test used notably by Chierchia (2004) and Koontz-Garboden (2009) to diagnose the absence of external arguments in inchoative verbs. Since there is no equivalent construction in Mbyá, and more generally no agent PPs in passives or in the language at large, the *by*-itself test cannot be applied in Mbyá.

Another piece of evidence is provided by instrument modification, which is allowed with passivized causatives but not with inchoatives:

(20) a. João o-mo-pẽ okẽ yvyra py.
João A3-CAUS-break door wood with
'João broke the door with a stick.'

b. Okẽ o-pẽ (*yvyra py).
door A3-break wood with
Comment: "You need someone to use the stick."

c. Okẽ o-nhe-mo-pẽ yvyra py.
door A3-CAUS-break wood with
'The door was broken with a stick.'

(21) a. Ava-kue o-mo-yxyĩ tape maquina py.
man-PL A3-CAUS-smooth path machine with
'The men smoothed out the road with a machine.'

b. Tape h-yxyĩ (*maquina py).
path B3-smooth machine with

c. Tape o-nhe-mo-yxyĩ maquina py.
path A3-PASS-CAUS-smooth machine with
'The road was smoothed out with a machine.'

Not only do (20c) and (21c) imply the existence of an external argument, it is also understood that this argument is an agent, rather than the door or the road itself: clearly, the door cannot be the participant manipulating the stick in (20c), and if it were the understood external argument in (19b), negating the existence of an agent with *avave* ('nobody') should be coherent. In sum, it appears that the reduced causatives of Mbyá cannot be analyzed as reflexive verbs with a semantically impoverished effector external argument, as proposed by Koontz-Garboden (2009) for marked anti-causatives. In these respects, non-reflexive causatives whose valency was reduced with *je-/nhe-* are more similar to English passives, which also imply the existence of an external argument, than to marked anti-causatives. French SE-anticausatives, for instance, are consistent with negating the existence of an external argument, and license neither instrument modifiers nor agentive prepositional phrases:

(22) *French*

a. La porte s'est cassée, mais personne ne l'a cassée.
the door SE = is broken but nobody NEG it = has broken
'The door broke, but nobody broke it.'

b. La porte s'est cassée (*avec un bâton).
the door SE = is broken with a stick

c. La porte s'est cassée (*par Jean).
the door SE = is broken by Jean

I will not offer a detailed analysis of the structure and interpretation of valency reduction with *je-/nhe-*, nor will I explain the preference for its reflexive interpretation, since these questions are orthogonal to our main argument. What matters to the analysis of resultative formation is that transitive verbs prefixed with *je-/nhe-* introduce an external argument, which is either existentially quantified or bound through reflexivization. In

both cases, these verb forms contrast with inchoatives, which lack an external argument altogether.

2.5 There are no anticausative or labile alternations in Mbyá

We have seen that causativization in Mbyá is marked by the prefix *mo-/mbo-*, the suffix *-uka* or the sociative causative prefix *(gue)ro-*. The prefix *je-/nhe-* is used as a reflexive or passive marker. Two other valency increasing or decreasing markers that we will not discuss here are the reciprocal prefix *jo-/nho-*, and the impersonal voice marker *-a*, which binds the external argument of a transitive or intransitive verb without promoting its internal argument (Dooley 2015: §13.2).

The demotion of a direct object to an oblique argument is not marked by derivational morphology, but is marked syntactically by the use of postpositions:

(23) Dooley (2016: 144)

a. A-i-peju atã tata.
A1.SG-B3-blow strong fire
'I blew on the fire with strength.'

b. Yvytu o-i-peju yvyra re.
wind A3-B3-blow tree OBL
'The wind blew on the tree.'

Given this rich inventory of valency changing markers, we may ask ourselves whether there are any unmarked valency alternations in the language. With respect to external argument alternations, the answer is clearly negative. As Dooley observes in his grammatical sketch of Mbyá, alternations that affect the external argument are marked morphologically (Dooley 2015: §13.2).

The situation is more complex with alternations involving internal arguments, which are optional with some verbs:

(24) Dooley (2016: 30)

a. O-ẽ o-vy.
A3-go.up A3-go
'He kept going up.'

b. O-ẽ yvy'ã.
A3-go.up mountain
'He went up the mountain.'

(25) Dooley (2016: 144)

a. Yvytu o-i-peju atã.
wind A3-B3-blow strong
'The wind blew strongly.'

b. A-i-peju atã tata.
A1.SG-B3-blow strong fire
'I blew on the fire with strength.'

I conclude that, with the possible exception of optional internal arguments, every operation that increases or decreases the valency of a verb is marked either by derivational morphology, or by the use of adpositions. In particular, all operations that introduce or bind an external argument are marked by derivational morphology.

An important consequence of this state of affairs is that Mbyá lacks any form of anti-causative or labile alternation. We saw that valency reduction with *je-/nhe-* should be analyzed as a form of passivization or reflexivization. So-called labile alternations, covert alternations between inchoative and transitive causative uses of a verb, are also unattested, as is middle voice. In these respects, Mbyá differs from English, in which labile alternations are attested, as well as German and Greek, in which both labile alternations and marked anticausatives are attested (Alexiadou et al. 2006). In section 4, I will argue that this property of Mbyá is closely linked to the restricted distribution of resultatives in the language.

3 Guaraní resultatives

3.1 Morphological makeup

Resultative predicates are formed by attaching the suffix *-kue/-gue* to the verb root. Both active and inactive verbs are attested in resultatives. The following examples illustrate the predicative use of resultatives:

(26) a. Okẽ o-pẽ-gue.
door A3-break-RES
'The door is broken.'

b. Xo'o o-jy-kue.
meat A3-cook-RES
'The meat is cooked.'

c. Kova'e kumanda h-aguino-gue.
this bean B3-spoil-RES
'These beans are spoiled.'

d. Xe-po i-ruru-kue.
B1.SG-hand B3-swell-RES
'My hand is swollen.'

Mbyá resultatives also have attributive uses:

(27) a. A-mo-ĩ porã ta okẽ o-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-break-RES
'I am going to fix the broken door.'

b. Ha'u-xe xo'o o-xyryry-kue.
A1.SG.eat-DES meat A3-fry-RES
'I want to eat fried meat.'

c. A-i-poru ta kova'e cable xo-gue.
A1.SG-B3-use PROSP this cable tear-RES
'I am going to use this torn cable.'

We now come to the observation at the centre of this paper, namely that the resultative suffix *-kue/-gue* cannot attach to causative verbs, whether they are derived causatives or underived transitive causatives. This is illustrated in examples (28) and (29):

(28) a. A-j-aty jaixa.
A3-B3-bury paca
'I buried the paca.

b. *Jagua o-jou jaixa (j)-aty-kue.
dog A3-find paca 3-bury-RES
Intended: 'The dog found the buried paca.'

(29) *A-mo-ĩ porã ta okẽ o-mo-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-CAUS-break-RES
Intended: 'I am going to fix the broken door.' (cf. (27a))

Resultative formation is also unacceptable with causative verbs whose valency has been reduced with the prefix *je-/nhe-*:

(30) *A-mo-ĩ porã ta okẽ o-nhe-mo-pẽ-gue.
A1.SG-CAUS-be good PROSP door A3-PASS-CAUS-break-RES

Note that resultative formation is not acceptable with all intransitive verbs. Resultatives formed from activity verbs are unacceptable, as illustrated in (31):

(31) *Kunumi o-guata-kue i-kane'õ.
boy A3-walk-RES B3-tired

Furthermore, resultatives are not attested with all inchoative verbs:

(32) a. A-mo-ĩ axuka ka'ay py, ha'e he'ẽ reve'i.
A1.SG-CAUS-be sugar mate in and sweet quickly
'I put sugar in the mate, and it got sweet quickly.'

b. ?A-ka'ay-'u-xe ka'ay he'ẽ-gue.
A1.SG-mate-drink-DES mate sweet-RES
Intended: 'I want to drink sweetened mate.'

