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Valence-Increasing Morphology in Temne
by

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Dedication

To the innocent victims of the rebel war in Sierra Leone

Abstract

In this dissertation, I examine the combinatorial properties of valence-increasing suffixes (i.e., the causative and applicatives), and the semantic and syntactic effects of combining these suffixes with a verb stem in the Yoni dialect of Temne, a Southern Atlantic language of the Niger-Congo language family spoken in Sierra Leone. The data used in the analysis were drawn from direct elicitations and Temne spoken corpus representing contemporary use of the Yoni dialect.

Concerning the combinatorial properties of valence-increasing suffixes, I investigate the classes of verb stems that combine with each suffix, the extent to which the suffixes can co-occur, and the relative order of the suffixes in the verb stem. I demonstrate that the combinations of valence-increasing suffixes with verb stems or with other suffixes are limited. Also, the relative order of verb suffixes is fixed and is described by morphological templates.

In connection with semantics, I illustrate that the applicatives are polysemous and the meanings of each applicative are closely related. I describe these meanings in terms of a schematic network in the sense of Langacker (1987). I also describe the compositional pathway involved in the derivation of each schema of co-occurring suffixes. I demonstrate that some of the meanings of the combination of suffixes with particular verb stems are predictable, while others are unpredictable.

In terms of syntax, I investigate whether any semantic role uniquely maps onto a specific grammatical relation. Also, I examine the principles that govern the mapping and realization of post-verbal arguments, and demonstrate that the

order of post-verbal arguments is determined by two interacting hierarchies: the participant hierarchy and the precedence hierarchy. The participant hierarchy provides a ranked ordering of event-participants based on their semantic roles. The precedence hierarchy ranks objects expressed by object-markers over those expressed by nouns, requiring that the former precede the latter. I also identify the prominence hierarchy: 1/2 » 3animate » 3inanimate, which ranks objects according to grammatical person and animacy; semantically plausible clauses in which an object-marker lower on the prominence hierarchy would precede an object-marker higher on the hierarchy are blocked and considered ungrammatical.

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List of abbreviations

1	first person	NC	noun class
2	second person	NEG	negative suffix
3	third person	NOM	nominal argument
A	causer argument	OBL	oblique object
AGT	agent	PAR	particle
ANIM	animate	PAST	past tense
BEN	benefactive suffix	PERF	perfective aspect
CAUS	causative suffix	PL	plural
COM	comitative	PO	primary object
DEF	definite article	POSS	possessive marker
DEM	demonstrative marker	PROG	progressive marker
DO	direct object	QM	question marker
E	event	QO	quaternary object
E ₁	causing event	R	object of a ditransitive verb
E ₂	caused event	RECIP	reciprocal suffix
FUT	future tense	REF	reflexive suffix
G	goal	REV	reversive suffix
GER	gerund	S	substitutive participant
GR	grammatical relations	SG	singular
I	applied object of the instrumental suffix	SO	secondary object
INANIM	inanimate	SRC	source
INDEF	indefinite article	STH	something
INST	instrumental suffix	SUB	substitutive role
IO	indirect object	SUBJ	subject
ITER	iterative suffix	TO	tertiary object
L	applied object of the locative suffix	W	applied object of the benefactive suffix
LOC	locative suffix	Y	object of a transitive verb
MAL	maleficiary	X	subject of a basic sentence
		Z	applied object

Chapter 1

Introduction

In this dissertation, I examine the combinatorial properties of valence-increasing suffixes, and the semantic and syntactic effects of combining these suffixes with a verb stem in the Yoni dialect of Temne, a Southern Atlantic language of the Niger-Congo language family spoken in Sierra Leone. As the name suggests, “valence-increasing suffixes” are suffixes that add a syntactic argument to the valence of the verb. In Temne, these suffixes are the causative *-s*, the locative *-r*, instrumental *-ɪnɛ̀* and benefactive applicative *-ɔ̀*.

In general, research on valence-increasing morphology (causatives and applicatives) in a particular language or across languages has focussed on four main issues: (i) the source and evolution of the affixes, (ii) the combinatorial properties of the affixes, (iii) the semantics and (iv) the syntactic effects of combining these affixes with a verb stem. However, this study is not about the origin and evolution of verb suffixes; rather it addresses questions about the combinatorial properties of valence-increasing suffixes, and the semantics and the syntactic effects of these suffixes on a verb stem.

1.1 The problems

The properties of valence-increasing suffixes in Temne pose several research questions. These questions may be divided into three groups: combinatorics, semantics and syntax. In this section, I highlight the research questions that are addressed in this dissertation.

Concerning the combinatorial properties of valence-increasing suffixes, there is the question about what classes of verb stems that are compatible or incompatible with each suffix or set of valence-increasing suffixes. For example, whereas the verb stems *bók* ‘X cries’, *chép* ‘X plants sth’ and *gbál* ‘X sweeps sth’ combine with the causative suffix, the verb stems *bémpà* ‘X makes sth’, *bánkàli* ‘X rolls sth’ and *bàràfi* ‘X pops off sth’ are incompatible with the causative suffix.

In addition, the causative suffix combines with the transitive verb *dī* ‘X eats sth’, as demonstrated by the following example.

- (1) a. *ɔ̀-làngbà* *ɔ̀* *dī* *k-à-yèk*
 NC1:DEF-man NC1.SUBJ:INDEF eat NC2-INDEF-monkey
 ‘The man ate a monkey.’
- b. *ɔ̀-bàkò* *ɔ̀* *di-s*
 NC1:DEF-woman NC1.SUBJ:INDEF eat-CAUS
- ɔ̀-làngbà* *k-à-yèk*
 NC1:DEF-man NC2-INDEF-monkey
 ‘The woman made the man eat a monkey.’

The verb *dīs* ‘A made X eat sth’ in (1b) is derived from the verb stem *dī* ‘X eats sth’ in (1a). In this example (1a), the participant *ɔ̀làngbà* ‘man’ is the subject, while the participant *kàyèk* ‘monkey’ is the primary object, defined here as any argument that appears immediately after the verb. When the causative suffix is combined with the verb *dī* ‘X eats sth’ in (1b), the subject *ɔ̀làngbà* ‘man’ of the basic verb appears immediately after the verb, while the basic object *kàyèk* ‘monkey’ of the verb occurs after it. The term “basic object” is defined in this study as the object of any underived verb. Combining the causative suffix with the basic verb also has the syntactic effect of adding to the clause the causer argument

ǎbðkð ‘woman’ that is the subject of the causativized verb. Thus, (1b) demonstrates that the causative suffix combines with the transitive verb *dī* ‘X eats sth’.

While the causative suffix combines with the transitive verb *dī* ‘X eats sth’, examples (2b) and (2c) reveal that it does not combine with the ditransitive verb *nút* ‘X feeds sth to someone’.

- (2) a. *ǎ-bðkð* *ǎ* *nút*
 NC1:DEF-woman NC1.SUBJ:INDEF eat
- ǎ-làngbà* *k-ð-yèk*
 NC1:DEF-man NC2-INDEF-monkey
 ‘The woman fed the man a monkey.’
- b. **ǎ-yà* *ǎ* *nút-s*
 NC1:DEF-old woman NC1.SUBJ:INDEF eat-CAUS
- ǎ-bðkð* *ǎ-làngbà* *k-ð-yèk*
 NC1:DEF-woman NC1:DEF-man NC2-INDEF-monkey
 Intended meaning: ‘The old woman made the woman feed the man a monkey.’
- c. **ǎ-yà* *ǎ* *nút-s*
 NC1:DEF-old woman NC1.SUBJ:INDEF eat-CAUS
- kð* *ǎ-làngbà* *k-ð-yèk*
 NC1.OBJ NC1:DEF-man NC2-INDEF-monkey
 Intended meaning: ‘The old woman made her (the woman) feed the man a monkey.’

The verb *nútðs* ‘A made X feed sth to someone’ in (2b) and (2c) is formed by combining the basic verb *nút* ‘X feeds sth to someone’ with the causative suffix *-s*. Example (2b) is ungrammatical because the causative suffix and the ditransitive verb *nút* ‘X feeds sth to someone’ are incompatible. Note that in (2b)

all the post-verbal arguments are expressed by nominals. The sentence is still ungrammatical even when one of the objects is expressed by an object marker and the others are expressed by nominal arguments, as demonstrated by the ungrammaticality of (2c). Thus, examples (1) and (2) raise the question: What verb stems combine with each valence-increasing suffix?

Questions about the combinatorial properties of verb affixes across languages have also featured in the study by Dixon & Aikhenvald (2000), among others. In this study, Dixon & Aikhenvald (2000) examined the semantic and syntactic verb types that combine with the causative and applicative, stating that ditransitive verbs are less likely to combine with causatives across languages than transitive and intransitive verbs. Similarly, investigations about the combinatorial properties of valence-increasing suffixes have also been carried out in individual language families. One such study is by Kiyosawa and Gerds (2010), who investigate the combination of applicatives with other verb suffixes in Salish languages. This study also includes an inquiry into the discourse functions of applicatives in Salish languages.

In addition, data on valence-increasing suffixes reveal that certain verbs that combine with two suffixes when they occur separately do not combine with these two suffixes when they co-occur. For example, the verb *bés* ‘X digs sth out’ combines with the causative suffix *-s* and the instrumental suffix *-ínè* when the two suffixes occur in a verb stem separately. Example (3) illustrates the causativized verb *bésàs* ‘A causes X to dig sth out’.

- (3) a. *ǎ-làngbà* *ǎ* *bés* *ǎ-chèr*
 NC1:DEF-man NC1.SUBJ:INDEF dig NC3:DEF-rats
 ‘The man dug out the rats.’
- b. *ǎ-bàkò* *ǎ* *bés-às*
 NC1:DEF-woman NC1.SUBJ:INDEF eat-CAUS
- ǎ-làngbà* *ǎ-chèr*
 NC1:DEF-man NC3:DEF-rat
 ‘The woman made the man dig out the rats.’

The verb *bésàs* ‘A causes X to dig sth out’ in (3b) is derived from the verb stem *bés* ‘X digs sth out’. When *bés* is combined with the causative suffix, the subject *ǎlàngbà* ‘man’ of the basic verb becomes the object, while the added argument *ǎbàkò* ‘woman’ becomes the subject of the causativized verb. Thus, example (3) indicates that the causative suffix -s is compatible with the verb *bés* ‘X digs sth out’.

The verb *bés* ‘X digs sth out’ also combines with the instrumental suffix -*ǎnè* when it appears alone on a verb, as demonstrated in (4).

- (4) a. *ǎ-làngbà* *ǎ* *bés* *ǎ-chèr*
 NC1:DEF-man NC1.SUBJ:INDEF dig NC3:DEF-rats
 ‘The man dug the rats out.’
- b. *ǎ-bàkò* *ǎ* *bés-ǎnè*
 NC1:DEF-woman NC1.SUBJ:INDEF eat-INST
- ǎ-chèr* *k-à-tàlà*
 NC3:DEF-rat NC3-INDEF-hoe
 ‘The man dug the rats out with a hoe.’

The verb *bésǎnè* ‘X digs sth out using a tool’ is derived from the verb stem *bés* ‘X digs sth out’. When the instrumental applicative is combined with the basic verb *bés*, a new argument *kàtàlà* ‘hoe’ is added to the valence of the verb. Thus,

examples (3b) and (4b) demonstrate that the verb *bés* ‘X digs sth out’ combines with both the instrumental applicative and the causative suffix.

However, the verb stem *bés* ‘X digs sth out’ does not combine with the causative suffix and the instrumental suffix when the two suffixes co-occur, as indicated by the ungrammaticality of (5b) and (5c).

- (5) a. *ǎ-làngbà* *ǎ* *bés* *ǎ-chèr*
 NC1:DEF-man NC1.SUBJ:INDEF dig NC3:DEF-rats
 ‘The man dug the rats out.’
- b. **ǎ-bǎkò* *ǎ* *bés-ǎs-ǎnè*
 NC1:DEF-woman NC1.SUBJ:INDEF eat-CAUS-INST
- ǎ-làngbà* *ǎ-chèr* *k-ǎ-tàlà*
 NC1:DEF-man NC1:DEF-rat NC3-INDEF-hoe
 Intended meaning: ‘The woman made the man dig the rats out using a hoe.’
- c. **ǎ-bǎkò* *ǎ* *bés-ǎs-ǎnè*
 NC1:DEF-woman NC1.SUBJ:INDEF eat-CAUS-INST
- kǎ* *ǎ-chèr* *k-ǎ-tàlà*
 NC3.OBJ NC1:DEF-rat NC3-INDEF-hoe
 Intended meaning: ‘The woman made him/her dig the rats out using a hoe.’

In example (5b), all the post-verbal arguments are expressed by nominal arguments, while in (5c) they are expressed by a combination of the object marker *kò* and the nominals *ǎchèr* ‘rats’ and *kàtàlà* ‘hoe’. However, both (5b) and (5c) are ungrammatical because the verb *bés* ‘X digs sth out’ does not combine with the causative suffix and instrumental applicative when the two suffixes co-occur. Thus, the examples in (5) invite an inquiry into which verb stems can combine with each set of co-occurring suffixes - a question also addressed in this study.

In addition, data on valence-increasing suffixes in Temne indicate that some of these suffixes can co-occur. One set of valence-increasing suffixes that co-occur is the causative suffix *-s* and the instrumental applicative *-ínè*, as illustrated in example (6).

- (6) *ǰ-bðkð* *ǰ* *mún-əs-ínè*
 NC1:DEF-woman NC1.SUBJ:DEF drink-CAUS-INST
- ǰ-wàth* *ínγ-tðl* *k-ð-bèp*
 NC1:DEF-child NC3:DEF-medicine NC2-INDEF-spoon
- ‘The woman made the child drink the medicine with a spoon.’
 ‘The woman used a spoon (as a means) to make the child drink the medicine.’

The verb *múnəsínè* ‘X drinks sth using a tool’ is derived from the verb stem *mún* ‘X drinks sth’. This example (6) indicates that the causative and instrumental suffixes co-occur. However, they co-occur only in the order CAUS » INST, but not *INST » CAUS, as demonstrated by the ungrammaticality of (7).

- (7) **ǰ-bðkð* *ǰ* *mún-ínè-s*
 NC1:DEF-woman NC1.SUBJ:DEF drink-INST-CAUS
- ǰ-wàth* *ínγ-tðl* *k-ð-bèp*
 NC1:DEF-child NC3:DEF-medicine NC2-INDEF-spoon
- Intended meanings:
 ‘The woman made the child drink the medicine with a spoon.’
 ‘The woman used a spoon (as a means) to make the child drink the medicine.’

The failure of the causative suffix and the instrumental applicative to co-occur in the order INST » CAUS raises the question: In which order do verb suffixes co-occur and how is the relative ordering of suffixes in the verb stem described? These questions have also been raised in the Atlantic languages Fula by Arnott (1970) and Paster (2005, 2006) and in Wolof by Buell and Sy (2006).

Furthermore, several hypotheses have been proposed in the literature about the relative ordering of verb suffixes. For example, while Bybee (1985) and Rice (2000) argue that the order of affixes may be described in terms of semantic scope, others like Baker (1985) claim that an interaction between syntax and morphology may be used to describe the order in which suffixes occur in the verb stem. There is also the proposal that phonology determines the relative order of co-occurring affixes in some languages. On the other hand, studies by Arnott (1970), Paster (2005, 2006), among others, have shown that the relative ordering of verb suffixes in Pulaar, an Atlantic language spoken in West Africa, for example, is phonologically driven. On the other hand, Hyman (2003) argues for the possibility of explaining the order of verb affixes in terms of morphology. In Kanu (2009a), I claim that the order of suffixes in Temne and the way in which they combine is determined by the morphotactics. In this study, I re-examine this claim using more elaborate data.

While the causative suffix and instrumental applicative co-occur, the causative suffix and the benefactive applicative do not co-occur, as indicated by the following example.

- (8) a. *ńŋ-tàn* *ɔ̌* *mún* *ń-m̀lant*
 NC3:DEF-dog NC1.SUBJ:DEF drink NC3:DEF-water
 ‘The dog drank the water.’
- b. **ɔ̌-b̀k̀k̀* *ɔ̌* *mún-əs-̀*
 NC1:DEF-woman NC1.SUBJ:DEF drink-CAUS-BEN
- ńŋ-tàn* *ɔ̌-wàth* *ń-m̀lant*
 NC3:DEF-dog NC3:DEF-medicine NC3:DEF-water
 Intended meaning: ‘The woman made the dog drink the water for the man.’

- c. *ḵ-bḵkḵ ḵ *mún-ḵ-ḵs*
 NC1:DEF-woman NC1.SUBJ:DEF drink-BEN-CAUS
- ḵḵ-tàn* ḵ-wàth ḵ-mànt
 NC3:DEF-dog NC3:DEF-medicine NC3:DEF-water
- Intended meaning: ‘The woman made the dog drink the water for the man.’

In (8b) the causative suffix and benefactive applicative are combined with the basic verb *mún* ‘X drinks sth’. In this example, the order of the suffixes is CAUS » BEN, but the sentence is ungrammatical. In (8c) the order of the suffixes is reversed BEN » CAUS, but the sentence is still ungrammatical, thus indicating that in either directions, the causative suffix and the benefactive suffix do not co-occur. Thus, example (8) raises the question: What are the co-occurrence restrictions among valence-increasing suffixes and how are these restrictions explained?

Thus, in terms of the combinatorial properties of valence-increasing suffixes, this study addresses the following questions: (i) What classes of verb stems combine with each valence-increasing suffix or set of valence-increasing suffixes? (ii) What combinatorial restrictions hold between verbs and valence-increasing suffixes? (iii) Which valence-increasing suffixes co-occur and in what order? (iv) How do we describe the relative ordering of valence-increasing suffixes in the verb stem, and (v) What co-occurrence restrictions hold between two suffixes?

In connection with semantics, data from valence-increasing suffixes indicate that the locative, instrumental and benefactive applicatives are associated with several meanings and these meanings are closely related. Some of these

suffixes take a certain meaning only when they are combined with a certain set of verbs. The following example may be used to illustrate this phenomenon.

- (9) a. *ǎ-wàth* *ǎ* *lám* *áŋ-sàr*
 NC1:DEF-child NC1.SUBJ:DEF throw NC3:DEF-stone
 ‘The child threw the stone.’
- b. *ǎ-wàth* *ǎ* *lám-ǎr* *áŋ-bòk*
 NC1:DEF-child NC1.SUBJ:DEF throw-LOC NC3:DEF-snake
- áŋ-sàr*
 NC3:DEF-stone
 ‘The child threw the stone at the snake.’

In (9b), the derived verb *lámǎr* ‘X throws sth at a location’ is derived from the verb stem *lám* ‘X throws sth’. In this example, the locative suffix *-r* adds an allative meaning (i.e., direction towards a goal) to the basic meaning of the verb. However, when the same suffix is combined with the verb stem *báni* ‘X reclaims sth’, the derived verb *bániǎr* ‘X reclaims sth from L’ assumes an ablative meaning (i.e., direction away from a location), as demonstrated by (10b).

- (10) a. *ǎ-làngbà* *ǎ* *báni* *áŋ-pòn*
 NC1:DEF-man NC1.SUBJ:DEF reclaim NC3:DEF-swamp
 ‘The man reclaimed the swamp.’
- b. *ǎ-làngba* *ǎ* *báni-r* *ǎ-bàŋ*
 NC1:DEF-man NC1.SUBJ:DEF reclaim-LOC NC1:DEF-chief
- áŋ-pòn*
 NC3:DEF-swamp
 ‘The man reclaimed the swamp from the chief.’

The verb *bániǎr* ‘X reclaims sth from someone’ in (10b) is derived from the verb stem *báni* ‘X reclaims sth’. This example (10b) indicates that the locative suffix

takes an ablative meaning when it is combined with the verb stem *báni* ‘X reclaims sth’.

The locative suffix *-r* takes a purely static locative meaning when it is combined with the verb *yírà* ‘X sits down’, as illustrated in example (11b).

- (11) a. *áŋ-yàrì* *ḡ* *yírà*
 NC3:DEF-cat NC1.SUBJ:DEF sit
 ‘The cat sat down.’
- b. *áŋ-yàrì* *ḡ* *yírà-r* *áŋ-bènt*
 NC1:DEF-cat NC1.SUBJ:DEF sit-LOC NC3:DEF-stool
 ‘The cat sat on the stool.’

In (11b), the locative suffix is only associated with a locative meaning because the meaning of the basic verb denotes a static event. In this case, the spatial locations of the participant *áŋyàrì* ‘cat’ and the participant *áŋbènt* ‘stool’ are the same.

Examples (9b), (10b) and (11b) demonstrate that the locative suffix has various interpretations depending on the verb stem. When it is combined with the verb *lám* ‘X throws sth’, it takes on an allative meaning. When it is combined with the verb *báni* ‘X reclaims sth’, it assumes the ablative meaning. However, when the locative suffix is combined with the verb *yírà* ‘X sits down’, it takes on a purely locative meaning, indicating that the locative suffix is polysemous or vague and posing the problem of how to describe this polysemy. In this study, I investigate the various meanings of each valence-increasing suffix and describe these meanings in terms of a schematic network in the sense of Langacker (1987).

Examples (9-11) also invite an investigation into the participant roles that are associated with each valence-increasing suffix and whether these participant roles change when a valence-increasing suffix is combined with a new verb stem.

In this study, the term “participant role” is defined as the role (such as AGENT, PATIENT, EXPERIENCER, SOURCE, BENEFICIARY, GOAL, etc.) that an event participant plays in a construction.

Moreover, some of the data on valence-increasing suffixes invite an investigation into whether the meaning of a derived verb is predictable from the meaning of its component parts. For example, a verb stem that is combined with a causative suffix and an instrumental applicative is subject to two possible interpretations, as indicated by (12).

- (12) *ǎ-bǎkǎ* *ǎ* *mún-ǎs-ǎnè*
 NC1:DEF-woman NC1.SUBJ:DEF drink-CAUS-INST
- ǎ-wǎth* *ǎŋ-tǎl* *k-ǎ-bèp*
 NC1:DEF-child NC3:DEF-medicine NC2-INDEF-spoon
- ‘The woman made the child drink the medicine with a spoon.’
 ‘The woman used a spoon (as a means) to make the child drink the medicine.’

The verb *múnǎs* ‘X drinks sth using a tool’ is derived from the verb stem *mún* ‘X drinks sth’ and it has two closely related meanings. Although both meanings are plausibly derived from combining the suffixes CAUS + INST with the verb *mún* ‘X drinks sth’, it is impossible to predict which one of these two meanings is the speakers’s intended meaning. Also, examples like (12) raise the question of whether the meanings of morphologically derived verbs are always predictable from the meaning of their component parts. In addition, this example (12) invites an inquiry into the compositional pathway involved in the derivation of each schema of a derived verb.

Some inquiries have been made in the literature on the meaning of verb affixes and how these meanings may be described; one proposal being the

“construction-based approach” (Goldberg, 1992, 1995, 2006; Croft, 2001) and the other the “lexical rule approach” (Bresnan & Kanerva, 1989; Bresnan & Zaenen, 1990; Alsina & Mchombo, 1990; Ackerman, 1990; Mohanan, 2006). The construction-based approach treats each construction as autonomous, which is consistent with the view that “different constructions are typically, possibly always, accompanied by slightly different interpretations” (Goldberg, 1995:8), hence the need to analyze each construction separately. The “lexical rule approach”, on the other hand, assumes that the meaning of a derived verb is predictably derived by applying certain rules in a language. These rules often alter the argument structure of a verb and its combinatorial possibilities.

In addition, applicatives in many Niger-Congo languages, including Bantu languages are polysemous. In Chichewa, for example, the applicative *-ir* is used to express an allative, locative, instrument, recipient, circumstance, manner and a benefactive meaning (Hyman 2007). Also, as in Chichewa, in Fula the applicative *-ir* is used to express the allative, locative, manner and instrument, while the affix *-an-* is used to express the benefactive, recipient and circumstance (Hyman 2007). The polysemous nature of applicatives has raised several questions. The first of these is: How is the polysemy of verb suffixes described? One proposal for describing polysemous verb suffixes is Langacker (1987)’s schematic network. Concerning Niger-Congo languages, Hyman (2007) has addressed two questions about the polysemy of the applicative morpheme; they are: (i) What was the semantics of the original grammaticalization(s)? Second, how did the (or each) grammaticalization extend to cover other functions, ultimately deriving

àbòkà ‘cutlass’, is replaced by the object marker *ɲì*, which is closer to the verb than the basic object *àɲyòka* ‘cassava’ of the verb.

The instrumental applicative can also add two objects to the valence of the verb, as illustrated in examples (14b) and (14c).

- (14) a. *ɔ̀-làngbà* *ɔ̀* *gbéɓ* *àɲy-kòmɓ*
 NC1:DEF-man NC1.SUBJ:DEF climb NC3:DEF-palm tree
 ‘The man climbed the palm tree.’
- b. *ɔ̀-langbà* *ɔ̀* *gbéɓ-àɲè* *ɔ̀-wàth*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC1:DEF-child
- àɲy-kòmɓ* *k-à-pàr*
 NC3:DEF-palm tree NC2-INDEF-climbing rope
 ‘The man together with the child climbed the palm tree using a climbing rope.’
- c. *ɔ̀-langbà* *ɔ̀* *gbéɓ-àɲè* *kì*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC2.OBJ
- ɔ̀-wàth* *àɲy-kòmɓ*
 NC1:DEF-child NC3:DEF-palm tree
 ‘The man together with the child climbed the palm tree using it (climbing rope).’

Example (14a) has the basic verb *gbéɓ* ‘X climbs sth’ to which the instrumental applicative is added in (14b). Attaching the instrumental applicative to the verb increases the valence of the verb by two objects, *ɔ̀wàth* ‘child’ and *kàpàr* ‘climbing rope’. The applied object, *ɔ̀wàth* ‘child’, is assigned the participant role of COMITATIVE, while the object *kàpàr* ‘climbing rope’ is interpreted as the INSTRUMENT. In this example, the comitative object is closer to the verb and it immediately precedes the basic object of the verb, while the INSTRUMENT appears in the most peripheral position. However, in (14c) the INSTRUMENT which is

(16) a. *ǎ-lángbà* *ǎ* *thóy-ì* *mì* *kò*
 NC1:DEF-man NC1.SUBJ:DEF burn-BEN 1SG.OBJ NC1.OBJ

ǎ-kòr

NC3:DEF-farm

‘The man burnt down the farm for him/her on my behalf.’

b. *ǎ-lángbà* *ǎ* *thóy-ì* *kò*
 NC1:DEF-man NC1.SUBJ:DEF burn-BEN NC1.OBJ

ǎ-kòr

k-à-làpàt

NC3:DEF-farm NC2-INDEF-torch

‘The man burnt down the farm for him/her with a torch.’

The derived verb *thóyì* ‘X burns sth for someone/using a tool’ in (16a) and (16b) is derived from the verb stem *thóy* ‘X burns Y’. In (16a), the benefactive applicative adds the applied objects expressed by the object markers *mì* and *kò*. In (16b), the applied objects are expressed by the object marker *kò* and the nominal *kàlàpàt* ‘torch’. Thus, the examples in (16) demonstrate that the benefactive applicative can add up to two applied objects to the valence of the verb.

In general, the benefactive suffix can add a beneficiary, substitutive and an instrument, but only two of these applied objects (beneficiary, substitutive or beneficiary, instrument) can be added to a clause at a time. These constructions raise questions about the number of arguments a single or multiple valence-increasing suffixes can add to the valence of the verb and what grammatical relation these applied objects bear to the verb. In addition, there is the question about what the order of argument structure changing morphology such as the causatives and applicatives tell us about the syntactic structure of the verb phrase.

Another issue also addressed in this dissertation concerns the mapping of participant roles to grammatical relations. There is the claim in the literature over

the years that the grammatical relation of an argument in a construction is connected with that of participant roles. Several hypotheses have been proposed in favour of this position. One such hypothesis was made by Perlmutter and Postal (1984) who proposed the Universal Alignment Hypothesis (UAH) which states:

Universal Alignment Hypothesis (UAH):

There exist principles of universal grammar which predicts the initial relation borne by each nominal in a given clause from the meaning of the clause.

Perlmutter and Postal (1984:97)

In the same vein, Rosen (1984) has proposed the Little Alignment Hypothesis, which states:

Little Alignment Hypothesis:

For any one predicate in any one language, there is a fixed mapping which aligns each semantic role with initial grammatical relations. The alignment remains invariant for all clauses with that predicate.

Rosen (1984:53)

The two proposals cited above maintain that there is a fixed correspondence between participant roles and grammatical relations. This view has also been expressed by Baker (1988a) in what he refers to as the Uniformity of Theta Assignment Hypothesis, which states:

Uniformity of Theta Assignment Hypothesis (UTAH)

Identical thematic relationships between items are represented structurally by identical structural relationships between those items at the level of D-structure.

Baker (1988a:46)

The UTAH maintains that the mapping between participant roles and grammatical relations is regular at both D-structure (i.e., the level representing the basic argument relations in a sentence) and S-structure, which represents the superficial syntactic properties of a sentence.

Another principle claiming correspondence between participant roles and grammatical relations is the Functional Argument-Biuniqueness condition, and it states:

Function-argument biuniqueness:

Each a-structure role must be associated with a unique grammatical function, conversely.

Bresnan & Zaenen (1990: 51)

The Function-argument biuniqueness condition maintains a strict one-to-one correspondence between participant roles and grammatical relations. Thus, the four proposals mentioned above collectively stipulate that the position of arguments is connected with that of participant roles.

However, other researchers including Jackendoff (1990), Grimshaw (1990) and Dowty (1991) have proposed that participant roles map onto grammatical relations by means of a universal thematic hierarchy. Bresnan and Zaenen (1990) have proposed this thematic hierarchy to be: *agent » beneficiary » experiencer/goal » instrument » patient/theme » locative*. By this view, the highest ranked participant role occupies the highest or left-most ranked grammatical relation and the lowest or right-most ranked thematic role maps onto the lowest grammatical relation in the hierarchy. As observed by Gerds (1998), one setback of this approach is that it relies on a cross-linguistically valid theta hierarchy whose exact form is still being debated.

However, other linking theories like Lexical Function Grammar (LFG) have argued against a one-to-one mapping between participant roles and grammatical relations. According to Butt (2006:131), “cross-linguistic recurrence of argument alternation” is one reason why linking theories have resisted any one-

to-one mapping between participant roles and grammatical relations. Butt (2006) illustrates this argument alternation using the following data from the causative construction in Chichewa.

- (17) a. *Nŭngu* *i-na-phîk-ítsa* *kadzĩdzi* *maũngu*
 porcupine SUBJ-PAST-cook-CAUS owl pumpkins
 ‘The porcupine made the owl cook the pumpkin.’
- b. *Nŭngu* *i-na-phîk-ítsa* *maũngu kwá* *kadzĩdzi*
 porcupine SUBJ-PAST-cook-CAUS pumpkins by owl
 ‘The porcupine made the owl cook the pumpkin.’

Butt (2006: 132)

According to Butt (2006), the causee *kadzĩdzi* ‘owl’ alternates between a direct argument of the clause or an oblique object. In (17a), the causee is closer to the verb and is the direct object, while in (17b) the causee is an oblique object.¹ This argument alternation coincides with an alternation in the mapping of the participant roles of the arguments to grammatical relations.

In this dissertation, I investigate whether there is any one-to-one mapping from participant roles to grammatical relations in constructions with a valence-increasing suffix on the verb by examining the mapping and realization of arguments in both “homogeneous object constructions” and “heterogeneous object constructions”. As used in this dissertation, a “homogeneous object construction” is a construction where post-verbal arguments are either all expressed by nominal arguments or are all expressed by object markers. Example (18) illustrates a homogeneous object construction.

¹ Butt (2006) observes that Chichewa does not have case marking, and the direct object appears immediately after the verb.

- (18) a. *ɔ̀-kàp̀àrà* *ɔ̀* *lám-ə̀r* *ɔ̀-tàk*
 NC1:DEF-hunter NC1.SUBJ:DEF throw-LOC NC1:DEF-deer
- ɔ̀-sòr̀àp̀àn*
 NC3:INDEF-spear
 ‘The hunter threw a spear at the deer.’
- b. *ɔ̀-kàp̀àrà* *ɔ̀* *lám-ə̀r* *k̀*
 NC1:DEF-hunter NC1.SUBJ:DEF throw-LOC NC1.OBJ
- ɣ̀ì*
 NC3.OBJ
 ‘The hunter threw it (the spear) at him/her (the deer).’

The verb *lámə̀r* ‘X throws sth at L’ is derived from the verb stem *lám* ‘X throws sth’. The participant *ɔ̀kàp̀àrà* ‘hunter’ in (18a) and (18b) is the AGENT and maps onto the subject (i.e., the participant that occupies the pre-verbal argument position in a construction). In (18a), the applied object *ɔ̀tək* ‘deer’ is assigned the participant role of GOAL and is the primary object. The basic object of the verb is in (18a) the nominal *ɔ̀sòr̀àp̀àn* ‘spear’ and is the THEME.

In terms of grammatical relation, the basic object, *ɔ̀sòr̀àp̀àn* ‘spear’, is the secondary object, defined here as any argument that immediately appears after the primary object. In (18b) the object of the basic verb, which is expressed by the object marker *ɣ̀ì*, is the secondary object and is assigned the participant role of THEME. The applied object, which is expressed by the object marker *k̀*, is the primary object and is the GOAL. Thus, examples (18a) and (18b) indicate that there is no one-to-one mapping between participant roles and grammatical relations.

Examples (19a) and (19b) illustrate a “heterogeneous object construction”, defined here as a construction where the post-verbal arguments are a combination of a nominal argument and an object marker.

- (19) a. *ǎ-kàpàrà* *ǎ* *lám-ǎr* *ɣì*
 NC1:DEF-hunter NC1.SUBJ:DEF throw-LOC NC3.OBJ
- ǎ-tàk*
 NC1:DEF-deer
 ‘The hunter threw it (the spear) at the deer.
- b. *ǎ-kàpàrà* *ǎ* *lám-ǎr* *kɔ̀*
 NC1:DEF-hunter NC1.SUBJ:DEF throw-LOC NC1.OBJ
- à-sòr àp àn*
 NC3.INDEF-spear
 ‘The hunter threw the spear at it (the deer)

The verb *lámàr* ‘X throws sth at a location’ is derived from the verb stem *lám* ‘X throws sth’. In (19a), the argument expressed by the object marker *ɣì* is the THEME and is the primary object, while the applied object *ǎtək* ‘deer’, assigned the participant role of LOCATION, is the secondary object. In (19b), the basic object of the verb, which is also the THEME, is expressed by a nominal *àsòr àp àn* ‘spear’ and is the secondary object, while the applied object that is expressed by an object marker *kɔ̀* is the primary object. Like the participant role of THEME, the participant role of LOCATION does not consistently map onto any specific grammatical relation. Thus, evidence from the data analysed so far indicates that there is no consistent one-to-one mapping between participant roles and grammatical relations in Temne. However, this claim is further investigated in this study using more elaborate data.

Also, data on valence-increasing suffixes invite an inquiry into the principles underlying the mapping and realization of post-verbal arguments. The data analysed so far indicate that the mapping and realization of post-verbal arguments in Temne is determined by two interacting hierarchies, the participant hierarchy and the precedence hierarchy (see Section 2.1.7 for a detailed discussion of these principles). A third hierarchy, the prominence hierarchy, ranks objects according to grammatical person and animacy; semantically plausible clauses in which an object-marker lower on the prominence hierarchy would precede an object-marker higher on the hierarchy are blocked and considered ungrammatical. These three principles are investigated in detail in Chapters 3 and 4.

Thus, in terms of syntax the study addresses the question of whether any semantic role (i.e., participant role) uniquely maps onto any specific grammatical relation. It also investigates the principles that govern this mapping and the realization of post-verbal arguments in a construction with a valence-increasing suffix on the verb.

1.2 Thesis outline

The dissertation is divided into five chapters. Chapter 2 comprises four main sections. Section 2.1 provides background information about the language, including its linguistic classification, dialects, sound system, tonal system, noun class system, basic sentence structure, verb classes, grammatical relations and object hierarchies. Section 2.2 presents an overview of Temne verb extensions. A review of the literature on valence-increasing suffixes in Temne is given in

Section 2.3. Section 2.4 is a discussion of the methods used in the collection and analysis of the data.