The following resultatives were identified in Dooley's (2016) lexicon. Note that all base verbs in the list are intransitive in Mbyá, with the apparent exception of *monda*, to which we come back below:

(33)
a.	aguino > aguino-gue	rot > rotten
b.	jy > jy-kue	cook > cooked
c.	kanhy > kanhy-gue	disappear > disappeared
d.	ke > ke-kue	turn (of milk) > turned
e.	monda > monda-kue	steal > stolen
f.	u'ũ > u'ũ-gue	rot > rotten
g.	xo > xo-gue	break off > broken off
h.	xoro > xoro-kue	tear > torn
i.	xyryry > xyryry-kue	fry > fried
j.	ypi > ypi-kue	dry (of a tree) > dried
k.	vo > vo-kue	crack > cracked

My consultants judged that these resultatives are well formed. They also accepted the following ones. Again, all base verbs in the list are intransitive:

(34)

a.	aju > aju-kue	ripen > ripe
b.	akỹ > akỹ-gue	get wet > wet
c.	o'yxã > o'yxã-gue	cool > cooled
d.	karẽ > karẽ-gue	bend (intransitive) > bent
e.	pẽ > pẽgue	break > broken
f.	pererĩ > pererĩ-gue	thin > thinned
g.	piru > piru-kue	dry > dried
h.	potĩ > potĩ-gue	clean > cleaned
i.	re'õ > re'õ-gue	soften > softened
j.	ynyẽ > ynyẽ-gue	fill up > filled-up
k.	ruru > ruru-kue	swell > swollen
l.	yxyĩ > yxỹi-gue	smooth > smoothed
m.	kai > kai-kue	burn > burned

All verbs in these lists but *monda* have inchoative uses. Indeed, in his lexicon, Dooley (2016: 92) observes that the formation of resultatives with *-kue/-gue* is restricted to intransitive verbs, with the exception of the form *mondakue* ('stolen'), which my consultants also accepted:

(35)
A-jo-gua ao monda-kue.
A1.SG-TR-buy clothes steal-RES
'I bought stolen clothes.'

It should be noted that *monda* is not a direct transitive verb, but rather an intransitive verb with an oblique theme argument:

(36) Dooley (2016: 119)
Kyxe re i-monda.
knife ABL B3-steal
'He stole the knife.'

Still, *monda* differs from the other predicates listed in (33) and (34) insofar as its subject is not a theme but an agent, and constitutes an apparent exception to the generalization that Mbyá resultatives may only be derived from inchoative verbs. In section 5, I will argue that the compatibility of *monda* with resultative derivation is due to the irregular character of this verb, and that this exception actually brings further support to the proposed analysis of the restricted distribution of Mbyá resultatives.

Before I close this section, I would like to point out that the Guaraní suffix *-kue/-gue* is also attested as nominal temporal marker (Tonhauser 2006; 2007; Thomas 2014):

(37)
Xe-r-embireko-kue o-menda xe-irũ r-eve.
B1.SG-R-wife-PAST A3-marry B1.SG-friend R-with
'My ex-wife married my friend.'

However, uses of *-kue/-gue* as a nominal tense and as a resultative marker have different distributions and interpretations. As a past temporal marker, *-kue/-gue* cannot be suffixed to verbs that have not been nominalized. If the verb is nominalized, *-kue/-gue* can attach to it regardless of its event structure. In (38a), the bare verb *o-o* is compatible with a past tense interpretation. Attaching the temporal marker *-kue* to the verb in (38b) is ungram-

matical. In (38c), the temporal marker attaches to the nominalizer *va'e*, which rescues the sentence:

(38) a. João o-o Argentina py.
João A3-go Argentina to
'João went to Argentina.'

b. *João o-o-kue Argentina py.
João A3-go-PAST Argentina to

c. João o-o va'e-kue Argentina py.
João A3-go NMLZ-PAST Argentina to
'João went to Argentina.'

By contrast, the resultative use of *-kue/-gue* is restricted to inchoative verbs, and does not require nominalization. Since the present paper is only concerned with the resultative use of *-kue/-gue*, and its use as a temporal marker has a different distribution, the question of the unification of resultative and past uses will be left to future research.

3.2 Semantic properties of Mbyá resultatives

Embick (2004) observes that English adjectival passives, unlike pure state predicates, cannot be used in complements of verbs of creation:

(39) *English* (Embick 2004: 357)
a. This door was built open.
b. *This door was built opened.

(40) *English* (Embick 2004: 357)
a. This new ruler was built long.
b. *This new ruler was built lengthened.

Since adjectival passives describe states that result from a previous causing event, asserting that an entity was in a result state at its time of creation is incoherent. Applying the same diagnostics in Mbyá confirms that inchoative verbs suffixed with *-kue/-gue* denote properties of result states, rather than properties of pure states:

(41) a. Para o-j-apo kamixa tuixa.
Para A3-B3-make shirt large
'Para made a large shirt.'

b. #Para o-j-apo kamixa (o)-xoro-gue.
Para A3-B3-make shirt A3-tear-RES

c. João o-j-apo okẽ r-atã.
João A3-B3-make door R-hard
'João made a sturdy door.'

d. #João o-j-apo okẽ (o)-pẽ-gue.
João A3-B3-make door A3-break-RES
Consultant's comment: "The door can only be broken after it's been made."

One may further ask what kind of result state is described by Mbyá resultatives. In a seminal study, Kratzer (2000) observed that German and English adjectival passives do not form a homogeneous class. Kratzer identified two kinds of adjectival passives in these

languages, depending on the nature of the state and its relation to the causing event. Resultant state adjectival passives denote mere states of events having culminated, which Kratzer models as properties of times that follow the culmination of an event. Target state adjectival passives, on the other hand, describe semantically richer states that result from the culmination of an event, but may not persist indefinitely. In English and German, target state adjectival passives that do not describe permanent states are compatible with modification by *still* (in German: *immer noch*), unlike resultant state adjectival passives, as illustrated by (42a) vs (42b), respectively:

(42) *German* (Kratzer 2000: 385–386)[10]
   a. Die Geisslein sind immer noch versteckt.
      the little_goats are always still hidden
      'The little goats are still hidden.'
   b. Das Theorem ist (*immer noch) bewiesen.
      the theorem is (*always still) proven
      '*The theorem is still proven.'

The distinction between resultant states and target states was initially formulated by Parsons (1990), who offers an elegant description of the difference between these two kinds of states:

(43) Parsons (1990: 234–235)
   "For every event *e* that culminates, there is a corresponding state that holds forever after. This is "the state of *e*'s having culminated," which I call the "Resultant state of *e*" (…) It is important not to identify the Resultant-state of an event with its "target" state. If I throw a ball onto the roof, the target state of this event is the ball's being on the roof, a state that may or may not last for a long time. What I am calling the Resultant state is different; it is the state of my having thrown the ball onto the roof, and it is a state that cannot cease holding at some later time."

Following this intuition, Kratzer (2000) proposes that target state adjectival passives are derived by applying a stativizer to a relation between events and states, while resultant state adjectival passives are derived by using a stativizer that is essentially a perfect operator, which maps a property of events to a property of times:

(44) a. $[\![(42a)]\!] = \exists e \exists s [\text{CAUSE}(e)(s) \,\&\, \text{HIDDEN}(s)(\text{the goats}) \,\&\, t_0 \subseteq \tau(s)]$
   b. $[\![(42b)]\!] = \exists e [\text{PROVE}(e)(\text{the theorem}) \,\&\, \tau(e) \leq t_0]$

Kratzer's denotations for the two stativizers are given in (45). I have renamed the target and resultant stativizers $\text{RES}_{\text{TARGET}}$ and $\text{RES}_{\text{RESULT}}$, respectively:

(45) a. $[\![\text{RES}_{\text{TARGET}}]\!] = \lambda R.\lambda s.\, \exists e[R(e)(s)]$
   b. $[\![\text{RES}_{\text{RESULT}}]\!] = \lambda P.\lambda t.\, \exists e[P(e) \,\&\, \tau(e) \leq t]$

Coming back to Mbyá, all the resultatives that my consultants accepted and that do not describe permanent states are compatible with modification by *teri* ('still'):

[10] Glosses in Kratzer's (2000) examples have been modified to fit the Leipzig glossing rules.

(46) a. Okẽ o-pẽ-gue teri.
door A3-break-RES still
'The door is still broken.'

b. Xe-ao akỹ-gue teri.
B1.SG-clothes wet-RES still
'My clothes are still wet.'

c. Xe-po i-ruru-kue teri.
B1.SG-hand B3-swell-RES still
'My hand is still swollen.'

We must of course make allowance for resultative predicates that are incompatible with *teri* because they denote permanent states:[11]

(47) a. #Xo'o o-jy-kue teri.
meat A3-cook-RES still

b. #Jety xyryry-kue teri.
potato fry-RES still

Finally, the incompatibility of *-kue/-gue* resultatives with activity predicates (cf. example (31)) is also explained if *-kue/-gue* denotes a target stativizer, which takes relations between events and states as arguments. Since activity predicates denote properties of events without an associated target state, they will not be able to combine with *-kue/-gue*.

I conclude that *-kue/-gue* resultatives denote target states rather than resultant states.

3.3 Structure of Mbyá resultatives

My analysis of the structure of Mbyá resultatives builds on the constructivist analysis of causativization of Schäfer (2007) and Alexiadou et al. (2006; 2015). Verbs are decomposed into an uncategorized root together with a number of functional projections:

(48) $[_{\text{VoiceP}}$ Voice $[_{\text{vP}}$ v √ROOT]]

Following Marantz (1997), roots are category neutral. A little v head categorizes them as verbal. Following earlier proposals by Kratzer (1996), Hale & Keiser (2002) and Pylkkännen (2002; 2008), external arguments are introduced by a Voice head.

In addition, Schäfer (2007) and Alexiadou et al. (2015) analyze causative/inchoative alternations as Voice alternations. Inchoative verbs (i.e. unmarked anticausatives) consist of a Voice-less vP. In causative verbs, an agent or causer argument is introduced by an additional Voice head:

(49) *English* (Alexiadou et al. 2015: 29)
a. The door opened.
b. [v_{CAUS} [the door √OPEN]]

This analysis follows a tradition of decomposing causative verbs into a state denoting root, and an operator that introduces a causing event (see among many others Lakoff 1965; McCawley 1968; Dowty 1979; von Stechow 1996; Harley 2008; 2012). In addition, Pylkkänen (2002; 2008) argued based on the analysis of Finnish desiderative causatives

[11] More precisely: these states are permanent by virtue of the nonreversible nature of the change of state described by the root, not because the resultatives have perfect-type meanings.

and Japanese adversative causatives that causing events may be introduced independently from causer arguments. She concludes that causative relations between eventualities and agents of causing events are introduced by different heads, which in the present framework are identified with little v and Voice, respectively. Further extending this line of reasoning, Kratzer (2005) observes that Pylkkänen's dissociation of causing events from causer arguments makes it possible to analyze causative alternations as Voice alternations. Kratzer argues that causation should be analyzed as a relation between a causing event and an event or state that the culmination of this event brings about. In this perspective, one may assume that inchoative predicates are causative too:

(50) Kratzer (2005)
"the commonly posited BECOME operator becomes superfluous in the decomposition of inchoatives, causatives, and anticausatives. Those three types of verbs are all plain causatives. They differ with respect to voice."

Finally, Schäfer (2007) and Alexiadou et al. (2015) provide syntactic arguments for the presence of a causative little v head in inchoatives, in the absence of external argument introducing head.

Building on this analysis of causative structures, Alexiadou et al. (2015) argue that resultative operators differ with respect to their height relative to the Voice head. In resultant state adjectival passives, the resultative head (which I will refer to as RES) is introduced above Voice, while in target state adjectival passives, it is introduced below the Voice head. In resultant state adjectival passives, Voice may introduce an agent or a causer argument. On the other hand, when Voice is present in target state adjectival passives, it introduces as an external argument a participant[12] in the target state, which accounts for the incompatibility of target state adjectival passives with modifiers that relate to agents or causers, with the exception of agents and causers that participate in the result state (see McIntyre 2013 and section 4.1). The class of target state adjectival passives is not itself syntactically homogeneous, since target state participles in English and German as well as target state interpretations of Greek participles formed with the suffix *-menos* are argued to embed a full vP, while Greek target state participles formed with the suffix *-tos* only embed a root or √P:

(51) Structure of resultant state (RSAP) and target state adjectival passives (TSAP):

a.	$[RES_{RESULT}\ [Voice_{AGENT/CAUSER}\ [\ v\ \sqrt{ROOT}]]$	RSAP
b.	$[Voice_{HOLDER}\ [RES_{TARGET}\ [\ v\ \sqrt{ROOT}]]$	TSAP in English, German, Greek *-menos*
c.	$[RES_{TARGET}\ \sqrt{ROOT}\ ]$	TSAP with Greek *-tos*

In this perspective, if Mbyá resultatives describe target states, we expect that they should occur lower than Voice, or more generally lower than the point where external arguments are introduced in the syntactic structure. This is indeed confirmed by the fact that Mbyá resultatives do not license agent/causer related modifiers, as illustrated below with instrumental modifiers. In this respect, resultatives pattern with inchoative verbs, as opposed to causative and passive verbs:

[12] A consequence of this analysis is that causative little v heads can occur independently of agent/causer Voice in English adjectival passives. In that sense, it challenges the claim that English is a v-Voice bundling language, contra Pylkkänen (2008) and in line with Harley (2009).

(52) a. Okẽ o-nhe-mo-pẽ yvyra py.
door A3-PASS-CAUS-break wood with
'The door was broken with a piece of wood.'

b. *Okẽ o-pẽ yvyra py.
door A3-break wood with

c. *Okẽ o-pẽ-gue yvyra py.
door A3-break-RES wood with

(53) a. Tape o-nhe-mo-yxyĩ maquina py.
path A3-PASS-CAUS-smooth machine with
'The road was smoothed out with a machine.'

b. *Tape h-yxyĩ maquina py.
path B3-smooth machine with

c. *Tape h-yxyĩ-gue maquina py.
path B3-smooth-RES machine with

Resultatives that include a v layer entail the existence of a causing event. Evidence that Mbyá resultatives are of this type was already presented in (41), where it was shown that they are unacceptable in complements of verbs of creation.

In sum, resultative predicates formed with *-kue/-gue* denote a target state, which entails the existence of a causing event. The resultative head is introduced above little v, and is incompatible with an agent/causer Voice head. This suggests the following structure for Mbyá resultatives:

(54) a. piru-kue
dry-RES
'dried'

b. $[_{AspP}\ RES_{TARGET}\ [_{vP}\ [_{v}\ \sqrt{DRY}\ v_{CAUS}\ ]\ [_{\theta P}\ \theta_{THEME}\ DP\ ]\ ]\ ]$

In this structure, the stative root √DRY is adjoined to the v_{CAUS} head, which introduces a causing event. The thematic head θ_{THEME} introduces the holder of the state, in the complement domain of little v. The little vP denotes a relation between states of the theme being dry and their causing event. The resultative head RES_{TARGET} maps these relations to a property of target states of such events.

In the syntactic representation in (54), it is assumed that the root denotes a state. This is appropriate for verbs like *piru*, which can be used as pure stative predicates. However, some inchoative verbs only have a dynamic use. This is the case for instance with *pẽ* ('break'). How can we capture the dynamic nature of such verbs? Following Embick (2009), I propose that the roots of predicates of caused states denote a property of events and must co-occur with a "proxy" predicate of states. In inchoative structures, the root √BREAK denotes a property of events that is adjoined to a causative little v head, and specifies a manner of causing. The caused state is denoted by an abstract predicate ST that is c-commanded by little v:[13]

[13] See Koontz Garboden & Beavers (2017), Beavers (2018) for objections to Embick's proposal and an alternative analysis. Note that the debate about the proper representation of states in *break* type verbs is ultimately orthogonal to the argument made in this paper.

(55) $[_{vP}\ [_{v}\ \sqrt{}\text{BREAK}\ v_{CAUS}\ ]\ [_{\theta P}\ [_{\theta}\ \text{ST}\ \theta_{\ \text{THEME}}\ ]\ \text{DP}\ ]\ ]$

Given these assumptions, we may represent the structure of resultatives derived from predicates of caused states as follows:

(56) a. pẽ-gue
break-RES
'broken'
b. $[_{AspP}\ \text{RES}_{\text{TARGET}}\ [_{vP}\ [_{v}\ \sqrt{}\text{BREAK}\ v_{CAUS}\ ]\ [_{\theta P}\ [_{\theta}\ \text{ST}\ \theta_{\ \text{THEME}}\ ]\ \text{DP}\ ]\ ]\ ]$

The compositional interpretation of these structures is discussed in the appendix.