Chapter 3 answers questions about the combinatorial properties of each valence-increasing suffix and the semantic and syntactic effects of combining a verb with each of these suffixes. In terms of semantics, I identify the verbs that can combine with each suffix and describe the meanings of these derived verbs based on schemas. I also assess the meaning of these derived verbs in terms of whether they are predictably derived from the meaning of their component parts or not. In addition, the chapter sheds some light on the number of arguments that each suffix can add to the valence of the verb and the principles underlying the mapping and realization of arguments in a construction with a valence-increasing suffix on the verb. These issues are examined vis-à-vis the causative suffix in Section 3.1, the locative suffix in Section 3.2, the instrumental suffix in Section 3.3 and the benefactive suffix in Section 3.4. A summary of the main findings in this chapter is given in Section 3.5.

Chapter 4 is concerned with the co-occurrence of valence-increasing suffixes and is sub-divided into six sections. In Section 4.1, I examine the constraints on co-occurring verb suffixes. In particular, I identify which valence-increasing suffixes co-occur and in what order. I also identify the suffixes that do not co-occur and possible reasons why they do not co-occur. Section 4.2 deals with the co-occurrence of CAUS + INST, and is followed by Section 4.3, which is concerned with the co-occurrence of LOC + INST. A discussion of the co-occurrence of LOC + BEN is carried out in Section 4.4, followed by Section 4.5,

which examines the co-occurrence of BEN + INST. In Sections 4.2-4.5, I investigate the verb stems that can combine with each set of suffixes, the meanings that are associated with each set of suffixes and the compositional pathway in the derivation of each schema. Each of these sections also involves a discussion of the syntactic effects of combining multiple valence-increasing suffixes with a verb and the principles underlying the mapping and realization of post-verbal arguments in the construction. A summary of the main findings in this chapter is given in Section 4.6.

Finally, in chapter 5 I present a discussion of the main findings and conclusions about valence-increasing morphology in Temne.

Chapter 2

Background to the study

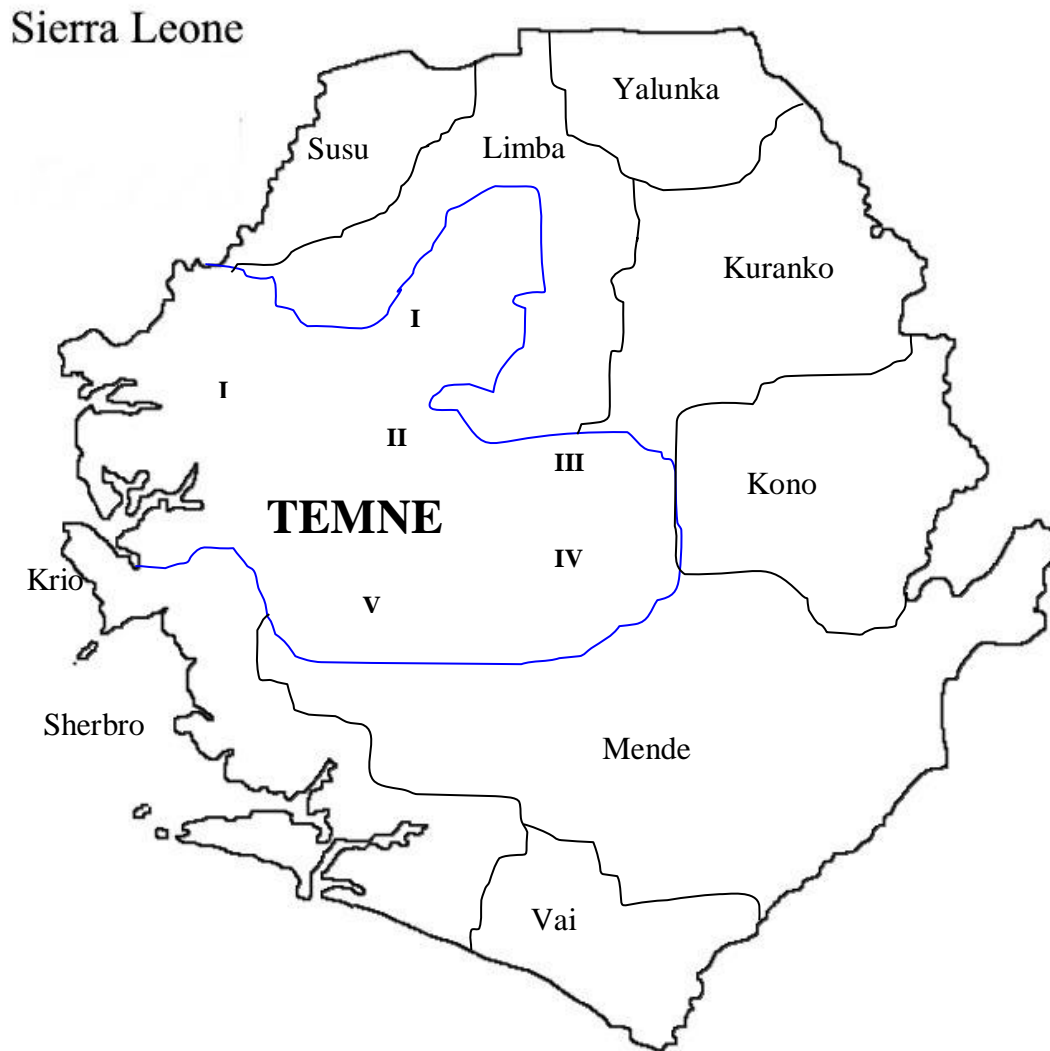
In this chapter, I present an overview of the language Temne, including its linguistic classification, dialects, sound system, tonal system, noun class system, basic sentence structure, verb classes, grammatical relations, object hierarchies and the verb extensions. The chapter also comprises a review of some of the previous studies on valence-increasing suffixes in Temne. The literature review is followed by a discussion of the sources of the data and methods used in the elicitation and analysis of the data.

2.1 The Temne language

Temne (ISO 639-3:tem) belongs to the Southern Atlantic Group of the Niger-Congo language family, formerly the Southern Branch of the Atlantic group of Niger-Congo (Blench, 2006; Childs, 2010). It is one of the four most widely spoken languages in Sierra Leone, West Africa. According to the 2004 population census, which is the most recent national census, 1,568,977 individuals (i.e., about 30% of the population of Sierra Leone) speak Temne as a native language.

Temne is spoken predominantly in the Northern Province of Sierra Leone, where it is a lingua franca. It shares boundaries with Mende in the South, Kono in the East, and Limba, Kuranko, and Susu on the Guinea border. Dalby (1966) classifies Temne into five main dialects: Eastern Konke, Western Konke, Bombali, Western dialect (North-Western and Sanda) and the Yoni dialect, which is the focus of this study. The dialects show minor phonological differences, but the morphology and syntax is largely similar. The map in Figure 1 illustrates the

distribution of the Temne dialects and the languages sharing borders with Temne-speaking populations.² This map indicates only the most dominant language or languages in each region.



Key:

I	Western dialect	II	Bombali dialect	III	Eastern Konke
IV	Western Konke	V	Yoni dialect		

Figure 1. Language map of Sierra Leone showing distribution of Temne dialects

² This map makes use of an outline downloaded from: http://worldmapsonline.com/images/OutlineMaps/Sierra_Leone.jpg. I have inserted the language boundaries and dialects of Temne, based on Dalby (1966).

2.1.1 Sound system

Temne has nineteen consonants, nine vowels and six diphthongs. Table 1 illustrates the consonant inventory of Temne in IPA symbols; where these differ, the orthographic symbols used in this dissertation are given, following the IPA symbols, in parentheses.³

Table 1. *Temne consonant system*

	Bilabial	Labio-Dental	Dental	Alveolar	Palatal	Velar	Labio-velar	Glottal
Plosive	p b		t̪ (th)	t d		k	ɸ (gb)	
Nasal	m			n		ŋ		
Affricative					tʃ (ch)			
Fricative		f		s	ʃ (sh)			h
Trill				r				
Approximant					j (y)		w	
Lateral approximant				l				

In the examples in this dissertation, the phoneme [t̪] is written as “th”, [tʃ] is written as “ch”, [ʃ] is “sh”, [ɸ] is “gb”, and [j] is “y”.

Concerning the vocalic system, Temne has nine vowels. An acoustic analysis of recordings from native speakers by Kanu & Tucker (2010) provides evidence that of the nine vowels in Temne, /i, e, ε/ are front, /ə, ʌ, a/ are central, and /u, o, ɔ/ are back vowels, as represented in Figure 2:⁴

³Wilson (2007) gives only 18 consonants for Temne, treating /d/ and /r/ as allophones and describing them as phonemes in some contexts and free variants in some other contexts. He states, “[d] is stem initial and postnasal; [r] occurs elsewhere, including in the class prefixes *rä-*, *rə-*, and *ro-*. In the other group members the contexts are almost the same” (p. 154). However, minimal pairs like: *dàdà* ‘uncombed hair’ and *dàrà* ‘palm nut stalk’ indicate that the phonemes /d/ and /r/ are separate phonemes.

⁴ Kamarah (1994) describes the vowel /a/ as front, /ʌ/ as back and /ə/ as central.

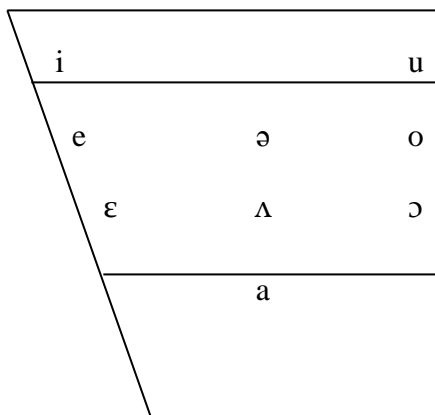


Figure 2. Temne vowel chart

The symbol /ʌ/ is used as a transcription convention representing the central half-open vowel. Based on preliminary acoustic analysis in Kanu & Tucker (2010), it may be more accurately described as /ɜ/ or /ɐ/ on the standard IPA chart. The vowels [e] and [ɛ] differ from each other in the sense that [e] is a front half-close vowel, while [ɛ] is a front half-open vowel. In terms of distribution, the front half-open [ɛ] occurs in stem-initial position, as in words like *èshèth* ‘houses’, *ébanà* ‘the bananas’. On the other hand, the front half-close vowel [e] does not occur in stem-initial position. The minimal pair *chép* ‘to stop breast feeding a child’ and *chép* ‘to plant sth’ indicates that the phonemes [e] and [ɛ] are contrastive in non-initial position.

In addition to the nine vowels, Temne has six diphthongs. Figure 3 illustrates these diphthongs.

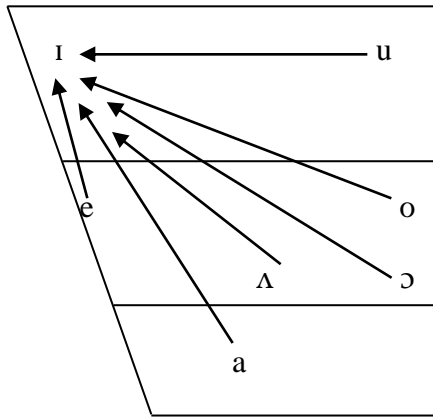


Figure 3. Chart of Temne diphthongs

In this dissertation, the orthographic symbols /uy, oy, ɔy, ʌy, ay, ey/ are used to represent the diphthongs. The IPA approximations are /ui, oi, ɔi, ʌi, ai, ei/ respectively.

2.1.2 Tonal system

Temne is a tonal language, having a high tone written with [´] and a low tone written with [˘]. The following examples illustrate words that are contrastive due to a difference in tone.

(20)	<i>bì</i>	‘a hole’	<i>bí</i>	‘black’
	<i>bà</i>	‘to have’	<i>bá</i>	‘to lay eggs’
	<i>chèn</i>	‘ants’	<i>chén</i>	‘to slaughter’
	<i>chèr</i>	‘rats’	<i>chér</i>	‘to release/let loose’
	<i>fɔ̀l</i>	‘long rope’	<i>fɔ́l</i>	‘to incubate’
	<i>fɔ̀k</i>	‘parcel’	<i>fɔ́k</i>	to wrap/parcel something’

Tone plays both lexical and grammatical functions in Temne. The examples in (20) illustrate the lexical function of tones.

In terms of grammatical function, tone may be used to distinguish definite and indefinite forms of nouns taking the class 7 prefix (see Section 2.1.3). The following examples illustrate this contrast.

- (21)
- | | | | |
|---------------|------------|---------------|----------------|
| <i>èmès</i> | ‘eggs’ | <i>émès</i> | ‘the eggs’ |
| <i>èshèth</i> | ‘houses’ | <i>éshèth</i> | ‘the houses’ |
| <i>èyòkà</i> | ‘cassavas’ | <i>éyòkà</i> | ‘the cassavas’ |
| <i>èbòpàr</i> | ‘leaves’ | <i>ébòpàr</i> | ‘the leaves’ |

Not much work has been done on tone in Temne. Reference to tonal contrast has been made by Dalby (1966), Kanu (2002) and Kamarah (1994) who claim that there are also rising and falling tones in Temne. However, an investigation of the tonal system of the Yoni dialect of Temne by Kanu & Tucker (2010) indicates that rising and falling tones are only created by morphophonemic processes that combine the tones of affixes undergoing vowel coalescence. One example of these morphomorphemic processes is the co-occurrence of the benefactive *-̀̀* and the instrumental *-̀̀nè*. In this case, the vowel of the benefactive *-̀̀* is deleted, but the low tone on the vowel shifts to *-̀̀nè*, creating a portmanteau benefactive-instrumental suffix *-̀̀nè* with a rising tone on the initial vowel. Because of this, I consider Temne to have only basic high and low tones.

2.1.3 Noun class system

A noun in Temne is inflected for noun class and definiteness. The categories of number and noun class are expressed cumulatively by a single prefix. For some noun classes, definiteness is also expressed cumulatively, while for others, it is expressed with a separate prefix. Out of the ten noun classes in Temne, only three express noun class and definiteness cumulatively. Definiteness is more often

expressed by separate prefixes, namely *-á-* (i.e., the definite) or *-à-* (i.e., the indefinite), which appear between the class prefix and the bare noun, as illustrated in some of the examples in Table 2. Also, as pointed out in Section 2.1.2, tone may be used to distinguish the definite and indefinite forms of nouns taking the class 7 prefix. Table 2 lists these noun classes with example nouns.

Table 2. *Noun class prefixes in Temne*

<i>class</i>	<i>def. form</i>	<i>example</i>	<i>gloss</i>	<i>indef. form</i>	<i>example</i>	<i>gloss</i>
nc1	á-	á-wàth	the child	ù-	ù-wàth	a child
nc2	k-á-	k-á-yèk	the monkey	k-à-	k-à-yèk	a monkey
nc3	áŋ-	áŋ-shèth	the house	à-	à-shèth	a house
nc4	r/d-á-	r-á-bèm	the rabbit	r/d-à-	r-à-bèm	a rabbit
nc5	áy-	áy-tàr	the slaves	à-	à-tàr	slaves
nc6	t-á-	t-á-bèp	the spoons	t-à-	t-à-bèp	spoons
nc7	é-	é-lòp	the fish	è-	è-lòp	fish
nc8	n-á-	n-á-bèŋà	the ropes	n-à-	n-à-bèŋà	ropes
nc9	p-á-	p-á-rànk	the type of rice	p-à-	p-à-rànk	type of rice
nc10	m-á-	m-á-yènthè	the sesame	m-à-	m-à-yènthè	sesame

Table 2 indicates that a few of the class prefixes inflect for the definite or indefinite form on nouns; they are the class 1 prefix *á-* which is used to express the definite form on nouns like *álangbà* ‘the man’ and *áchìk* ‘the male stranger’, while the form *ù-* is used to express the indefinite form on the same nouns, *ùlàngbà* ‘a man’ and *ùchìk* ‘a male stranger’. The class 3 prefix *áŋ-* assigns the definite form on nouns like *áŋshèth* ‘the house’ and *áŋyìbà* ‘the vulture’, while the form *à-* is used to express the indefinite form on the same noun stems. Also, the class 5 prefix *áy-* assigns the definite form on nouns like *áyfàm* ‘the people’ and *áychìrà* ‘the female strangers’, while the form *à-* assigns the indefinite form on the noun stems that take the class 5 prefix.

Previous studies by Wilson (1961, 2007); Hutchinson (1969); Kamarah (1994, 2007) and Bai-sheka (2007) have classified nouns in Temne into noun classes based on animacy or semantic concepts. However, an investigation of 1000 nouns in Temne by Kanu (2009b) reveals that Temne noun classes are not motivated semantically or by animacy. However, there are loose correlates for some classes with semantic groupings of objects. For example, the class 4 prefix *r/d-* and the class 8 prefix *n-* correlate with nouns that are rope-like. Some of these examples are listed in (22a) and (22b).

- (22) a. Class 4 prefix *d/r-*
r-à-béɣà 'a rope'
r-à-nàth 'a type of rope'
r-à-yɔy 'a type of rope'
r-à-tùl 'raffia'
r-à-pɔmpɔ 'cotton wool'
- b. Class 8 prefix *n-*
n-à-béɣà 'ropes'
n-à-nàth 'type of ropes'
n-à-yɔy 'type of ropes'
n-à-tùl 'rafias'
n-à-pɔmpɔ 'reels of cotton wool'

In addition, the class 10 prefix *m-* correlates with nouns that are liquids, including the examples in (23).

- (23) Class 10 prefix *m-*
m-á-bèr 'the alcohol'
m-á-chìr 'the blood'
m-á-nónò 'the cow milk'
m-á-lánkò 'the palm kernel oil'
m-á-rókàs 'the lime juice'

Despite the association of some nouns with certain noun classes, a semantic criterion does not provide a regular system for assigning nouns into class prefixes. The first piece of evidence against using a semantic strategy for classifying nouns into noun classes comes from the class 4 prefix *r/d-*. According to Bai-Sheka (2007) and Wilson (2007), the class 4 prefix combines with rope-like objects. However, as indicated by the examples in (24), the class 4 prefix *r/d-* also combines with nouns that are not ropes.

- (24) Class 4: *r/d-* prefix (Non-ropes)
- | | |
|--------------------|---------------|
| <i>r-à-bèm</i> | ‘a rabbit’ |
| <i>r-à-bày</i> | ‘chieftaincy’ |
| <i>r-à-fòr</i> | ‘an eye’ |
| <i>r-à-bàthàkà</i> | ‘a knee’ |
| <i>r-à-shèk</i> | ‘a tooth’ |
| <i>r-à-wù</i> | ‘a knee cap’ |

Moreover, the class 10 prefix *m-* which Wilson (2007), Bai-Sheka (2007) and Kamarah (2007) associate with nouns that are liquids also combines with nouns that are not liquids, as indicated by the examples in (25).

- (25) Class 10: *M-*: (Non-liquids)
- | | |
|------------------|-----------------------|
| <i>m-á-lénì</i> | ‘the wasps’ |
| <i>m-á-yàrì</i> | ‘the cats’ |
| <i>m-á-kànd</i> | ‘the peanuts’ |
| <i>m-á-làp</i> | ‘the (type of fruit)’ |
| <i>m-á-shìbò</i> | ‘the accidents’ |

In addition to semantic concepts, animacy has alternatively been used by Bai-Sheka (2007) and Wilson (2007) to classify nouns into noun classes. According to Bai-Sheka (2007), the class prefixes *k-*, *t-*, *r-*, *n-* *ɔ/ɔŋ-*, *m-*, *ɛ/y-*, *p-* and *ɔ-*, corresponding to class 2, 6, 4, 8, 3, 10, 7, 9 and 1 in this analysis, constitute the inanimate noun classes, while the class 1 *ɔ/u-*, class 5 *a/ɔŋ-*, class 3

ɲ/ɲɲ-, class 7 *ɛ/y-*, class 6 *t-*, class 2 *k-*, class 4 *r-*, and class 10 *m-* are the animate noun classes.

However, classifying nouns in Temne based on animacy is feasible only to a limited extent. It is feasible in the sense that the class 1 prefix *u/ɔ-* and class 5 prefix *a/ɲ-*, for example, correlate with nouns that are animate, while the class 8 prefix *n-* is compatible with only inanimate nouns. The problem with classifying nouns in Temne based on animacy is that some of the class prefixes cut across animate and inanimate nouns. For example, the class 3 prefix *ɲ/ɲ-*, class 7 prefix *ɛ/y-*, class 6 prefix *t-*, class 2 prefix *k-*, class 4 prefix *r-*, and class 10 prefix *m-* cut across animate and inanimate groups, as illustrated in Table 3.

Table 3. *Class prefixes cutting across animate and inanimate nouns*

class no.	class prefix	animate	inanimate
class 3	<i>ɲɲ-</i>	<i>ɲɲ-yári</i> ‘the cat’	<i>ɲɲ-shèth</i> ‘the house’
class 7	<i>ɛ-</i>	<i>ɛ-yék</i> ‘the monkeys’	<i>ɛ-múnà</i> ‘the potatoes’
class 6	<i>t-</i>	<i>t-ɲ-lómè</i> ‘the sheep’ (pl)	<i>t-ɲ-bèp</i> ‘the spoons’
class 2	<i>k-</i>	<i>k-ɲ-lómè</i> ‘the sheep’	<i>k-ɲ-bàp</i> ‘the axe’
class 4	<i>r-</i>	<i>r-à-bém</i> ‘a rabbit’	<i>r-à-sèk</i> ‘a tooth’
class 10	<i>m-</i>	<i>m-ɲ-lènì</i> ‘the wasps’	<i>m-ɲ-lémrè</i> ‘the oranges’

The examples in Table 3 indicate that certain class prefixes cut across the animate and inanimate groups; thus suggesting that animacy is not a regular strategy for classifying nouns into class prefixes in Temne.

In terms of number, four of the noun classes correspond to the singular, while the remaining six correspond to the plural. Table 4 illustrates the noun classes that express the singular form of a noun.

Table 4. *Class prefixes corresponding to the singular*

<i>noun class</i>	<i>example</i>	<i>gloss</i>
class 1	ó-yà	the old woman
	ù-yà	an old woman
	ó-kèy	the thief
	ù-kèy	a thief
class 2	k-á-lòmè	the sheep (sg)
	k-à-lòmè	a sheep (sg)
	k-á-tàlà	the hoe
	k-à-tàlà	a hoe
class 3	áy-yàri	the cat
	à-yàri	a cat
	áy-sàpò	the key
	à-sàpò	a key
class 4	r-á-bèm	the rabbit
	r-à-bèm	a rabbit
	r-á-shèk	the tooth
	r-à-shèk	a tooth

Some noun classes express only the plural. These noun classes are listed in

Table 5.

Table 5. *Class prefixes corresponding to the plural*

<i>noun class</i>	<i>example</i>	<i>gloss</i>
class 5	áy-làngbà	the men
	à-làngbà	men
	áy-fòm	the people
	à-fòm	people
class 6	t-á-lòmè	the sheep (pl)
	t-à-lòmè	sheep (sheep)
	t-á-nà	the cows
	t-à-nà	cows
class 7	é-shèth	the houses
	è-shèth	houses
	é-lòp	the fish (pl)
	è-lòp	fishes
class 8	n-á-bèyà	the ropes
	n-à-bèyà	ropes
class 9	p-á-rànk	the (type of) rice
	p-à-rànk	a (type of) rice
	p-á-yàkà	the (type of) rice
	p-à-yàkà	a (type of) rice
class 10	m-á-bèr	the alcohol
	m-à-bèr	alcohol
	m-á-yènthè	the sesame
	m-à-yènthè	sesame

Class 1 nouns form the plural by taking either the class 5, 10 or class 6 noun class. In addition, classes 2 and 3 nouns form the plural by either taking the class 6, 7 or class 10 noun class, which undermines any claim that two noun classes in Temne differ from each other in their singular-plural pairing. Nouns belonging to class 4 form the plural by either taking the class 6, 7 or class 8 noun class. Table 6 illustrates this singular-plural pairing of these noun classes.

Table 6. *Class prefixes marking the singular, and their plural counterparts*

class prefixes marking the singular			plural counterparts		
<i>noun class</i>	<i>example</i>	<i>gloss</i>	<i>noun class</i>	<i>example</i>	<i>gloss</i>
class 1	<i>ɔ̄-làngbà</i>	the man	class 5	<i>áy-làngbà</i>	the men
	<i>ɔ̄-yà</i>	the old woman	class 10	<i>m-ì-yà</i>	the old women
	<i>ù-tàk</i>	a deer	class 6	<i>t-à-tàk</i>	deers
class 2	<i>k-à-lòmè</i>	a sheep	class 6	<i>t-à-lòmè</i>	sheep (pl)
	<i>k-î-nà</i>	the cow	class 7	<i>é-nà</i>	the cows
	<i>k-î-lùth</i>	the lock	class 10	<i>m-î-lùth</i>	the locks
class 3	<i>îŋ-yàri</i>	the cat	class 10	<i>m-î-yàri</i>	the cats
	<i>îŋ-shèth</i>	the house	class 7	<i>é-shèth</i>	the houses
	<i>îŋ-chiyà</i>	the chair	class 6	<i>t-î-chiyà</i>	the chairs
class 4	<i>r-î-bèm</i>	the rabbit	class 6	<i>t-î-bèm</i>	the rabbits
	<i>r-î-shèk</i>	the tooth	class 7	<i>é-shèk</i>	the teeth
	<i>r-à-pàl</i>	a rope	class 8	<i>n-à-pàl</i>	ropes

Class 5, 6, 7, 8, 9 and 10 are the plural class prefixes. Nouns belonging to class 5 form the singular by taking noun class 1. Also, nouns that belong to class 6 or 7 form the plural by taking the class 1, 2, 3 or class 4 noun class, while nouns belonging to class 8 form the singular by taking the class 4 noun class. On the other hand, nouns which belong to class 9 are mass nouns and have no singular counterpart. Also, some of the nouns that belong to class 10 are mass nouns, while others are not. Class 10 nouns that are not mass nouns form the singular by taking

the class 1, 2, or class 3 noun class. Table 7 lists the plural noun classes and their singular counterparts.

Table 7. *Class prefixes marking the plural, and their singular counterparts*

class prefixes marking the plural			singular counterparts		
<i>noun class</i>	<i>example</i>	<i>gloss</i>	<i>noun class</i>	<i>example</i>	<i>gloss</i>
class 5	<i>áy-làngbà</i>	the men	class 1	<i>ǎ-làngbà</i>	the man
class 6	<i>t-à-lòmè</i>	sheep (pl)	class 2	<i>k-à-lòmè</i>	sheep (sg)
	<i>t-á-chiyà</i>	the chairs	class 3	<i>áy-chiyà</i>	the chair
	<i>t-á-bèm</i>	the rabbits	classes 4	<i>r-á-bèm</i>	the rabbit
class 7	<i>t-à-nà</i>	cows	class 1	<i>ù-nà</i>	a cow
	<i>é-shèth</i>	the houses	class 3	<i>áy-shèth</i>	the house
	<i>é-lòp</i>	the fish (pl)	class 2	<i>k-á-lòp</i>	the fish
	<i>é-nà</i>	the cows	class 1	<i>ǎ-nà</i>	the cow
class 8	<i>è-shèk</i>	teeth	class 4	<i>r-à-shèk</i>	a tooth
	<i>n-á-bèyà</i>	the ropes	class 4	<i>d-à-bèyà</i>	a rope
class 9	<i>p-á-rànk</i>	type of rice	(mass)	-	-
class 10	<i>m-á-bèr</i>	the alcohol	(mass)	-	-
	<i>m-á-yà</i>	the old women	class 1	<i>ǎ-yà</i>	the old woman
	<i>m-á-yàri</i>	the cats	class 3	<i>áy-yàri</i>	the cats
	<i>m-à-lùth</i>	locks	class 2	<i>k-á-lùth</i>	lock

Table 7 indicates that nouns belonging to noun class 6 and class 7 form the singular by taking noun class 2, 3, 1 or 4, which also belies any claim that two noun classes in Temne differ from each other in their singular-plural pairing.

In addition to expressing number, class prefixes in Temne exhibit properties that are also found in other Atlantic languages. For example, adjectives take prefixes that agree with the nouns they modify in noun class, definiteness, and number. Examples (26a-b) illustrate this agreement between the adjective and the controlling noun.

- (26) a. *k-à-tálà* *k-à-bàna*
 NC2-INDEF-hoe NC2-INDEF-big
 ‘a big hoe’
- b. *r-à-shèk* *r-à-bànà*
 NC4-INDEF-tooth NC4-INDEF-big
 ‘a big tooth’

The bare noun *tàlà* ‘hoe’ in (26a) takes the class 2 noun class *k-*, and the adjective *kàbàrà* ‘big’ that modifies it also takes the class 2 noun class *k-*. Similarly, in (26b) the bare noun *shèk* ‘tooth’ takes the class 4 noun class *r-* and the adjective *ràbàrà* ‘big’ that modifies it also takes the class 4 noun class *r-*. Thus, in both (26a) and (26b), the prefix of the adjective and the class prefix of the controlling noun agree in number (sg/pl) and noun class.

Moreover, demonstrative adjectives also agree in noun class and number with the controlling noun, as demonstrated by the examples in (27).

- (27) a. *k-â-tàlà* *â-k-è* b. *t-â-tàlà* *â-t-è*
 NC2-DEF-hoe DEF-NC2-DEM NC6-DEF-hoe DEF-NC6-DEM
 ‘this hoe’ ‘these hoes’

In (27a), the noun *tàlà* ‘hoe’ appears with the noun class *k-* (i.e., nc2), which expresses the singular form of the noun. The corresponding demonstrative adjective *âkè* ‘this’ that modifies the noun *kâtàlà* ‘the hoe’ is also in the singular form. In (27b), the demonstrative adjective is the plural form *âtè* ‘these’, corresponding with the noun *tâtàlà* ‘hoes’, which takes the plural class prefix *t-*. Thus, in both (27a) and (27b), the class prefix and the demonstrative adjective agree in noun class and number. Note that the order of the noun class is different on the noun and on the demonstrative.

The presence of a noun class system with some degree of concord is not unique to Temne. Wilson (2007) has also reported the existence of a class system with some degree of concord in the Atlantic languages Bijago, Biafada, Pajade, Cassanga, Cobiana, Banhum and the Tenda-Konyagi languages. In addition,

studies by Katamba (2003), Bokamba (1993) and Van der Wal (2009), among others, have shown that noun classes with a concord system are widespread in Bantu languages.

2.1.4 Basic sentence structure

Temne has a fixed word order, and as the example in (28) illustrates, the basic word order in a simple declarative sentence is Subject-Verb-Object (SVO).

- (28) *Adeníkèŋ* *ɔ́* *wáy* *è-kɔ̀fàthà* *è-fù*
 Adenikeŋ NC1.SUBJ:DEF buy NC7:INDEF-shoe NC7:INDEF-new
 ‘Adenikeŋ buys/is buying/bought new shoes.’

In (28) the subject of the sentence is the proper name *Adenikeŋ*, and it precedes the subject marker *ɔ́* which in turn precedes the verb *wáy* ‘buy’. The verb immediately precedes the object *èkɔ̀fàthà* ‘shoes’. The subject marker is obligatory in a construction where a nominal subject is overtly expressed, and it agrees with the controlling noun in number, noun class and definiteness.

The subject of the sentence may be expressed by an emphatic pronoun, as indicated by (29) below.

- (29) *kɔ̀nɔ̀ŋ* *ɔ́* *wáy* *è-kɔ̀fàthà* *è-fù*
 s/he NC1.SUBJ:DEF buy NC7:INDEF-shoe NC7:INDEF-new
 Literal meaning: ‘S/he bought a new pair of shoes.’
 ‘It was she that bought a new pair of shoes.’

Note that unlike nouns, pronouns do not take a noun class prefix. However, information about which noun class a pronoun belongs to is deduced from the subject marker that appears after a pronoun in a sentence. In the case of the pronoun *kɔ̀nɔ̀ŋ* ‘s/he’ in (29), the subject marker *ɔ́* corresponds to nouns which belong to noun class 1, which implies that the pronoun *kɔ̀nɔ̀ŋ* ‘s/he’ belongs to the

noun class 1 definite. Also, there are no inanimate subject pronouns in Temne; rather, these forms are expressed by subject markers (see Table 9).

There are two types of subject pronouns in Temne, and I classify them into Group 1 and Group 2, all of which are listed in Table 8.

Table 8. *Subject pronouns in Temne*

<i>person</i>	<i>number</i>	<i>group-1 subj</i>	<i>group-2 subj</i>	<i>gloss</i>
1	sg	<i>mìnè</i>	<i>mìnéɲ</i>	I
	pl	-	<i>sàɲ</i>	we
2	sg	<i>mùnɔ̀</i>	<i>mùnɔ̀ɲ</i>	you (sg)
	pl	-	<i>nàɲ</i>	you (pl)
3	sg	<i>kɔ̀nɔ̀</i>	<i>kɔ̀nɔ̀ɲ</i>	s/he
	pl	-	<i>ɲàɲ</i>	they

In terms of syntax, the Group-2 subject pronouns *mìnéɲ* ‘I’, *mùnɔ̀ɲ* ‘you. sg’, *kɔ̀nɔ̀ɲ*, ‘s/he’, *sàɲ* ‘we’, *nàɲ* ‘you (pl)’ and *ɲàɲ* ‘they’ differ from the Group-1 subject pronouns *mìnè* ‘I’, *mùnɔ̀* ‘you. sg’ and *kɔ̀nɔ̀*, ‘s/he’. First, as shown in Table 8, the Group 2 subject pronouns have singular and plural forms, while the Group 1 subject pronouns have no plural forms. Secondly, whereas the Group-2 pronouns co-occur with a subject marker, the Group-1 pronouns do not. Example (29) above illustrates a Group-2 subject pronoun co-occurring with a subject marker, while example (30) below indicates that a Group 1 subject pronoun does not co-occur with any subject marker.

(30) *mìnè wáy è-kɔ̀fàthà è-fù*
 I buy NC7:INDEF-shoe NC7:INDEF-new
 ‘I bought a new pair of shoes.’

The sentence is ungrammatical when a Group 1 subject pronoun is followed by a subject marker, as indicated by example (31).

- (31) **mìnè* ì *wáy* *è-kòfàthà* *è-fù*
 I 1SG.SUBJ buy NC7:INDEF-shoe NC7:INDEF-new
 Intended meaning: ‘I bought a new pair of shoes.’

The contrast in grammaticality between (31) and (30) indicates that the Group 1 subject pronoun *mìnè* ‘I’ does not take a subject marker. However, the semantic difference between Group-1 and Group-2 pronouns remains unclear.

Some sentences in Temne do not have any overtly expressed subject. However, such sentences do have a subject-marker, which agrees with the elided subject in number and person. The following example illustrates this sentence type.

- (32) *ó* *wáy* *è-kòfàthà* *è-fù*
 NC1.SUBJ:DEF buy NC7:INDEF-shoe NC7:INDEF-new
 ‘S/he bought new shoes.’

In (32), the subject of the sentence is expressed by the subject marker *ó* (i.e., NC1.SUBJ:DEF). Any nominal subject that is added to (32) must agree with the subject marker *ó* in noun class, definiteness and in person. Table 9 illustrates the subject markers in Temne.

Table 9. *Subject markers in Temne*

<i>person/noun class</i>	<i>definite form</i>	<i>indefinite form</i>
1sg	ì	-
1pl	sà	-
2sg	àŋ	-
2pl	nà	-
nc1	ǎ	ù-
nc2	ká	kà
nc3	áŋ	à
nc4	rá/dá	rà/dà
nc5	áŋ	à
nc6	tá	tà
nc7	é	è
nc8	ná	nà
nc9	pá	pà
nc10	má	mà

As indicated in Table 9, subject markers in Temne correspond to the noun classes in number (i.e., singular/plural), definiteness and noun class. However, the first and second person subject markers have no indefinite forms. Also, the indefinite form of the class 9 subject marker *nà* and the second person plural subject marker *nà* are homophonous.

In the previous studies by Hutchinson (1969), Wilson (1961, 2007) and Kamarah (2007), these subject markers were described as “subject pronouns”. However, unlike the true pronouns listed in Table 8, the subject markers do not have the distribution of pronouns. First, as the impossibility of (33a) indicates, these subject markers cannot be coordinated, but subject pronouns can, as illustrated in (33b).

- (33) a. *ɪ yì àŋ sà bá k-á-pèt
 I and you 1PL.SUBJ have NC2-DEF-town
 Intended meaning: ‘You and I own the town.’
- b. mìnɛŋ yì mùnɔŋ sà bá k-á-pèt
 I and you 1PL.SUBJ have NC2-DEF-town
 ‘You and I own the town.’

Secondly, unlike subject pronouns, the subject markers in Temne cannot occur in a one-word utterance. Thus, they cannot be used to answer questions like ‘Who did this?’ or ‘Who did you give it to?’, as indicated by the contrast in grammaticality between (34b) and (34c).