4 Explaining the restricted distribution of Mbyá resultatives

4.1 Target stativizers and Voice

Following previous studies by Rapp (1996), Schlüker (2005), Gehrke (2011), Meltzer-Asscher (2011) and McIntyre (2013), Alexiadou et al. (2015) note that English, Greek and German target state adjectival passives fail to license agent/causer related modifiers, unless the agent they refer to is present in the target state, or the adverb modifies that state directly. The following contrasts illustrate this fact:

(57) *English* (McIntyre 2013: 31)
a. The door seemed broken (*by Mary).
b. The road remained blocked by the police.

(58) *English* (McIntyre 2013: 31)
a. The door seemed painted (*by Mary).
b. The door seemed painted by Picasso.

The target state adjectival passives in (57a) and (58a) are incompatible with agentive *by*-phrases. In (57b) and (58b), agentive modification is acceptable. McIntyre argues that the relevant contrast lies in the relation of the agent to the target state. While the agents of (57a) and (58a) only participate in the causing event, those of (57b) and (58b) are interpreted as participants in the target state. As McIntyre puts it, they are "responsible for continuing the state expressed by the participle" or are somehow essential to the characterization of the state. It appears then that the arguments introduced in *by*-phrases in (57b) and (58b) are arguments of the target state, and that these examples are consistent with the generalization that target state adjectival passives are incompatible with agent oriented modifiers that relate to the causing event rather than its result state. This generalization is further supported by the incompatibility of target state adjectival passives with instrument modifiers and agent oriented adverbs. The following examples from Greek illustrate:

(59) *Greek* (Alexiadou et al. 2015: 158)
Ta lastixa ine (*akoma) fuskomena me tin tromba.
the tires are still inflated with the pump
'The tires are (*still) inflated with the pump.'

(60) *Greek* (Alexiadou et al. 2015: 158)
To thisavrofilakio itan (*akoma) prosektika anigmeno.
the safe was still cautiously opened
'The safe was (*still) cautiously opened.'

Based on these observations and additional modification tests, Alexiadou et al. (2015) conclude that target stativizers are introduced below Voice, and block the introduction of agent/causer Voice.

In order to explain the incompatibility of target stativizers with agent/causer Voice, Anagnostopoulou (2017; 2018) proposes that target state but not resultant state participles represent outcomes of scalar changes. She further argues that verbs that lexicalize scalar changes must express change along a single dimension. The presence of Voice is then argued to be blocked in target state adjectival passives because it would lead to interactions between the agent and the theme that would render the change too complex.

In the next subsection, I will argue that the incompatibility of target stativizers with agent/causer Voice explains the restricted distribution of resultatives in Mbyá.

4.2 Explaining the restricted distribution of Mbyá resultatives

Mbyá target state resultatives are unacceptable with all transitive verbs. This contrasts with target state adjectival passives in English and German, which can be derived from a subset of non-alternating transitive causatives, as illustrated by the following examples:

(61) *German* (Kratzer 2000: 385)

a. Die Reifen sind immer noch aufgepumpt.
the tires are always still pumped_up
'The tires are still pumped-up.'

b. Das Gebäude ist immer noch geräumt.
the building is always still evacuated
'The building is still evacuated.'

c. Der Deckel ist immer noch abgeschraubt.
the lid is always still screwed_off
'The lid is still screwed off.'

d. Die Ausfahrt ist immer noch versperrt.
the driveway is always still obstructed
'The driveway is still obstructed.'[14]

The fact that these adjectival passives are compatible with modification by *still* suggests that they are interpreted as target state resultatives. Importantly, the transitive verb stems from which they are derived lack inchoative alternants:

(62) *English*

a. *The tires pumped up.
b. #The building evacuated.[15]
c. *The lid screwed off.
d. *The driveway obstructed.

[14] Kratzer (2000) observes that some uses of *obstructed* lack event implications, and therefore do not qualify as adjectival passives, e.g. *Because of a congenital malformation, tissue obstructed the blood vessel*. Kratzer concludes that the verb *obstruct* has stative as well as eventive uses.

[15] *Evacuate* has intransitive uses, see (i) below. Note that in this example, "the building" is understood metonymically as referring to its residents. Therefore, such examples do not provide evidence of labile alternations with *evacuate*:

(i) The last time the building evacuated was during the 2013 floods.
(Retrieved from https://calgary.ctvnews.ca/water-leak-forces-hundreds-of-residents-out-of-salvation-army-building-1.4095618 on April 15, 2019).

(63) *German*

a. *Die Reifen pumpten auf.
the tires pumped up

b. *Das Gebäude evakuierte.
the building evacuated

c. *Der Deckel schraubte ab.
the lid screwed off

d. *Die Ausfahrt versperrte.
the driveway obstructed

In German, the native speakers I consulted accept *sich*-forms of these verbs only to the extent that internal causation is conceivable. To illustrate, one speaker commented that (64b) is acceptable "if I imagine a building that has a function of ejecting all residents in the case of a threat". Another speaker observed that (64a) suggests that "the tires have a built-in inflation mechanism (much like life jackets in an airplane)." One speaker judged that, as a consequence of these implications, (64b) and (64d) are odd. Another one judged that (64c) and (64d) are odd, for the same reasons.

(64) *German*

a. Die Reifen pumpten sich auf.
the tires pump REFL up
'The tires pumped themselves up.'

b. ?Das Gebäude evakuierte sich.
the building evacuated REFL
'The building evacuated itself.'

c. ?Der Deckel schraubte sich ab.
the lid screw REFL off
'The lid screwed itself off.'

d. ?Die Ausfahrt versperrte sich.
the driveway obstructed REFL
'The driveway obstructed itself.'

I conclude that these examples, to the extent that they are acceptable, are interpreted reflexively, and are therefore semantically transitive.

This discussion shows that target state resultatives are compatible with some transitive verbs that do not participate in causative alternations in English and German. Why then are resultatives incompatible with transitive causatives in Mbyá? We saw in section 3 that Mbyá lacks any form of anticausative or labile alternations. Furthermore, the only operations that reduce the valency of transitive verbs preserve external argument entailments: both reflexive and passive verbs entail the existence of an external argument, and there appears to be no middle voice in the language. In the present analytical framework, this suggests that the roots of lexically causative verbs in Mbyá are only ever attested in syntactic frames that include an agent or causer Voice head, which introduces an external argument in the semantic representation of the verb. I conclude that these roots are lexically required to occur in such syntactic frames. This entails that these verbs will be incompatible with resultative derivation with the suffix *-kue/-gue*, since this suffix is a target stativizer and as such is incompatible with agent or causer Voice. The same reasoning also explains the ungrammaticality of resultatives derived from morphological causatives,

under the assumption that the causative prefix *mo-/mbo-* introduces a thematic Voice head.

By contrast, given the compatibility of the English and German transitive causatives with target state derivation in (61), we must conclude that the roots of these verbs may occur in syntactic frames that lack agent or causer Voice, despite the fact that these verbs do not have inchoative alternants.

Note that a similar analysis of restrictions on the distribution of target state resultatives was already proposed in Greek by Anagnostopoulou (2017), who observed that verbs of manner of killing and verbs of creation, as well as a subset of verbs with manner entailments, cannot form target state adjectival passives:

(65) *Greek* (Anagnostopoulou 2017: 115)
Aftos o anthropos ine (*akomi) dolofonimenos/straggalismenos
this the man is (*still) murdered/strangled
dhilitiriasmenos/pirovolimenos/mexeromenos.
poisoned/shot/knived

(66) *Greek* (Anagnostopoulou 2017: 115)
a. To vivlio mu ine (*akomi) grameno.
the book my is (*still) written
b. O kiklos ine (*akomi) sxediasmenos.
the circle is (*still) drawn

(67) *Greek* (Anagnostopoulou 2017: 115)
*Ta magula tis ine akomi xastukismena, gi'afto ponai.
the cheeks her are still slapped, for_this hurts
'*Her cheeks are still slapped, that's why she hurts.'