- (34) a. Speaker A: kɪnɪ dɛr-à?
 who arrive-QM
 ‘Who arrived?’
- b. Speaker B: mìnɛŋ ‘I’
- c. *ɪ
 1SG.SUBJ

The ungrammaticality of (34c) indicates that the first person singular subject marker *ɪ* cannot occur in a one-word utterance.

The subject-marker in a Temne sentence may be followed by tense/aspect markers. The past tense and future tense can be overtly marked in the sentence by means of the auxiliary markers *b̀̀* ‘past’ and *t̀̀* ‘future’ respectively. Example

(35) illustrates the past tense.

- (35) ɔ-b.ɪy ɔ̀̀ b̀̀ dɛr dɛ̀̀
 NC1:DEF-chief NC1.SUBJ:DEF PAST arrive here
 ‘The chief arrived here before.’

In example (36) below, the future tense marker *t̀̀* ‘shall/will’ precedes the verb and the sentence has the interpretation of the future tense.

- (36) *ɔ̌-b.àɣ* *ɔ̌* *tà* *dér* *dè*
 NC1:DEF-chief NC1.SUBJ:DEF FUT arrive here
 ‘The chief will arrive here.’

However, when tense is unmarked, the sentence is open to two interpretations: the present tense and the past tense.

The morpheme *yìdàk* is used to indicate imperfective aspect, while the auxiliary verbs *pò*, *là*, or *sà* mark perfective aspect. These aspect markers always occur between the subject or subject marker and the main verb, as demonstrated by example (37).

- (37) *Adénikèŋ* *ɔ̌* *pò* *wáy* *è-kɔ̌fàthà* *è-fù*
 Adenike NC1.SUBJ:DEF PERF buy NC7:INDEF-shoe NC7-INDEF-new
 ‘Adenike has bought a new pair of shoes.’

The three perfective aspect markers *pò*, *là* and *sà* share the same meaning and are free dialectal variants. The variant *sà* is common among speakers of the Eastern and Western Konke dialects, while speakers of other dialects, including the Yoni dialect, more often use the forms *pò* and *là*.

The perfective aspect markers can combine with the tense markers. In this case the tense marker precedes the perfective aspect marker, as illustrated by example (38).

- (38) *Adénikèŋ* *ɔ̌* *bɔ̌* *pò* *wáy* *è-kɔ̌fàthà* *è-fù*
 Adenikeŋ NC1.SUBJ:DEF PAST PERF buy NC7-INDEF-shoe NC7-new
 ‘Adenikeŋ has bought a new pair of shoes.’

Following the verb is the object of the verb, which may be expressed as a nominal, as shown in (38) above where the object of the verb is the nominal *èkɔ̌fàthà* ‘shoes’.

In addition, the object of the verb may be expressed by an object marker, as indicated in (39).

- (39) *ɔ̌-bɔ̌kɔ̌* *ɔ̌* *wáy* *yì*
 NC1:DEF-woman NC1.SUBJ:DEF buy NC7.OBJ
 ‘The woman bought them.’

In (39), the object of the verb is expressed by the object marker *dì*. The object markers in Temne are listed in Table 10 and are inflected for person or noun class.

Table 10. *Object markers in Temne*

<i>person/noun class</i>	<i>object markers</i>
1sg	<i>mì</i>
1pl	<i>sù</i>
2sg	<i>mù</i>
2pl	<i>nù</i>
nc1	<i>kɔ̌</i>
nc5	<i>ɣà</i>
nc2	<i>kì</i>
nc3	<i>ɣì</i>
nc4	<i>rì/dì</i>
nc6	<i>chì</i>
nc7	<i>yì</i>
nc8	<i>nì</i>
nc9	<i>pì</i>
nc10	<i>mà</i>

There are no object pronouns in Temne.

2.1.5 *Verb classes*

The verb may be intransitive, transitive or ditransitive. Some of the intransitive verbs in the sample of verbs examined in this study are listed in Table 11. The variable X in the glosses in Table 11 stands for the single event-participant of the monovalent intransitive clause, realized as the syntactic subject, and is defined as “X such that X is expressed as subject of the basic clause”.

Table 12. *Sample of transitive verbs in Temne*

<i>verbs</i>	<i>gloss</i>
<i>bémpà</i>	X makes Y
<i>báp</i>	X meets Y
<i>bót</i>	X puts down Y
<i>đi</i>	X eats Y
<i>fák</i>	X drops Y
<i>gbéηà</i>	X hates Y
<i>kóth</i>	X ties Y
<i>kéyà</i>	X steals Y
<i>kúth</i>	X fetches Y (water)
<i>láp</i>	X burns Y
<i>lám</i>	X throws Y
<i>mém</i>	X tests Y
<i>mún</i>	X drinks Y
<i>mánk</i>	X hides/buries Y
<i>ηáy</i>	X bites Y
<i>pát</i>	X cooks Y
<i>wáy</i>	X buys Y
<i>yéf</i>	X mills Y
<i>yák</i>	X washes Y
<i>yágbà</i>	X hurries Y

The following example illustrates a transitive construction.

- (41) *ḡ-wàth* *ḡ* *thílà* *ḡ-kàròshìn*
 NC1:DEF-child NC1.SUBJ:INDEF sell NC3:DEF-kerosene
 ‘The child sold the kerosene.’

In (41), the argument *ḡkàròshìn* ‘kerosene’ is the basic object of the verb and is identified by the variable Y. In this example, Y corresponds to the primary object, while X *ḡwàth* ‘child’ is the subject (see Section 2.1.6 for a discussion of grammatical relations).

In addition to transitive verbs are ditransitive verbs which support three core arguments identified here as X, Y and R. The variable R is defined here as “R such that R is expressed as the primary object of a transitive verb”. However, R is loosely semantic in that it is the non-subject argument that is higher in animacy, and it typically has a recipient-like role. Table 13 lists the ditransitive

verbs in the sample of verbs used in the analysis in this dissertation (see Table I in the appendix for a list of these verbs).

Table 13. *Sample of ditransitive verbs in Temne*

<i>root</i>	<i>gloss</i>
<i>báŋlì</i>	X gives a handful of Y to R
<i>bɔ́</i>	X borrows Y from R
<i>bént</i>	X deprives R of Y
<i>bóyà</i>	X donates Y to R
<i>déŋ</i>	X puts Y on R's head
<i>sɔ́ŋ</i>	X gives Y to R
<i>tɔ́rĩ</i>	X shows Y to R
<i>nút</i>	X feeds Y to R
<i>rám</i>	X pays Y to R
<i>yér</i>	X donates Y to R
<i>yép</i>	X lends Y to R
<i>yíf</i>	X asks R about Y

The following example illustrates a ditransitive construction.

- (42) *ɔ́-yà* *ɔ́* *nút* *ɔ́-wàth* *áŋ-nàk*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC1:DEF-child NC3:DEF-rice
 ‘The old woman fed the child some rice.’

In (42), the objects of the ditransitive verb are R *ɔ́wàth* ‘child’ that is realized as the primary object and Y *áŋnàk* ‘rice’ that is the secondary object. The grammatical relation that is assigned to the participants R and Y remain the same even when R and Y are expressed as object markers. Example (43) illustrates this construction type.

- (43) *ɔ́-yà* *ɔ́* *nút* *kɔ́* *ŋì*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC1:OBJ NC3:OBJ
 ‘The old woman fed it to him/her.’

In (43), the participant R is expressed by the object marker *kɔ́*, and is the primary object, while the participant Y, which is expressed by the object marker *ŋì*, is the secondary object. Thus, as in constructions where all the objects are expressed by nouninals, the participant R is the primary object and Y is the secondary object

when all the objects are expressed by object markers. I refer to constructions where post-verbal arguments are all expressed as nominals or object markers as “homogeneous object constructions” (see Section 2.1.7 for a discussion of homogeneous object constructions). In constructions where post-verbal arguments are a combination of a nominal and an object marker, referred to here as “heterogeneous object constructions” the grammatical relations of Y and R change (see Section 2.17).

Note that with the exception of the participant R, which has a recipient-like role, the participants X and Y do not have any specific participant role. Depending on the verb, the participant X may be assigned the participant role of AGENT, as example (44) above indicates. Also, the participant X may be assigned the participant role of PATIENT, as indicated in (44).

- (44) *ǎ-yà* *ǎ* *tù*
 NC1:DEF-old woman NC1.SUBJ:DEF sick
 ‘The old woman fell sick.’

In addition, the participant X may be assigned the role of EXPERIENCER, as illustrated in (45).

- (45) *ǎ-yà* *ǎ* *bóthàr* *ǎ-wòs* *kóŋ*
 NC1:DEF-old woman NC1.SUBJ:DEF love NC1:DEF-husband POSS
 ‘The old woman loves her husband.’

Thus, examples (43-45) indicate that the participant X may be assigned the role of AGENT, PATIENT or EXPERIENCER, depending on the verb. Similarly, the participant Y may be assigned the role of THEME or PATIENT, while the participant R is closely associated with the participant role of RECIPIENT. This variability in

participant roles is the reason for using the variables X and Y in this dissertation and is further discussed in Mel’čuk (1988).

2.1.6 Grammatical relations

In Temne, syntactic properties like relativization, focalization or topicalization do not distinguish the arguments in a construction, and there is no case marking or verb agreement. Grammatical relations other than the subject are marked only by word order. The subject differs from the object in that it precedes the verb. Also, the subject controls the agreement on the subject marker, as illustrated in (46).

- (46) $\acute{\text{y}}\text{-y\grave{a}}$ $\acute{\text{y}}$ $f\acute{\text{u}}\text{th\grave{a}}$ $\grave{\text{e}}\text{-b\grave{a}}\text{n\grave{a}}$
 NC1:DEF-old woman NC1.SUB:DEF boil NC7:INDEF-banana
 ‘The old woman boiled bananas.’

The predicate of the sentence in (46) is the transitive verb *fúthà* ‘X boils Y’. The participant X *ýyà* ‘old woman’ is the subject; it precedes the predicate and agrees with the subject marker $\acute{\text{y}}$ in number (i.e., singular/plural), noun class and definiteness. The participant Y *èbànà* ‘banana’ comes after the verb, and is the primary object.

The examples in (47) illustrate a ditransitive sentence in Temne. In this sentence type, three participants are expressed: the subject X, and the objects R and Y.

- (47) a. $\acute{\text{y}}\text{-b\grave{a}}\text{k\grave{a}}$ $\acute{\text{y}}$ $n\acute{\text{ú}}\text{t}$ $\acute{\text{y}}\text{-w\grave{a}}\text{th}$ $\acute{\text{a}}\text{\eta}\text{-n\grave{a}}\text{k}$
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:DEF-child NC3:DEF-rice
 ‘The woman fed the child some rice.’

- b. *ɔ̌-bɔ̌kɔ̌* *ɔ̌* *núʈ* *kɔ̌* *ŋì*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:OB NC3:OBJ
 ‘The woman fed it (rice) to him/her.’

The predicate of the sentences in (47) is the ditransitive verb *núʈ* ‘X feeds Y to R’. The participants *ɔ̌wàth* ‘child’ and *áŋnàk* ‘rice’ come after the verb and are the objects, while the participant X *ɔ̌yà* ‘old woman’ that precedes the verb is the subject. The participant *ɔ̌wàth* ‘child’ that is R appears immediately after the verb, and is analyzed here as the primary object. The participant Y *áŋnàk* ‘rice’ appears immediately after the primary object, and is considered to be the secondary object. In (47b) the secondary object is expressed by the object marker *ŋì*, and is immediately preceded by the primary object, which is expressed by the object marker *kɔ̌*.

Dryer (1986) distinguishes between “primary object languages” and “direct object languages”. By his analysis, languages that treat R as less oblique than Y are primary object languages, while languages that treat Y as more oblique than R are direct object languages. Ditransitive constructions like (47) show that Temne places the participant R closer to the verb than Y. Therefore, Temne is a primary object language in the sense of Dryer (1986), hence the use of the PO/SO rather than DO/IO in this dissertation. Another reason for using PO/SO rather than the DO/IO distinction is that, as shown in Chapters 3 and 4, Temne has a tertiary object (TO) and a quaternary object (QO) for which there are no terms in the DO/IO system.

An oblique object may be introduced by a preposition, as demonstrated by example (48).

(48) *ǎ-yà* *ǎ* *nút* *ǎ-wàth* *ńń-nàk*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC1:DEF-child NC3:DEF-rice

yì *k-à-bèp*
 with NC2-INDEF-spoon

‘The old woman fed the child some rice with a spoon.’

In (48), the participant X *ǎ-yà* ‘old woman’ is the subject. It precedes the subject marker *ǎ* and the ditransitive verb *nút* ‘X feeds Y to R’. The participant R *ǎ-wàth* ‘child’ that is closer to the verb is the primary object. The participant Y *ńń-nàk* ‘rice’ immediately follows the primary object and is the secondary object, while the participant *k-à-bèp* ‘spoon’, which is introduced by the preposition *yì* ‘with’, is the oblique object.

So far, I have claimed that the argument that appears immediately after the verb is the primary object. This claim is based on word order. Further evidence for this claim comes from reflexive constructions. In this construction type, the primary object is the target of reflexivization. The following reflexive constructions illustrate this phenomenon using the ditransitive verb *nút* ‘X feeds Y to R’.

(49) a. *ǎ-bàkà* *ǎ* *nút* *ǎ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:DEF-old man

k-à-yèk
 NC2-INDEF-monkey
 ‘The woman fed the old man a monkey.’

b. *ǎ-bàkà* *ǎ* *nút-nè* *k-à-yèk*
 NC1:DEF-woman NC1.SUBJ:DEF feed-REF NC2-INDEF-monkey
 ‘The woman fed herself a monkey.’

The verb *nútnè* ‘X feeds himself Y’ is derived from the verb stem *nút* ‘X feeds Y to R’. When the reflexive suffix *-nè* is combined with the verb *nút* ‘X feeds Y to R’, it is the primary object *íthèm* ‘old man’, rather than the secondary object, *káiyèk* ‘monkey’ that is eliminated from the clause.

The primary object is also the target of reflexivization even when all the post-verbal arguments are expressed by object makers, as demonstrated by example (50).

- (50) a. *ǎ-bǎkǎ* *ǎ* *nút* *kǎ* *ɣǐ*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1.OBJ NC3.OBJ
 ‘The woman fed it to him/her.’
- b. *ǎ-bǎkǎ* *ǎ* *nút-nè* *ɣǐ*
 NC1:DEF-woman NC1.SUBJ:DEF feed-REF NC3.OBJ
 The woman fed it to herself.’

In (50a), the primary object and the secondary object are expressed by the object markers *kǎ* and *ɣǐ* respectively. Example (50b) indicates that when the reflexive suffix is combined with the verb *nút* ‘X feeds Y to R’, it is the primary object *kǎ* that is the target of reflexivization.

Bresnan and Moshi (1990) distinguish between “symmetrical language type” and “asymmetrical language type”. They define asymmetrical language type as languages where “only one of the post-verbal arguments exhibits “primary object” syntactic properties of passivization, object agreement and adjacency to the verb” (p.147). On the other hand, a symmetrical language type refers to a language where “more than one NP can display “primary object” syntactic properties” (p.141). Examples like (49-50) where the object that is closer to the

verb is the only target of reflexivization indicate that Temne is an asymmetrical object type language.

2.1.7 Object hierarchies

The mapping and realization of post-verbal arguments in Temne is determined by two interacting hierarchies, the participant hierarchy and the precedence hierarchy. In constructions where the requirements of the two hierarchies conflict the precedence hierarchy outranks the participant hierarchy. A third hierarchy, the prominence hierarchy ranks objects according to grammatical person and animacy; semantically plausible clauses in which an object-marker lower on the prominence hierarchy would precede an object-marker higher on the hierarchy are blocked and considered ungrammatical. In this section, I examine these three principles in detail.

The participant hierarchy provides a ranked ordering of event-participants based on their participant roles. Arguments expressing participant roles higher in the ranking precede arguments expressing participant roles that are lower in the ranking. In a basic ditransitive construction, arguments occur in the order of precedence $X \gg R \gg Y$, which means that the participant role assigned to X, usually the AGENT, PATIENT or EXPERIENCER, is the highest ranked role and precedes R, which is often the RECIPIENT. The RECIPIENT in turn precedes Y, which may be assigned the participant role of THEME, PATIENT or EXPERIENCER depending on the verb. This participant hierarchy $X \gg R \gg Y$ follows from the view that Temne is a primary object language and treats the participant R as less

oblique than the participant Y. The following examples illustrate the participant hierarchy in a ditransitive construction.

- (51) a. *ǎ-yà* *ǎ* *nút* *ǎ-wàth*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC1:DEF-child
- áŋ-nàk*
 NC3:DEF-rice
 ‘The old woman fed the child the rice.’

- b. *ǎ-yà* *ǎ* *nút* *kò* *ŋì*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC1.OBJ NC3.OBJ
 ‘The old woman fed it (rice) to him/her.’

Examples (51a) and (51b) indicate that in a homogeneous object construction, the ranking of participant roles is X » R » Y. This means that the participant R and its participant role map onto the primary object, while the participant Y and its participant role map onto the secondary object. The participant hierarchy is more complex in constructions with a derived verb. A full discussion of this participant hierarchy is given in Chapters 3 and 4.

The second hierarchy that governs the mapping and realization of post-verbal arguments in Temne is the precedence hierarchy, and it states:

The precedence hierarchy (OM » NOM):

When an argument expressed by an object marker (OM) co-occurs with another object expressed by a nominal (NOM), the object that is expressed by the object marker is assigned a higher grammatical relation than the nominal object.

Thus, in a heterogeneous object construction, the participant that is expressed by an object marker outranks the participant that is expressed by a nominal.

- (52) a. *ǎ-yà* *ǎ* *nút* *ŋì* *ǎ-wàth*
 NC1:DEF-old woman NC1.SUBJ:DEF feed NC3.OBJ NC1:DEF-child
 ‘The old woman fed it (rice) to the child.’

b. **ǝ-yà* *ǝ* *nút* *ǝ-wàth*
NC1:DEF-old woman NC1.SUBJ:DEF feed NC1:DEF-child

ɲì
NC3.OBJ

Intended meaning: ‘The old woman fed it (rice) to the child.’

Example (52a) obeys the precedence hierarchy; hence the participant expressed by the object marker *ɲì* precedes the participant that is expressed by the nominal *ǝwàth* ‘child’. Example (52b) is ungrammatical because it violates the precedence hierarchy. In this example, the participant expressed by the nominal *ǝwàth* ‘child’ precedes the participant *ɲì* that is expressed by the object marker.

In heterogeneous object constructions where both the participant hierarchy and the precedence hierarchy come into conflict, the precedence hierarchy outranks the participant hierarchy, as indicated by the examples in (53).

(53) *ǝ-yà* *ǝ* *nút-à* *mì*
NC1:DEF-old woman NC1.SUBJ:DEF feed-BEN 1SG.OBJ

ǝ-wàth *áɲ-nàk*
NC1:DEF-child NC3:DEF-rice

‘The old woman fed the rice to the child for me.’

Example (53) is a heterogeneous object construction. In this construction, the post-verbal arguments are expressed by the object marker *mì* and the nominals *ǝwàth* ‘child’ and *áɲnàk* ‘rice’. The ranking between the nominal objects and the object that is expressed by the object marker is governed by the precedence hierarchy. Thus, the object that is expressed by the object marker is closer to the verb, while the two nominal objects come after it; the sentence is ungrammatical otherwise. On the other hand, the ranking between the two nominal objects is governed by the participant hierarchy, which requires the participant role of

RECIPIENT that is assigned to the participant R *ɔ̀wàth* ‘child’ to outrank the participant role of THEME that is assigned to the participant Y *áɣnàk* ‘rice’. Thus, in this example the precedence hierarchy is applied before the participant hierarchy; the sentence is ungrammatical otherwise.

In addition, there is a third hierarchy that blocks certain semantically plausible constructions if the order of participants determined by the participant hierarchy or precedence hierarchy violates the prominence hierarchy. The term “prominence hierarchy” is used here in the sense of Aissen (1999) to refer to the ranking of person and semantic features like animacy in a construction. The prominence hierarchy in Temne states:

The prominence hierarchy:

Post-verbal arguments that are expressed by object markers must occur in the order of precedence: 1/2 » 3ANIM » 3INANIM.

The following sentences may be used to describe the prominence hierarchy in Temne.

(54) a. *ɔ̀-yà* *ɔ̀* *sɔ̀ɣ-à* *mù*
 NC1:DEF-old woman NC1.SUBJ:DEF give-BEN 2SG.OBJ

kɔ̀ *ɣì*
 NC1.OBJ NC3.OBJ

‘The old woman gave it to him/her for you.’

b. **ɔ̀-yà* *ɔ̀* *sɔ̀ɣ-à* *kɔ̀*
 NC1:DEF-old woman NC1.SUBJ:DEF give-BEN NC1.OBJ

mù *ɣì*
 2SG.OBJ NC3.OBJ

Intended meaning: ‘The old woman gave it to you for him/her.’

- c. *ḡ-yà* *ḡ* *sḡḡ* *mù* *ḡì*
 NC1:DEF-old woman NC1.SUBJ:DEF give 2SG.OBJ NC3.OBJ
- tà* *tḡḡ*
 for his/hers
- ‘The woman gave it to you for him/her.’

Example (54a) is grammatical because it obeys the prominence hierarchy. In this example, the second person singular object marker *mù* precedes the third person animate object marker *kḡ*, which in turn precedes the third person inanimate object marker *ḡì*. While the sentence ‘the old woman gave it to him/her for you’ is possible with object markers in Temne, the sentence ‘the old woman gave it to you for him/her’ is impossible with object markers, as indicated by (54b). In this example (54b), the third person animate object marker *kḡ* outranks the second person object marker *mù*, resulting in the order of object markers *kḡ* » *mù* (i.e., 3ANIM » 2SG.OBJ), which violates the prominence hierarchy. To express (54b), we need the periphrastic construction in (54c).

The prominence hierarchy also allows the third person animate object marker *kḡ* to precede the third person inanimate object marker *ḡì*. However, it disallows a construction where a third person inanimate object marker outranks the third person animate object marker *kḡ*, as the contrast in grammaticality between (55a) and (55b) indicates.

- (55) a. *ḡ-làngbà* *ḡ* *lámḡ-r* *kḡ* *ḡì*
 NC1:DEF-man NC1.SUBJ:DEF threw-LOC NC1.OBJ NC3.OBJ
 ‘The man threw it at him/her.’
- b. **ḡ-làngbà* *ḡ* *lámḡ-r* *ḡì* *kḡ*
 NC1:DEF-man NC1.SUBJ:DEF threw-LOC NC3.OBJ NC1.OBJ
 Intended meaning: ‘The man threw him/her at it.’

- c. *ḡ-làngbà* *ḡ* *lámà-r* *kḍ* *kà*
 NC1:DEF-man NC1.SUBJ:DEF threw-LOC NC1.OBJ at

ḡì
 NC3.OBJ

Intended meaning: ‘The man threw him/her at it.’

The sentence ‘the man threw it at him/her’ is possible with object markers in Temne, as indicated by the grammaticality of (55a). In this example (55a), the third person animate object marker *kḍ* precedes the third person inanimate object marker *ḡì*, hence it obeys the prominence hierarchy. While the sentence ‘the man threw it at him/her’ is possible, the sentence ‘the man threw him/her at it’ is impossible with object markers, as demonstrated by the ungrammaticality of (55b). In this example, the third person inanimate object marker outranks the third person animate object marker, which violates the prominence hierarchy. Note that (55b) obeys the participant hierarchy. In this example, the participant L that is expressed by the object marker *ḡì* outranks the participant Y that is expressed by the object marker *kḍ*. To express (55b), which is blocked by the prominence hierarchy, we need the periphrastic construction in (55c).

In addition, the prominence hierarchy blocks semantically plausible constructions where the first person object marker *mì* outranks the second person object marker *mù*, as indicated by the ungrammaticality of (56a).

- (56) a. **ḡ-làngbà* *ḡ* *lámà-r* *mì* *mù*
 NC1:DEF-man NC1.SUBJ:DEF throw-LOC 1SG.OBJ 2SG.OBJ
 Intended meaning: ‘The man threw me at you.’

hierarchy, the participant hierarchy and the precedence hierarchy are part of the general structure of Temne grammar. In Chapters 3 and 4, I will present a detailed discussion of these three hierarchies.

2.2 Verb extensions: An overview

Childs (2003) defines verb extensions as “derivational suffixes that alter the meaning and often the argument structure of a verb” (p. 110). In this dissertation, the term “verb extensions” is used to refer to both derivational and inflectional suffixes, including the causative, locative, instrumental, benefactive, iterative, reversive, reflexive, reciprocal and negative suffix that appear in a verb stem. These extensions are distinguished based on the effect that they have on the valence of their base. In Temne, there are three sets of these extensions: valence-neutral suffixes, valence-decreasing suffixes and valence-increasing suffixes. Table 14 summarizes these verb extensions.

Table 14. *Verb extensions in Temne*

	<i>verb extensions</i>	<i>markers</i>
Neutral suffixes	Reversive	-i
	Iterative	-s, -th
	Negative	-ê
Valence-decreasing suffixes	Reflexive	-nê
	Reciprocal	-înê
Valence-increasing suffixes	Causative	-s, -î
	Locative	-r
	Instrumental	-îmê
	Benefactive	-î

In the following section, I will give a brief discussion of the basic meaning and syntax of each of these suffixes.

2.2.1 Neutral suffixes

The reversive -*ì*, iterative -*s* and negative suffix -*è* are the neutral suffixes in Temne. These suffixes neither add to nor reduce the valence of the verb. The reversive suffix is -*ì*, and expresses the reversal of the action that is expressed by the verb, as indicated in (58).

- (58) a. *ǎ-wàth* *ǎ* *súnt* *áŋ-bìthàr̀̀*
 NC1:DEF-child NC1.SUBJ:DEF cork NC3:DEF-bottle
 ‘The child corked the bottle.’
- b. *ǎ-wàth* *ǎ* *súnt-ì* *áŋ-bìthàr̀̀*
 NC1:DEF-child NC1.SUBJ:DEF cork-REV NC3:DEF-bottle
 ‘The child uncorked the bottle.’

The verb *súǹ̀* ‘X removes a cork from Y’ in (58b) is derived from the verb stem *súnt* ‘X puts a cork on Y’.

The reversive suffix is less productive than other suffixes in Temne, occurring only with the following verbs of those chosen for this study.

- (59) *kóth* ‘X ties Y’ *kóth-ì* ‘X unties Y’
 déŋ ‘X puts Y on top of’ *déŋ-ì* ‘X takes away Y from the top of...’
 ráf ‘X stabs Y’ *ráf-ì* ‘X removes Y’
 shék ‘X ties Y’ *shék-ì* ‘X unties Y’
 sát ‘X puts Y on top of’ *sát-ì* ‘X takes away Y from the top of...’
 súnt ‘X corks Y’ *súnt-ì* ‘X uncorks Y’
 kánthà ‘X closes Y’ *kánth-ì* ‘X opens Y’

The iterative suffix in Temne is -*s*, and signals the repetition of an event. The repeated event may be the same event as the previous event or just a similar event. Example (60) illustrates a typical iterative construction.

- (60) a. *ǎ* *tóri* *áŋ-chik* *á-ròŋ*
 NC1.SUBJ:DEF show NC5:DEF-stranger NC3:DEF-road
 ‘S/he showed the strangers the road.’

- b. $\dot{\text{ɔ}}$ *tɔri-s* *áŋ-chìk* *á-ròŋ*
 NC1.SUBJ:DEF show-ITER NC5:DEF-stranger NC3:DEF-road
 ‘S/he repeatedly showed the strangers the road.’

The verb *tɔri-s* ‘X shows Y to R repeatedly’ in (60) is derived from the verb stem *tɔri* ‘X shows Y to R’.

There is an allomorph *-th* of the iterative suffix *-s*. Example (61) illustrates this iterative allomorph using the verb *ráfàth* ‘X stabs Y repeatedly’ that is derived from the verb stem *ráf* ‘X stabs Y’.

- (61) a. $\dot{\text{ɔ}}$ -kèy $\dot{\text{ɔ}}$ *ráf* $\dot{\text{ɔ}}$ -bàkà
 NC1:DEF-thief NC1.SUBJ:DEF stab NC1:DEF-woman
 ‘The thief stabbed the woman.’

- b. $\dot{\text{ɔ}}$ -kèy $\dot{\text{ɔ}}$ *ráf-àth* $\dot{\text{ɔ}}$ -bàkà
 NC1:DEF-thief NC1.SUBJ:DEF stab-ITER NC1:DEF-woman
 ‘The thief repeatedly stabbed the woman.’

Example (61b) differs from (61a) in the sense that it has a repetitive meaning. The distribution of the two iterative allomorphs is lexically-determined by the radical, though iterative *-s* is more widely distributed than iterative *-th*.

In terms of combination, the iterative suffix combines with more verbs in the sample than the reversive suffix. The verbs listed in (62) are some of these verbs.

(62)	<i>bó</i>	‘X lends Y to R’	<i>bó-s</i>	‘X lends Y to R again’
	<i>béy</i>	‘X belches’	<i>béy-às</i>	‘X belches again’
	<i>bók</i>	‘X cries’	<i>bók-às</i>	‘X cries again’
	<i>bór</i>	‘X peels Y’	<i>bór-às</i>	‘X peels Y again’
	<i>búm</i>	‘X guards Y’	<i>búm-às</i>	‘X guards Y again’
	<i>dī</i>	‘X eats Y’	<i>dī-s</i>	‘X eats Y again’
	<i>dú</i>	‘X plaits Y’s hair’	<i>dú-s</i>	‘X plaits Y’s hair again’
	<i>gbál</i>	‘X writes Y’	<i>gbál-às</i>	‘X writes Y again’
	<i>gbál</i>	‘X sweeps Y’	<i>gbál-às</i>	‘X sweeps Y again’

The negative suffix *-è* is another of the neutral verb suffixes in Temne.

This suffix negates a proposition and combines with all the verbs in Temne.

Example (63) demonstrates the semantic effect of the negative suffix on the verb stem *bót* ‘X puts R on Y’.

(63)	a.	<i>ǎ-kàs</i>	<i>kàmì ǎ</i>	<i>bót</i>	<i>mì</i>	<i>rò</i>	<i>skùl</i>
		NC1:DEF-father	mine	NC1.SUBJ:DEF	put	1SG.OBJ	to school
		‘My father sent me to school.’					
	b.	<i>ǎ-kàs</i>	<i>kàmì ǎ</i>	<i>bót-è</i>	<i>mì</i>	<i>rò</i>	<i>skùl</i>
		NC1:DEF-father	mine	NC1.SUBJ:DEF	put-NEG	1SG.OBJ	to school
		‘My father did not send me to school.’					

In terms of distribution, the negative suffix combines with all the verbs analyzed in this study, and it occupies the rightmost slot in the verb stem, which qualifies it as an inflectional morpheme.

2.2.2 Valence-decreasing suffixes

Unlike the neutral suffixes, the reciprocal and reflexive suffixes decrease the valence of the verb by one object. In both the reciprocal and reflexive constructions, the subject of the derived verb performs an event and is affected by that event.

The reflexive suffix is *-nè* and gives the sentence the interpretation of the subject X acting on itself. Example (64) illustrates a transitive-based reflexive construction in Temne.

- (64) a. *Màréŋ* *ǝ* *shél* *ǝ-làngbà*
 Marie NC1.SUBJ:DEF laugh NC1:DEF-man
 ‘Marie laughed at the man.’
- b. *Màréŋ* *ǝ* *shél-nè*
 Marie NC1.SUBJ:DEF laugh-REF
 ‘Marie laughed at herself.’

The verb *shélnè* ‘X laughs at X (herself)’ in (64b) is from the verb stem *shél* ‘X laughs at Y’. In this example, the participant Y *ǝlàngbà* ‘man’ that is the object of the basic verb in (64a) is replaced by the reflexive suffix *-nè*, which is co-referential with the subject X *Màréŋ* ‘Marie’. Thus, when the reflexive suffix is combined with a verb, the valence of the verb is reduced by one argument.

Some of the verbs that combine with the reflexive suffix are listed in (65) below.

- | | | | | |
|------|-------------|---------------------|----------------|---------------------------|
| (65) | <i>bént</i> | ‘X deprives R of Y’ | <i>bént-nè</i> | ‘X deprives himself of Y’ |
| | <i>bónt</i> | ‘X names Y’ | <i>bónt-nè</i> | ‘X names himself’ |
| | <i>bór</i> | ‘X peels off Y’ | <i>bór-nè</i> | ‘X peels himself’ |
| | <i>búm</i> | ‘X guards Y’ | <i>búm-nè</i> | ‘X guards himself’ |
| | <i>gbák</i> | ‘X cuts Y’ | <i>gbák-nè</i> | ‘X cuts himself’ |
| | <i>már</i> | ‘X helps Y’ | <i>már-nè</i> | ‘X helps himself’ |
| | <i>mínk</i> | ‘X hides Y’ | <i>mínk-nè</i> | ‘X hides himself’ |
| | <i>shél</i> | ‘X laughs at Y’ | <i>shél-nè</i> | ‘X laughs at himself’ |

Note that all transitive verbs in the sample combine with the reflexive suffix.

As with the reflexive, the reciprocal suffix *-lànè* also reduces the valence of the verb by one argument. The meaning of the reciprocal suffix may be schematized as ‘X acts on Y, and Y acts on X’, while the meaning of the reflexive

suffix is schematized as ‘X acts on itself’. Thus, the subject of the reciprocal is both the actor and undergoer, while the subject of the reflexive acts on itself. Therefore, it is both the actor and undergoer. Example (66) illustrates a typical reciprocal sentence.

- (66) a. *áŋ-tàn* *ɔ̃* *kàli* *k-á-yèk*
 NC3:DEF-dog NC1.SUBJ:DEF look NC2-DEF-monkey
 ‘The dog looked at the monkey.’
- b. *áŋ-tàn* *yì* *k-á-yèk* *áŋ*
 NC3:DEF-dog and NC2-DEF-monkey NC5.SUBJ:INDEF
- kàli-àné*
 look-RECIP
 ‘The dog and the monkey looked at each other.’

The meaning of the reciprocal sentence (66b) may be represented as ‘X looks at Y and Y looks at X’. Some of the verbs that combine with the reciprocal suffix are listed in (67).

- | | | | | |
|------|-------------|---------------------|-----------------|-----------------------------------|
| (67) | <i>bént</i> | ‘X deprives R of Y’ | <i>bént-àné</i> | ‘X and R deprive each other of Y’ |
| | <i>bónt</i> | ‘X names Y’ | <i>bónt-àné</i> | ‘X and Y name each other’ |
| | <i>búm</i> | ‘X guards Y’ | <i>búm-àné</i> | ‘X and Y guard each other’ |
| | <i>nál</i> | ‘X insults Y’ | <i>nál-àné</i> | ‘X and Y insult each other’ |
| | <i>nút</i> | ‘X feeds Y to R’ | <i>nút-àné</i> | ‘X and R feed each other Y’ |
| | <i>már</i> | ‘X helps Y’ | <i>már-àné</i> | ‘X and Y help each other’ |
| | <i>pól</i> | ‘X claps’ | <i>pól-àné</i> | ‘X (pl) clap for each other’ |
| | <i>rám</i> | ‘X pays Y’ | <i>rám-àné</i> | ‘X and Y pay each other’ |

As with the reflexive suffix, the reciprocal suffix also combines with all transitive verbs in the sample.

2.2.3 Valence-increasing suffixes

The class of valence-increasing suffixes in Temne can be divided between the causative and the applicatives (locative, instrumental and benefactive). Whereas

the causative adds a new event-participant that is the subject, demoting the subject of the basic verb to the object, the applicatives increase the verb's valence by adding an object. Temne has three applicatives, which will be discussed in the sections below, following a look at the causative suffix.

2.2.3.1 Causative suffixes

The causative suffix *-s* is added to a basic verb to indicate that the event expressed by the basic verb is caused by an unspecified action of the new event-participant. The participant A is frequently referred to in the literature as the “causer” argument (e.g., Kemmer, 1994; Dixon & Aikhenvald 2000). Combining the causative suffix with a verb also has the syntactic effect of demoting the subject X of the basic verb to the primary object, as demonstrated by (68).

- (68) a. *k-â-yèk* *ǎ* *dî* *âŋ-bàná*
 NC2-DEF-monkey NC1.SUBJ:DEF eat NC3:DEF-banana
 ‘The monkey ate the banana.’
- b. *ǎ-wàth* *ǎ* *dî-s* *k-â-yèk*
 NC1:DEF-child NC1.SUBJ:DEF eat-CAUS NC2-DEF-monkey
- âŋ-bàná*
 NC3:DEF-banana
 ‘The child made the monkey eat the banana.’