Anagnostopoulou observes that the causative verbs that cannot form target state adjectival passives require an agent as an external argument. By contrast, at least some verbs of external causation that are not strictly agentive appear to form acceptable target state adjectival passives in Greek, as illustrated by the following examples (the judgments in (69) were provided by a native speaker of Greek):

(68) *Greek* (Alexiadou et al. 2015: 157)
Ta lasticha ine akoma fuskomena.
the tires are still pumped_up

(69) *Greek*
a. ?To ktirio ine akoma ekenomeno.
the building is still evacuated
b. ?To kapaki ine akoma ksevidomeno.
the lid is still screwed_off
c. O dromos ine akoma mplokarismenos.
the driveway is still blocked

In the present framework, verbs that require an agent as external argument must be realized in a frame that includes an agentive Voice head, which explains their incompatibility

with target stativizers. By contrast, the roots of non-agentive causative verbs that are compatible with target state adjectival passives must be able to occur in syntactic frames that lack an agent or causer Voice head, even if they fail to participate in labile alternations.

In sum, the crucial difference between Mbyá and languages like English, German or Greek with respect to the distribution of target state resultatives appears to be range of roots that are required to co-occur with an agent or causer Voice head. In Mbyá, all roots of transitive causatives are subject to this requirement. In English, German and Greek, at least some roots of non-alternating transitive causative verbs must be able to occur in frames that do not include agent or causer Voice.

4.3 Coda

I have argued that all roots of transitive lexical causatives in Mbyá require the presence of an agent or causer Voice head in their syntactic frame. This, in combination with the incompatibility of target state resultatives with such heads, explains the restricted distribution of resultatives in this language. What is still unclear at this point is the nature of the association between Voice and the roots of causative verbs in Mbyá. In the next section, I sketch two alternative analyses of this dependency. The first one builds on the assumption that phonological exponents may spell out linearized sequences of terminal nodes, and proposes that exponents of roots of transitive lexical causatives in Mbyá spell out sequences of heads that include the root itself and its associated Voice head. The second adopts a more classical approach to Vocabulary Insertion, and posits that these roots bear a feature that must be checked by a Voice head.

5 Spelling out Mbyá verbs

5.1 Spelling out syntactic frames with post-linearization spanning

An elegant way of capturing the requirement that roots of transitive causatives impose on the presence of a Voice head is to assume that the exponent of these verbs spell out a chunk of structure that includes both heads. Theories of Vocabulary Insertion at non-terminal nodes are well suited to implement this idea. In this subsection, I will sketch an analysis of the morphological realization of Mbyá verbs using the theory of post-linearization spanning of Haugen & Siddiqi (2016).

An important motivation of realizational models of morphology with non-terminal insertion is the avoidance of the proliferation of null exponents and post-syntactic readjustment operations like fusion and fission. Null exponents and readjustment operations are invoked in realizational models of morphology when a piece of syntactic structure that contains multiple terminal nodes is spelled out by a single exponent. This arises for instance in the analysis of irregular past forms of English verb tenses like *hit* or *sang* (Halle & Marantz 1993). The former may be analyzed by positing a null allomorph of the past tense, whose use is triggered by the presence of the root √HIT:

(70) Vocabulary Items for T[+past] (Embick 2015: 93)
a. T[+past] ↔ *-t* /{√BEND, √LEAVE, …}_
b. T[+past] ↔ ∅ /{√HIT, √QUIT, …}_
c. T[+past] ↔ *-ed*

An analysis of *sang* will involve not only positing a null exponent for the past tense in the context of √SING, but also invoking a phonological readjustment rule that will change the nucleus of the exponent of the root in the context of the past tense.

By contrast, post-linearization spanning treats *hit* and *sang* as exponents of adjacent sequences of heads after linearization:[16]

(71) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{HIT}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{HIT} + v + T_{[+past]}}_{\textit{hit}}$

c. Phonological realization:

(72) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{SING}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{SING} + v + T_{[+past]}}_{\textit{sang}}$

c. Phonological realization:

The realization of sequences of heads by a single Vocabulary Item is subject to the two following principles:

(73) Post-linearization Contiguous Morpheme Insertion Principle (Haugen & Siddiqi 2016: 369)
Insertion may realize multiple adjacent X^0s (features) provided that the features realized by the inserted Vocabulary Item are as large a subset of the string of adjacent X^0s (features) as that which could otherwise be expressed by separate overt Vocabulary Items at the contained X^0s (features).

(74) Minimize Exponence (Siddiqi 2009: 4)
The most economical derivation will be the one that maximally realizes all the formal features of the derivation with the fewest morphemes.

Note that in post-linearization spanning, a Vocabulary Item may provide an exponent for a series of heads, without matching all the heads in the series. This is similar to the insertion of underspecified Vocabulary Items under bundles of features in Distributed Morphology. In view of this fact, the discussion that follows will distinguish *exponence* (the phonological realization of a series of heads) from *feature matching*. In the graphical representation of Vocabulary Insertion that are used in this section, e.g. (72b)–(72c), horizontal curly brackets represent exponence, rather than feature matching.

Keeping this in mind, let us now illustrate how the two principles in (73) and (74) interact in the realization of the past form of *sing*. This process involves a competition between the irregular form *sang* and the regular form **singed*, which exploits the following set of Vocabulary Items:

(75) a. $T_{[+past]} \leftrightarrow$ *-ed*
b. $\sqrt{SING} \leftrightarrow$ *sing*
c. $\sqrt{SING}, T_{[+past]} \leftrightarrow$ *sang*

[16] Haugen & Siddiqi assume that the English past tense and past participle have a common [bound] feature, which I will ignore in this exposition, for the sake of conciseness.

Two options compete for the phonological realization (i.e. exponence) of the linearized sequence of heads. For ease of reading, feature matching between Vocabulary Items and sequences of heads are indicated through boldface, while exponence is indicated with curly brackets:

(76) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{SING}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{\mathbf{SING}} + v + \mathbf{T_{[+past]}}}$

c. Phonological realization: ***sang***

(77) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{SING}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{\mathbf{SING}} + v}\ +\ \underbrace{\mathbf{T_{[+past]}}}$

c. Phonological realization: ***sing*** ***-ed***

While both options satisfy the Post-linearization Contiguous Morpheme Insertion Principle, Minimize Exponence favours *sang* over *singed*, since the former realizes (i.e. matches) the same number of features (√SING and $T_{[+past]}$) with fewer morphemes. Note that, given the inventory of Vocabulary Items in (75), the little v head does not qualify as realized in either option, in the *matching* sense of realization. Nevertheless, this head is still spelled out by *sang* in (76c) and by *sing* in (77c).

It is worthwhile to discuss the process that leads to the realization of the past form of *hit*, since this will illustrate an important feature of post-linearization spanning, namely the use of homophony in the analysis of morphological irregularities. Both the present non-third person form of this verb and its past tense form are realized as *hit*. The Vocabulary Item in (78b) may be used to spell out the former. However, spelling out the past form of this verb with this Vocabulary Item is less optimal than using the regular form **hitted*, since (78b) does not match the past tense feature. Consequently, we must introduce a homophone of *hit* in (78c), in order to account for the irregular realization of the verb in the past tense.

(78) a. $T_{[+past]} \leftrightarrow$ *-ed*

b. $\sqrt{HIT} \leftrightarrow$ hit_1

c. $\sqrt{HIT}, T_{[+past]} \leftrightarrow$ hit_2

(79) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{HIT}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{\mathbf{HIT}} + v}\ +\ \underbrace{\mathbf{T_{[+past]}}}$

c. Phonological realization: $\boldsymbol{hit_1}$ ***-ed***

(80) a. Syntactic structure: $[\ T_{[+past]}\ [_{vP}\ v\ \sqrt{HIT}\ ]\ ]$

b. Linearized sequence of heads: $\underbrace{\sqrt{\mathbf{HIT}} + v + T_{[+past]}}$

c. Phonological realization: $\boldsymbol{hit_1}$

(81) a. Syntactic structure: [$T_{[+past]}$ [$_{vP}$ v √HIT]]

b. Linearized sequence of heads: $\underbrace{\sqrt{\mathbf{HIT}} + \mathrm{v} + \mathbf{T}_{[+\mathbf{past}]}}$

c. Phonological realization: ***hit*$_2$**

While the appeal to root homophony in post-linearization spanning may be criticized by some, it is embraced by Haugen & Siddiqui (2016), who argue that this approach is no more stipulative than positing a contextually conditioned zero-allomorph of the past tense, and reflects some degree of arbitrariness in the history of these irregular forms.

Let us now consider how post-linearization spanning may be used to provide a model of the morphological realization of Mbyá resultatives and valency alternations. In a realizational morphological framework, the most delicate aspect of Mbyá verb morphology to model is the lack of labile alternations. Indeed, we must make sure that (i) exponents of inchoative verbs cannot be used to spell out transitive structures, and (ii) exponents of transitive causatives cannot be used to spell out inchoative structures. In Distributed Morphology, both problems would arise if null exponents were used indiscriminately to spell out little v heads and Voice. Remembering that the verb *piru* ('dry') is restricted to intransitive inchoative or stative uses, while *aty* ('bury') is restricted to transitive uses, consider the following inventory of Vocabulary Items:

(82) a. √DRY ↔ *piru*
b. √BURY ↔ *aty*
c. $\mathrm{v}_{\mathrm{CAUS}}$ ↔ ∅
d. Voice ↔ ∅

Unrestricted use of null exponents for $\mathrm{v}_{\mathrm{CAUS}}$ and Voice predicts, incorrectly, that the exponent *piru* may realize a causative verb, and that the exponent *aty* may realize an inchoative verb:

(83) a. Syntactic structure:[17] [Voice [$_{vP}$ [√DRY $\mathrm{v}_{\mathrm{CAUS}}$] [$_{\theta P}$ θ_{THEME} DP]]]

b. Phonological realization: *$\varnothing_{\mathrm{Voice}}$ – $\varnothing_{\mathrm{v}}$ – *piru*

(84) a. Syntactic structure: [$_{vP}$ [√BURY $\mathrm{v}_{\mathrm{CAUS}}$] [$_{\theta P}$ θ_{THEME} DP]]

b. Phonological realization: *$\varnothing_{\mathrm{v}}$ – *aty*

These cases of over-generation are elegantly avoided using post-linearization spanning. One may restrict the use of *aty* to causative structures by assuming that this exponent spells out a sequence of heads that includes both the root and Voice:

(85) a. Voice, $\mathrm{v}_{\mathrm{CAUS}}$, √BURY ↔ *aty*

b. Syntactic structure: [Voice [$_{vP}$ [√BURY $\mathrm{v}_{\mathrm{CAUS}}$] [$_{\theta P}$ [ST θ_{THEME}] DP]]]

c. Linearizarion: $\underbrace{\mathbf{Voice} + \mathbf{v}_{\mathbf{CAUSE}} + \sqrt{\mathbf{BURY}}}$

d. Phonological realization: ***aty***

[17] In this example and the following ones, I do not discuss the phonological realization of the internal argument of the verb, which does not belong to the same Spell Out domain as little v. This has been indicated by greying out θP in the syntactic representation of each example.

Because the Vocabulary Item in (85a) is specified for Voice, it cannot spell out a sequence that does not include this head.

The impossibility to spell out transitive structures with *piru* is also easily accounted for with Minimize Exponence, given the availability of the alternative realization *mombiru*. To illustrate, the exponent *piru* defined in (86a) spells out all three features present in (87), but it matches only the root, while the combination of *mo-* and *piru* (*mombiru*) in (88) matches all three features:

(86) a. √DRY ↔ *piru*
b. Voice, v_{CAUS} ↔ *mo-*

(87) a. Syntactic structure: [Voice [$_{vP}$ [√DRY v_{CAUS}] [$_{\theta P}$ θ_{THEME} DP]]]

b. Linearization: $\underbrace{\text{Voice} + v_{CAUS} + \sqrt{\textbf{DRY}}}$

c. Phonological realization: ***piru***

(88) a. Syntactic structure: [Voice [$_{vP}$ [√DRY v_{CAUS}] [$_{\theta P}$ θ_{THEME} DP]]]

b. Linearization: $\underbrace{\textbf{Voice} + \textbf{v}_{\textbf{CAUS}}}$ + $\underbrace{\sqrt{\textbf{DRY}}}$

c. Phonological realization: ***mo-*** ***piru***

Minimize Exponence favours (88) over (87), since the causative morpheme *mo-* matches the Voice and v_{CAUS} heads, which are left unmatched in (87). Note that this analysis relies on an auxiliary assumption, which is that there is no Vocabulary Item that spells out Voice with a null exponent. This however is a consequence of a design feature of post-linearization spanning, which eschews the use of null exponents altogether.

The analysis also captures covert event structure alternations between stative and inchoative uses of *piru* and other stative roots, under the assumption that little v heads lack independent exponents in the language (which is supported by the lack of overt marking of alternations between stative and dynamic interpretations of verbs, as well as by the lack of overt marking of the opposition between inchoative and process verbs, all these oppositions being encoded in flavours of little v in the proposed analysis):

(89) a. √DRY ↔ *piru*

b. Syntactic structure: [$_{vP}$ [√DRY $v_{CAUS/STATE}$] [$_{\theta P}$ θ_{THEME} DP]]

c. Linearization: $\underbrace{v_{CAUS/STATE} + \sqrt{\textbf{DRY}}}$

d. Phonological realization: ***piru***

In sum, this analysis captures dependencies between the roots of lexical causatives and Voice lexically, by encoding in Vocabulary Items the information that the exponents of these roots also spell out Voice. In this perspective, the incompatibility of roots of underived transitive causatives with resultative derivation receives the same explanation as the impossibility of these roots to occur in inchoative verb frames. Namely, since both structures lack agent or causer Voice, the only Vocabulary Item that may spell out the root is overspecified. Compare (92) to the grammatical resultative in (91):

(90) a. RES_{TARGET} ↔ *-kue*

(91) a. v_{CAUS}, √BREAK ↔ *pẽ*

b. Syntactic structure: [RES_{TARGET} [$_{vP}$ [√BREAK v_{CAUS}] [$_{\theta P}$ [ST θ_{THEME}] DP]]]

c. Linearization: $\underbrace{\mathbf{v_{CAUS}} + \mathbf{\sqrt{BREAK}}}_{\textit{pẽ}} + \underbrace{\mathbf{RES_{TARGET}}}_{\textit{-kue}}$

d. Phonological realization: ***pẽ*** ***-kue***

(92) a. Voice, v_{CAUS}, √BURY ↔ *aty*

b. Syntactic structure: [RES_{TARGET} [$_{vP}$ [√BURY v_{CAUS}] [$_{\theta P}$ [ST θ_{THEME}] DP]]]

c. Linearization: $\underbrace{\mathbf{v_{CAUS}} + \mathbf{\sqrt{BURY}}}_{*\textit{aty}} + \underbrace{\mathbf{RES_{TARGET}}}_{\textit{-kue}}$

d. Phonological realization: ****aty*** ***-kue***

5.2 Remarks on thieving

It was observed in section 3.1 that the verb *monda* ('steal') is compatible with resultative *-kue/-gue*, which appears to contradict the generalization that resultative *-kue/-gue* only combines with inchoative predicates. I believe that the source of this exception lies in the irregular character of the predicate *monda* itself. This is a dynamic predicate which requires the presence of an agent argument and a theme that undergoes a transfer of possession. As such, *monda* falls under Tsunoda's (1981) category of predicates of effective action. The fact that the theme of this verb is realized as an oblique argument is somewhat surprising, since effective action predicates tend to be realized as transitive verbs cross-linguistically (Tsunoda 1985; Malchukov 2005; Grimm 2011). Even more surprising is the fact that the agent of *monda* is cross-referenced with a class B inactive marker. Velázquez-Castillo (2012a) observed that arguments that initiate a process of change (in this case a transfer of possession) are marked as actors in Paraguayan Guaraní. Mbyá is similar to Paraguayan Guaraní in this respect (see Dooley 2015: §10.1). We would therefore expect the agent of *monda* to be cross-referenced with a class A marker. This is indeed how the agent of dynamic uses of *monda* is cross-referenced in Paraguayan Guaraní (see Jover Peralta & Osuna 1950; Guasch & Ortiz 2008).