The verb *dîs* ‘A causes X to eat Y’ is derived from the verb stem *dî* ‘X eats Y’. The participants X and Y are expressed by the nominals *ǎwàth* ‘child’ and *âŋbàná* ‘banana’ respectively. In (68b), which bears the causativized verb *dîs* ‘A causes X to eat Y’, the participant A *ǎwàth* ‘child’ is the subject, X *kâyèk* ‘monkey’ is the primary object, and Y *âŋbàná* ‘banana’ is the secondary object.

Causative *-s* has a suppletive allomorph *-λ*. Example (69) illustrates a causative construction with this causative allomorph *-λ*.

- (69) a. *λη-tàn* *ɔ̄* *sákàth* *dò*
 NC3:DEF-dog NC1.SUBJ:DEF move over there
 'The dog moved over there.'
- b. *ɔ̄-wàth* *ɔ̄* *sákàth-λ* *λη-tàn* *dò*
 NC1:DEF-child NC1.SUBJ:DEF move-CAUS NC3:DEF-dog over there
 'The child made the dog move over there.'

In (69a), the participant X *ληtàn* 'dog' is the subject of the sentence. In (69b), the causative allomorph *-λ* is combined with the verb stem yielding the causativised verb *sákàthλ* 'A causes X to move over there'. In this example (69), the participant A *ɔ̄wàth* 'child' is the subject of the causativized verb, and the subject *ληtàn* 'dog' of the basic verb is the primary object.

The causative allomorph-*λ* is less productive than *-s*. As discussed in Section 3.1, out of the 300 verbs in the sample of verbs analyzed in this study, *-λ* combines with only four verbs *bék* 'X arrives', *sákàth* 'X pushes Y', *kóth* 'X walks' and *thákàs* 'X learns Y'.

Previous researchers, including Kamarah (1994, 2007) and Kanu (2004) have claimed that the two causative allomorphs differ in their distribution in the sense that *-λ* combines with verbs ending in *-th*, while causative *-s* does not. However, corpus-based data used in this analysis reveal that the verbs in Table 15 are incompatible with causative *-λ* even though they end in *-th*. Instead, these verbs combine with causative *-s*.

Table 15. *Verb roots ending in -th in combination with causative -s*

<i>root</i>	<i>gloss</i>	<i>root + caus</i>	<i>gloss</i>
<i>béth</i>	X bursts into tears	<i>béth-às</i>	A made X bursts into tears
<i>gbéth</i>	X yells at Y	<i>gbéth-às</i>	A made X yell at Y
<i>gbánthà</i>	X hits Y	<i>gbánthà-s</i>	A made X hit Y
<i>kóth</i>	X ties Y	<i>kóth-às</i>	A made X tie Y
<i>kúth</i>	X fetches Y	<i>kúth-às</i>	A made X fetch Y
<i>sóth</i>	X sews Y	<i>sóth-às</i>	A made X sew Y
<i>shéth</i>	X builds Y	<i>shéth-às</i>	A made X build Y
<i>thánth</i>	X harvests Y	<i>thánth-às</i>	A made X harvest Y

The examples in Table 15 indicate that the distribution of the two causative allomorphs is not conditioned phonologically; rather their distribution is lexically conditioned.

In addition to the morphological causative, Temne also has a periphrastic causative that is formed by means of the verb *yó* ‘make’. Example (70) below illustrates the periphrastic causative construction.

- (70) *áy-múrthè* *áy* *yó* *áy-fàm*
 NC5:DEF-rebel NC5.SUBJ:DEF make NC5:DEF-people
- áy* *sàkò* *léy* *gbés*
 NC5.SUBJ:DEF all.night sing IDPH
 ‘The rebels made the people sing all night.’

In the periphrastic causative construction in (70), the participant A *áymúrthè* ‘rebels’ is the causer argument and is the subject of the verb *yò* ‘make’, while the participant X *áyfàm* ‘people’ is the subject of the verb *léy* ‘sing’. The verb *yó* ‘make’ performs the same function as the causative suffix. This example also demonstrates that both the causer argument A and the causee X require subject markers, thus indicating that the periphrastic causative construction is bi-clausal.

A morphologically-causativized verb can be causativized periphrastically, as demonstrated in (71).

(71) *ɔ̀-làngbà* *ɔ̀* *yɔ́* *ɔ̀-bɔ̀kɔ̀* *ɔ̀*
 NC1:DEF-man NC1.SUBJ:DEF make NC1:DEF-woman NC1.SUBJ:DEF

dī-s *ɔ̀-wàth* *áŋ-nàk*
 eat-CAUS NC1:DEF-child NC3:DEF-rice

‘The man made the woman feed the child the rice.’

Example (71) has the meaning that the participant *ɔ̀làngbà* ‘man’ is involved in the caused event only indirectly, whereas *ɔ̀bɔ̀kɔ̀* ‘woman’ is either directly or indirectly involved in feeding the child. The woman *ɔ̀bɔ̀kɔ̀* is directly involved in the event of feeding the child if she feeds the child herself. On the other hand, the woman is indirectly involved when, for example, she merely prepares and puts the food on the dining table for the child to eat.

In terms of frequency, the periphrastic causative construction is more frequent in the corpus than the morphological causative construction. In addition, on being asked to construct a causative construction in Temne, the majority of my consultants always give examples of a periphrastic causative before giving an example of a morphological causative. The low frequency of the morphological causative construction compared to the periphrastic causative construction suggests that causative *-s* is falling out of use and is gradually being replaced by the periphrastic causative verb *yɔ́* ‘make’. However, the focus of this study is on the morphological causative, though passing reference will be made to the periphrastic causative.

The morphological causative and iterative suffixes are both expressed by a suffix of the form *-s*. However, the two contrast in syntax and semantics. Semantically, iterative *-s* adds the notion of performing an action repeatedly,

while causative *-s* does not have this function. In terms of syntax, causative *-s* is a valence-increaser, while iterative *-s* neither increases nor decreases the valence of the verb. Example (72b) illustrates the structure of the iterative construction while (72c) illustrates the causative.

- (72) a. *ʒ-langba* *ʒ* *wáy* *á-pàlà*
 NC1:DEF-man NC1.SUBJ:DEF buy NC3:DEF-rice
 ‘The man bought the rice.’
- b. *ʒ-langba* *ʒ* *wáy-əs* *á-pàlà*
 NC1:DEF-man NC1.SUBJ:DEF buy-ITER NC3:DEF-rice
 ‘The man bought some rice (grains) again.’
- c. *ʒ-bàkà* *ʒ* *wáy-əs* *ʒ-làngbà*
 NC1:DEF-man NC1.SUBJ:DEF buy-CAUS NC1:DEF-man
- á-pàlà*
 NC3:DEF-rice
 ‘The woman made the man buy the rice (grains).’

Example (72b) does not have the structure of a causative construction; the argument *á-pàlà* ‘rice’ that is adjacent to the verb is not the subject of the basic verb in (72a). There is also no new argument added to the clause. Unlike iterative *-s*, causative *-s* always comes along with a causer argument that is absent in an iterative construction. In the case of (72c), this causer argument A is the nominal *ʒ-bàkà* ‘woman’ that is the subject of the causative construction. The demoted subject of the basic verb is *ʒ-làngbà* ‘man’ and is closer to the verb, while the object of the basic verb *á-pàlà* ‘rice’ is demoted to the secondary object.

2.2.3.2 *Applicative suffixes*

Among the valence-increasing suffixes is the locative applicative *-r* which is combined with a verb to specify the location or directionality of an event. The

locative applicative has the syntactic effect of adding a new applied object to the clause, specifying some kind of location/spatial landmark as illustrated by example (73).

- (73) a. *ǔ-wàth* *ǔ* *lám* *áŋ-bàná*
 NC1:DEF-child NC1.SUBJ:DEF throw NC3:DEF-banana
 ‘The child threw the banana.’
- b. *ǔ-wàth* *ǔ* *lám-ǎr* *k-á-yèk*
 NC1:DEF-child NC1.SUBJ:DEF throw-LOC NC2-DEF-monkey
- áŋ-bàná*
 NC3:DEF-banana
 ‘The child threw the banana at the monkey.’
- c. *ǔ-wàth* *ǔ* *lám* *áŋ-bàná*
 NC1:DEF-child NC1.SUBJ:DEF throw NC3:DEF-banana
- kà* *k-á-yèk*
 on/in/at/from NC2-DEF-monkey
 ‘The child threw the banana at the monkey.’

In (73b), the locative applicative is combined with the verb stem *lám* ‘X throws Y’, deriving the verb *lámǎr* ‘X throws Y at L’ and adding the applied object *L* *ká-yèk* ‘monkey’ to the clause. In this construction, the applied object *ká-yèk* ‘monkey’ is the primary object, and the argument Y *áŋbàná* ‘banana’ (i.e., the object of the basic verb), is the secondary object. As indicated by (73c), the meaning of (73b) may be expressed periphrastically by the preposition *kà* ‘on/in/at/from’. In this case, the preposition *kà* ‘on/in/at/from’ is translatable as the English preposition ‘to’.

In addition, the locative suffix *-r* also denotes a static location just as the preposition *kà* ‘on/in/at/from’ does. The following examples illustrate this meaning of the suffix *-r* and the preposition *kà* ‘on/in/at/from’.

- (74) a. *áŋ-yàrì* *ǎ* *yírà*
 NC3:DEF-cat NC1.SUBJ:DEF sit
 ‘The cat sat down.’
- b. *áŋ-yàrì* *ǎ* *yírà* *kà* *á-kùmà*
 NC3:DEF-cat NC1.SUBJ:DEF sit on/in/at/from NC3:DEF-box
 ‘The cat sat on the box.’
- c. *áŋ-yàrì* *ǎ* *yír-àr* *á-kùmà*
 NC3:DEF-cat NC1.SUBJ:DEF sit-LOC NC3:DEF-box
 ‘The cat sat on the box.’

In (74b), the oblique object *á-kùmà* ‘box’ is introduced by the preposition *kà* ‘on/in/at/from’ and it designates the location of the event expressed by the predicate just as the suffix *-r* does in (74c).

The locative suffix *-r* and the locative preposition *kà* ‘on/in/at/from’ also denotes direction away from a location. Example (75) illustrates this meaning of the locative suffix.

- (75) a. *ǎ-wàth* *ǎ* *wáy* *k-à-pèn*
 NC3:DEF-child NC1.SUBJ:DEF buy NC2-INDEF-pen
 ‘The child bought a pen.’
- b. *ǎ-wàth* *ǎ* *wáy* *k-à-pèn* *kà*
 NC3:DEF-child NC1.SUBJ:DEF buy NC2-INDEF-pen on/in/at/from’
- ǎ-làngbà*
 NC:DEF-man
 ‘The child bought a pen from the man.’

- c. *ɔ̂-wàth* *ɔ̂* *wáy-ɛ̂r* *ɔ̂-làngbà*
 NC3:DEF-child NC1.SUBJ:DEF buy-LOC NC3:DEF-man
- k-ɔ̂-pɛn*
 NC2-INDEF-pen
 ‘The child bought a pen from the man.’

In (75b), the oblique object *ɔ̂làngbà* ‘man’ is introduced by the preposition *kà* ‘on/in/at/from’, and it denotes direction away from a location, just as the suffix *-r* does in (75c).

To sum up, examples (73), (74) and (75) indicate that the locative suffix *-r* and locative preposition *kà* ‘on/in/at/from’ are variant forms and are semantically vague. The specific meaning they take is determined by the verb stem. In (73), the verb *lám* ‘X throws Y’ denotes direction towards a location. Therefore, the locative suffix *-r* and the preposition *kà* ‘on/in/at/from’ are translatable as the English preposition ‘to’. In (74), the verb *yírà* ‘X sits’ denotes a static location. Therefore, both the suffix *-r* and the preposition *kà* ‘on/in/at/from’ are translatable as the English preposition ‘on’. In (74), the verb *wáy* ‘X buys Y’ denotes direction from a location. Therefore, the suffix *-r* and the preposition *kà* ‘on/in/at/from’ are translatable as the English preposition ‘from’, Examples (73-75) also indicate that Temne has both the morphological locative and the periphrastic locative constructions. The periphrastic locative constructions are expressed by means of the locative preposition *kà* ‘on/in/at/from’, while the morphological locative is expressed by the suffix *-r*.

The instrumental suffix *-ánè* adds an instrument to the basic meaning of the verb and can add up to two applied objects to the clause. Example (76b) illustrates an instrumental construction with one applied object.

- (76) a. *ǎ-thèm* *ǎ* *thómò*
 NC1:DEF-old man NC1.SUBJ:DEF dance
 ‘The old man danced.’
- b. *ǎ-thèm* *ǎ* *thómò-ánè* *t-à-gbàràkà*
 NC1:DEF-old man NC1.SUBJ:DEF dance-INST NC6-INDEF-stilt
 ‘The old man danced with stilts.’

In (76b), the instrumental suffix *ánè* is attached to the basic verb *thómò* ‘X dances’ and the derived verb is *thómòánè* ‘X dances using I’. Combining the instrumental suffix with the verb *thómò* ‘X dances’ adds an argument slot that is filled in by the instrument *tàgbàràkà* ‘stilts’ in (76b).

In addition, the instrumental applicative in Temne can have other effects on the valence of the basic verb and can add up to two applied objects to the construction, the second being the comitative. Example (77b) illustrates this construction type.

- (77) a. *ǎ-thèm* *ǎ* *thómò*
 NC1:DEF-old man NC1.SUBJ:DEF dance
 ‘The old man danced.’
- b. *ǎ-thèm* *ǎ* *thómò-ánè* *ǎ-wàth*
 NC1:DEF-old man NC1.SUBJ:DEF dance-INST NC1-child

t-à-gbàràkà
 NC6-INDEF-stilt
 ‘The old man together with the child danced with stilts.’

In (77b), the derived verb is *thómòáínè* ‘X dances with C using I’ and the applied objects are *ówàth* ‘child’ and *tàgbàràkà* ‘stilts’. A detailed discussion of this syntactic effect is found in Section 3.3 in Chapter 3.

Like other valence-increasing suffixes, an instrument can be added periphrastically using a preposition. In this case, the preposition *yì* ‘with’ is used, as demonstrated in (78).

- (78) a. *áŋ-yàmàmà* *ó* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’
- b. *áŋ-yàmàmà* *ó* *thómò yì* *t-à-gbàràkà*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance with NC6-INDEF-stilt
 ‘The acrobat danced with stilts.’
- c. *áŋ-yàmàmà* *yì* *ó-bòkò* *áŋ*
 NC3:DEF-acrobat with NC1:DEF-woman NC5.SUBJ:DEF
- thómò yì* *t-à-gbàràkà*
 dance with NC6-INDEF-stilt
 ‘The acrobat together with the woman danced with stilts.’

In both (78b) and (78c), the oblique object *tàgbàràkà* ‘stilts’ is added to the clause by the preposition *yì* ‘with’.

Note that the comitative can also be added by the instrumental preposition *yì* ‘with’, as demonstrated by (79b).

- (79) a. *áŋ-yàmàmà* *ó* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’
- b. *áŋ-yàmàmà* *ó* *thómò yì* *ó-bòkò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance with NC1:DEF-woman
 ‘The acrobat danced with the woman.’

Example (79b) has a bare verb *thómò* ‘X dances’ just as (79a). The comitative *óbòkò* ‘woman’ is introduced by the preposition *yì* ‘with’ in (79b).

In addition, it is also possible to have an instrumental construction where the agent X and comitative C that are expressed by nominals are followed by a derived verb (verb + INST) that is in turn followed by an instrument which is expressed by an object marker. Example (80) illustrates this construction type.

- (80) *áŋ-yàmàmà* *yì* *óbòkò* *áŋ*
 NC3:DEF-acrobat with NC1:DEF-woman NC5.SUBJ:DEF
- thómò-ánè* *chì*
 dance-INST NC6.OBJ
- ‘The acrobat together with the woman danced with it (a set of stilts).’

In (80), the derived verb *thómòánè* ‘X together with C dance using I’ introduces only the instrument which is expressed by the object marker *chì*.

Example (81a) can be reformulated, as in example (81b).

- (81) a. *áŋ-yàmàmà* *yì* *óbòkò* *áŋ*
 NC3:DEF-acrobat with NC1:DEF-woman NC5.SUBJ:DEF
- thómò yì* *t-à-gbàràkà*
 dance with NC6-INDEF-stilt
- ‘The acrobat together with the woman danced with stilts.’
- b. *áŋ-yàmàmà* *ó* *thómò-ánè* *kò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-INST NC2.OBJ
- yì* *t-à-gbàràkà*
 with NC6-INDEF-stilt
- ‘The acrobat together with him/her danced with stilts.’

In (81b), the derived verb *thómòánè* ‘X dances together with C’ is derived from the basic verb *thómò* ‘X dances’. In this example, the comitative, which is expressed by the object marker *kò*, is introduced by the instrumental

applicative *-ánè*, while the instrument *tàgbàràka* ‘stilts’ is introduced by the preposition *yì* ‘with’.

The benefactive applicative *-à* can add multiple applied objects to the valence of the verb. Among these applied objects is W (i.e., the new participant whose interests are affected by the event which the predicate expresses). Example (82) illustrates a benefactive construction with the applied object W.

- (82) a. *ǎ-wàth* *ǎ* *gbál* *áy-kònkò*
 NC1:DEF-child NC1.SUBJ:DEF sweep NC3:DEF-room
 ‘The child swept the room.’
- b. *ǎ-wàth* *ǎ* *gbál-à* *ǎ-thèm*
 NC1:DEF-child NC1.SUBJ:DEF sweep-BEN NC1:DEF-old man
- áy-kònkò*
 NC3:DEF-room
 ‘The child swept the room for the old man.’

Example (82b) illustrates the verb *gbálà* ‘X sweeps Y for W’ that is derived from the stem *gbál* ‘X sweeps Y’. Combining the benefactive suffix with the verb *gbál* ‘X sweeps Y’ has the syntactic effect of adding an argument expressed by the object *ǎthèm* ‘old man’ in (82b). This applied object is construed as the beneficiary in the sense that it is affected favorably by the event expressed by the predicate. In this example, the new object W *ǎthèm* ‘old man’ is the primary object and Y *áykònkò* ‘room’ is the secondary object.

The Temne benefactive can have other effects on the valence of the basic verb; it can add up to two additional objects, a substitutive and an instrument, over and above the beneficiary, as indicated by example (83b).

- (83) a. *ǰ-wàth* *ǰ* *yák* *áŋ-pèpè*
 NC1:DEF-child NC1.SUBJ:DEF wash NC3:DEF-calabash
 ‘The child washed the calabash.’
- b. *ǰ-wàth* *ǰ* *yák-à* *mì*
 NC1:DEF-child NC1.SUBJ:DEF wash-BEN 1SG.OBJ
- áŋ-pèpè* *m-à-sòda*
 NC3:DEF-calabash NC10-INDEF-soda.soap
 ‘The child washed the calabash for me using soda soap.’

In (83b), the new arguments are expressed by the object marker *mì* (i.e., the beneficiary) and the instrument *màsòdà* ‘soda soap’. A discussion of this syntactic effect of the benefactive suffix is given in Section 3.4 in Chapter 3.

In addition to the morphological benefactive construction, Temne also has an alternate periphrastic benefactive construction that is as frequent in the corpus as the morphological benefactive construction. This construction is formed by means of the benefactive preposition *tà* ‘for’. Example (84b) illustrates this periphrastic benefactive construction.

- (84) a. *ǰ-bàkà* *ǰ* *wáy* *é-bùk*
 NC1:DEF-woman NC1.SUBJ:DEF buy NC7:DEF-book
 ‘The woman bought the books.’
- b. *ǰ-bàkà* *ǰ* *wáy* *é-bùk* **tà**
 NC1:DEF-woman NC1.SUBJ:DEF buy NC7:DEF-book for
- áŋ-fèth*
 NC3:DEF-kid
 ‘The woman bought the books for the kids.’

In (84b), the argument *áŋfèth* ‘kids’ is the beneficiary and is introduced by the preposition *tà* ‘for’.

The benefactive suffix *-l̩* and the benefactive preposition *tà* ‘for’ can occur in the same clause. In this construction type, the preposition *tà* ‘for’ selects the beneficiary, not the substitutive, as demonstrated in (85).

(85) a. *ǎ-bòkò* *ǎ* *wáy-ḏ* *ǎ-làngbà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-BEN NC1:DEF-man

é-bùk **tà** *áy-fèth*
 NC7:DEF-book for NC3:DEF-kid

‘The woman bought the books for the kids on behalf of the man.’
 *‘The woman bought the books for the man on behalf of the kids.’

b. *ǎ-bòkò* *ǎ* *wáy-ḏ* *áy-fèth*
 NC1:DEF-woman NC1.SUBJ:DEF buy-BEN NC1:DEF-child

é-bùk **tà** *ǎ-langba*
 NC7:DEF-book for NC1:DEF-man

‘The woman bought books for the man on behalf of the kids.’
 *‘The woman bought books for the kids on behalf of the man.’

The verb *wáy-l̩* ‘X buys Y for W in (85b) is derived from the verb stem *wáy* ‘X buys Y’. In (85a), the derived verb assigns the participant role of SUBSTITUTIVE to the participant *ǎlàngbà* ‘man’ that is adjacent to the verb. The substitutive participant is identified in this dissertation as S, and it refers to the participant on whose behalf an action is performed. On the other hand, the preposition *tà* ‘for’ assigns the participant role of a BENEFICIARY to the participant *áyfèth* ‘kids’, which it selects. In (85b), the participant *áyfèth* ‘kids’ is the SUBSTITUTIVE, while the participant *ǎlàngbà* ‘man’ that is adjacent to the benefactive preposition is the BENEFICIARY. Therefore, examples (85a) and (85b) indicate that the preposition *tà* ‘for’ assigns only a BENEFICIARY role to the participant that it adds to the clause.

In addition, a verb that is combined with the benefactive applicative *-l̩* can also take an instrument that is expressed by a nominal. The instrument is introduced by the preposition *yì* ‘with’ while the beneficiary W is introduced by the benefactive applicative *-l̩*. Example (86b) illustrates this construction type.

(86) *ǎ-làngbà* *ǎ* *báf-l̩* *ǎ-bðkð*
 NC1:DEF-man NC1.SUBJ:DEF buy-BEN NC1:DEF-woman

áf-pòn **yì** *l̩-wàkà*
 NC3:DEF-swamp with NC3:INDEF-cutlass
 ‘The man brushed the swamp for the woman using a (type of) cutlass.’

The verb *báf-l̩* ‘X brushes Y for W using I’ in (86) is derived from the verb stem *báf* ‘X brushes Y’. In this example, the applied object W *ǎ-bðkð* ‘woman’ is introduced by the benefactive applicative, while the instrument *l̩-wàkà* ‘type of cutlass’ is introduced by the preposition *yì* ‘with’.

Also, a verb that is combined with the benefactive applicative and introducing the applied object I, which is expressed by an object marker, can take a beneficiary that is expressed by a nominal and introduced by the preposition *yì* ‘with’. Example (87) illustrates this construction type.

(87) a. *ǎ-làngbà* *ǎ* *báf* *áf-pòn*
 NC1:DEF-man NC1.SUBJ:DEF buy NC3:DEF-swamp
 ‘The man brushed the swamp.’

b. *ǎ-làngbà* *ǎ* *báf-l̩* *yì*
 NC1:DEF-man NC1.SUBJ:DEF buy-BEN NC3.OBJ

áf-pòn **tà** *ǎ-bðkð*
 NC3-swamp for NC1:DEF-woman
 ‘The man brushed the swamp for the woman using it (a cutlass).’

The verb *báfà* ‘X brushes Y for W using I’ is derived from the verb stem *báf* ‘X brushes Y’. In this example, the instrument which is expressed by the object marker *ɲĩ*, is introduced by the benefactive applicative *-à*, while the beneficiary W is introduced by the preposition *tà* ‘for’.

Table 16 summarizes the valence-increasers in Temne and their periphrastic counterparts.

Table 16. *List of valence-increasers and their periphrastic alternates*

<i>Verb extensions</i>	<i>markers</i>	<i>periphrastic alternate</i>
causative	-s, -à	<i>yɔ́</i>
locative	-r	<i>kà, rò/dò, nò</i>
instrumental	-ánè	<i>yĩ</i> ‘with’
benefactive	-à	<i>tà</i> ‘for’

However, this study focuses only on the valence-increasing suffixes (i.e., the causative, locative, instrumental and benefactive applicative), though passing references are made to their periphrastic counterparts.

2.3 Previous studies on verb extensions in Temne

In general, verb extensions in Atlantic languages, including Temne, have been seriously under-studied. According to Becher & Drolc (2007) and Hyman (2007), the analysis of verb extensions has lagged behind that of noun classes. Viewing the problem from a broader perspective, Hyman (2007) states that verb extensions are difficult to study, as elicitation requires more in-depth familiarity with the grammar of a language than a study of noun classes, which can be read off a word list.

In spite of these difficulties, there are a few publications on some aspects of verb extensions in Atlantic languages, including Becher (2002), Buell and Sy (2006), Childs (1987, 1995, 2003), Endresen (1994), Faye & Mous (2006), Creissels, D. and Nougier-Voisin, S (2004), Gottschligg (2006), Kamarah (2007), Kanu (2004, 2009a), Paster (2005, 2006), and Wilson (2007). Among these studies, Childs (1987, 1995, 2003), Kamarah (2007), Kanu (2004, 2009a), and Wilson (2007) describe verb extensions in the South Atlantic language family, the subgroup of Atlantic languages to which Temne belongs. Lack of data is an important factor affecting the study of verb extensions in this language family.

According to Childs (2003), among the problems demanding resolutions are:

- (i) Morphotactics:
In what order can and do the extensions appear, and with what other extensions? Are the constraints semantic?
- (ii) Semantics:
Is it possible to identify a unique meaning for each verb extension? What happens when they combine?
- (iii) Syntax:
What are the effects of the affixation of extensions on the argument structure? What is the range of variation? Are there a maximum number of allowable arguments?

Many of these problems have not been resolved in Temne. Part of the task in this study is to provide an answer to these questions, using data that is drawn from Temne spoken corpus.

This study is not the first attempt to describe verb extensions in Temne. Discussions of Temne verb extensions are found in a few descriptive grammars, including Kamarah (2007), Schlenker (1864), Sumner (1922), Scott (1956) and Wilson (1961, 2007). In addition, aspects of verb extensions in Temne are found in theoretical studies by Hutchinson (1969), Kamarah (1994), Kanu (2004) and Yillah (1992), as well as in an article by Kanu (2009a). In this section, I examine some of the issues raised in these studies, starting with the descriptive grammars.

In Table 17, I list the verb extensions identified in Schlenker (1864), Sumner (1922), Wilson (1961, 2007), Kamarah (1994) and Kanu (2004, 2009a). Table 17 shows that the various studies differ in the number and types of suffixes they identify.

Table 17. *Verb extensions from previous studies on Temne*

	Schlenker 1864	Sumner 1922	Wilson 1961	Wilson 2007	Yillah 1992	Kamarah 1994	Kanu 2004	Kanu 2009a
causative	-as, -a	-as, -ath	-s, -a, -r	-s, -l, -r	-l	-əs	-əs, -l	-s, -l
reversive	-i, -e	-	-i	-	-	-	-	-i
iterative	-as, -ath	-as	-s, -th	-s, -t	-s, -t	-əs	-s, -əs	-əs, -th
locative	-	-	-r	-l, -r	-r	-ər	-r, -ər	-r, -ər
benefactive	-	-a	-l	-l, -nɛ	-ná	-nɛ	-l, -nɛ	-l
instrument	-	-	-l	-l, -nɛ	-lnɛ	-lnɛ	-lnɛ	-lnɛ
reciprocal	-ane	-ane	-lnɛ	-lnɛ	-	l̄nɛ	-l̄nɛ	-lnɛ
reflexive	-ne	-ne	-nɛ	-nɛ	-	-	-nɛ	-nɛ
negative	-	-	-	-	-	-	-ɛ, -yɛ	-ɛ, -yɛ
relative	-na, -a	-	-	-	-	-	-	-
spontaneous	-ane	-ane	-	-	-	-	-	-
separative	-	-	-	-i	-	-	-	-
intransitive	-	-	-	-	-ɛ	-l	-	-
together	-	-	-	-nɛ, -lnɛ	-	-	-	-
intensive	-	-	-	-	-t	-	-	-
inchoative	-a	-	-	-	-	-	-	-

A quick look at Table 17 reveals several discrepancies amongst the different authors. Wilson (2007), for example, analyzes the morpheme $-\lambda$ as a causative,

locative, benefactive and instrumental suffix. However, there is no evidence from the corpus or elicitation supporting the view that the morpheme *-ɔ̃* has a locative meaning. Also, contrary to Wilson's claim, only a handful of verbs actually take a causative or instrumental meaning when they are combined with the suffix *-ɔ̃*. On the other hand, the vast majority of the verbs that combine with the suffix *-ɔ̃* take the benefactive meaning.

Schlenker (1864) identifies what he refers to as “the relative *-na*, *-a*”, “spontative *-ɔ̃nɛ̃*” and “inchoative *-a*” that are absent in the other studies. What Schlenker refers to as the “relative *na-*” is possibly what I refer to as the benefactive *ɔ̃*, the /n/ being an epenthetic consonant. Schlenker (1864) and Sumner (1922) identify the “spontaneous suffix *-ɔ̃nɛ̃*” that is not among the suffixes in the other studies. Consultants in this study and other native speakers of Temne are unfamiliar with this suffix, and there are no examples to clarify Sumner's claim. In addition, Wilson (2007) identifies the suffixes *-nɛ̃* and *-ɔ̃nɛ̃* as marking “together” (i.e., the comitative) and the instrument. However, Wilson (2007) did not specify whether *-nɛ̃* is an allomorph of *-ɔ̃nɛ̃* or not. In the present study, the suffix *-nɛ̃* is analyzed as a reflexive suffix. Instead, the instrumental suffix *-ɔ̃nɛ̃* has the additional meaning of a comitative when it combines with some verbs.

In terms of valence-increasing suffixes, Wilson (1961, 2007), Yillah (1992), Kamarah (1994, 2007) and Kanu (2004, 2009a) collectively agree that the instrumental suffix is *-ɔ̃nɛ̃*, and that the benefactive suffix *-ɔ̃* overlaps as an

instrumental applicative (see Chapter 3). It is shown here that the instrumental meaning of the benefactive applicative is limited to a small set of verbs. Yillah (1992) and Kamarah (1994, 2007) also identify the morpheme *-ná* as a benefactive suffix. However, no construction with the morpheme *-na* as a benefactive suffix is found in the corpus. In addition, all the previous studies agree that there is a locative suffix *-r*.

Finally, with the exception of Yillah (1992), the rest of the studies identify the causative morpheme *-s*. A causative *-a* also appears in Schlenker (1864)'s list of verb extensions, while Sumner (1922) identifies *-at* as a causative suffix. On the other hand, Wilson (1961, 2007) analyzes the suffix *-r* as a causative, but states that it is very rare. However, no examples of a causativized verb that is derived with *-a*, *-at* or *-r* are found in the corpus or through elicitation. In the following sub-sections, I examine some of the issues concerning verb extensions raised in the theoretical studies by Yillah (1992), Kamarah (2007), Wilson (2007) and Kanu (2004, 2009a).

2.3.1 Yillah (1992)

In his section on verb extensions in Temne, Yillah (1992) gives sample sentences to illustrate the meaning of the verb extensions that he identifies, and the order in which they occur in the verb stem. Below is a list of his verb extensions.

- (88) Intensive: *t*
 Iterative: *s, t*
 Directional *r*
 Causative/benefactive: *á* (transcribed as *-ɺ* in the present analysis)
 Intransitive: *è*
 Benefactive: *ná*

Yillah (1992:174)

Elsewhere in his dissertation, Yillah identifies the reflexive suffix *-nè* and the reciprocal *-λnè*.

Yillah's list of verb extensions comprises intensive *-t* and the two suppletive iterative morphemes *-s* and *-t*. Intensive *-t* and iterative *-t* are absent in the works of other researchers. By iterative *-t*, Yillah possibly refers to the suffix *-th*, which, as shown in Table 15, is an allomorph of the iterative *-s* (see Section 2.2.1). In addition, Yillah's inventory of verb suffixes lacks the reversive, negative and instrumental suffixes that are present in the entries of other researchers listed in Table 17. Yillah's directional suffix *-r* is the locative suffix in the present analysis.

Concerning the order in which the suffixes occur in the verb stem, Yillah (1992) gives the following template.

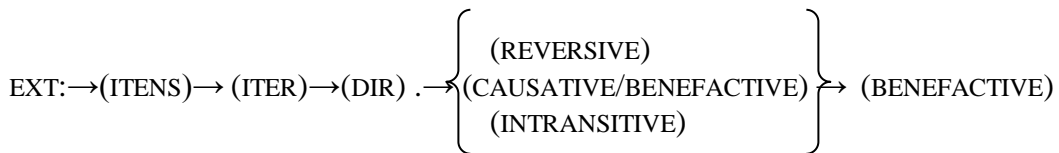


Figure 4. Order of suffixes in the verb stem, from Yillah (1992: 173)

As demonstrated in chapter 4, this study agrees with Yillah that the order of suffixes can be described by means of a morphological template in the sense that the suffixes occur in an immutable fixed order. In terms of the sequence of suffixes in the verb stem, the present study agrees that the iterative suffix precedes the directional or locative suffix. In addition, the present study agrees that the directional/locative applicative precedes the benefactive applicative. However, in contrast to Yillah's template, no data in the corpus or data collected from

elicitation provide evidence for the co-occurrence of the causative and benefactive suffix.

2.3.2 Kanu (2004, 2009a)

In Kanu (2004), I present a descriptive analysis of the co-occurrence of verbal suffixes in Temne and the order in which they occur in the verb stem. I identify the causative allomorphs *-s* and *-ɔ̃*, iterative *-s*, reversive *-i*, directional *-r*, benefactive *-ɔ̃*, instrumental *-ɔ̃nɛ̃*, reflexive *-nɛ̃*, reciprocal *-ɔ̃nɛ̃* and negative *-ɛ̃*, which is essentially the inventory presented in this study.

In terms of the co-occurrence of suffixes, I argue that the order of suffixes in Temne is fixed and can be described by the morphological template shown in Figure 5.

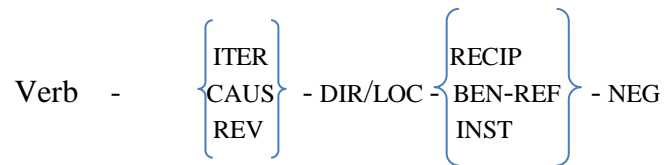


Figure 5. Suffix ordering in Temne, from Kanu (2004)

The template claims that the iterative, causative, reversive; reciprocal, benefactive-reflexive and instrumental suffix are mutually exclusive. I argue against a phonological account for the complementarity of these suffixes. Alternatively, I claim that the complementarity of each set of suffixes is grounded in the morphosyntax which is made possible by the fact that the suffixes compete for a single structural position.

In Kanu (2009a), I build upon the analysis in Kanu (2004) by presenting a discussion of suffix ordering and combinations in Temne. In this later article, I

argue that neither phonology nor semantic scope can fully account for the order of verb suffixes in Temne. I also re-visit the morphological template that is proposed in Kanu (2004) for the order of suffixes in the Temne verb stem, observing that the benefactive suffix precedes the instrumental, reciprocal and reflexive suffixes, which are mutually exclusive. Figure 6 illustrates this template.

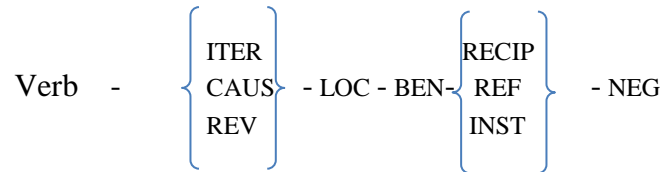


Figure 6. Suffix ordering in Temne, from Kanu (2009a)

In both studies (Kanu, 2004; 2009a), I demonstrate that the order of suffixes is fixed, and can be described by a morphological template.

In relation to the order of suffixes, the present study maintains, contrary to Kanu (2004, 2009a), that out of the valence-increasing suffixes in the language, the causative suffix co-occurs only with the instrumental applicative. It does not co-occur with the locative or benefactive suffix. Also, unlike the previous studies by Kanu (2004, 2009a) where the analysis was based on data elicited from a few speakers of the language, the present study is corpus-based.

2.3.3 *Kamarah (2007)*

In his grammar of Temne, Kamarah (2007) lists the verbal suffixes, their semantic uses and combinatorial possibilities. His inventory of verb suffixes is given below.

(89)	benefactive	-nλ, -λ	‘for’
	directional	-ər/-r	‘to, at, from’
	repetitive	-əs/-s	‘do over and over again’
	causative	-əs/-λ	‘to cause to’
	reflexive	-nε	‘to X oneself’
	reciprocal	-λnε	‘with, each other’
	intransitive	-λ	

Kamarah (2007: 98)

In this list, Kamarah gives alternate forms of the benefactive, directional, repetitive (iterative) and causative suffix. He analyzes the suffix -λ as as having a benefactive meaning. He also analyzes the same suffix -λ as as having a causative meaning and an intransitive meaning, and gives the following examples to illustrate the intransitive use of this suffix.

(90)	a.	<i>κλγβλγ</i>	‘to break’	<i>κλγβλγλ</i>	‘to break by itself’
	b.	<i>κλput</i>	‘to deflate’	<i>κλputλ</i>	‘to deflate by itself’

Kamarah (2007: 98)

However, verbs like *κλγβλγλ*, ‘breaking’ and *κλputλ* ‘deflating’ are transitive in nature since they take an object even though they bear the supposedly intransitive suffix. The following are some examples.

(91)	<i>κλ-γβλγ-λ</i>	<i>mì</i>	<i>λγ-póthì-ò,</i>	<i>κλ</i>
	GER-break-BEN	1SG.OBJ	NC3:DEF-cup-PAR	(then)

ḡ *gbúkè*
 NC1.SUBJ:DEF run
 ‘S/he ran away as soon as s/he broke the cup for me.’

(92)	<i>κλ-pút-λ</i>	<i>kò</i>	<i>λγ-bòyλ</i>	<i>κλ</i>
	GER-deflate-ben	NC1.OBJ	NC3:DEF-boil	(then)

ḡ *fì*
 NC1.SUBJ:DEF die
 ‘S/he died as soon as his/her swelling was deflated (for him/her)’.

Examples (91) and (92) indicate that the suffix $-\lambda$ in Kamarah's examples is not intransitive; it is in fact the benefactive applicative and it increases the valence of the verb by one applied object, W. In (91), the derived verb $k\lambda gb\lambda y\lambda$ adds the applied object that is expressed by the object marker $m\grave{i}$, while in (92) the derived verb $k\lambda p\acute{u}t\lambda$ adds the object expressed by the object marker $k\grave{\lambda}$. Thus, examples like (91) and (92) pose a problem for analyzing the morpheme $-\lambda$ as an intransitive suffix. Problems like this stem from not using contextualized data. The methodology applied in this study addresses this problem by including contextualized examples in the analysis.

However, Kamarah's (2007) work gives an insight into the combinatorial possibilities of the verb extensions. He divides the verbal suffixes into two groups: single and combined suffixes. The single suffixes are the benefactive $-n\lambda$, directional/relational $-\partial r$, repetitive $-\partial s$, causative $-\partial s$, $-\lambda$, reflexive $-n\grave{\epsilon}$, reciprocal $\acute{\lambda}n\grave{\epsilon}$ and intransitive $-\acute{\lambda}$. The morphemes he analyzes as combined are the benefactive-reflexive $-\lambda+n\grave{\epsilon}$, directional/relational-reflexive $-\partial r+n\grave{\epsilon}$, repetitive-reflexive $-\partial s+n\grave{\epsilon}$, causative-reflexive $-\partial s+n\grave{\epsilon}$, and repetitive-relational-reflexive $-\partial s+\partial r+n\grave{\epsilon}$. By the "relational" suffix, Kamarah means the locative suffix.

Concerning the combined suffixes, Kamarah (2007) observes that the "combined extensions all end in the reflexive $[n\grave{\epsilon}]$ " (p. 98), which is consistent with the idea that the reflexive is inflectional and combines with all transitive stems. However, the data analyzed in this study indicate that the ending of some

combined suffixes do not create reflexive verbforms syntactically. Table 18 gives some of these examples.

Table 18. *Combinations of verb extensions*

<i>suffix combinations</i>	<i>examples</i>	<i>gloss</i>
causative + instrument	<i>dí-s-ínè</i>	A causes X to eat Y using I
	<i>kóth-à-ínè</i>	A causes X to walk using I
locative + benefactive	<i>lám-àr-à</i>	X throws Y towards L for W
	<i>sóm-àr-à</i>	X sends Y towards L for W
locative + instrument	<i>lám-àr-ínè</i>	X throws Y towards L using I
	<i>wáy-àr-ínè</i>	X buys Y from L using I
benefactive + instrument	<i>dú-à-ínè</i>	X plaits Y's hair using I affecting the interests of W
	<i>tóŋ-à-ínè</i>	X cooks Y using I affecting the interests of W
benefactive + negative	<i>ták-à-è</i>	X did not give Y for W
	<i>shék-à-è</i>	X did not tie Y for W

The examples in Table 18 demonstrate that not all combined verb extensions in Temne end in the reflexive suffix *-nè*. Thus, Kamarah possibly analyzed too limited a dataset.

2.3.4 *Wilson (2007)*

Information about verb extensions in Temne is also found in Wilson (2007). In this work, Wilson identifies the ten different verbal suffixes in Temne listed below⁵.

⁵ Wilson (2007)'s annotation *-ä* is in this study represented as *-à*.

(93)	intransitive:	-ä,	-nɛ	
	causative:	-ä,	-r,	-s
	instrumental:	-ä,	-nɛ	
	benefactive:	-ä,	-nɛ	
	directional:	-ä,	-r	
	together:	-nɛ	-änɛ	
	reciprocal:	änɛ		
	reflexive:	-nɛ		
	iterative:	-s/t		
	separative	-i		

Wilson (2007:162)

With the exception of intransitive *-nɛ*, causative *-r*, instrumental *-nɛ*, benefactive *-nɛ*, directional *-ä* (*i.e.* *ɔ̀*) and together *-nɛ*, the rest of the suffixes are also found in the inventories of verb suffixes in earlier studies. Note that what Wilson refers to as “together” is what I refer to as the comitative, and is analyzed here as one of the meanings of the instrumental suffix *-änɛ*. In addition, what Wilson refers to as the “separative” suffix *-i* is the reversion suffix in the present analysis.

The present analysis differs in some ways from the analysis by Wilson. For example, Wilson (2007) analyzes the verb suffix *-r* as a directional and causative suffix. To demonstrate that the morpheme *-r* is a causative, Wilson cites the examples *lāsàr* ‘spoil, make spoil’ and *támàr* ‘make stand’. Concerning the form *lāsàr*, there is no verb *lās* in Temne. Therefore, I analyze the verb *lāsàr* ‘X destroys Y’ as a root with an inherent causative meaning. The verb *támàr* is derived from the base *támɔ̀* ‘X stands up’ and there is no doubt that it has a causative meaning. However, the causativizing effect of *-r* is only an idiosyncratic effect of its combination with the verb root *támɔ̀* given that this is the only

example that my consultants and I are aware of, and that no further forms have been found in the corpus.

To sum up, although research has been done on verb extensions in Temne, there are still many details lacking in the descriptions. Part of the reason for this is that some of the previous studies had a wider scope and are not solely concerned with verb extensions. Also, the data used in the previous studies were collected from either a few speakers of the language or represent the author's personal knowledge of the language. Therefore, the discussions and claims in the previous studies are made against the background of limited data. The present study is different from previous studies on verb extensions in Temne in the sense that the analysis in it is data-driven. The data is drawn from two main sources: recorded Temne spoken discourse and targeted constructions elicited from native speakers of the language. These sources are described in detail in Section 2.4.

The gaps found in the previous studies fall into three categories: combinatorics, semantics and syntax. In terms of the combination of suffixes, previous studies are silent about which set of verbs can occur with each suffix, and why certain verbs do not occur with certain suffixes. Also, previous studies lack detailed information about the co-occurrence, co-occurrence restrictions and the relative order of the suffixes in the verb stem. Concerning semantics, we still do not know the full range of meanings that are associated with each verb that is combined with a valence-increasing suffix and whether these meanings are a function of their component parts or not. In connection with syntax, previous studies lack a comprehensive analysis of the relative order and the principles

underlying the mapping and realization of post-verbal arguments in a construction.

2.4 Methodology

The data used in the analysis are drawn from two main sources: recorded Temne spoken discourse and targeted constructions elicited from native speakers of the language. These sources are described in the following sub-sections.

2.4.1 Temne spoken corpus

The primary data used in this analysis are drawn from transcribed spontaneous speech representing face-to-face conversations, telephone conversations, songs, religious sermons, narratives, interviews and radio broadcasts, and is a little over 1.5 million words. By combining a variety of genres, I was able to find more examples of the target tokens or constructions in comparison to when only one or two genres are used.

The data were recorded in Sierra Leone in June 2008. Therefore, the corpus represents contemporary use of the language. The recorded participants are native speakers of the Yoni dialect of Temne, between the ages of 10-70 years, both male and female. The vast majority of these participants are monolinguals, speaking only Temne, and they cut across various occupations, including homemakers, traders, farmers, pensioners, civil servants, administrators, teachers, and students.

The procedure for exploring the corpus was as follows. I searched manually in the corpus for constructions with verb suffixes, particularly valence-

increasing suffixes. The rationale behind this procedure was two-fold. Firstly, it enabled me to identify and compile the verbs that combine with each verb suffix. Secondly, it allowed me to map out the co-occurrence possibilities among verb suffixes and the shades of contextual meanings that each verb extension or set of verb suffixes may have. In addition, by searching for constructions with complex verbs, I was able to take note of unexpected or rare combination of suffixes. Moreover, I examined the semantic and syntactic structure of constructions with complex verbs with the aim of compiling the semantics that are associated with each derived verb and the syntactic effects of a suffix or set of suffixes on the argument structure of a verb.

The corpus-based methodology has some advantages over mere elicitation tasks. First, it enabled me to take note of distinctions, nuances or patterns of co-occurrences between suffixes that I would not have found through introspection, or known enough to elicit. These nuances may not even be consciously accessible to speakers. Thus, rare combinations of verb extensions that are not retrievable from direct elicitation surfaced in the corpus.

Also, the corpus-based methodology allowed me to observe verb suffixes that are multi-functional or heterogeneously polysemous and to analyze contextualized meanings of the suffixes. If the analysis of the verb extensions was based solely on sentences elicited from participants or my knowledge of the language, the full range of their functions may not be so apparent. In addition, the way the suffixes fit structurally into the grammar may be difficult to understand, and the ways in which speakers make use of the suffixes may not be clear.

Moreover, the corpus allowed me to quantify the frequency of verb suffixes or constructions where the verb is combined with a verb suffix. Finally, since the recorded participants cut across age groups, gender and social status, using the corpus enabled me to access a wide range of linguistic variations that exist in the language insofar as it is represented in the corpus.

In spite of the advantages of using the corpus, there are some obstacles that I contended with. First, the size of the corpus is relatively small, consisting of only a little over 1.5 million words. Therefore, the corpus yielded a low number of tokens of the desired structures. In particular, there were few tokens of verbs with more than two verb extensions. This problem would have resulted in incomplete descriptions if the data were drawn solely from the corpus. To complement the corpus, I also used data from direct elicitation.

2.4.2 Direct elicitation

I identified 300 common verbs in Temne for a more detailed investigation. These verbs, which are listed in Table I in the appendix, are the most frequent verbs in the corpus. I combined each valence-increasing suffix with each of these verbs. The aim was to investigate which verbs co-occur with each suffix or set of suffixes and which verbs are incompatible with certain suffixes.

I also did a cross-combination of valence-increasing suffixes and checked all these combinations with other native speakers of the language. The results of this strategy gave me an insight into the full range of suffixes that co-occur or suffixes that are mutually exclusive and possible reasons for these complementarities. This strategy also allowed me to compile information about

the linear order in which the suffixes occur in the verb stem. I also targeted verb roots that do not combine with any particular verb suffix in the corpus to find out if such verbs form a coherent class.

Furthermore, I elicited contextualized samples of constructions with verb complexes or verbs that could be expected to have two or more arguments. I asked native speakers who are bilingual to translate utterances into Temne that are likely to convey meanings which are associated with any of the verb suffixes. The following are samples of these constructions.

- (94) a. The man made the child cry. (*causative*)
 b. The child made the dog jump over there. (*causative*)
 c. The teacher made the student recite the Quran. (*causative*)
 d. The rebels came from the bush. (*locative (ablative)*)
 e. The man threw the stone at the snake. (*allative*)
 f. The dog sat on the floor. (*locative*)
 g. He is brushing the grass with a cutlass. (*instrumental*)
 h. The man and the woman danced with stilts (*inst-com*)
 i. The woman fried eggs for her husband. (*benefactive*)

Moreover, since the meaning of the suffixes can also be expressed using prepositions or by periphrastic means, I expressed the meaning of each suffix using the prepositional or periphrastic alternative, and then asked participants to express the same meaning using verbal suffixes. Below are some of the stimuli.

(95) *Prepositional locative constructions*

- a. *I* *yírà* *kà* *áy-bènt*
 1SG.SUBJ sit on NC3:DEF-stool
 ‘I sat on the stool.’
- b. *sà* *bà* *kà* *kɔ́* *kà* *ǝ-bày* (*dī*)
 3PL.SUBJ have to go to NC1:DEF-chief there
 ‘We have to go to the chief.’

(96) *Prepositional benefactive constructions*

ɔ́ wáy é-bùk tà tàŋ
3SG.SUBJ buy NC7:DEF-book for them
'S/he bought some books for them (to their advantage/disadvantage).'

(97) *Benefactive construction with the periphrastic preposition tà 'for'*

ɔ́ wáy-̀̀ mù é-bùk tà
3SG.SUBJ buy-BEN 2SG.OBJ NC7:DEF-book for

tàŋ
them
'S/he bought some books for them on your behalf.'

(98) *Periphrastic instrumental construction*

ɔ́-làngbà ɔ́ lám ̀̀ŋ-sàr yì
NC1:DEF-man NC1.SUBJ:DEF throw NC3:DEF-stone with

̀̀-lànth
NC3:INDEF-sling
'The man threw the stone using a sling.'

Additionally, I created a set of sentences with complex verbs (i.e., verbs with two or more valence-increasing suffixes), then substituted the verb suffixes and asked the consultants for the meaning of the sentences as I added new suffixes to the verb stem. I also constructed both grammatical and ungrammatical constructions with verb suffixes and then asked native speakers to identify the grammatical or ungrammatical, acceptable or unacceptable constructions.

In addition, I ordered and re-ordered verb extensions in various ways and then asked native speakers for the order of suffixes that best reflects the way in which they use them. The aim was to elicit information about the order in which the suffixes occur in a verb stem. Similarly, I conducted grammaticality judgment tests among fifteen native speakers in cases where there was controversy or

disagreement over the grammaticality of the example constructions or uses of the extensions. In such cases, I took into account the judgment reflecting the intuition of at least 70% of the participants. In general, the level of disagreement over the grammaticality or acceptability of constructions was miniscule.

The following chapter involves an analysis of the combinatorial properties of each valence-increasing suffix, and an analysis of the meanings that are associated with each suffix. In addition, Chapter 3 includes a discussion of the syntactic effects of adding a single valence-increasing suffix to a verb and the principles underlying the mapping and realization of post-verbal arguments in these constructions.

Chapter 3

Combination of a single valence-increasing suffix with a verb root

The causative *-s*, locative *-r*, instrumental *-ánè* and benefactive *-à* suffixes are the valence-increasing suffixes in Temne. These suffixes differ in the number of arguments they can add to the clause and the participant roles these arguments are assigned. The benefactive applicative is associated with the widest range of applied objects and participant roles; it adds up to three applied objects to the clause. The instrumental applicative adds up to two applied objects to the clause, while the locative applicative increases the valence of the verb by only one object. Unlike the benefactive, instrumental and locative applicative, the causative suffix adds a causer argument that is the subject of the causative construction. It also has the syntactic effect of demoting the subject X of the basic verb to the primary object or secondary object.

In general, valence-increasing suffixes in Temne are relatively productive. Out of the four, the benefactive is the most productive; it combines with 281 (94%) of the 300 verbs in the sample. As observed by Peterson (2007), the benefactive applicative construction is the most common type across languages. Therefore, it is not surprising that the benefactive applicative is compatible with more verbs than any other valence-increasing suffix in Temne. Next to the benefactive applicative is the instrumental applicative, which is compatible with 193 (64.3%) verbs. The locative applicative occurs with 87 (29%) verbs while the causative suffix, which is the least productive suffix, combines with only 43 (14.3%) of the 300 verbs in the database. Table 19 summarizes these statistics.

Table 19. *Verbs that co-occur with valence-increasing suffixes*

<i>Suffixes</i>	<i>tokens</i>	<i>%</i>
Causative	44	14.6%
Locative	87	29%
Instrumental	193	64.3%
Benefactive	281	94%

In this chapter, I examine verbs that combine with each valence-increasing suffix and describe the meanings of the derived verbs in terms of schemas. In this study, the “meaning” of a derived verb is limited to context-free and generalizable senses of the verb. Context-dependent senses of a derived verb are interpreted as “readings” and are not represented in the schemas. The term “schema” is used here in the sense of Langacker (1987) to refer to “an abstract characterization that is fully compatible with all the members of the category it defines” (p. 371). In addition, I examine the principles underlying the mapping and realization of arguments in a construction with a single valence-increasing morpheme on the verb.

The chapter is divided into five main sections. Section 3.1 is about the causative suffix, followed by Section 3.2 which deals with the locative applicative. Section 3.3 is concerned with the instrumental applicative. A discussion of the benefactive applicative is carried out in Section 3.4. Section 3.5 summarizes the main findings in the chapter.

3.1 The causative suffix

The causative suffix *-s* adds a new argument A to the clause. The new argument is expressed as the syntactic subject. Combining the causative suffix with a verb also has the syntactic effect of demoting the subject X of the basic verb to an object in

the causative construction. The argument A is viewed as the protagonist of the causing event, while the demoted subject X of the basic verb is viewed as the protagonist of the caused event. The causer argument A is most often the AGENT, but in Temne it can also be an inanimate participant, including natural forces like wind and storm, or abstract notions like hunger that is the cause of an event. The following example illustrates an intransitive-based causative construction.

- (99) a. *ǒ-wàth* *ǒ* *tú*
 NC1:DEF-child NC1.SUBJ:DEF sick
 ‘The child fell sick.’
- b. *ǎ-kàkà* *kǎ* *tú-s* *ǒ-wàth*
 NC3:DEF-measles NC2.SUBJ:DEF sick-CAUS NC1:DEF-child
 ‘The measles caused the child to be sick.’

The derived verb *tús* ‘A causes X to be sick’ in (99b) is derived from the verb stem *tú* ‘X gets sick’. In this example, the subject *ǒwàth* ‘child’ of the intransitive verb in (99a) is demoted to the primary object, while the added argument *ǎkàkà* ‘measles’ surfaces as the subject of the causative construction. The participant A *ǎkàkà* ‘measles’ functions as the causer argument, while the participant X *ǒwàth* ‘child’ is the causee.

Example (100b) illustrates a transitive-based causative construction.

- (100) a. *k-ǎ-yek* *ǒ* *dī* *é-bàná*
 NC2-DEF-monkey NC1.SUBJ:DEF eat NC7:DEF-banana
 ‘The monkey ate the bananas.’
- b. *ǒ-wàth* *ǒ* *dī-s* *k-ǎ-yèk*
 NC1:DEF-child NC1.SUBJ:DEF eat-CAUS NC2-DEF-monkey
- é-bàná*
 NC7:DEF-banana
 ‘The child fed bananas to the monkey.’

The verb *dīs* ‘A causes X to eat Y’ is derived from the verb stem *dī* ‘X eats Y’. In (100a) the object Y *ébàrà* ‘bananas’ of the basic verb is the primary object. In (100b), the object *ébàrà* ‘bananas’ is demoted to the secondary object, while the subject X of the non-causative construction *káyèk* ‘monkey’ becomes the primary object.

The basic subject or causee X may be expressed as the secondary object in a heterogeneous object construction, as demonstrated in (101b).

- (101) a. *k-á-yèk* *ǎ* *dī* *ɣì*
 NC2-DEF-monkey NC1.SUBJ:DEF eat NC3.OBJ
 ‘The monkey ate it.’
- b. *ǎ-wàth* *ǎ* *dī-s* *ɣì*
 NC1:DEF-child NC1.SUBJ:DEF eat-CAUS NC3.OBJ
- k-á-yèk*
 NC2-DEF-monkey
 ‘The child fed it to the monkey.’

The verb *dīs* ‘A made X eat Y’ in (101b) is derived from the verb stem *dī* ‘X eats Y’. In this example, (101a), the object of the transitive verb, marked by the object marker *ɣì*, is the primary object. Combining the causative suffix with the verb results in the demotion of the participant X *káyèk* ‘monkey’ to the secondary object in (101b), while the object of the basic verb that is marked by the object marker *ɣì* maps onto the primary object.

3.1.1 Schema of the causative suffix

The causative suffix *-s* conveys the notion of an actor performing some unspecified event *E*₁, causing some other entity to perform a second event, *E*₂

(Dixon & Aikhenvald 2000; Shibatani & Pardeshi 2002; Kemmer 1993, 1994). This is illustrated by the schema in Figure 7.

A performs E_1 , causing X to perform E_2 (on Y)

Figure 7. Schema of the CAUS construction

The causative construction involves at least two participants identified as the causer argument A and the causee X, which is the subject of the basic verb that is combined with the causative suffix. The participant A is usually an AGENT, but can also be non-agentive entities like diseases or abstract notions like hunger. The caused event E_2 is performed by X. The participant role that is assigned to X(causee) is context-dependent, hinging on many factors including the nature of E_2 and the nature of the participant A. The participant Y, if present, is the entity that is acted upon by X. The following example is captured by the causative schema in Figure 7.

- (102) a. *ǰ-yìmàm* *ǰ* *mún* *m-á-bèr*
 NC1:DEF-Muslim cleric NC1.SUBJ:DEF drink NC10-DEF-alcohol
 ‘The Muslim cleric drank alcohol.’
- b. *áy-mùràthè* *áy* *mún-às*
 NC5:DEF-rebel NC5.DEF.SUBJ drink-CAUS
- ǰ-yìmàm* *m-á-bèr*
 NC1:DEF-Muslim cleric NC10-DEF-alcohol
 ‘The rebels caused the Muslim cleric to drink alcohol.’

The derived verb *múnàs* ‘A made X drink Y’ in (102b) is derived from the verb stem *mún* ‘X drinks Y’. In this example (102b), there are two events: E_2 corresponding to E ‘X drinks Y’ in (102a) and E_1 a causing event, which as is typical of causatives, is unspecified.

In terms of participants, (102b) consists of A, which is expressed by the nominal *áyμùràthè* ‘rebels’, and is the protagonist of the causing event E_1 . The participant X is the target of E_1 ; X is expressed by the nominal *ýyìmàm* ‘Muslim cleric’ and is the primary object. The participant Y is the undergoer of E_2 , and is expressed by the nominal *máìbèr* ‘alcohol’ that is the secondary object. Thus, (102b) has the semantic and syntactic structure of a causative construction.

3.1.2 Combination of the causative suffix with a verb root

Out of the 300 verbs analyzed in this study, the causative suffix is compatible with 44 verbs (i.e., 14.6%), including some transitive and intransitive verbs. No ditransitive verb in the sample combines with the causative suffix. Also, no morphologically derived ditransitive-based causative construction is found in the corpus or accepted during the elicitation tasks. Table 20 lists the verbs in the sample that combine with the causative suffix.

Table 20. *Verbs in the sample that combine with the causative suffix*

<i>root</i>	<i>gloss</i>	<i>root + CAUS</i>	<i>gloss</i>
<i>bál-à</i>	X marries Y	<i>bál-às</i>	A causes X to marry Y
<i>banì</i>	X reclaims Y	<i>banì-s</i>	A causes X to reclaim Y
<i>báns-à</i>	X is angry	<i>báns-às</i>	A causes X to be angry
<i>ból</i>	X grows tall	<i>ból-às</i>	A causes X to grow tall
<i>bóm</i>	X defecates	<i>bóm-às</i>	A causes X to defecate
<i>bék</i>	X arrives	<i>bék-à</i>	A causes X to arrive
<i>bés</i>	X digs out Y	<i>bés-às</i>	A causes X to dig out Y
<i>béth</i>	X bursts into tears	<i>béth-às</i>	A causes X to burst into tears
<i>bór</i>	X peels off Y	<i>bór-às</i>	A causes X to peel off Y
<i>bók</i>	X cries	<i>bók-às</i>	A causes X to cry
<i>bóy</i>	X makes Y (heaps)	<i>bóy-às</i>	A causes X to make Y (heaps)
<i>chép</i>	X plants Y	<i>chép-às</i>	A causes X to plant Y
<i>chén</i>	X slaughters Y	<i>chén-às</i>	A causes X to slaughter Y
<i>chís</i>	X is inebriated	<i>chís-às</i>	A causes X to be inebriated
<i>đi</i>	X eats Y	<i>đi-s</i>	A causes X to eat Y
<i>đir-à</i>	X sleeps	<i>đir-às</i>	A sleeps with X
<i>fál</i>	X flies	<i>fál-às</i>	A causes X to fly

<i>gbál</i>	X writes Y	<i>gbál-às</i>	A causes X to write Y
<i>gbók</i>	X scrubs Y	<i>gbók-às</i>	A causes X to scrub Y
<i>gból</i>	X grinds Y	<i>gból-às</i>	A causes X to grind Y
<i>gbál</i>	X sweeps Y	<i>gbál-às</i>	A causes X to sweep Y
<i>gbám</i>	X pounds Y	<i>gbám-às</i>	A causes X to pound Y
<i>gbép</i>	X climbs Y	<i>gbép-às</i>	A causes X to climb Y
<i>kóth</i>	X walks	<i>kóth-à</i>	A causes X to walk in vain
<i>kál</i>	X pours Y	<i>kál-às</i>	A causes X to pour Y
<i>kóm</i>	X gives birth to Y	<i>kóm-às</i>	A bears a child with X
<i>kór-à</i>	X is pregnant	<i>kór-às</i>	A impregnates X
<i>kúlò</i>	X cries	<i>kúlò-s</i>	A causes X to cry
<i>láp</i>	X is ashamed	<i>láp-às</i>	A causes X to be ashamed
<i>lóm</i>	X speaks	<i>lóm-às</i>	A prosecutes X
<i>mútà</i>	X dives	<i>mútà-s</i>	A causes X to dive
<i>mér</i>	X swallows Y	<i>mér-às</i>	A causes X to swallow Y
<i>mún</i>	X drinks Y	<i>mún-às</i>	A causes X to drink Y
<i>ɲánt</i>	X pukes Y	<i>ɲánt-às</i>	A causes X to puke Y
<i>póɲ</i>	X ends Y	<i>póɲ-às</i>	A causes X to end Y
<i>sákàth</i>	X moves over there	<i>sákàth-à</i>	A causes X to move over there
<i>shéth</i>	X builds Y	<i>shéth-às</i>	A causes X to build Y
<i>tátá</i>	X prostitutes	<i>tátá-s</i>	A causes X to prostitute
<i>thómò</i>	X dances	<i>thómò-s</i>	A causes X to dance
<i>thákàs</i>	X learns Y	<i>thákàs-à</i>	A made X learn Y
<i>tóɲ</i>	X cooks Y	<i>tóɲ-às</i>	A causes X to cook Y
<i>wáy</i>	X buys Y	<i>wáy-às</i>	A causes X to buy Y
<i>wóɲ</i>	X puts on Y	<i>wóɲ-às</i>	A causes X to put on Y
<i>yír-à</i>	X sits down	<i>yír-às</i>	A causes X to sit down

Out of the verbs in Table 20, only the verb roots *bék* ‘X arrives’, *kóth* ‘X walks’ and *sákàth* ‘X moves over there’ combine with the causative *-à* mentioned in Chapter 2. The remaining verb roots form the causative with the suffix *-s*.

A few derived verbs have assumed idiosyncratic meanings that are not a function of their component parts. One example of these derived verbs is *kóth-à* ‘A caused X to walk in vain’ that is derived from the root *kóth* ‘X walks’. Also, the causative of the verb *bóm* ‘X defecates’, has the idiosyncratic meaning ‘A beats the crap out of X’. In addition, the derived verb *lóm-às* that is derived from the root *lóm* ‘X talks’ has assumed the meaning ‘X prosecutes Y’. These meanings of the derived verbs are not predictably derived from the meaning of their component

parts. However, unlike the three verbs mentioned above, the meanings of the remaining derived verbs in Table 20 are predictable from the meaning of their component parts.

As noted above, aside from these 44 verbs, the remaining 256 verbs analyzed do not combine with the causative suffix. A sample of these verbs is given in Table 21.⁶

Table 21. *Sample of verbs that are incompatible with the causative suffix*

<i>root</i>	<i>Gloss</i>	<i>root +CAUS</i>
<i>bá</i>	X has Y	* <i>bá-s</i>
<i>bám̀bà</i>	X carries a child on X's back	* <i>bám̀bà-s</i>
<i>báɲ̀l̀</i>	X gives a handful of Y to R	* <i>báɲ̀l̀-<i>s</i></i>
<i>bɔ̀f̀thà̀r</i>	X beats up Y	* <i>bɔ̀f̀thà̀r-à̀s</i>
<i>bónt</i>	X names Y in a lawsuit	* <i>bónt-à̀s</i>
<i>bɔ̀y</i>	X immerses Y	* <i>bɔ̀y-à̀s</i>
<i>bé̀f̀th</i>	X pays indulgence to Y	* <i>bé̀f̀th-s</i>
<i>bákà</i>	X carries Y	* <i>bákà-s</i>
<i>bé̀mpà</i>	X makes Y	* <i>bé̀mpà-s</i>
<i>bánk̀l̀l̀i</i>	X rolls Y	* <i>bánk̀l̀l̀i-s</i>
<i>báp</i>	X meets Y	* <i>báp-à̀s</i>
<i>bér</i>	X arrives	* <i>bér-à̀s</i>
<i>bà̀r̀f̀i</i>	X pops off Y	* <i>bà̀r̀f̀i-s</i>

Some of the verbs in Table 21 or Table III in the appendix that do not combine with the causative are semantically similar to the verbs in Table 20 that are compatible with the causative suffix. As far as I know, there is no plausible semantic, morphological or syntactic explanation for the failure of these verbs to combine with the causative suffix. Therefore, I attribute their incompatibility with the causative suffix to idiosyncratic lexical restrictions on the causative suffix.

Note that verbs that are incompatible with the causative suffix do not resist causativization per se; they all causativize by means of the periphrastic verb *yó*

⁶ The full list of verbs that are incompatible with the causative suffix is found in Table III in the appendix.

‘make/cause’. The example below illustrates the verb *fī* ‘kill’ in a periphrastic causative construction.

- (103) *áŋ-máleriyà* *áŋ* **yó** *áŋ-fəm* *áŋ*
 NC3:DEF-malaria NC3.SUBJ:DEF make NC5:DEF-people NC5:OBJ.
- fī*
 die
- ‘Malaria made the people die.’/‘Malaria killed the people.’

Example (103) provides further evidence against any semantic constraints on the distribution of the causative, since all of the verbs in Table III in the appendix that are incompatible with the morphological causative form the causative by means of the periphrastic verb *yó* ‘make’.

In addition, no ditransitive-based causative construction is found in the corpus or through elicitation. One possible explanation for this is that the causative of ditransitives would create a clause with too many arguments. Cross-linguistically, languages that can form causative constructions from ditransitive verbs are fewer than languages that form causative constructions from transitive or intransitive verbs. Among the languages that do not allow ditransitive-based causative constructions are Basque (Dixon & Aikhenvald, 2000), Soninke (Comrie, 1974) and *Tukang Besi* (Donohue, 1999).

The restriction on the number of core arguments that can appear in a causative construction has been used to explain the incompatibility of ditransitive verbs with the causative affix across languages. A case in point is the language *Tukang Besi* where ditransitive verbs are incompatible with the causative prefix because adding the causative argument to the three core arguments of the basic verb over-saturates the verb (Donohue, 1999).

3.1.3 Mapping and argument realization in a causative construction

Two separate principles govern the mapping between participant roles and grammatical relations in a causative construction in Temne. They are the participant hierarchy and the precedence hierarchy, discussed in Section 2.1.7 in Chapter 2. Also, certain semantically plausible causative constructions that obey the participant hierarchy and prominence hierarchy are blocked if they violate the prominence hierarchy that is also discussed in Section 2.1.7. In this section, I examine these principles starting with the participant hierarchy.

3.1.3.1 The participant hierarchy in a causative construction

The participant hierarchy determines the relative ranking of arguments expressing different participant roles, and it designates which participant is assigned with a certain grammatical relation. The participant hierarchy applies to any construction bearing two or more objects of the same type (i.e., nominal or object markers). In a causative construction, the causer argument A is invariably the subject. The demoted subject X of the basic verb is adjacent to the verb, and is the primary object. In a transitive-based homogeneous object causative construction, the object Y of the basic verb follows X and is the secondary object. The following example illustrates the participant hierarchy in a transitive-based causative construction.

(105) \acute{z} - $b\acute{z}k\acute{z}$ \acute{z} $d\acute{i}$ - s \acute{z} - $th\acute{e}m$
NC1:DEF-woman NC1.SUBJ:DEF eat-CAUS NC1:DEF-old man

\acute{a} - $k\acute{\lambda}l\acute{i}$

NC3:DEF-pumpkin

‘The woman made the old man eat pumpkin.’

In this example, the verb *dīs* ‘A fed Y to X’ is derived from the verb stem *dī* ‘X eats Y’. The participant A *ḡbḡkḡ* ‘woman’ is the subject; X *ḡthèm* ‘old man’ is the primary object and Y *ḡkḡlī* ‘pumpkin’ is the secondary object. Thus, the participant hierarchy is A » X » Y. This participant hierarchy is also maintained when all the objects in (105) are replaced by object markers, as demonstrated by example (106).

(106) *ḡ-bḡkḡ* *ḡ* *dī-s* *kḡ* *kī*
 NC1:DEF-woman NC1.SUBJ:DEF eat-CAUS NC1.OBJ NC2.OBJ
 ‘The woman caused him/her to eat it.’

As in (105), in (106) the participant A *ḡbḡkḡ* ‘woman’ together with its participant role is the subject. The participant X that is marked by the object marker *kḡ* is the primary object. The participant Y, which is expressed by the object marker *kī*, maps onto the secondary object. Thus, the participant hierarchy is A » X » Y, following the convention that the primary object is a higher grammatical relation than the secondary object, and that participants are assigned to the highest open grammatical relation in the order of precedence described by the participant hierarchy. Therefore, in a causative construction where all the post-verbal arguments are expressed by object markers or nouns, the participant hierarchy determines which participant role is assigned a certain grammatical relation.

3.1.3.2 *The precedence hierarchy in a causative construction*

In addition to the participant hierarchy, the objects in a causative construction are also ranked based on the precedence hierarchy. In a heterogeneous object construction, participants that are expressed by object markers take precedence

over participants that are nominal objects. This ranking is schematized as OM » NOM, where OM refers to participants that are expressed by object markers, and NOM refers to the participants that are realized as nouns. This hierarchy means that the participant role corresponding to an event-participant that is expressed by an object marker maps onto a higher grammatical relation than the participant role corresponding to a noun. The following example illustrates the precedence hierarchy in a transitive-based causative construction.

- (107) a. *áy-múrthè áy mún-əs ǰ-mòrè*
 NC5-rebel NC5.SUBJ:DEF drink-CAUS NC1:DEF-Muslim cleric
m-ń-bèr
 NC10-DEF-alcohol
 ‘The rebels caused the Muslim cleric to drink alcohol.’
- b. *áy-mùrə̀thè áy mún-əs kò*
 NC5:DEF-rebel NC5.SUBJ:INDEF drink-CAUS NC1.OBJ
m-ń-bèr
 NC10-DEF-alcohol
 ‘The rebels caused him/her to drink alcohol.’
- c. *áy-mùrə̀thè áy mún-əs mà*
 NC5:DEF-rebel NC5.SUBJ:DEF drink-CAUS NC10.OBJ
ǰ-mòrè
 NC1:DEF-Muslim cleric
 ‘The rebels caused the Muslim cleric to drink it (alcohol).’

In (107a), where all the post-verbal arguments are nominals, the participants together with their participant roles are assigned grammatical relations based on the participant hierarchy A » X » Y. In (107b), the participant X, which is expressed by the object marker *kò*, becomes the primary object, while the participant Y that is the noun *m-ń-bèr* ‘alcohol’ is the secondary object. This

ranking of the object marker and noun is maintained in (107c) where the participant Y that is the object marker *mà* (i.e., *mābèr* ‘alcohol’) is the primary object and the participant X that is the noun *ɔmðrè* ‘Muslim cleric’ is demoted to the secondary object.