Given this state of affairs, I would like to suggest that *monda* has an argument structure that is not characteristic of agentive verbs, and that this property is reflected both in its unexpected cross-referencing pattern and in its compatibility with resultative derivation. More precisely, I will argue that because of its peculiar argument structure, *monda* differs from other agentive verbs in Mbyá in not requiring the presence of a Voice head in its syntactic frame. My argument will rely on Zubizarreta & Pancheva's (2017a; b) theory of cross-referencing in Paraguayan Guaraní, which I apply to Mbyá.

Zubizarreta & Pancheva (2017a; b) analyze the cross-referencing system of Paraguayan Guaraní transitive verbs as a direct/inverse system, class A markers being used to cross-reference subjects in the direct order, while class B markers are used to cross-reference objects in the indirect order. In addition, Zubizarreta and Pancheva argue that while class A markers are agreement prefixes, class B 1st and 2nd person markers are pronouns. In the

simplest case of indirect order, they are object pronouns that are promoted to a position of adjunction to the inflection head I, via the edge of vP, as illustrated by the following example from Paraguayan Guaraní:[18]

(93) *Paraguayan Guaraní* (Zubizarreta & Pancheva 2017a: 1177)
a. (Nde) che = mbo-jahu.
you 1SG.OBJ = TR-bathe
'You bathe me.'
b. [$_{I}$ D_{1SG} $I_{[1SG]}$ [$_{vP}$ ($\cancel{DP}_{\cancel{1SG}}$) [$_{vP}$ DP_{2SG} [$_{vP}$ $v_{[1SG]}$ [V ($\cancel{DP}_{\cancel{1SG}}$)]]]]]

Zubizarreta and Pancheva observe that object cross-reference markers in the inverse order may originate as possessors of incorporated noun phrases. This analysis is supported by the formal identity of possessive pronouns with class B cross-reference markers, as illustrated in (94a)–(94b):

(94) *Paraguayan Guaraní* (Zubizarreta & Pancheva 2017a: 1181–1182)
a. Nde re-johéi che rova (ky'a).
you 2SG-wash 1POSS face dirty
'You wash my (dirty) face.'
b. Nde che = rova (jo)héi.
you 1POSS = face wash
'You wash my face.'

In (94b), the 1st person cross-reference marker is argued to be base generated as a possessor in the specifier of the incorporated nP *che = rova*, before undergoing cyclic movement to I.

Zubizarreta and Pancheva extend this analysis to class B 1st and 2nd person cross-reference markers of so-called "triform-verbs", which they argue originate as possessors of an nP incorporated into little v. Consider for instance the verb *che = rasẽ* in (95). This verb consists of the nP *asẽ* ('cry') incorporated into a light v. Its class B 1st person cross-reference marker originates as a possessor of the incorporated nP, and is cyclically moved to a position of adjunction to the I head:

(95) Zubizarreta & Pancheva (2017b: 97)
(Che) che = rasẽ.
I 1POSS = cry
'I cry.'

I propose that the Mbyá verb *monda* ('steal') has a structure similar to that of intransitive tri-form verbs, where the incorporated phrase is a possessive DP, rather than an nP:

(96) a. Kyxe re xe-monda.
knife ABL B1-steal
'I stole the knife.'
b. [$_{IP}$ [$_{I}$ D $I_{[1SG]}$] [$_{vP}$ $\cancel{DP}_{\cancel{1SG}}$ [$_{vP}$ PP [$_{v}$ [$_{DP}$ $\cancel{nP}_{\cancel{[1SG]}}$ [D_{POS} [$_{nP}$ [$_{n}$ √THEFT n] ST]]] v_{CAUS}]]]]

[18] Note that Zubizarreta and Pancheva gloss the causative prefix *mo-/mbo-* as a transitivizer, TR.

In this example, the stem *xemonda* is derived by incorporating an event denoting DP interpreted as 'my theft' into a light v. Its 1st person cross-reference marker originates as a possessor ($nP_{[1SG]}$) in the specifier of DP, and is cyclically moved until it ends up as a D head adjoined to I. The theme is introduced as a post-positional argument of the verb. The introduction of the agent as a possessor explains its unexpected cross-referencing with a class B marker.

Moving on to the interpretation of (96b), we can assume that the possessor $nP_{[1SG]}$ is base-generated in a thematic position. More precisely, the root √THEFT denotes a property of events of stealing, and the possessive head D_{POS} introduces introduces $nP_{[1SG]}$ as the agent of these events (cf. *John's theft of the $1,000*).

Crucially, while we argued that agent-introducing Voice is always spelled out together with the root of transitive causative verbs, this generalization need not apply to the relation between nominal roots and D_{POS}. If √THEFT can be spelled out independently of D_{POS}, it should be possible for the target stativizer *-kue* to combine with the stem *monda*, as illustrated in (97), repeated from (35), and in (98):

(97) A-jo-gua ao monda-kue.
A1.SG-TR-buy clothes steal-RES
'I bought stolen clothes.'

(98) a. √THEFT ↔ *monda*

b. Syntactic structure: $[\ RES_{TARGET}\ [_{vP}\ [_{nP}\ [_{n}\ \sqrt{THEFT}\ n\ ]\ ST\ ]\ v_{CAUS}\ ]\ ]$

c. Linearization: $\underbrace{\mathbf{v_{CAUS}} + \mathbf{n} + \mathbf{\sqrt{THEFT}} + \mathbf{ST}}_{\textbf{\textit{monda}}} + \underbrace{\mathbf{RES_{TARGET}}}_{\textbf{\textit{-kue}}}$

d. Phonological realization: ***monda*** ***-kue***

In sum, analyzing *monda* as an incorporated DP explains its irregular inflection class and argument structure. In addition, the hypothesis that its agent is not introduced by Voice but rather by a possessive D_{POS} head explains why *monda* is not subject to the requirement that all roots of lexical transitive causatives in Mbyá should be spelled out together with Voice.

5.3 Cross-linguistic Variation

The analysis sketched in the previous subsection accounts for the lack of target resultatives derived from transitive causatives in Mbyá. However, we haven't yet explained why such alternations are attested in English and similar languages. For alternating verbs like *dry*, the answer is simple. The Vocabulary Item that is used to spell out the root of such verbs is underspecified for Voice. Since causative alternations are unmarked in English, the same Vocabulary Item can be used to spell out the root in an inchoative or a transitive frame, the former being compatible with resultative formation:

(99) a. √DRY ↔ *dry*

b. Syntactic structure: $[_{vP}\ [\sqrt{DRY}\ v_{CAUS/STATE}\ ]\ [_{\theta P}\ \theta_{THEME}\ DP\ ]\ ]$

c. Linearization: $\underbrace{v_{CAUS/STATE} + \mathbf{\sqrt{DRY}}}_{\textbf{\textit{dry}}}$

d. Phonological realization: ***dry***

(100) a. √DRY ↔ *dry*

b. Syntactic structure: $[_{\text{Voice}}$ Voice $[_{\text{vP}}$ [√DRY $v_{\text{CAUS/STATE}}$] $[_{\theta\text{P}}$ θ_{THEME} DP]]]

c. Linearization: $\underbrace{\text{Voice} + v_{\text{CAUS/STATE}} + \sqrt{\textbf{DRY}}}$

d. Phonological realization: *dry*

The situation is more complicated with transitive causatives that do not alternate, like *bury*. Because these verbs can form target state adjectival passives, the Vocabulary Items that realize their roots must not be specified for agent or causer Voice:

(101) v_{CAUS}, √BURY ↔ *bury*

However, this cannot be the whole story, since the Vocabulary Item in (101) could then be used to spell out the root √BURY in an inchoative frame, which we know is unattested.

In order to solve this puzzle, I propose that the constraints that prevent the realization of these roots in inchoative frames are not lexical, but pragmatic. I will now sketch an analysis along these lines, by building on an earlier proposal by Rappaport Hovav (2014).