Thus, examples (107b) and (107c) demonstrate that the participant that is realized as an object marker takes precedence over the participant that is a noun. This means that the participant role that corresponds to an object marker is assigned a higher grammatical relation than the participant role that corresponds to a nominal participant. In addition, examples (107b-c) demonstrate that the arguments X and Y can be in more than one grammatical relation depending on both the participant hierarchy and the precedence hierarchy.

3.1.3.3 *The prominence hierarchy in a causative construction*

As discussed in Chapter 2, the prominence hierarchy in Temne is a constraint that blocks constructions with a certain order of object markers. The hierarchy stipulates that post-verbal arguments that are expressed by object markers must occur in the order of precedence 1/2 » 3ANIM » 3INANIM. In what follows, I apply the prominence hierarchy to the causative construction.

- (108) a. *ɔ-bɔkɔ* *ɔ* *wáy-ə̀s* *mĩ*
 NC1:DEF-woman NC1.SUBJ:DEF buy-CAUS 1SG.OBJ
- kɔ*
 NC1.OBJ
- ‘The woman caused me to buy him/her.’
 *‘The woman caused him/her to buy me.’

- b. **ǎ-bǎkǎ* *ǎ* *wáy-ǎs* *kǎ*
 NC1:DEF-woman NC1.SUBJ:DEF buy-CAUS NC1.OBJ

mǐ
 1SG.OBJ

Intended meaning: ‘The woman caused him/her to buy me.’

- c. *ǎ-bǎkǎ* *ǎ* *yǎ* *kǎ* *ǎ*
 NC1:DEF-woman NC1.SUBJ:DEF make NC1.OBJ NC1.SUBJ:DEF

wáy *mǐ*
 buy 1SG.OBJ

‘The woman made/caused him/her to buy me.’

Example (108a) conforms to the prominence hierarchy. In this example, the first person object marker *mǐ* precedes the third person object marker *kǎ*. Therefore, (108a) is grammatical, while (108b) which violates the prominence hierarchy by allowing the third person object markers *kǎ* to precede the first person object marker *mǐ*, is disallowed. In other words, it is impossible to say in Temne ‘the woman caused him/her to buy me’ using a morphological causative. Note that (108a) does not have the intended meaning of (108b). To express this meaning, the periphrastic construction in (108c) is used instead.

Also, the first person object marker co-occurs with the third person inanimate object marker in the order 1 » 3INANIM, as shown in the following example.

- (109) a. *ǎ-bǎkǎ* *ǎ* *dǐ-s* *mǐ*
 NC1:DEF-woman NC1.SUBJ:DEF eat-CAUS 1SG.OBJ

kǐ
 NC2.OBJ

‘The woman made me eat it.’

- b. **ǝ-bǝkǝ* *ǝ* *dī-s* *kì*
 NC1:DEF-woman NC1.SUBJ:DEF eat-CAUS NC2.OBJ

mǐ
 1SG.OBJ

Intended meaning: ‘The woman caused it to eat me.’

- c. *ǝ-bǝkǝ* *ǝ* *yǝ* *kàimà* *kǝ*
 NC1:DEF-woman NC1.SUBJ:DEF make so.that NC2:INDEF

dī *mǐ*
 eat 1SG.OBJ

The woman made/caused it to eat me.’

Example (109a) shows that a causative construction with the ranking of object markers 1 » 3INANIM is permissible, but the reversed order is not, as shown by the ungrammaticality of (109b). Note that (109a) does not have the interpretation of (109b). To derive this meaning, the periphrastic causative construction in (109c) is used instead.

As with the first person and third person object markers, it is also possible to have a causative construction with the second person singular and the third person plural animate object marker ranked in the order 2 » 3ANIM, as indicated by example (110a). However, the reversed order 3ANIM » 2 is not permissible, as indicated by the ungrammaticality of (110b).

- (110) a. *ǝ-làngbà* *ǝ* *dī-s* *mù* *ɣà*
 NC1:DEF-man NC1.SUBJ:DEF eat-CAUS 2SG.OBJ NC5.OBJ
 ‘The man caused you to eat them.’
 *‘The man caused them to eat you.’

- b. **ǝ-làngbà* *ǝ* *dī-s* *ɣà* *mù*
 NC1:DEF-man NC1.SUBJ:DEF eat-CAUS NC5.OBJ 2SG.OBJ
 Intended meaning: ‘The man caused them to eat you.’

Example (110a) obeys the prominence hierarchy. In this example, the second person singular object marker *mù* outranks the third person plural object marker

ɲà, and the sentence is grammatical. However (110b), which violates the prominence hierarchy by ranking the third person plural marker *ɲà* over the second person singular marker *mù*, is disallowed.

In addition, it is possible to have a causative construction with the ranking of the third person animate and third person inanimate object marker in the order 3ANIM » 3INANIM, but not in the reversed order *3INANIM » 3ANIM, as the contrast in grammaticality between (111a) and (111b) indicates.

- (111) a. *ɔ̀-làngbà* *ɔ̀* *dī-s* *ɲà* *kì*
 NC1:DEF-man NC1.SUBJ:DEF eat-CAUS NC5.OBJ NC2.OBJ
 ‘The man caused them to eat it.’
 *‘The man caused it to eat them.’
- b. **ɔ̀-làngbà* *ɔ̀* *dī-s* *kì* *ɲà*
 NC1:DEF-man NC1.SUBJ:DEF eat-CAUS NC2.OBJ NC5.OBJ
 Intended meaning: ‘The man caused it to eat them.’

Example (111a) follows the prominence hierarchy; hence the third person plural animate marker *ɲà* precedes the third person singular inanimate marker *kì*.

Example (111b) that violates the prominence hierarchy is impossible.

Finally, constructions where the first person object marker precedes the second person object marker (112b) or the second person object marker precedes the first person object marker (112c) are not found in the corpus or accepted during the elicitation tasks.

- (112) a. *ì* *gbók* *mù*
 1SG.SUBJ scrub 2SG.OBJ
 ‘I scrubbed you.’
- b. **ɔ̀-làngbà* *ɔ̀* *gbók-às* *mì* *mù*
 NC1:DEF-man NC1.SUBJ:DEF scrub-CAUS 1SG.OBJ 2SG.OBJ
 Intended meaning: ‘The man made me scrub you.’

- c. **ǝ-làngbà* *ǝ* *gbók-às* *mù* *mi*
 NC1:DEF-man NC1.SUBJ:DEF scrub-CAUS 2SG.OBJ 1SG.OBJ
 Intended meaning: ‘The man made you scrub me.’
- d. *ǝ-làngbà* *ǝ* *yǝ* *mì*
 NC1:DEF-man NC1.SUBJ:DEF make 1SG.OBJ
- ì* *gbók* *mù*
 1SG.OBJ scrub 2SG.OBJ
 ‘The man made me scrub you.’

The verb *gbókàs* in (112b-c) is derived from the verb stem *gbók* ‘X scrubs Y’. In (112b), the participant X (i.e., the causee) is expressed by the first person object marker *mì* and precedes the participant Y, which is expressed by the second person object marker *mù*. This construction is ungrammatical as it violates the prominence hierarchy. In (112c), the participant X (i.e., the causee) is expressed by the second person object marker *mù* and precedes the participant Y, which is expressed by the first person object marker *mì*. This construction (112c) is also ungrammatical because it violates the prominence hierarchy. The intended meanings of (112b) and (112c) are expressed in periphrastic constructions. Example (112d) expresses the intended meaning of (112b).

To sum up, the examples in (108-112) provide evidence that a causative construction with the order of object markers: 1 » 3ANIM; 1 » 3INANIM; 2 » 3ANIM; 2 » 3INANIM; and 3ANIM » 3INANIM are allowed, while the reversed orders are disallowed. To express the intended meaning of the causative constructions that violate the prominence hierarchy, the periphrastic causative construction is used instead. Also, the first person and second person object markers do not

precede each other. Thus, semantically plausible causative constructions that violate the prominence hierarchy are disallowed in Temne.

3.1.4 Summary of the causative suffix

So far, I have shown that the causative suffix has the syntactic effect of increasing the valence of the verb by adding a causer argument A that is expressed as the syntactic subject, and demoting the subject X of the basic verb to an object position. Semantically, the causative construction conveys the notion of an actor performing an event E_1 that triggers the performance of another event E_2 . While some verbs that co-occur with the causative suffix take this meaning, others like the derived verb *kóth-à* ‘A caused X to walk in vain’, *bómàs* ‘A beats the crap out of Y’ and *lómàs* ‘X prosecutes Y’ do not. Instead, they have idiosyncratic meanings that are not predictably derived from the combination of their component parts by rules. In terms of participants, up to two core participants are involved in a causative construction: they are the causer argument A and the demoted subject X of the basic verb.

Concerning the combination of the causative suffix with a verb, the results of the study indicate that the causative suffix combines with some transitive and intransitive verbs. Other transitive and intransitive verbs that are incompatible with the causative suffix are affected by idiosyncratic lexical restrictions. In addition, no ditransitive verb in the corpus or data from elicitation is compatible with the causative suffix. The failure of ditransitive verbs to form causatives with the morphological causative is found to be unconnected with the number of arguments that a derived verb can support. Evidence for this claim comes from

the fact that the derived verbs of other valence-increasing morphology also support the same number of arguments that would otherwise appear in a ditransitive-based causative construction.

In connection with the mapping from participant roles to grammatical relations, two principles are involved: they are the participant hierarchy and the precedence hierarchy. The participant hierarchy refers to the relative precedence ranking given to arguments expressing different participant roles, and is realized in a construction where two or more post-verbal objects are expressed by nominals or by object markers. In a homogeneous object construction, defined as a construction where all the post-verbal arguments are either nouns or object markers, the participant hierarchy is $A \gg X \gg Y$. This means that the participant role identified with the participant A invariably maps onto the subject, while the participant role assigned to the participant X maps onto the primary object. In a transitive-based causative construction, the participant role assigned to the participant Y maps onto the secondary object.

In a heterogeneous object causative construction, both the participant hierarchy and the precedence hierarchy determine the mapping between participant roles and grammatical relations. The precedence hierarchy refers to the relative ranking of post-verbal arguments in a construction where the objects are a combination of nouns and object markers. In this case, the participant that is expressed as an object marker (OM) is closer to the verb and is the primary object, while the participant that is a noun maps onto the secondary object.

Finally, certain semantically plausible causative constructions that combine object markers are blocked if the order of precedence determined by the participant hierarchy and precedence hierarchy violates the prominence hierarchy, 1/2 » 3ANIM » 3INANIM. The prominence hierarchy is an inviolable blocking constraint in Temne.

3.2 The locative applicative

The locative applicative *-r* adds an object to the valence of the basic verb. This object is represented here as L, and it expresses a LOCATION, GOAL, or SOURCE. The suffix *-r* occurs with transitive, intransitive and ditransitive verbs. The following example illustrates an intransitive-based locative construction using the verb *yîrâr* ‘X sits on L’ that is derived from the verb stem *yîrâ* ‘X sits down’.

- (113) a. *ì* *yîrâ*
 1SG.SUBJ sit down
 ‘I sat down.’
- b. *ì* *yîrâ-âr* *âŷbènt*
 1SG.SUBJ sit-LOC NC3:DEF-stool
 ‘I sat on the stool.’

Example (113a), which has a basic verb *yîrâ* ‘X sits down’ does not include any expression of a spatial location. In (113b), where the verb *yîrâ* ‘X sits on L’ is combined with the locative applicative, a new argument *âŷbènt* ‘bench/stool’ that is understood as the location of the event expressed by the predicate is added to the clause.

Example (114) illustrates a transitive-based locative construction that is derived from the verb *wáy* ‘X buys Y’.

- (114) a. *ǎ-bǎkǎ* *ǎ* *wáy* *è-lòp*
 NC1:DEF-woman NC1.SUBJ:DEF buy NC7:INDEF-fish
 ‘The woman bought some fish.’
- b. *ǎ-bǎkǎ* *ǎ* *wáy-ǎr* *ǎ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1:DEF-old man
- è-lòp*
 NC7:INDEF-fish
 ‘The woman bought some fish from the old man.’

The verb *wáyàr* ‘X buys Y from L’ in (114b) is derived from the verb stem *wáy* ‘X buys Y’ in (114a). Example (114a) is a simple clause without any expression of a location. In (114b), the applied object L *ǎthèm* ‘old man’ expresses the location of the event. Syntactically, the applied object is the primary object, and the basic object Y *èlòp* ‘fish’ of the transitive verb is the secondary object.

The locative applicative also combines with ditransitive verbs. The following heterogeneous object construction based on the ditransitive verb stem *pút* ‘X lances Y on R’, illustrates this type of a locative construction:

- (115) a. *ǎ-nǎs* *ǎ* *pút* *kǎ* *ǎì*
 NC1:DEF-nurse NC1.SUBJ:DEF lance NC1.OBJ NC3.OBJ
 ‘The nurse lanced it (the swelling) on him/her (the child).’
- b. *ǎ-nǎs* *ǎ* *pút-ǎr* *mì* *kǎ*
 NC1:DEF-nurse NC1.SUBJ:DEF lance-LOC 1SG.OBJ 3SG.OBJ
- ǎì*
 NC3.OBJ
 ‘The nurse lanced it (the swelling) on him/her (the child) in my
 presence.’

The verb *pútàr* ‘X lances Y on R before L’ in (115b) is derived from the verb stem *pút* ‘X lances Y on R’. In (115a), the participant R and Y that are the objects of the basic verb are the primary and secondary objects respectively. Adding the

locative applicative to the verb *pútàr* ‘X lances Y on R before L’ increases the valence of the verb by one applied object. This applied object which is expressed by the object marker *mĩ*, is the primary object, and the basic objects of the ditransitive verb R and Y that are expressed by the object marker *kò* and *ĩjì* are the secondary object and tertiary object respectively.

However, there are restrictions on the locatives of ditransitive verbs. First, a ditransitive-based homogeneous object construction where all the post-verbal arguments are nominals is disallowed. Thus, whereas we can express (115b) where all the post-verbal arguments are object markers, (116) based on the same verb where all the post-verbal objects are nominals is impossible.

- (116) **ĩ-nòs* *ĩ* *pút-àr* *ĩ-bòkò*
 NC1:DEF-nurse NC1.SUBJ:DEF lance-LOC NC1:DEF-woman
- ĩ-wàth* *ĩj-bòyì*
 NC1:DEF-child NC3:DEF-swelling
- Intended meaning: ‘The nurse lanced the swelling on the child in the woman’s presence.’

The contrast in grammaticality between (116) and (115b) indicates that Temne does not allow a locative construction with three post-verbal arguments that are expressed by nominals.

3.2.1 Schemas of the locative applicative

The locative applicative has several different but closely related meanings which I represent here as a polysemous schematic network (Langacker 1987), although I depart from Langacker’s conventions by representing each meaning as a lexical paraphrase (Mel’cuk 1988), rather than as pictorial diagrams; event-participants

are represented, as in the rest of this dissertation, as variables. In Langacker's (1987) "network model of polysemy", each meaning of a unit occupies a node and is connected on the horizontal axis to the meanings that are most similar to it. Following Langacker (1987), I represent the relation of similarity with broken arrows. The vertical axis corresponds to abstractness or schematicity. The meanings that are higher in the network are more schematic or less specific and are compatible with all of the meanings linked to it from below in the network. Meanings lower in the network represent more specific meanings, or elaborations of higher schemas.

The relation of schematicity is represented with solid arrows. Each of the schemata for the suffix also includes in brackets an abstract meaning for the verbal base, schematized as [X performs E]. This is provided to make the diagrams more readable, and in recognition of the fact that these suffixes always appear in context attached to some verbal base. The variable X represents the participant directing the action that is expressed by the predicate, while L, the participant associated with the locative applicative, represents the spatial location or deictic centre of the event. Figure 8 illustrates the schemas of the locative construction.

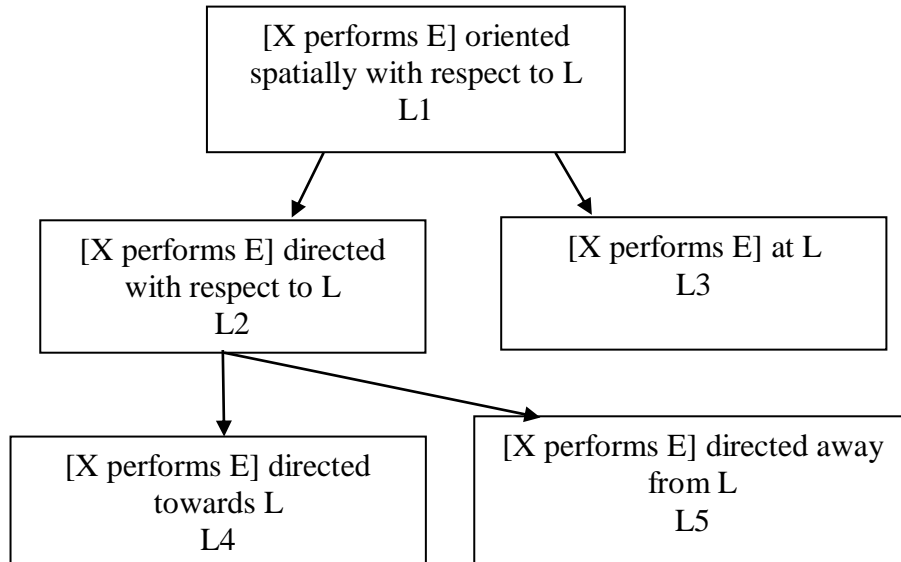


Figure 8: Schemas of the LOC construction

A verb that is combined with the locative suffix is associated with closely related schemas labeled L1, L2, L3, L4 and L5 in Figure 8. Schema L1, referred to as the super schema, is the most abstract of these schemas and it does not appear with a verb. Schema L2 is also not instantiated in the meaning of a verb. These two schemas (i.e., L1 and L2) are created to highlight the shared semantic features of each subgroup of meanings. Unlike schemas L1 and L2, schemas L3, L4 and L5 are expressed in the meaning of the derived verbs, and are the focus of discussion in this section.

Schema L3 is an elaboration (i.e., a sub-meaning) of schema L1, and it differs from all other schemas in that it is associated with the participant role of LOCATION, defined here as “L such that *E* is performed at L”. Example (117b) demonstrates schema L3 of the locative construction.

- (117) a. *áŋ-təŋ* *ḵ* *fənthλ*
 NC3:DEF-dog NC1.SUBJ:DEF lie.down
 ‘The dog lay down.’

- b. *áy-tàŋ* ɔ̌ *fānth-ə̀r* *áy-yàrì*
 NC1:DEF-dog NC1.SUBJ:DEF lie down-LOC NC3:DEF-cat
 ‘The dog lay on the cat.’

The verb *fānthə̀r* ‘X lies down at L’ is derived from the basic verb *fānthà* ‘X lies down’. In this example, the participant *áy-tàn* ‘dog’ is X, and directs the action described by the predicate. The participant *áy-yàrì* ‘cat’ is L and it designates the location where the event *E* that is described by the predicate took place.

Schema L4, which I also refer to as the allative schema, states ‘[X performs *E*] directed towards L’. This schema is different from schemas L3 and L5 in the type of event it denotes and the participant that this event involves. The event that is expressed by the derived verb is anchored at a deictic center, which is in fact the location of the participant X that controls the event. This deictic center is construed as the starting point of the event, and the event is directed outwards towards L (i.e., the end-point). The participant L is assigned the participant role of GOAL, defined here as “a GOAL is L such that *E* is directed at L”. The following example illustrates schema L4 of the locative construction with the verb *súth* ‘X shoots Y’.

- (118) a. *ɔ̌-làngbà* ɔ̌ *súth* *k-à-fánkè*
 NC1:DEF-man NC1.SUBJ:DEF shoot NC2-INDEF-witch.gun
 ‘The man shot a witch gun.’
- b. *ɔ̌-làngbà* ɔ̌ *súth-ə̀r* *ɔ̌-bɔ̀kò*
 NC1:DEF-man NC1.SUBJ:DEF shoot-LOC NC1:DEF-woman
- k-à-fánkè*
 NC2-INDEF-witch.gun
 ‘The man shot a witch gun at the woman.’

Example (118a), which has a basic verb *súth* ‘X shoots Y’, does not specify a target at which the gunshot is directed. This target *óbàkò* ‘woman’ is specified in (118b) where the locative applicative is added to the basic verb, deriving the verb *súthàr* ‘X shoots Y at L’. However, (118b) is not precise about whether the target *óbàkò* ‘woman’ is hit or not. Rather, it basically specifies that the gunshot is directed at the target *óbàkò* ‘woman’. In this example, the participant L *óbàkò* ‘woman’ is the GOAL.

Sometimes, schema L4 involves only figurative directionality. The following example illustrates this phenomenon.

- (119) *ǎ-làngbà* *ǎ* *sónkò-r* *ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF shout-LOC NC1:DEF-child
 ‘The man shouted at the child.’

The verb *sónkòr* ‘X shouts at L’ is derived from the root *sónkò* ‘X shouts’. This example does not denote any physical motion of the participant X *ǎlàngbà* ‘man’ or the participant Y *ǎwàth* ‘child’. However, a sense of the directionality is embedded in the meaning of the derived verb. In this case, the directionality is towards the participant L *ǎwàth* ‘child’ that is the target of the shouting event.

Schema L5, which I also refer to as the ablative schema, states ‘[X performs E] directed away from L’. This schema is different from schemas L3 and L4 in the type of event that it denotes and the participant role that is assigned to L. In this case, the participant L is assigned the role of SOURCE (SRC), defined here as “the SOURCE is L, such that E is directed away from L”. The following example illustrates this schema with the verb *gbáshì* ‘X takes Y’.

- (120) a. *áŋ-sòyà* *áŋ* *gbáshì* *é-bàná*
 NC5:DEF-soldier NC3.SUBJ:DEF take NC7:DEF-banana
 ‘The soldiers took the bananas.’
- b. *áŋ-sòyà* *áŋ* *gbáshì-r* *áŋ-fàm*
 NC5:DEF-soldier NC3.SUBJ:DEF take-LOC NC5:DEF-people
- é-bàná*
 NC7:DEF-banana
 ‘The soldiers took the bananas from the (village) people.’

The derived verb *gbáshì-r* ‘X takes Y from L’ denotes the deictic center or direction from which Y *é-bàná* ‘bananas’ are taken from. This direction is represented by the participant L *áŋfàm* ‘people’ in (120b). However, in its non-derived form in (120a) the verb *gbáshì* ‘X takes Y’ does not specify the source of Y *é-bàná* ‘banana’. Therefore, the participant L *áŋfàm* ‘people’ is assigned the participant role of SOURCE. No verb denoting a figurative ablative directionality is found in the corpus.

In summary, there are three schemas of the locative *-r* that are instantiated in the meaning of the verbs. These schemas are L3, L4 and L5, and are related to each other in a polysemous network involving abstract higher-level schemas identified as L1 and L2. However, it is still unclear which verb stems are compatible with each schema.

3.2.2 *Combination of the locative applicative with a verb root*

In the previous sub-section, I described the schemas of the derived locative verb. In this section, I identify the verbs that are compatible with each schema. I begin by looking at the verbs that combine with schema L3.

3.2.2.1 Verbs instantiating schema L3

Out of the 87 verbs that combine with the locative applicative, only 26 combine with schema L3. These verbs are listed in Table 22.

Table 22. *Verbs combining with schema L3*

<i>verb</i>	<i>gloss</i>	<i>verb +LOC</i>	<i>gloss</i>
<i>ból</i>	X grows tall	<i>ból-àr</i>	X grows tall in the presence of L
<i>bólì</i>	X picks up Y	<i>bólì-r</i>	X picks up Y in the presence of L
<i>bóŋ</i>	X makes Y (heaps)	<i>bóŋ-àr</i>	X makes Y (heaps) on L
<i>bór</i>	X peels off Y	<i>bór-àr</i>	X peels off Y in the presence of L
<i>búlì</i>	X makes a hole in Y	<i>búlì-r</i>	X makes a hole in Y in the presence of L
<i>bús</i>	X takes off Y	<i>bús-àr</i>	X takes off Y in the presence of L
<i>chēchì</i>	X spreads Y	<i>chēchì-r</i>	X spreads Y all over L
<i>chén</i>	X slaughters Y	<i>chén-àr</i>	X slaughters Y in L
<i>chér</i>	X lets Y go	<i>chér-àr</i>	X lets Y go on L
<i>ǎi</i>	X eats Y	<i>ǎi-r</i>	X eats Y in the presence of L
<i>ǎir.̀̀</i>	X sleeps in Y	<i>ǎir-àr</i>	X exploits Y
<i>fǎnth.̀̀</i>	X lies down	<i>fǎnth-àr</i>	X sleeps in Y where L is located
<i>fì</i>	X dies	<i>fì-r</i>	X lies down on L
<i>gból</i>	X grinds Y	<i>gból-àr</i>	X is in the habit of performing E to Y
<i>gbébà</i>	X faints	<i>gbébà-r</i>	X dies in the presence of L
<i>gbéthà</i>	X cuts down Y completely	<i>gbéthà-r</i>	X grinds Y on L
<i>gbáy</i>	X hangs Y	<i>gbáy-àr</i>	X faints in the presence of L
<i>kóth</i>	X ties Y	<i>kóth-àr</i>	X cuts down Y completely in the presence of L
<i>pólò</i>	X crowns Y	<i>pólò-r</i>	X hangs Y on L
<i>sóth</i>	X sews Y	<i>sóth-àr</i>	X ties Y at point L
<i>shék</i>	X ties Y	<i>shék-àr</i>	X crowns Y in the presence of L
<i>shéth</i>	X builds Y	<i>shéth-àr</i>	X sews Y at point L
<i>súnt</i>	X corks Y	<i>súnt-àr</i>	X ties Y at point L
<i>tú</i>	X is sick	<i>tú-r</i>	X builds Y on L
<i>tók</i>	X scolds Y	<i>tók-àr</i>	X corks Y at point L
<i>yír.̀̀</i>	X sits down	<i>yír.̀̀</i>	X gets sick in L
			X scolds Y in the presence of L
			X sits down on L

With all the verbs in Table 22, the deictic center is identical to the location of the speaker, hence the “in the presence of” reading that may be associated with this schema.

3.2.2.2 Verbs instantiating schema L4

Schema L4, the allative schema, is the most productive schema of the locative suffix. Out of the 87 verbs that combine with the locative applicative, 42 (i.e., 48.2%) verbs instantiate the meaning of performing an action that is directed towards a location. These verbs are listed in Table 23.

Table 23. *Verbs combining with schema L4*

<i>root</i>	<i>gloss</i>	<i>root +BEN</i>	<i>gloss</i>
<i>báns-à</i>	X is angry	<i>báns-àr</i>	X is angry and the anger is directed at L
<i>bék</i>	X arrives	<i>bék-àr</i>	X arrives towards L
<i>bánkàkì</i>	X rolls Y	<i>bánkàlì-r</i>	X rolls Y towards L
<i>bés</i>	X digs out Y	<i>bés-àr</i>	X digs out Y towards L
<i>bóy</i>	X mentions Y	<i>bóy-àr</i>	X mentions Y to L
<i>bók</i>	X cries	<i>bók-àr</i>	X cries facing L
<i>bóyà</i>	X donates Y	<i>bóyà-àr</i>	X donates Y to L
<i>béy</i>	X belches	<i>béy-àr</i>	X belches facing L
<i>fǒf</i>	X says Y	<i>fǒf-àr</i>	X says Y to L
			X rebukes Y
<i>fál</i>	X flies	<i>fál-àr</i>	X flies to L
<i>fǎshì</i>	X crosses Y	<i>fǎshì-r</i>	X crosses Y towards L
<i>fithà</i>	X throws Y	<i>fithà-r</i>	X throws Y towards L
<i>gbáli</i>	X lines up Y	<i>gbáli-r</i>	X lines up Y in the direction of L
<i>gbál</i>	X writes Y	<i>gbál-àr</i>	X writes Y to L
<i>gbál</i>	X sweeps Y	<i>gbál-àr</i>	X sweeps Y towards L
<i>gbéth</i>	X yells	<i>gbéth-àr</i>	X yells at L
<i>gbép</i>	X climbs Y	<i>gbép-àr</i>	X climbs Y towards L
<i>gbánthì</i>	X ends Y	<i>gbánthì-r</i>	X ends Y in the direction of L
<i>kánthà</i>	X closes Y	<i>kánthà-r</i>	X closes Y in the direction of L
<i>káshì</i>	X denies doing Y	<i>káshì-r</i>	X denies doing Y and the denial is directed at L
<i>kó</i>	X goes to Y	<i>kó-r</i>	X goes to Y where L is also located
<i>kóth</i>	X walks	<i>kóth-àr</i>	X walks towards L
<i>kál</i>	X pours Y	<i>kál-àr</i>	X pours Y into L
<i>lóm</i>	X says Y	<i>lóm-àr</i>	X says Y to L
			X rebukes Y
<i>lám</i>	X throws Y	<i>lám-àr</i>	X throws Y towards L
<i>léy</i>	X sings	<i>léy-àr</i>	X sings to L
<i>lák</i>	X throws Y	<i>lák-àr</i>	X throws Y towards L
<i>ɲómì</i>	X makes an ugly face	<i>ɲómì-r</i>	X makes an ugly face towards L
<i>ɲít</i>	X climbs	<i>ɲít-àr</i>	X climbs towards L
<i>ɲánt</i>	X pukes Y	<i>ɲánt-àr</i>	X pukes Y on L
<i>ɲét</i>	X minces Y	<i>ɲét-àr</i>	X minces Y in the direction of L
<i>sónkò</i>	X shouts	<i>sónkò-r</i>	X shouts at L
<i>sór</i>	X coughs	<i>sór-àr</i>	X coughs towards L

<i>shém</i>	X refuses Y	<i>shém-àr</i>	X refuses Y and the refusal is directed at L
<i>táy</i>	X shuts down Y	<i>táy-àr</i>	X shuts down Y in the direction of L
<i>tátá</i>	X flirts	<i>tátá-r</i>	X flirts with/at L
<i>thómò</i>	X dances	<i>thómò-r</i>	X dances towards L
<i>thìlà</i>	X sells Y	<i>thìlà-r</i>	X sells Y to L
<i>tháy</i>	X bends Y	<i>tháy</i>	X bends Y towards L
<i>thánthì</i>	X extends Y	<i>thánthì-r</i>	X extends Y in the direction of L
<i>thúf</i>	X spits on Y	<i>thúf-àr</i>	X spits Y on L
<i>wóy</i>	X enters Y	<i>wóy-àr</i>	X enters Y in the direction of L

Some of the verbs that combine with schema L4 have an inherent allative meaning. They include the verbs *bék* ‘X arrives’, *bóy* ‘X mentions Y’, *bóyà* ‘X donates Y’, *fǎshì* ‘X crosses Y’, *fithà* ‘X throws Y’, *káshì* ‘X retracts Y’, *kó* ‘X goes to Y’, *lám* ‘X throws Y’. Also, some of the verbs in Table 23 that combine with schema L4 are not inherently directional. However, combining the locative applicative with these verbs gives them what I refer to as metaphorical directionality. These verbs are listed in Table 24 below.

Table 24. *Verbs involving metaphorical directionality*

<i>root</i>	<i>gloss</i>	<i>root + LOC</i>	<i>gloss</i>
<i>báns-à</i>	X is angry	<i>báns-àr</i>	X is angry at L
<i>béth</i>	X begins to cry	<i>béth-àr</i>	X begins to cry facing L
<i>bóy</i>	X mentions Y	<i>bóy-àr</i>	X mentions Y to L
<i>bók</i>	X cries	<i>bók-àr</i>	X cries facing Y
<i>béy</i>	X belches	<i>béy-àr</i>	X belches facing L
<i>chís</i>	X is drunk	<i>chís-àr</i>	X is drunk and directs his foolishness at L
<i>fǎf</i>	X says Y	<i>fǎf-àr</i>	X says Y to L, X rebukes Y
<i>gbéth</i>	X yells	<i>gbéth-àr</i>	X yells at L
<i>káshì</i>	X refuses doing Y	<i>káshì-r</i>	X refuses doing Y and the refusal is directed at L
<i>lóm</i>	X says Y	<i>lóm-àr</i>	X says Y to L, X rebukes Y
<i>léy</i>	X sings	<i>léy-àr</i>	X sings to L
<i>nyómì</i>	X grimaces	<i>nyómì-r</i>	X grimaces at L
<i>sónkò</i>	X shouts	<i>sónkò-r</i>	X shouts at L
<i>sór</i>	X coughs	<i>sór-àr</i>	X coughs towards L
<i>shém</i>	X refuses Y	<i>shém-àr</i>	X refuses Y and the refusal is directed at L
<i>tátá</i>	X flirts	<i>tátá-r</i>	X flirts and the flirtation is directed at L

Although the verbs listed in Table 24 do not involve any change of location, the notion of directionality towards L, which is derived from the locative applicative, is implicit in the meaning of the derived verbs. For example, concerning the verb *bánsàr* ‘X is angry at L’, the emotional mood or anger of X is directed at L. Similarly, with the verb *béthàr* ‘X burst out crying facing L’, the emotions conveyed by the facial expression of X are directed at the participant L, which is the target. Thus, none of the derived verbs in Table 24 involves any change of spatial location; instead the locative applicative adds directionality to the meaning of the verb.

Also included in the list of verbs in Table 24 are verbs of communication, often referred to as “speech act verbs”. Verbs of communication do not involve any physical motion or change of location per se. However, they are directional in the sense that they involve the transmission of speech messages from speaker X to the hearer represented as L. Thus, here too the speech messages are directed at L that is the goal.

3.2.2.3 Verbs instantiating schema L5

Out of the 87 verbs in the sample that co-occur with the locative applicative, 15 combine with schema L5 and are listed in Table 25.

Table 25. *Derived verbs combining with schema L5*

<i>verb</i>	<i>gloss</i>	<i>verb + LOC</i>	<i>gloss</i>
<i>báni</i>	X reclaims Y	<i>báni-r</i>	X reclaims Y from L
<i>bó</i>	X lends Y to R	<i>bó-r</i>	X borrows Y from R (that is analogous to L)
<i>gbáshì</i>	X takes away Y	<i>gbáshì-r</i>	X takes away Y from L
<i>gbîp</i>	X swoops down on Y	<i>gbîp-àr</i>	X swoops down on Y from L
<i>káshì</i>	X retracts Y	<i>káshì-r</i>	X retracts Y from L
<i>kéyà</i>	X steals Y	<i>kéy-àr</i>	X steals Y from L

<i>lémpì</i>	X swoops down on Y	<i>lémpì-r</i>	X swoops down on Y from L
<i>m'ánk</i>	X hides Y	<i>m'ánk-àr</i>	X hides Y from L
<i>lìŋ</i>	X pulls Y	<i>lìŋ-àr</i>	X pulls Y from L
<i>nɔy</i>	X withdraws Y	<i>nɔy-àr</i>	X withdraws Y from L
<i>thól.à</i>	X begs for Y	<i>thólì-r</i>	X begs for Y from L
<i>wáy</i>	X buys Y	<i>wáy-àr</i>	X buys Y from L
<i>yép</i>	X lends Y to R	<i>yép-àr</i>	X borrows Y from L
<i>yémà</i>	X wants Y	<i>yémà-r</i>	X wants Y from L
<i>yíf</i>	X asks for Y	<i>yíf-àr</i>	X asks for Y from L

Each of the derived verbs in Table 25 conveys the notion of performing an event E that is directed away from L. The variable L, in this context, represents a participant that is assigned the participant role of SOURCE.

A couple of the locative derived verbs have assumed idiosyncratic meanings. There are two groups of these verbs. The first group comprises verbs that have both a compositional and non-compositional meaning. One example of these verbs is *bésàr* ‘X digs out Y towards L’. Concerning the compositional meaning of this verb, Y stands in for the entity (e.g., diamonds) that is dug out, and Y is situated in a particular location in the river, for example. This location is represented in the schema of the derived verb by the variable L. The verb *bésàr* also has an extended meaning ‘X undermines Y’; this meaning is non-compositional. Other examples of derived verbs that have both a compositional and non-compositional meaning are the verbs *dír* ‘X eats Y in the presence of L, or X exploits Y’, and *fǔfàr* ‘X says Y to L’ or ‘X rebukes Y’. Thus, whereas one of the meanings of these derived verbs is compositional, the other is not. The derived verbs in Table 26 have only idiosyncratic meanings.

Table 26. *Derived verbs with a non-compositional meaning*

<i>verb</i>	<i>gloss</i>	<i>verb + LOC</i>	<i>gloss</i>
<i>bémpà</i>	X makes Y	<i>bémpà-r</i>	X embellishes Y
<i>đif</i>	X kills Y	<i>đif-àr</i>	X enslaves Y
<i>pá</i>	X says Y	<i>pá-r</i>	X presides over Y
<i>páy</i>	X jumps	<i>páy-àr</i>	X is ready for Y
<i>ráf</i>	X stabs Y	<i>ráf-àr</i>	X enacts Y (a law)
<i>shék</i>	X ties Y	<i>shék-àr</i>	X is determined
<i>thás</i>	X passes Y	<i>thás-àr</i>	X exceeds the limit
<i>thóy</i>	X burns Y	<i>thóy-àr</i>	X burns Y beyond limit
<i>mér</i>	X swallows Y	<i>mér-àr</i>	X swallows Y absent mindedly
<i>mém</i>	X tests Y	<i>mém-àr</i>	X tries performing an action
<i>ránkàth</i>	X rinses Y	<i>ránkàth-àr</i>	X rinses Y over and over
<i>nákàth</i>	X fries Y	<i>nákàth-àr</i>	X fries Y over and over
<i>thám</i>	X tastes Y	<i>thám-àr</i>	X is in the habit of doing E (that is not tasting)
<i>tám</i>	X stands	<i>tám-àr</i>	A causes X to stand up
<i>wóp</i>	X holds Y	<i>wóp-àr</i>	X holds onto Y relentlessly
<i>yák</i>	X launders Y	<i>yák-àr</i>	X performs E (and E is not laundering)

The derived verb *bémpàr* ‘X embellishes Y’ that is derived from *bémpà* ‘X makes Y’ has only the idiosyncratic meaning ‘X embellishes Y’. Also, the derived verb *đifàr* that is derived from the root *đif* ‘X kills Y’ has only the idiosyncratic meaning ‘X enslaves Y’, while the derived verb *pár* that is derived from the verb stem *pá* ‘X says Y’ assumes the idiosyncratic meaning ‘X presides over Y’. In addition, the locative applicative adds the meaning of intensity to the verbs *thásàr* ‘X exceeds the limit’ and *thóyàr* ‘X burns Y beyond limit’ that are derived from the verb root *thás* ‘X passes Y’ and *thóy* ‘X burns Y’ respectively.

When the locative suffix is combined with the verb stem *ránkàth* ‘X rinses Y’ or *nákàth* ‘X fries Y’, the derived verbs assume an iterative meaning. The derived verb *ránkàthàr* takes the iterative meaning ‘X rinses Y again and again’, while the verb *nákàthàr* assumes the iterative meaning ‘X fries Y repeatedly’.

Note that the verb stems *ránkàth* ‘X rinses Y’ and *nákàth* ‘X fries Y’ also derive iterative meaning by reduplicating the verb root. In addition to the iterative meaning, the locative suffix assumes a causative meaning when it is combined with the verb stem *támλ* ‘X stands up’. Thus, the derived verb *támàr* has the meaning ‘A causes X to stand up’. These idiosyncratic uses of the locative applicative *-r* have also been reported by Wilson (1961).

Some verb stems do not combine with the locative applicative. A sample of these verbs is given in Table 27.⁷

Table 27. *Sample of verbs that do not combine with the locative applicative*

<i>verb root</i>	<i>gloss</i>	<i>verb + LOC</i>
<i>bálλ</i>	X marries Y	* <i>bálλ-r</i>
<i>bám̀bà</i>	X carries Y on the back	* <i>bám̀bà-r</i>
<i>báyλ</i>	X gives a handful of Y to R	* <i>báyλ-r</i>
<i>bófàthàr</i>	X beats up Y	* <i>bófàthàr-àr</i>
<i>bóthàr</i>	X loves Y	* <i>bóthàr-àr</i>
<i>béfàth</i>	X worships Y	* <i>béfàth-àr</i>
<i>bákà</i>	X carries Y	* <i>bákà-r</i>
<i>bént</i>	X denies R of Y	* <i>bént-àr</i>
<i>báp</i>	X meets Y	* <i>báp-àr</i>
<i>bápàr</i>	X is present	* <i>bápàr-àr</i>
<i>bér</i>	X visits Y	* <i>bér-àr</i>
<i>báràfì</i>	X pops off Y	* <i>báràfì-r</i>
<i>bét</i>	X sucks Y	* <i>bét-àr</i>
<i>bát</i>	X holds Y	* <i>bát-àr</i>
<i>bóndàs</i>	X enlarges Y	* <i>bóndàs-àr</i>
<i>bónt</i>	X names Y	* <i>bónt-àr</i>
<i>bót</i>	X puts down Y	* <i>bót-àr</i>
<i>búkò</i>	X washes Y/ X bathes Y	* <i>búkò-r</i>
<i>bálbál</i>	X chases Y	* <i>bálbál-àr</i>
<i>bálàr</i>	X approaches Y	* <i>bálàr-àr</i>
<i>bálλ</i>	X hunts Y	* <i>bálλ-r</i>
<i>báy-</i>	X brings Y	* <i>báy-àr</i>
<i>bár</i>	X adds Y	* <i>bár-àr</i>
<i>báthò</i>	X worships Y	* <i>báthò-r</i>
<i>báyàt</i>	X bets Y	* <i>báyàt-àr</i>

⁷ See Table V in the appendix for a full list of the verbs that do not combine with the locative applicative.

<i>chép</i>	X plants Y	* <i>chép-àr</i>
<i>chûm</i>	X fights Y	* <i>chûm-àr</i>
<i>dámàr</i>	X cures Y	* <i>dámàr-àr</i>
<i>déŋ</i>	X puts Y on R's head	* <i>déŋ-àr</i>
<i>dér</i>	X comes/arrives	* <i>dér-àr</i>
<i>đim</i>	X misplaces Y	* <i>đim-àr</i>

Verbs like *báŋ* ‘X brings Y’, *báp* ‘X meets Y’ and *bálà* ‘X marries Y’ that do not take the locative suffix are semantically similar to verbs like *gbáshì* ‘X takes Y’, *lám* ‘X throws Y’ that combine with the locative suffix. This suggests that the incompatibility of the verbs in Table 27 with the locative suffix is possibly unconnected with semantics.

The verbs in Table 27 form a locative construction by means of the periphrastic locative preposition *rò* ‘to/in/on/from’, as demonstrated by example (121), using the basic verb *báp* ‘X meets Y’.

- (121) *ǎ-wàth* *ǎ* *báp* *áŋ-yàrì*
 NC1:DEF-child NC1.SUBJ:DEF meet-LOC NC3:DEF-cat
- rò* *dàwè*
 to/in/on/from market centre

‘The child met the cat in the market centre.’

In example (121), the argument *dàwè* ‘market centre’ maps onto the GOAL. Thus, the verb *báp* ‘X meets Y’ can form a locative construction using the locative preposition *rò* ‘in/on/to/from’, thus suggesting that the failure of this verb and the others in Table 27 to take the locative suffix *-r* is not based on syntax. As far as I know, there is no semantic or syntactic reason why these verbs do not combine with the locative suffix. Therefore, I attribute their failure to combine with the locative suffix to idiosyncratic lexical restrictions.

3.2.3 Mapping and argument realization in a locative construction

As with the causative construction, the participant hierarchy and the precedence hierarchy are the two principles that govern the mapping between participant roles and grammatical relations in a locative construction. In addition, the prominence hierarchy blocks certain semantically plausible locative constructions. These principles are discussed in the following sub-sections.

3.2.3.1 The participant hierarchy in a locative construction

In a transitive-based homogeneous object locative construction, the participant hierarchy is X » L » Y. This means that the argument X is the subject, L maps onto the primary object, and the participant Y is the secondary object. The following example illustrates a transitive-based homogeneous locative construction.

- (122) a. *ǎ-bǎkǎ* *ǎ* *wáy* *k-ǎ-làth*
 NC1:DEF-woman NC1.SUBJ:DEF buy NC2-INDEF-tilapia.fish
 ‘The woman bought some tilapia fish.’
- b. *ǎ-bǎkǎ* *ǎ* *wáy-ǎr* *ǎ-trèdà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1:DEF-trader

 k-ǎ-làth
 NC2-INDEF-tilapia.fish
 ‘The woman bought some tilapia fish from the trader.’

The verb *wáyàr* ‘X buys Y from L’ in (122) is derived from the verb stem *wáy* ‘X buys Y’. In (122a), the nominal *kàlàth* ‘tilapia fish’ is the basic object of the transitive verb Y. The participant *ǎtrèdà* ‘trader’ is L and the participant *ǎbǎkǎ* is X. Thus, the participant hierarchy is X » L » Y, where X is the subject, L is the primary object and Y is the secondary object.

In (124), the verb *pútàr* ‘X lances Y on R in the presence of L’ is derived from the verb stem *pút* ‘X lances Y on R’. In this example, the participant *ónðs* ‘nurse’ is X and is the subject. The participant expressed by the object marker *mì* is L and is the primary object. The participant R, expressed by the object marker *kð* immediately follows the primary object is R, and is the secondary object, while the object marker *ɣì* that expresses Y is the tertiary object. Thus, the participant hierarchy in a ditransitive-based homogeneous locative construction is X » L » R » Y. Note that ditransitive-based constructions where all the post-verbal arguments are nouns are disallowed.

Examples (122b), (123b) and (124b) indicate that the participant X is invariably the subject, and L is the primary object. However, the grammatical relation of Y depends on the valence of the verb. In a transitive-based locative construction, Y is the primary object, while in a ditransitive-based homogeneous locative construction, Y maps onto the tertiary object, and R maps onto the secondary object which indicates that the mapping of the participant Y to grammatical relation is not fixed.

3.2.3.2 *The precedence hierarchy in a locative construction*

As in a causative construction and in a basic ditransitive construction, the precedence hierarchy requires the argument that is expressed by an object marker to precede the nominal object. Thus, for each nominal object in a locative construction, replacing it with an object marker moves it closer to the verb, as illustrated in the examples in (125).

- (125) a. *ǎ-bàkà* *ǎ* *wáy-ǎr* *ǎ-trèdà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1:DEF-trader

k-à-làth

NC2-INDEF-tilapia.fish

‘The woman bought some tilapia fish from the trader.’

- b. *ǎ-bàkà* *ǎ* *wáy-ǎr* *ɣà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC5.OBJ

ǎ-trèdà

NC1:DEF-trader

‘The woman bought them from the trader.’

- c. *ǎ-bàkà* *ǎ* *wáy-ǎr* *kà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1.OBJ

k-à-làth

NC2-INDEF-tilapia fish

‘The woman bought some tilapia fish from him/her.’

In the homogeneous object construction in (125a), the applied object L *ǎ-trèdà* ‘trader’ is adjacent to the verb and is the primary object, while Y (i.e., *kà-làth* ‘tilapia fish’) is the secondary object. In the heterogeneous object construction in (125b), the nominal *kà-làth* ‘tilapia fish’ is replaced by the object marker *ɣà*; therefore, it is promoted to the primary object, while the nominal *ǎ-trèdà* ‘trader’ that is the primary object in (125a) is demoted to the secondary object. In (125c), the nominal *ǎ-trèdà* ‘trader’ is replaced by the object marker *kà* and is the primary object, while the participant *kà-làth* ‘tilapia fish’ that is the nominal is demoted to the secondary object. Thus, these examples indicate that the object that is expressed by an object marker always precedes the nominal object.

So far, I have demonstrated that a participant that is realized as an object marker is assigned higher grammatical relation than a participant that is

expressed by a nominal. This implies that a locative construction is grammatical whether or not the participant L is the primary object or not. However, some complexities are realized with ditransitive locative constructions. In a ditransitive-based heterogeneous object locative construction, certain combinations of post-verbal arguments are not permissible, even though they comply with the precedence hierarchy. These impermissible constructions are schematized in (126).

- (126) a. *Y(OM) » L(NP) » R(NP)
 b. *R(OM) » L(NP) » Y(NP)

On the other hand, ditransitive-based constructions listed in (127) are permissible.

- (127) a. L(OM) » Y(OM) » R(NP)
 b. L(OM) » R(OM) » Y(NP)
 c. L(OM) » R(NP) » Y(NP)

The basic difference between the constructions in (126) that are disallowed and the constructions in (127) that are allowed is that in the latter the participant L maps onto the primary object, while in the former either the participant Y or R is the primary object. To capture the grammaticality and ungrammaticality of the two sets of constructions (i.e., 126 and 127), I appeal to the constraint in (128).

- (128) *Constraint on ditransitive locative construction:*
 In a locative applicative construction based on a ditransitive verb, L must be expressed as an object marker (OM). The construction is ungrammatical otherwise.

The constraint in (128) captures the fact that constructions with three nominals, mentioned earlier, are ruled out. The constraint also implies that the participant L is always the primary object because it is higher on the participant hierarchy.

3.2.3.3 The prominence hierarchy in a locative construction

As with the causative construction and a basic ditransitive construction, semantically plausible locative constructions that combine object markers are blocked if the order of precedence determined by the participant hierarchy or precedence hierarchy violates the prominence hierarchy 1/2 » 3ANIM » 3INANIM. Example (129a) illustrates a semantically plausible construction that is blocked by the prominence hierarchy.

- (129) a. *àŋ m'ínk-àŕ ɣà mǐ
 2SG.SUBJ hide-LOC NC5.OBJ 1SG.OBJ
 Intended meaning: 'You hid me from them.'
- b. àŋ m'ínk mǐ rò ɣà ró
 2SG.SUBJ hide 1SG.OBJ to them there
 'You hid me from them.'

In (129a), the participant expressed by the object marker *ɣà* is L, and precedes the participant Y *mǐ*. Thus, (129a) obeys the participant hierarchy X » L » Y in a locative construction. However, the sentence is still ungrammatical because it violates the prominence hierarchy, which blocks any locative construction where the third person animate object marker *ɣà* outranks the first person object marker *mǐ*. To express the intended meaning of (129a), we need the periphrastic locative construction in (129b).

In addition, the prominence hierarchy can be illustrated using a locative construction where the second person plural object marker *nù* precedes the third person singular inanimate object marker *kì*. The following example illustrates this construction type.

- (130) *ś-làngbà ś lám-ə̀r nù kì*
 NC1:DEF-man NC1.SUBJ:DEF throw-LOC 2PL.OBJ NC2.OBJ
 ‘The man threw it at you (pl).’

In (130), the second person object marker *nù* precedes the third person inanimate object marker *kì*. In this example, the participant expressed by the object marker *nù* is L and precedes the participant *kì* that is Y. Therefore, example (130) obeys the precedence hierarchy and indicates that the sentence: ‘the man threw it at you (pl)’ is possible with a locative applicative.

However, as indicated by the ungrammaticality of (131a), the sentence:

‘The man threw you at it’ is impossible with the locative applicative.

- (131) a. **ś-làngbà ś mánk-ə̀r ɣà*
 NC1:DEF-old woman NC1.SUBJ:DEF hide-LOC NC5.OBJ
nù
 2PL.OBJ
 Intended meaning: ‘The man hid you (pl) from them.’

- b. *ś-làngbà ś mánk ɣà rò nù ró*
 NC1:DEF-man NCL.SUBJ:DEF hide NC5.SG to 2PL.OBJ there
 ‘The man hid you (pl) at them.’

Note that in (131a), the participant expressed by the object marker *ɣà* is L and precedes the participant *nù*, which is Y. Thus, (131a) obeys the participant hierarchy X » L » Y in a locative construction. However, the sentence is still ungrammatical because it violates the prominence hierarchy, which blocks any locative construction where the third person animate object marker *ɣà* precedes the second person object marker *nù*. To express the intended meaning of (131a), we need the periphrastic locative construction in (131b).

3.2.4 *Summary of the locative applicative*

The locative applicative has the syntactic property of increasing the valence of the verb by adding an applied object expressing some type of location. It combines with transitive, intransitive and ditransitive verbs. However, certain ditransitive-based locative constructions are disallowed. A ditransitive-based locative construction where the only object marker (OM) in the construction does not express L is not allowed.

In terms of schemas, locative *-r* is associated with five schemas, three (L3, L4, L5) of which are instantiated in the meaning of the derived verbs. These three schemas differ in the type of event and participants that are involved in the event. Schema L3 involves a static event and the applied object L is assigned the participant role of LOCATION. Schema L4 (i.e., the allative schema) and L5 (i.e., the ablative schema) denote directionality; the former denotes direction towards L, and the participant L is assigned the participant role of GOAL. The latter (i.e., schema L5) denotes direction away from L, and L corresponds to the SOURCE.

The data analyzed indicate that the meaning of some derived verbs is predictable from the meaning of their component parts. On the other hand, some derived verbs have assumed idiosyncratic meanings that are not a function of their composite parts. In this regard, the meaning of each derived verb would have to be analyzed or learned individually.

Furthermore, evidence from the data indicates that the participant hierarchy and the precedence hierarchy govern the mapping and realization of post-verbal arguments in a locative construction. In a homogeneous object

construction, the participant hierarchy $X \gg L \gg R \gg Y$ determines the order in which post-verbal arguments and their participant roles are realized. The grammatical relation of Y depends on the valence of the verb. In a transitive-based homogeneous locative construction, the participant Y maps onto the secondary object. However, in a homogeneous locative construction that is derived from a ditransitive verb, Y is the tertiary object and R is the secondary object, which indicates that the mapping of the participant role corresponding to Y (usually the THEME) varies.

In a ditransitive-based heterogeneous object construction, the participant L is always the primary object. Therefore, L is always expressed as an object marker in this construction type. However, in a transitive-based heterogeneous object construction, the participant that is marked by an object marker is closer to the verb than the nominal object. Thus, L is the primary object if it is expressed by an object marker, and Y is expressed by a noun. The participant L is the secondary object if it is expressed by a noun and Y is expressed by an object marker. Thus, the mapping of participant roles to grammatical relations in transitive-based heterogeneous object locative constructions is not fixed. In addition, the prominence hierarchy blocks certain semantically plausible locative constructions that obey the participant hierarchy and the precedence hierarchy.

3.3. The instrumental applicative

The Temne instrumental suffix is typologically unusual for an applicative in that it has variable but regular syntactic effects on the valence of its base. It can add one applied object, either an instrument (I) or a comitative (C), or it can add two

applied objects, I and C, to the valence of the verb. Example (132) illustrates an intransitive-based instrumental construction showing all three possibilities with the same verb stem *thómò* ‘X dances’.

- (132) a. *áŋ-yàmàmà* *ó* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’
- b. *áŋ-yàmàmà* *ó* *thómò-Ánè* *t-à-gbàràkà*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-INST NC6-INDEF-stilt
 ‘The acrobat danced with stilts.’
- c. *áŋ-yàmàmà* *ó* *thómò-Ánè* *óbàkò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-INST NC1:DEF-woman
 ‘The acrobat danced with the woman.’
- d. *áŋ-yàmàmà* *ó* *thómò-Ánè* *óbàkò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-INST NC1:DEF-woman
- t-à-gbàràkà*
 NC6-INDEF-stilt
 ‘The acrobat together with the woman danced with stilts.’

Example (132a) shows the base intransitive verb *thómò* ‘X dances’. In (132b), which has the derived verb *thómòánè* ‘X dances with I’, the instrumental applicative introduces the applied object I *tàgbàràkà* ‘stilts’ to the clause, and the new participant is the primary object. In (132c), which has the derived verb *thómòánè* ‘X dances together with C’, the instrumental applicative adds the applied object C that is the primary object. In (132d), the participants C, *óbàkò* ‘woman’ and I *tàgbàràkà* ‘stilts’ are both added to the clause; C is the primary object and I is the secondary object.

As with intransitive verbs, the instrumental applicative also increases the valence of the transitive verb by one or two applied objects, as demonstrated by the following examples.

- (133) a. *ǎ-láŋgbà ǎ gbép áŋ-kòm̩p*
 NC1:DEF-man NC1.SUBJ:DEF climb NC3:DEF-palm tree
 ‘The man climbed the palm tree.’
- b. *ǎ-láŋgbà ǎ gbép-áŋnè áŋ-kòm̩p*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC3:DEF-palm tree

k-à-pàr
 NC2-INDEF-climbing rope
 ‘The man climbed the palm tree using a climbing rope.’
- c. *ǎ-láŋgbà ǎ gbép-áŋnè ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC1:DEF-child

áŋ-kòm̩p
 NC3:DEF-palm tree
 ‘The man climbed the palm tree with the child.’
- d. *ǎ-láŋgbà ǎ gbép-áŋnè ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC1:DEF-child

áŋ-kòm̩p k-à-pàr
 NC3:DEF-palm tree NC2-INDEF-climbing rope
 ‘The man together with the child climbed the palm tree using a climbing rope.’

Example (133b) has the derived verb *gbépáŋnè* ‘X climbs Y with I’, derived from the verb stem *gbép* ‘X climbs Y’. In this example, the argument *áŋkòm̩p* ‘palm tree’ that is the basic object of the verb is the primary object, while the applied object *kàpàr* ‘climbing rope’ is the secondary object. In (133b), the applied object is the secondary object (lower than Y), while in (133c), which has the derived verb *gbépáŋnè* ‘X climbs Y together with C’, the applied object *ǎwàth*

‘child’, which is the primary object, is lower than Y *áηkòm̩p* ‘palm tree’, which is the secondary object. In (133d) where both C and I are introduced to the clause, the participant I *kàpàr* ‘climbing rope’ surfaces as the tertiary object, occupying the most oblique position; the participant C *ówàth* ‘child’ is the primary object, while Y *áηkòm̩p* is demoted to the secondary object.

The participant C and I may be distinguished based on syntax. The two participants differ when they appear with the participant Y. When C and I co-occur in a homogeneous object construction as in (133d), the participant C always maps onto a higher grammatical relation than the participant I. Thus, in the transitive-based instrumental construction in (133d), C is the primary object and I is the tertiary object.

The instrumental applicative also combines with ditransitive verbs, as indicated by (134b).

- (134) a. *ów-bàkà* *ów* *nút* *ów-wàth* *áη-nàk*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:DEF-child NC3:DEF-rice
 ‘The woman fed the child some rice.’
- b. *ów-bàkà* *ów* *nút-ánè* *ów-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF feed-INST NC1:DEF-child
- áη-nàk* *k-à-bèp*
 NC3:DEF-rice NC1-INDEF-spoon
 ‘The woman fed the child some rice using a spoon.’

The verb *nútnè* ‘X feeds Y to R using I’ is derived from the verb stem *nút* ‘X feeds Y to R’. In (134b), the applied object I is the nominal *kàbèp* ‘spoon’ and is the tertiary object, while the basic objects of the ditransitive verb are the

participants R *ǒwàth* ‘child’ and Y *áḡnàk* ‘rice’ that are the primary and secondary object respectively.

Although the instrumental applicative combines with ditransitive verbs, there are some restrictions. It cannot add a comitative C or both a comitative C and an instrument I to the valence of the ditransitive verb, as indicated by the ungrammaticality of (135a) and (135b).

(135) a. **ǒ-bòkò* *ǒ* *nút-áḡnè* *ǒ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF feed-INST NC1:DEF-old man

ǒ-wàth *áḡn-àk*
 NC1:DEF-child NC3:DEF-rice

Intended meaning:

‘The woman together with the old man fed the child some rice.’

b. **ǒ-bòkò* *ǒ* *nút-áḡnè* *ǒ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF feed-INST NC1:DEF-old man

ǒ-wàth *áḡn-àk* *k-à-bèp*
 NC1:DEF-child NC3:DEF-rice NC1-INDEF-spoon

Intended meaning: ‘The woman used a spoon to feed the child some rice for the old man.’

Example (135a) and (135b) are impossible because schema I3 [X performs E] accompanied by C’ that includes the comitative C, and schema I4 [X performs E] using I accompanied by C’ that combines both the comitative C and instrument I do not combine with ditransitive verbs.

3.3.1 Schemas of the instrumental applicative

Like the locative, the instrumental applicative is a polysemous morpheme that is associated with a range of meanings schematized in Figure 9.

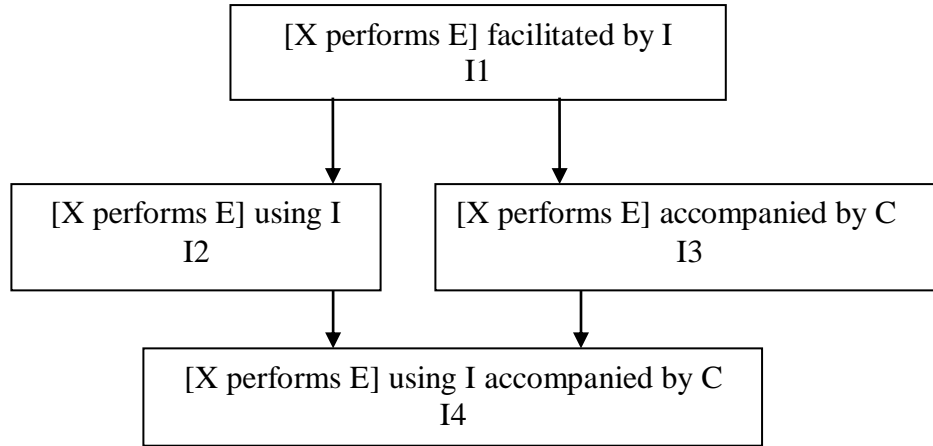


Figure 9. Schemas of the INST construction

Schema I1 is the most abstract schema and is the super-schema. Schemas I2 and I3 are instantiations of schema I1. Schema I2 adds a new participant I that is assigned the role of INSTRUMENT, defined here as ‘I such that X uses I as a means or tool to perform E’. The instrument in Temne is different from that in languages like the Southern Lake dialect of Chichewa, where according to Baker (1988a), only inanimate event-participants are assigned the role of INSTRUMENT.

Schema I2 allows abstract notions and animates to act as instruments, as shown in the following examples.

- (136) a. *ǎ-lángbà* *ǎ* *gbús* *áŋ-bòlì*
 NC1:DEF-man NC1.SUBJ:DEF plough NC3:DEF-swamp
 ‘The man ploughed the swamp.’
- b. *ǎ-làngbà* *ǎ* *gbús-ánè* *áŋ-bòlì*
 NC1:DEF-man NC1.SUBJ:DEF plough-INST NC3:DEF-swamp
- ù-nà*
 NC1:INDEF-cow
 ‘The man ploughed the swamp with a cow.’

- c. **ǎ-làngbà* *ǎ* *gbús-ǎnè* *ù-nà*
 NC1:DEF-man NC1.SUBJ:DEF plough-INST NC1:INDEF-cow
- ǎy-bòlǐ*
 NC3:DEF-swamp

In (136b), the participant *únà* ‘cow’ is I and is used as a tool to perform E (i.e., plough the swamp). This example indicates that animates can also serve as an instrument and that semantics alone cannot distinguish the comitative and the instrument in Temne.

In addition, abstract nouns can serve as instruments, as illustrated by the following example.

- (137) a. *ǎ-kèy* *ǎ* *rǎn-à* *à-k-àlǐ*
 NC1:DEF-thief NC1.SUBJ:DEF piggyback NC3:INDEF-pumpkin
 ‘The thief carried the pumpkin on his/her back.’
- b. *ǎ-kèy* *ǎ* *rǎn-ǎnè* *à-k-àlǐ*
 NC1:DEF-thief NC1.SUBJ:DEF piggyback-INST NC3:INDEF-pumpkin
- à-fǎsǎ*
 NC3:INDEF-strength
 ‘The thief carried the pumpkin on his/her back with strength.’

Example (137b) has the verb *rǎn-ǎnè* ‘X carries Y on his/her back by means of I’ that is derived from the verb stem *rǎn-à* ‘X piggybacks Y.’ In this example, the participant *à-fǎsǎ* ‘strength’ is the means used by the agent *ǎkèy* ‘thief’ to carry the pumpkin on his/her back.

Example (138b) illustrates schema I3 of the instrumental construction ‘[X performs E] together with C’ using the verb *gbép* ‘X climbs Y’. When the instrumental applicative is added to this verb, the new participant that is added to

the clause is a comitative C, defined as “C such that X performs E together with C”.

- (138) a. *ǎ-lángbà* *ǎ* *gbép* *áŋ-kòm̩p*
 NC1:DEF-man NC1.SUBJ:DEF climb NC3:DEF-palm tree
 ‘The man climbed the palm tree.’
- b. *ǎ-lángbà* *ǎ* *gbép-ánè* *ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC1:DEF-child
- áŋ-kòm̩p*
 NC3:DEF-palm tree
 ‘The man together with the child climbed the palm tree.’

The verb *gbépánè* ‘X climbs Y using I’ is derived from the verb stem *gbép* ‘X climbs Y’. In (138b) where the verb stem *gbép* ‘X climbs Y’ is combined with the instrumental applicative, the participant *ǎlángbà* ‘man’ is X, and performs the event E of climbing the palm tree together with the participant *ǎwàth* ‘child’ that is C. In this example, the participant C *ǎwàth* ‘child’ is the primary object. Thus, schema I3 maintains that the participants X and C co-participate in the event described by the basic verb.

Schema I4 ‘[X performs E] together with C, using I’ adds both I and C to the construction, as demonstrated by example (139b), which illustrates schema I4 using the verb *fǎshìánè* ‘X crosses Y together with C using I’. This verb is derived from the verb stem *fǎshì* ‘X crosses Y’.

- (139) a. *ǎ-lángbà* *ǎ* *fǎshì* *k-á-bàth*
 NC1:DEF-man NC1.SUBJ:DEF cross NC2-DEF-river
 ‘The man crossed the river.’

- b. *ɔ̀-làngbà* *ɔ̀* *fǎshì-ínè* *ɔ̀-yà*
 NC1:DEF-man NC1.SUBJ:DEF cross-INST NC1:DEF-old woman
- k-á-bàth* *à-bìl* *à-thòyì*
 NC2-DEF-river NC3:INDEF-boat NC3:INDEF-leaking
- ‘The man together with the old woman crossed the river in a leaking boat.’

In (139b), the participant *ɔ̀yà* ‘old woman’ and *àbìl àthòyì* ‘leaking boat’ that are added by the instrumental applicative are the participants C and I respectively. Both participants take part in the event described by the predicate. Thus, unlike schema I2, which adds only the participant I to the clause, and schema I3, which adds only the participant C, schema I4 adds both I and C to the construction.

3.3.2 Combination of the instrumental applicative with a verb root

Out of the 300 verbs used in this analysis, 193 (64.3%) combine with schema I2 of the instrumental applicative. Table 28 comprises a sample of these verbs.⁸

Table 28. *Sample of verbs that combine with schema I2 of the instrumental suffix*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>gbɔ̀l</i>	X grinds Y	<i>gbɔ̀l-ínè</i>	X grinds Y using I
<i>gbák</i>	X cuts Y	<i>gbák-ínè</i>	X cuts Y using I
<i>gbékàr</i>	X clips Y	<i>gbékàr-ínè</i>	X clips Y using I
<i>gbál</i>	X sweeps Y	<i>gbál-ínè</i>	X sweeps Y using I
<i>gbám</i>	X pounds Y	<i>gbám-ínè</i>	X pounds Y using I
<i>gbénth</i>	X yells	<i>gbénth-ínè</i>	X yells by means of I
<i>gbép</i>	X climbs Y	<i>gbép-ínè</i>	X climbs Y using I
<i>gbápàr</i>	X covers Y	<i>gbápàr-ínè</i>	X covers Y using I
<i>gbát</i>	X hunts Y	<i>gbát-ínè</i>	X hunts Y using I
<i>gbéthà</i>	X cuts Y	<i>gbéthà-ínè</i>	X cuts down Y using I
<i>gbíp</i>	X catches Y	<i>gbíp-ínè</i>	X catches Y using I
<i>gbón</i>	X touches Y	<i>gbón-ínè</i>	X touches Y with I
<i>gbúkè</i>	X runs	<i>gbúkè-ínè</i>	X runs using I
<i>gbál</i>	X quarrels	<i>gbál-ínè</i>	X quarrels with Y using I
<i>gbánth</i>	X crushes Y	<i>gbánth-ínè</i>	X crushes Y using I

⁸ See Table IX in the Appendix for a full list of the verbs that combine with the instrumental applicative.

<i>gbát</i>	X punches Y	<i>gbát-ínè</i>	X punches Y with I
<i>kál</i>	X roasts Y	<i>kál-ínè</i>	X roasts Y with I
<i>kánthà</i>	X shuts down Y	<i>kánthà-ínè</i>	X shuts down Y with I
<i>kàràṅ</i>	X reads Y	<i>kàràṅ-ínè</i>	X reads Y using I (e.g. lenses)
<i>kásàrà</i>	X endangers Y	<i>kásàrà-ínè</i>	X endangers Y using I
<i>káshì</i>	X retracts Y (wood)	<i>káshì-ínè</i>	X retracts Y (wood) with I
<i>kópàrà</i>	X asks for Y	<i>kópàrà-ínè</i>	X withdraws Y by means of I
<i>kóth</i>	X walks	<i>kóth-ínè</i>	X walks with I (stilts)
<i>kál</i>	X pours Y	<i>kál-ínè</i>	X pours Y with I
<i>káì</i>	X looks at Y	<i>káì-ínè</i>	X looks at Y with I
<i>kérà</i>	X carries Y	<i>kérà-ínè</i>	X carries Y by means of I
<i>kèth</i>	X scrapes Y	<i>kèth-ínè</i>	X scrapes Y using I
<i>kéyà</i>	X steals Y	<i>kéyà-ínè</i>	X steals Y using I
<i>kóchì</i>	X unties Y	<i>kóchì-ínè</i>	X unties Y using I
<i>kóm</i>	X gives birth to Y	<i>kóm-ínè</i>	X gives birth to Y by means of I
<i>kóth</i>	X ties Y	<i>kóth-ínè</i>	X ties Y in a bundle using I
<i>kúl</i>	X makes Y ripe	<i>kúl-ínè</i>	X makes Y ripe by means of I
<i>kúlò</i>	X cries	<i>kúlò-ínè</i>	X cries by means of I
<i>kúlùṅ</i>	X dilutes Y	<i>kúlùṅ-ínè</i>	X dilutes Y using I
<i>kúth</i>	X fetches Y	<i>kúth-ínè</i>	X fetches Y (water) using I
<i>káchì</i>	X pulls out Y	<i>káchì-ínè</i>	X pulls out Y by means of I
<i>kárà</i>	X brings Y	<i>kárà-ínè</i>	X brings Y by means of I
<i>káwòndì</i>	X preaches Y	<i>káwòndì-ínè</i>	X preaches Y using I
<i>lóm</i>	X talks about Y	<i>lóm-ínè</i>	X talks about Y by means of I
<i>lám</i>	X throws away Y	<i>lám-ínè</i>	X throws away Y using I
<i>lémpì</i>	X snatches Y	<i>lémpì-ínè</i>	X snatches Y using I
<i>léṅ</i>	X sings Y	<i>léṅ-ínè</i>	X sings Y using I
<i>làsàr</i>	X destroys Y	<i>làsàr-ínè</i>	X destroys Y using I
<i>lìṅ</i>	X pulls Y	<i>lìṅ-ínè</i>	X pulls Y using I
<i>lómì</i>	X identifies Y	<i>lómì-ínè</i>	X identifies Y using I
<i>láfàthì</i>	X turns over Y	<i>láfàthì-ínè</i>	X turns Y in another side using I
<i>már</i>	X helps Y	<i>már-ínè</i>	X helps Y with I
<i>mòtá</i>	X dives in Y	<i>mòtá-ínè</i>	X dives in Y using I
<i>mér</i>	X swallows Y	<i>mér-ínè</i>	X swallows Y using I
<i>mún</i>	X drinks Y	<i>mún-ínè</i>	X drinks Y using I
<i>mánk</i>	X buries/hides Y	<i>mánk-ínè</i>	X hides Y by means of I
<i>nál</i>	X insults Y	<i>nál-ínè</i>	X insults Y by means of I
<i>náshì</i>	X wipes off Y	<i>náshì-ínè</i>	X wipes off Y with I
<i>nóy</i>	X takes away Y from R	<i>nóy-ínè</i>	X takes away Y from R using I
<i>nút</i>	X feeds Y	<i>nút-ínè</i>	X feeds R with Y using I
<i>nántà</i>	X marries Y	<i>nántà-ínè</i>	X marries Y with I

For each of the derived verbs in Table 28, there is an added participant, I that is used as a tool or means to accomplish the event expressed by the predicate. As we saw in the previous section, this participant may be animate.

A subset of the verbs that take schema I2 can take both schemas I3 and I4.

These verbs are listed in Table 29.