Following Levin & Rappaport Hovav (1995), Rappaport Hovav (2014) observes that some causative verbs like *clear* only alternate with particular choices of theme argument:

(102) *English* (Rappaport Hovav 2014: 9)
a. I cleared the screen.
b. The screen cleared.

(103) *English* (Rappaport Hovav 2014: 9)
a. The waiters cleared the counter.
b. *The counter cleared.

Rappaport Hovav argues that the availability of the inchoative form with *clear* type verbs is not due to lexical restrictions, but to pragmatic constraints which favour the more informative expression of the cause argument:

(104) Rappaport Hovav (2014: 23)
"In the description of a change of state, the cause of the change of state is relevant; therefore, since an utterance which specifies the cause of the change of state is more informative than one which expresses just the change of state, it is to be preferred, all things being equal."

If the cause of a change of state is always relevant, speakers should use the more informative transitive verb form, unless they have additional reasons not to do so. One such reason would be that the speaker assumes there is no external cause. In Gricean terms, using the transitive form would then violate the maxim of quality (Grice 1975). In this scenario, the inchoative form is preferred:

(105) Rappaport Hovav (2014: 25)
a. My watch broke after the warranty ran out.
b. #I broke my watch after the warranty ran out.
(does not have the same interpretation as (a)).

Note that Rappaport Hovav (2014) does not intend her pragmatic analysis to apply to verbs like *kill* and *destroy*. Since these verbs never alternate, she argues that they are lexically associated with an external argument. However, given the availability of target state adjectival passives with non-agentive transitive causatives like *bury*, I believe that a lexical analysis of the lack of alternation of *bury*-type verbs is not tenable. Instead, I suggest that Rappaport Hovav's pragmatic analysis of causative alternations with *clear*-type verbs can be extended to non-alternating non-agentive transitive causatives. While the Vocabulary Items that spell out the roots of these verbs are by themselves compatible with inchoative frames, transitive frames are preferred due to their greater informativity. The challenge that we face is to explain why this preference rules out the inchoative use of *bury* type verbs, while it can be overridden by contextual factors for *break* and *clear* type verbs.

I suggest that the unacceptability of inchoative alternants with *bury* type verbs can be attributed to an obligatory implicature. Let us assume that the inchoative form of lexical causatives competes with its passive alternative:

(106) *English*
a. *The body buried.
b. The body was buried.

(106b) is more informative than (106a), since it entails the existence of an external cause that lead to the body being buried. Everything else being equal, an utterance of (106a) will therefore lead to an implicature that the speaker is not in a position to assert (106b). This implicature, however, conflicts with the common knowledge that events of burying have external causes. Indeed, *bury* is similar to *kill* and *destroy* insofar as these verbs denote non-spontaneous events, i.e. events that are unlikely to occur without the intervention of a external cause (Haspelmath 1993). In this respect, *bury* differs from verbs like *break* and *clear*, which are compatible with internal as well as external causes (Harley & Noyer 2000), and will therefore trigger non-contradictory implicatures.

Note that this analysis requires the computation of the implicature of (106a) to be mandatory and blind to common knowledge. Indeed, if the implicature could be cancelled, it would not lead to a contradiction and unacceptability. In addition, the computation of the implicature must be blind to common knowledge. Otherwise, given the piece of information that events of burying are always associated with an external cause, (106a) and (106b) would be truth-conditionally equivalent, and an utterance of (106a) would not trigger the implicature that the speaker is not in a position to assert (106b). A theory of blind and mandatory implicatures was developed by Magri (2009), in order to account for lifetime effects of individual-level predicates. For reasons of space, I will not discuss how the present analysis could be implemented in Magri's framework. There are certainly loose ends to tie up, but I believe that the broad lines of this analysis are clear enough for our purposes.

Importantly, this analysis can account for the felicity of target state resultatives derived from non-alternating lexical causatives, given adequate assumptions about the set of syntactic alternatives to adjectival passives. Consider for instance example (107):

(107) *English*
The body is still buried.

The implicature that is responsible for the unacceptability of inchoative uses of *buried* depends on a competition between the verbal passive and inchoative forms of the verb.

Under the assumption that target state adjectival passives do not compete with verbal passives, they will not trigger the faulty implicature. If adjectival and verbal passives differ in syntactic category in English, this assumption could be reduced to the more general requirement that two constituents cannot be syntactic alternatives of one another unless they have the same category, a requirement that is already part of Katzir's (2007) theory of structural alternatives.

5.4 Conspiracies

The analysis that was presented in this section relies on post-linearization spanning. However, it is also possible to model Mbyá verb morphology even if Vocabulary Insertion is limited to terminal nodes. To do so, one may wish to posit null exponents for Voice and little v heads. In order to account for the lack of covert alternations targeting external arguments, the former should be restricted to contexts that include the root of a lexically transitive verb:

(108) a. Voice ↔ ∅ /{√BURY, √BLOW, …}
b. Voice ↔ *mo-*
c. v_{CAUSE} ↔ ∅

Likewise, in order to block the insertion of roots of transitive verbs in inchoative verb frames, the exponents of these roots should be specified for insertion in the context of a Voice head:

(109) a. √BURY ↔ *aty* / v_{CAUSE} _] Voice]
b. √BLOW ↔ *peju* / v_{PROC} _] Voice]
c. …

In such a system, the absence of external argument alternations with roots of causative verbs arises as a conspiracy, as in the case of English irregular past tense inflection.[19] In the latter case, the blocking of a regular past tense verb form in the context of √SING conspires with the blocking of the regular exponent of √SING in the context of $T_{[+PAST]}$. In the former, the realization of agent/causer Voice by the causative prefix *mo-* is blocked in the context of a transitive root, while the phonological realization of the root is restricted to the context of agent/causer Voice.

While such an analysis is tenable, I believe that an analysis based on insertion at nonterminal nodes is more elegant. Indeed, in the conspiracy analysis, the restriction of the root of a causative verb to a transitive frame is encoded in the Vocabulary Item that specifies the exponent of this root. The fact that Voice is not realized independently from the root is arbitrarily encoded in a second Vocabulary Item. While this arbitrariness may be justified in the analysis of irregular processes, the morphology of Mbyá verbs appears to be a paragon of regularity, which is elegantly captured by the spanning analysis.

Note that I am not claiming that analyses of irregularities in post-linearization spanning are generally more principled than analyses that rely on null exponents and readjustment rules. As Haugen & Siddiqi (2016) recognize, the use of homophony in the former is no less stipulative than that of lexically conditioned zero allomorphs. In the specific case that concerns us here, however, a spanning analysis appears to more elegant.

[19] I am grateful to an anonymous reviewer for calling my attention to this point.

6 Conclusion

I have argued that what appeared to be an arbitrary selectional restriction governing the distribution of the Mbyá resultative suffix *-kue/-gue* is in fact an epiphenomenon, which reveals the interplay between lexical constraints on the frames in which roots may be inserted, and the syntactic properties of target stativizers.

The proposed analysis brings to light a point of variation in the lexical encoding of the dependencies between roots and functional heads: the distribution of resultatives in Mbyá suggests that all roots of underived transitive causatives are lexically associated with an agent/causer Voice head in this language, in contrast to English, German and Greek, where this lexical association only holds of roots of strictly agentive verbs.

Finally, this study of Mbyá resultatives offers new empirical support for the analysis of adjectival passives of Alexiadou et al. (2015), and stresses the importance of the distinction between target states and resultant states in the structure of adjectival passives and related resultative predicates.

Abbreviations

The following abbreviations are used in glosses in this paper: A = cross-referenced argument, class A, ABL = ablative case, ACC = accusative case, B = cross-referenced argument, class B, CAUS = causative, COMPL = completive aspect, DES = desiderative, INTR = intransitive verbalizer, NEG = negation, NMLZ = nominalizer, NOM = nominative case, OBJ = object, PAST = past temporal marker, PASS = passive, PL = plural, POSS = possessive, PROSP = prospective aspect, TR = transitive verbalizer, REFL = reflexive, RES = resultative, SG = singular, SE = romance "se"-reflexive.

Additional File

The additional file for this article can be found as follows:

- **Appendix.** Semantic composition. DOI: https://doi.org/10.5334/gjgl.688.s1

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Competing Interests

The author has no competing interests to declare.

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