Table 29. *Verbs in the sample that take schema I3 and I4*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>búkɔ</i>	X bathes	<i>búkɔ-ánè</i>	X bathes together with C, using I
<i>báyàt</i>	X bets Y	<i>báyàt-ánè</i>	X and C bet, using I as a stake
<i>chím</i>	X fights Y	<i>chím-ánè</i>	X fights with C, using I
<i>dī</i>	X eats Y	<i>dī-ánè</i>	X together C eat Y using I
<i>dirà</i>	X sleeps	<i>dirà-ánè</i>	X and Y sleep together using I
<i>fənthà</i>	X lies down	<i>fənthà-ánè</i>	X sleeps with C using I
<i>fíl</i>	X flies	<i>fíl-ánè</i>	X flies with C by means I
<i>gbép</i>	X climbs Y	<i>gbép-ánè</i>	X and C climb Y using I
<i>gbúkè</i>	X runs	<i>gbúkè-ánè</i>	X runs with C using I
<i>gbál</i>	X quarrels	<i>gbál-ánè</i>	X quarrels with C by means of I
<i>kóth</i>	X walks	<i>kóth-ánè</i>	X walks with C using I
<i>kérà</i>	X carries Y	<i>kérà-ánè</i>	X carries C along using I
<i>kárà</i>	X brings Y	<i>kárà-ánè</i>	X brings C along using I
<i>léŋ</i>	X sings Y	<i>léŋ-ánè</i>	X sings Y with C using I
<i>thór</i>	X climbs down	<i>thór-ánè</i>	X climbs down with C using I
<i>mótà</i>	X dives	<i>mótà-ánè</i>	X dives with C using I
<i>páy</i>	X gets ready/jumps	<i>páy-ánè</i>	X jumps with C using to I

Unlike the locative applicative where the choice of a schema is not free, the selection of one of the three schemas (I2, I3 or I4) of the instrumental applicative by a verb is free, and is based on the speaker's desired meaning. If the speaker's desired meaning is schema I3, the participant C is added to the construction and is the primary object, while Y (if expressed) is the secondary object.

Some derived verbs have assumed idiosyncratic meanings that are not a function of the meaning of their composite parts. These derived verbs are listed in Table 30.

Table 30. *Non-compositional V-ánè constructions*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>ból</i>	X grows tall	<i>ból-ánè</i>	X goes away
<i>bót</i>	X puts down Y	<i>bót-ánè</i>	X puts down Y using I/X seduces Y
<i>báp</i>	X meets Y	<i>báp-ánè</i>	X catches R red-handed with Y
<i>gbíp</i>	X catches Y	<i>gbíp-ánè</i>	X catches Y red-handed with Y
<i>chér</i>	X leaves Y alone	<i>chér-ánè</i>	X is left on his/her own
<i>kóm</i>	X gives birth to Y	<i>kóm-ánè</i>	X is born with Y (a spot)
<i>thólà</i>	X begs for Y	<i>thólà-ánè</i>	X curses/blesses Y
<i>támà</i>	X stands	<i>támà-ánè</i>	X stands up using I/X chastises Y
<i>dirà</i>	X sleeps	<i>dirà-ánè</i>	X sleeps using I/X seduces Y/X is drowsy
<i>fánthà</i>	X lies down	<i>fánthà-ánè</i>	X seduces Y/X slept with Y using I

The derived verbs *támánè*, *bótánè* and *diránè* differ from the other verbs in Table 30 in the sense that each of the three verbs has a meaning that is compositional and another that is non-compositional. For example, the derived verb *bótánè* has the compositional meaning ‘X puts down Y using I’, and the non-compositional meaning ‘X seduces Y’. Similarly, the derived verb *támánè* has the compositional meaning ‘X stands up using I’, and the idiosyncratic meaning ‘X chastises Y’. In the same vein, the derived verb *diránè* has the meaning ‘X sleeps using I’, which is compositional, and ‘X sleeps with Y’, or ‘X is drowsy’, which is not.

Some of the derived verbs in Table 30 have only the non-compositional meaning. They include the verbs *bólánè* ‘X goes away’ that is derived from the verb stem *ból* ‘X grows tall’, *bápàránè* ‘X is caught red-handed with Y’ that is derived from the verb stem *báp* ‘X meets Y’ and *chéránè* ‘X leaves Y on his own’ that is derived from the verb root *chér* ‘X leaves Y’, *thólánè* ‘X curses Y’ that is derived from *thólà* ‘X begs for Y’. Since these idiosyncratic meanings are not predictably derived from the meaning of their component parts, it is difficult to

make generalizations about their meanings. Therefore, the meaning of each derived verb would have to be analyzed individually.

3.3.3 *Mapping and argument realization in an instrumental construction*

Like the causative and locative construction, the mapping between participant roles and grammatical relations in an instrumental construction is governed by the participant hierarchy and the precedence hierarchy. In addition, certain semantically plausible instrumental constructions that obey the participant hierarchy and the precedence hierarchy are blocked if they violate the prominence hierarchy. I will examine each of these principles in detail in the following subsections.

3.3.3.1 *The participant hierarchy in an instrumental construction*

The participant hierarchy, $X \gg C \gg Y \gg I$, governs the mapping from participant roles to grammatical relations in a homogeneous object instrumental construction. In this case, the participant I is ranked lowest and the participant C is ranked highest of all objects. However, if the participant C is not expressed, as in an instrumental construction combining with schema I2, the participant Y is the primary object and I is the secondary object. The following example illustrates the participant hierarchy in a transitive-based instrumental construction combining with schema I2.

- (140) a. *ǎ-làngbà* *ǎ* *bór* *ńń-yòkà*
 NC1:DEF-man NC1.SUBJ:DEF peel NC3:DEF-cassava
 ‘The man peeled the cassava.’

- b. *ǎ-làngbà* ǎ *bór-ǎnè* *ǎŋ-yòkà*
 NC1:DEF-man NC1.SUBJ:DEF peel-INST NC3:DEF-cassava
- ǎ-thìs* *ǎ-fī*
 NC3:INDEF-knife NC3:INDEF-dull
- ‘The man peeled the cassava with a dull knife.’

The verb *bórǎnè* ‘X peels Y using I’ is derived from the verb stem *bór* ‘X peels Y’. The position of the participant I in the hierarchy is shown in (140b) which, as in the examples seen previously, shows that Y, which is marked by the participant *ǎŋyòkà* ‘cassava’, outranks I. Therefore, the participant hierarchy is X » Y » I.

Example (141) illustrates the participant hierarchy in a homogeneous object instrumental construction combining schema I3.

- (141) a. *ǎ-làngbà* ǎ *mótà* *ǎ-mànt*
 NC1:DEF-man NC1.SUBJ:DEF dive NC3:DEF-water
 ‘The man dived in the water.’
- b. *ǎ-làngbà* ǎ *mótà-ǎnè* *ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF dive-INST NC1:DEF-child
- ǎ-mànt*
 NC3:INDEF-water
- ‘The man together with the child dived in the water.’

The verb *mótàǎnè* ‘X dives together with C’ is derived from the verb stem *mótà* ‘X dives’. In (141b), the applied object C outranks the basic object of the verb Y. Thus, the participant C *ǎwàth* ‘child’ is the primary object and Y *ǎmànt* ‘water’ is the secondary object, and the participant hierarchy is X » C » Y.

In an intransitive-based homogeneous object construction combining with schema I4, the participant C outranks the participant I, as demonstrated in (142b).

- (142) a. *ǎŋ-yàmàmà* ǎ *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’

- b. *ńy-yàmàmà* *ɔ̌* *thómò-ńnè* *ɔ̌-bòkò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-INST NC1:DEF-woman
- t-à-gbàràkà*
 NC6-INDEF-stilt
- ‘The acrobat together with the woman danced with stilts.’

In (142b), the participants C, *ɔ̌bòkò* ‘woman’ and I *tàgbàràkà* ‘stilts’ are both added to the clause by the instrumental applicative. In this example, the participant C outranks the participant I, hence C is the primary object and I is the secondary object. Thus, the participant hierarchy is X » C » I.

In a transitive-based homogeneous object construction combining with schema I4, the participant C outranks both Y and I and the participant Y outranks I, as demonstrated by example (143).

- (143) a. *ɔ̌-làngbà* *ɔ̌* *gbép* *ńy-lémàrè*
 NC1:DEF-man NC1.SUBJ:DEF climb NC3:DEF-orange.tree
 ‘The man climbed the orange tree.’
- b. *ɔ̌-làngbà* *ɔ̌* *gbép-ńnè* *ɔ̌-wàth*
 NC1:DEF-man NC1.SUBJ:DEF climb-INST NC1:DEF-child
- ńy-lémàrè* *k-à-pàr*
 NC3:DEF-orange.tree NC2-INDEF-climbing rope
 ‘The man climbed the orange tree with the child, using a climbing rope.’

The verb *gbépńnè* ‘X climbs Y using I’ is derived from the verb *gbép* ‘X climbs Y’. In (143b), the participant C *ɔ̌wàth* ‘child’ is the primary object, the participant Y *ńylémàrè* ‘orange tree’ is the secondary object and the participant I maps onto the tertiary object. Thus, the participant hierarchy is X » C » Y » I.

Summing up, the data analyzed so far indicate that the grammatical relation that is assigned to the participant Y varies across constructions. In a

transitive-based instrumental construction combining with schema I2, the participant Y maps onto the primary object. However, in a transitive-based instrumental construction combining with schema I4, Y is the secondary object. In an intransitive-based instrumental construction conveying schema I4, the participant I is the secondary object, while C is the primary object. Thus, in the case of the participant X and C, the mapping between participant roles and grammatical relations is fixed. However, the grammatical relation assigned to the participant Y or I varies across constructions.

3.3.3.2 The precedence hierarchy in an instrumental construction

In addition to the participant hierarchy, the precedence hierarchy also determines the mapping from participant roles to grammatical relations in an instrumental construction. To illustrate this, I will first consider transitive-based constructions combining with schema I2. Based on the precedence hierarchy, the argument that is expressed as an object marker must precede the nominal object. This phenomenon is illustrated in the examples in (144), which illustrates schema I2, using the transitive form of the verb *búkà* ‘X bathes Y’.

- (144) a. *ǎ-bókà* *ǎ* *búkà-ǎnè* *ǎ-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF bathe-INST NC1:DEF-child
- m-à-sòy* *m-à-bì*
 NC10-INDEF-soap NC10-INDEF-black
- ‘The woman bathed the child using black (locally made) soap.’
- b *ǎ-bókà* *ǎ* *búkà-ǎnè* *mà*
 NC1:DEF-woman NC1.SUBJ:DEF bathe-INST NC10.OBJ
- ǎ-wàth*
 NC1:DEF-child
- ‘The woman bathed the child using it.’

- c. *ǎ-bðkð* *ǎ* *búkð-ǎnè* *kð*
 NC1:DEF-woman NC1.SUBJ:DEF bathe-INST 3SG.OBJ
- m-ð-sòy* *m-ð-bì*
 NC10-INDEF-soap NC10-INDEF-black
- ‘The woman bathed him/her using black soap.’

The derived verb *búkðǎnè* ‘X bathes Y using I’ in (144b) is derived from the verb stem *búkð* ‘X bathes Y’. In (144a), where all the objects are nominal, the participant I *mǎsòy* ‘soap’ is the secondary object, while Y *ǎwàth* ‘child’ is the primary object. However, in (144b) where the participant I is expressed by the object marker *mà* and Y by a nominal, the participant I is the primary object, and Y is the secondary object. In (144c), Y is expressed as an object marker *kð* and is the primary object, while I, which is a nominal, is the secondary object. Thus, post-verbal arguments that are expressed by object markers map onto a higher grammatical relation than objects that are expressed by a nominal.

The precedence hierarchy also applies to constructions that illustrate schema I3, as shown in the examples in (145).

- (145) a. *ǎ-thèm* *ǎ* *mótà-ǎnè* *ǎ-wàth*
 NC1:DEF-old man NC1.SUBJ:DEF dive-INST NC1-child
- ǎ-mǎnt*
 NC3:DEF-water
- ‘The old man together with the child dived in the water.’
- b. *ǎ-thèm* *ǎ* *mótà-ǎnè* *mà*
 NC1:DEF-old man NC1.SUBJ:DEF dive-INST NC10.OBJ
- ǎ-wàth*
 NC1:DEF-child
- ‘The old man together with the child dived in it (water).’

c. *ǝ-thèm* ǝ *mǝtǝ-ǎnè* *kǝ*
 NC1:DEF-old man NC1.SUBJ:DEF dive-INST NC1.OBJ

ǎ-mǎnt
 NC3-water

‘The old man together with him/her dived in the water.’

Example (145a) illustrates the basic verb *mǝtǝ* ‘X dives’. In this example (145a), the participant C *ǝwǎth* ‘child’ is the primary object and *ǎmǎnt* ‘water’ is the secondary object. The verb *mǝtǝǎnè* ‘X dives in Y together with C’ is derived from the verb stem *mǝtǝ* ‘X dives in Y’. In (145b), the basic object Y of the verb is expressed by the object marker *mǎ* and outranks the applied object C, which is expressed by the nominal *ǝwǎth* ‘child’. In (145c), the applied object C is expressed by the object marker *kǝ* and is the primary object, while the basic object *ǎmǎnt* ‘water’ of the verb is the secondary object. Thus, in both (145b) and (145c), the participant that is expressed by an object marker outranks the participant that is expressed by a nominal.

The precedence hierarchy also applies to constructions that illustrate schema I4, as demonstrated by the examples in (146).

(146) a. *ǝ-thèm* ǝ *fǝshǝ-ǎnè* *ǝ-wǎth*
 NC1:DEF-old man NC1.SUBJ:DEF cross-INST NC1:DEF-child

k-ǎ-bǎth *ǎ-bǐl* *ǎ-kùr*
 NC2-DEF-river NC3:INDEF-boat NC3:INDEF-old

‘The old man together with the child crossed the river in an old boat.’

b. *ǝ-thèm* ǝ *fǝshǝ-ǎnè* *ǎ*
 NC1:DEF-old man NC1.SUBJ:DEF cross-INST NC3.3SG

ǝ-wǎth *k-ǎ-bǎth*
 NC1:DEF-child NC2-DEF-river

‘The old man and the child used it (boat) to cross the river.’

- c. *ɔ̀-thèm* *ɔ̀* *fǎshì-ánè* *kɔ̀*
 NC1:DEF-old man NC1.SUBJ:DEF cross-INST 3SG.OBJ
- kì* *à-bìl* *à-kùr*
 NC2.OBJ NC3:INDEF-boat NC3:INDEF-old
- ‘The old man crossed it (river) with him/her using an old boat.’

The derived verb *fǎshìánè* ‘X crosses Y together with C, using I’ in (146b) is derived from the verb stem *fǎshì* ‘X crosses Y’. In (146a) where all the objects are nominals, the participant C *ɔ̀wàth* ‘child’ is the primary object, Y *kàbàth* ‘river’ is the secondary object and the participant I *àbìl àkùr* ‘old boat’ is the tertiary object. However, following the precedence hierarchy, in (146b), the participant I that is expressed by the object marker *ɲì* precedes the participants C *ɔ̀wàth* ‘child’ and Y *kàbàth* ‘river’ that are nominals. Thus, in this example, the participant I is the primary object, while C and Y that are expressed as nominal arguments are the secondary object and tertiary object respectively.

In (146c) the participant C and Y that are expressed by object markers precede the nominal argument *àbìl àkùr* ‘old boat’ that is I. The participant C, which is marked by the object marker *kɔ̀*, is the primary object, Y is the secondary object and I is the tertiary object. Thus, examples (146b) and (146c) indicate that the grammatical relation that is assigned to the participant I, Y and C varies across constructions, and is governed by the precedence hierarchy. In addition, examples (146b) and (146c) indicate that in constructions where the precedence hierarchy and the participant hierarchy apply, the former outranks the latter.

3.3.3.3 The prominence hierarchy in an instrumental construction

As with the causative or locative construction, certain semantically plausible instrumental constructions are blocked if they violate the prominence hierarchy. A case in point is the third person animate object marker and the third person inanimate object marker which co-occur in the order of precedence $k\grave{o} \gg k\grave{i}$ (i.e., 3ANIM \gg 3INANIM), but not in the reversed order $*k\grave{i} \gg k\grave{o}$ (i.e., *3INANIM \gg 3ANIM), as illustrated by the contrast in grammaticality between (147a) and (147b).

- (147) a. \acute{o} -làngbà \acute{o} gbús-Ánè áŋ-bòlì
 NC1:DEF-man NC1.SUBJ:DEF plough-INST NC3:DEF-swamp

\grave{u} -nà
 NC1:INDEF-cow
 ‘The man ploughed the swamp with a cow.’

- b. $*\acute{o}$ -làngbà \acute{o} gbús-Ánè ŋì k\grave{o}
 NC1:DEF-man NC1.SUBJ:DEF plough-INST NC3.OBJ NC1.OBJ

The derived verb *gbúsánè* ‘X ploughs Y, using I’ in (147a) is derived from the verb stem *gbús* ‘X ploughs Y’. Example (147a) illustrates a homogeneous object construction where the participant Y *áŋbòlì* ‘swamp’ precedes the participant I, making it possible to say in Temne ‘the man ploughed the swamp with a cow’. However, this sentence is only possible when all the post-verbal arguments are nouns. When the two post-verbal arguments are replaced by object markers, the sentence is impossible. This is because it violates the prominence hierarchy which requires the animate object marker *k\grave{o}* to precede the inanimate object marker *k\grave{i}*. Note that (147b) obeys the participant hierarchy X \gg Y \gg I. Thus, examples (147a) and (147b) indicate that certain semantically plausible instrumental constructions

that obey the participant hierarchy are blocked if they violate the prominence hierarchy.

3.3.4. Summary of the instrumental applicative

The instrumental applicative increases the valence of the verb by adding up to two applied objects to the clause. It combines with transitive, intransitive and ditransitive verbs. When it is combined with a transitive or intransitive verb, it adds either one or two applied objects to the valence of the verb. These applied objects are identified as C and I and correspond to the participant role of COMITATIVE and INSTRUMENT respectively. However, when it is combined with a ditransitive verb, it can only add one applied object, C or I to the valence of the verb.

In terms of schemas, the instrumental construction is associated with four schemas. Schema I1 is the super-schema, schema I2, I3 and I4 are expressed in the meaning of the derived verbs. Every verb that occurs with the instrumental applicative combines with schema I2. In contrast, schemas I3 and I4 are expressed only when the instrumental applicative combines with a certain set of verbs.

In connection with the mapping and realization of arguments, the study shows that, like in a causative and locative construction, the participant hierarchy and the precedence hierarchy determine the mapping from participant roles to grammatical relations in an instrumental construction. The basic participant hierarchy is $X \gg \{C \gg R\} \gg Y \gg I$. In heterogeneous object instrumental constructions, the participant hierarchy and the precedence hierarchy govern the mapping and realization of arguments in the construction. The data also indicate

that the mapping between participant roles and grammatical relations in instrumental construction varies from one construction to the other. In addition, certain semantically plausible instrumental constructions that combine object markers are blocked if the order of precedence determined by the participant hierarchy or precedence hierarchy violates the prominence hierarchy.

3.4 The benefactive applicative

As with the instrumental applicative, the benefactive applicative in Temne is typologically unusual for an applicative in the sense that it has variable but regular syntactic effects on the valence of the verb. It can add one or two applied objects to the clause. Minimally, it can add either a beneficiary W or an instrument I; it can also add both W and I, or W and a substitutive S. However, S cannot be added on its own or in conjunction with I. The benefactive applicative can combine with transitive, intransitive and ditransitive verbs. Example (148b) illustrates an intransitive-based benefactive construction, where only one applied object, the beneficiary W, is added to the clause.

- (148) a. *ńŷ-yámàmà* *ń* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’
- b. *ńŷ-yámàmà* *ń* *thómò-à* *ń-chìk*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-BEN NC1:DEF-stranger
 ‘The acrobat danced for the stranger.’

The verb *thómòńnè* ‘X dances for W’ is derived from the verb stem *thómò* ‘X dances’. Combining the benefactive applicative with the verb *thómò* ‘X dances’ in

(148b) has the syntactic effect of adding the applied object W *śchik* ‘stranger’ to the valence of the verb. This applied object is the primary object.

In some constructions, the only applied object that the benefactive applicative adds to the clause is the instrument I. Example (149) illustrates this construction type.

- (149) a. *ńŷ-yámàmà* *ś* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’
- b. *ńŷ-yámàmà* *ś* *thómò-à* *t-à-gbàrəkà*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-BEN NC2-INDEF-stilt
 ‘The acrobat danced with stilts.’

The verb *thómòà* ‘X dances using I’ is derived from the verb stem *thómò* ‘X dances’. In (149b), the applied object is I *tàgbàrəkà* ‘stilts’. It is absent in (149a) where the verb is bare. This function of the benefactive suffix is similar to that of the instrumental applicative that also adds an instrument I to the clause (see Section 3.4.2). Thus, the examples in (148) and (149) indicate that the benefactive applicative can add a beneficiary W or an instrument I to the valence of the verb.

The benefactive applicative can also add both the beneficiary W and instrument I to the clause when it is combined with an intransitive verb, as demonstrated the example in (150b).

- (150) a. *ńŷ-yámàmà* *ś* *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’

- b. *áŋ-yámàmà* ð *thómò-à* ð-*bàly*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-BEN NC1:DEF-chief

t-ò-gbàràkà
 NC6-INDEF-stilt

‘The acrobat danced for the chief using stilts.’

The derived verb *thómò* ‘X dances for W using I’ in (150b) is derived from the basic verb *thómò* ‘X dances’. In this example, two applied objects are introduced to the clause by the benefactive applicative; they are W *òbàly* ‘chief’, which is the primary object, and I *tògbàràkà* ‘stilts’ the secondary object.

The benefactive applicative can also add both the beneficiary W and substitutive S to the valence of an intransitive verb, as illustrated in (151).

- (151) a. *áŋ-yámàmà* ð *thómò*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance
 ‘The acrobat danced.’

- b. *áŋ-yámàmà* ð *thómò-à* ð-*bàly*
 NC3:DEF-acrobat NC1.SUBJ:DEF dance-BEN NC1:DEF-chief

ò-chìk
 NC1:DEF-stranger

‘The acrobat danced for the stranger on behalf of the chief.’

The derived verb *thómò* ‘X dances using I’ in (151b) is derived from the basic verb *thómò* ‘X dances’. In this example, two applied objects are added to the clause; they are the substitutive S *òbàly* ‘chief’ and the benefactive W *òchìk* ‘stranger’. The substitutive S is the primary object and the benefactive W is the secondary object. Note that the substitutive S and the instrument I can never co-occur. The substitutive only occurs in constructions where the benefactive W is also expressed.

As with intransitive verbs, the benefactive applicative can increase the valence of a transitive verb by up to two applied objects. Example (152) illustrates a transitive-based benefactive construction with the benefactive object W.

- (152) a. *ǎ-bǎkǎ* *ǎ* *bés* *m-ǎ-wòn*
 NC3:DEF-woman NC1.SUBJ:DEF dig NC10-INDEF-bush.yam
 ‘The woman dug out bush yams.’
- b. *ǎ-bǎkǎ* *ǎ* *bés-à* *áy-fèth*
 NC3:DEF-woman NC1.SUBJ:DEF dig-BEN NC5:DEF-children

 m-ǎ-wòn
 NC10-INDEF-bush.yam
 ‘The woman dug out bush yams for the children.’

The derived verb *bés-à* ‘X digs out Y for W using I’ in (152b) is derived from the basic verb *bés* ‘X digs out Y’. When the benefactive applicative is combined with the transitive verb *bés* ‘X digs out Y’ in (152b), the applied object W *áyfèth* ‘children’ is added to the clause and is the primary object, while the object Y *mǎwòn* ‘bush yams’ of the basic verb becomes the secondary object.

As in an intransitive-based benefactive construction, sometimes only the instrument I is added to the valence of a transitive verb, as demonstrated by the following example.

- (153) a. *ǎ-bǎkǎ* *ǎ* *bés* *m-ǎ-wòn*
 NC3:DEF-woman NC1.SUBJ:DEF dig NC10-DEF-bush.yam
 ‘The woman dug out bush yams.’
- b. *ǎ-bǎkǎ* *ǎ* *bés-à* *m-ǎ-wòn*
 NC3:DEF-acrobat NC1.SUBJ:DEF dig-BEN NC10-DEF-bush.yam

 à-pìkàs
 NC3:INDEF-pickaxe
 ‘The woman dug out bush yams using a pickaxe.’

The derived verb *bésλ* ‘X digs out Y using I’ in (153b) is derived from the basic verb *bés* ‘X digs out Y’. In (153b), only one applied object is added to the clause, and is I *ápikàs* ‘pickaxe’ that is the secondary object. The basic object of the verb Y *máwòn* ‘bush yam’ is the primary object.

The benefactive applicative can introduce both a beneficiary W and an instrument I to the valence of a transitive verb, as demonstrated in (154b).

- (154) a. *ǎ-bǎkǎ* *ǎ* *bés* *m-ǎ-wòn*
 NC3:DEF-woman NC1.SUBJ:DEF dig NC10-INDEF-bush.yam
 ‘The woman dug out bush yams.’
- b. *ǎ-bǎkǎ* *ǎ* *bés-λ* *áy-fèth*
 NC3:DEF-acrobat NC1.SUBJ:DEF dig-BEN NC5:DEF-children
- m-á-wòn* *λ-píkàs*
 NC10:DEF-bush.yam NC3:INDEF-pickaxe
 ‘The woman dug out bush yams for the children, using a pickaxe.’

The derived verb *bésλ* ‘X digs out Y for W using I’ in (154b) is derived from the basic verb *bés* ‘X digs out Y’. In (154b), two applied objects are added to the clause; they are the benefactive W *áyfèth* ‘children’ that is the primary object, and the instrument I *ápikàs* ‘pickaxe’ that is the tertiary object. The argument Y *máwòn* ‘bush yams’, which is the basic object of the verb, is the secondary object.

Also, both the benefactive W and substitutive S can be added to the valence of a transitive verb. Example (155b) illustrates this construction type.

- (155) a. *ǎ-bǎkǎ* *ǎ* *bés* *m-ǎ-wòn*
 NC3:DEF-woman NC1.SUBJ:DEF dig NC10-INDEF-bush yam
 ‘The woman dug bush yams.’

- b. *ǝ-bðkð* *ǝ* *bés-à* *sù*
 NC3:DEF-acrobat NC1.SUBJ:DEF dig-BEN 1PL.OBJ
- áy-fèth* *m-á-wòn*
 NC3:DEF-children NC10-DEF-bush yam
- ‘The woman dug bush yams for the children on our behalf.’

The derived verb *bésà* ‘X digs out Y for W on behalf of S’ in (155b) is derived from the basic verb *bés* ‘X digs out Y’. In this example, the applied objects are the substitutive S that is expressed by the object marker *sù*, and the benefactive W *áyfèth* ‘children’. The applied object S is the primary object and W is the secondary object, while Y *màwòn* ‘bush yam’ that is the object of the transitive verb is the tertiary object.

In addition to transitive and intransitive verbs, the benefactive applicative also combines with ditransitive verbs. However, unlike transitive and intransitive verbs, a ditransitive verb that is combined with the benefactive suffix can only add one applied object (W or I) to the clause. The following example illustrates a ditransitive-based benefactive construction, with the applied object W.

- (156) a. *ǝ-bðkð* *ǝ* *nút* *ǝ-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:DEF-child
- à-nàk*
 NC3:INDEF-rice
 ‘The woman fed the child some rice.’
- b. *ǝ-bðkð* *ǝ* *nút-à* *ǝ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF feed-BEN NC1:DEF-old man
- ǝ-wàth* *áy-nàk*
 NC1:DEF-child NC3:DEF-rice
 ‘The woman fed the child some rice for the old man.’

- c. **ǎ-bǎkǎ* *ǎ* *nút-à* *mǐ*
 NC1:DEF-woman NC1.SUBJ:DEF feed-BEN 1SG.OBJ
- ǎ-thèm* *ǎ-wàth* *ǎ-ǎk*
 NC3:DEF-old man NC1:DEF-child NC3:DEF-rice
- Intended meaning:
 ‘The woman fed some rice to the child for the old man on my behalf.’

The derived verb *nút-à* ‘X feeds Y to R, for W’ in (156b) is derived from the basic verb *nút* ‘X feeds Y to R’. In (156a), the basic objects R and Y of the ditransitive verb are the primary object and secondary object respectively. In (156b), the benefactive applicative is attached to the verb resulting in adding to the valence of the verb the applied object W *ǎ-thèm* ‘old man’ that is the primary object. The basic objects R and Y of the ditransitive verb are demoted to the secondary object and tertiary object respectively. The ungrammaticality of (156c) indicates that the benefactive applicative cannot add both the beneficiary W and the substitutive S to the valence of a ditransitive verb.

Moreover, a ditransitive-based benefactive can introduce an instrument I to the clause, as shown in (157b).

- (157) a. *ǎ-bǎkǎ* *ǎ* *nút* *ǎ-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF feed NC1:DEF-child
- ǎ-ǎk*
 NC3:INDEF-rice
 ‘The woman fed the child some rice.’
- b. *ǎ-bǎkǎ* *ǎ* *nút-à* *ǎ-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF feed-BEN NC1:DEF-child
- ǎ-ǎk* *k-à-bèp*
 NC3:INDEF-rice NC2:INDEF-spoon
 ‘The woman fed the child some rice with a spoon.’

c.	* <i>ǝ-bǝkǝ</i>	<i>ǝ</i>	<i>nút-à</i>	<i>mǝ</i>
	NC1:DEF-woman	NC1.SUBJ:DEF	feed-BEN	1SG.OBJ
	<i>ǝ-wàth</i>	<i>à-nàk</i>	<i>k-ǝ-bèp</i>	
	NC3-child	NC3:INDEF-rice	NC2-INDEF-spoon	
	Intended meaning: ‘The woman fed the child some rice with a spoon for me.’			

The derived verb *nút* ‘X feeds Y to R for W, using I’ in (157b) is derived from the basic verb *nút* ‘X feeds Y to R’. In this example, the only applied object is I *kǝbèp* ‘spoon’ and is the tertiary object, while R and Y that are the basic objects of the ditransitive verb are the primary object and secondary object respectively. Example (157c) indicates that a ditransitive verb that is combined with a benefactive applicative cannot add both the benefactive W and instrument I to the clause. Also, it is impossible to have the substitutive S without the beneficiary W in a construction. This implies that a benefactive construction with a substitutive S and instrument I is impossible in Temne.

Thus, syntactically the benefactive applicative can add one applied object (beneficiary W, or instrument I) or two applied objects (W, S, or W, I) to the valence of a transitive or intransitive verb. It cannot add both a substitutive S and an instrument I to the clause. Also, it cannot add two applied objects to the valence of a ditransitive verb.

3.4.1 Schemas of the benefactive applicative

The benefactive applicative is a polysemous suffix combining with various schemas that are closely related to each other by a system of semantic network. Figure 10 illustrates this schematic network.

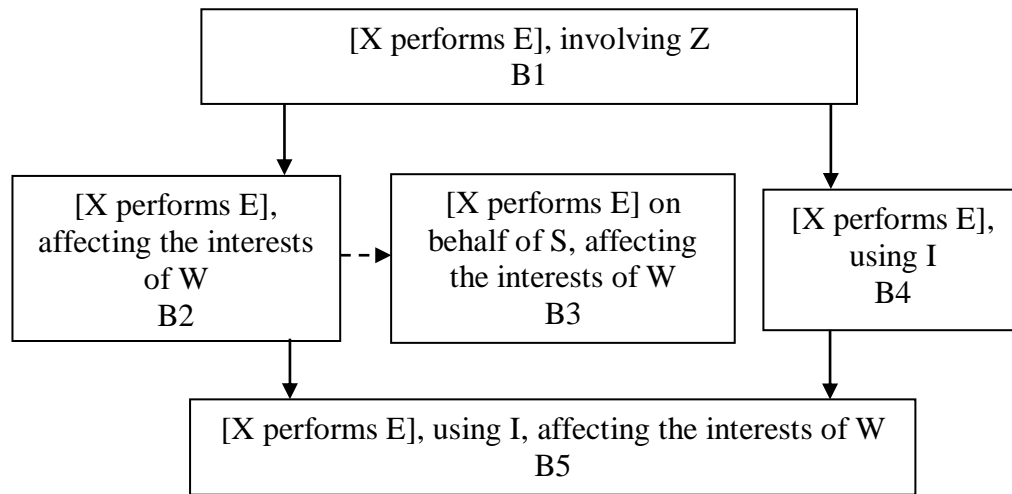


Figure 10. Schemas of the BEN construction

Schema B1 is the super-schema, and is adapted from Mel'čuk (1993) who formulated the generalized applicative schema 'involving Z'. The variable Z does not represent any particular participant role, though it is associated with the participant role of SUBSTITUTIVE, INSTRUMENT or BENEFICIARY/MALEFICIARY. Schemas B2, B3, B4 and B5 are sub-schemas, and are expressed in the meaning of the derived verbs. Schemas B2 and B4 are elaborations of schema B1, as indicated by the boldface arrows. Schema B5 is in turn a subgroup of schemas B2 and B4, while schema B3 is an extension of schema B2, as indicated by the broken arrow.

The difference between the events that each schema denotes defines the participant that is involved in each schema. Schema B2 denotes the event schematized as '[X performs E] affecting the interests of W'. In this case, the new participant W is either a beneficiary or maleficiary, defined here as 'W such that X performs E affecting the interests of W'. Schema B4 denotes the event '[X performs E] using I'. In this case, the new participant is I, and I is an INSTRUMENT,

defined as ‘I such that X performs E using I.’ Schema B5 is schematized as ‘[X performs E] using I affecting the interests of W’. In this case, both I and W are involved in the event, hence the difference between this schema and schema B2 or B4. Schema B3 also includes two new participants, the beneficiary W and the substitutive S.

Schema B2 is the most productive schema of the benefactive construction. This schema combines the meaning of any verb that co-occurs with the benefactive applicative. It states ‘[X performs E], affecting the interests of W’. Example (158) illustrates schema B2 of the benefactive construction.

- (158) a. *ǎ-làngbà* *ǎ* *wáy* *k-ǎ-bò*
 NC1:DEF-man NC1.SUBJ:DEF buy NC2-DEF-bread
 ‘The man bought a loaf of bread.’
- b. *ǎ-langba* *ǎ* *wáy-ǎ* *ù-wàth*
 NC1:DEF-man NC1.SUBJ:DEF buy-BEN NC1:INDEF-child
- ù-dòr* *k-ǎ-bo*
 NC:INDEF-hungry NC2-INDEF-bread
 ‘The man bought a loaf of bread for a hungry child.’

Example (158b) has the derived verb *wáy-ǎ* ‘X buys Y for W’. In this example, the participant *ǎlàngbà* ‘man’ is X, and performs the event E of buying Y that is the loaf of bread. The performance of this event affects the interests of W *ùwàth* ‘child’. The specific ways in which the interests of W are affected depends on the context. In (158b), it is implicit that W’s interests are affected favourably given that the participant W is hungry. Alternatively, W’s interests may be affected unfavourably, as illustrated by example (159).

- (159) *kà m-á-sòmpà m.àmì, áḡ-mùrəthè áḡ*
 at NC10-DEF-bitterness mine NC5:DEF-rebel NC5:SUB.DEF
ḏif-à mǐ ǐ-wòs mǐ
 kill-BEN 1SG.OBJ NC1:DEF-husband 1SG.OBJ
 ‘To my greatest dismay, the rebels killed my husband.’

The verb *ḏif-à* ‘X kills Y for W’ is derived from the verb stem *ḏif* ‘X kills Y’. In (159), the participant *áḡmùrəthè* ‘rebels’ is X, and performs the event E of killing Y *ǐwòs* ‘husband’. This event affects the interests of W, expressed by the object marker *mǐ*. Given this context, it is likely that the interests of W are affected unfavourably. Thus, examples like (159b) and (158b) indicate that the beneficiary and maleficiary readings of the benefactive applicative are context-dependent. Therefore, these two readings are not represented in any separate schema. As observed by Peterson (2007), the overlap between the benefactive applicative is typologically common, though not universal. In this dissertation, I use the variable W to refer to the role of the beneficiary or maleficiary.

Schema B3 involves the new participants S and W. The distinctive part of this schema is that it adds an ‘on behalf of’ meaning to the basic meaning of the verb, as indicated by example (160b).

- (160) a. *yàḡḡḡ ǐ rós áḡ-nàk*
 mom NC1.SUBJ:DEF serve NC3:DEF-rice
 ‘Mom served the rice.’
- b. *yàḡḡḡ ǐ rós-à mǐ*
 mom NC1.SUBJ:DEF serve-BEN 1SG.OBJ
- ǐ-wàḡ k.àmì áḡ-nàk*
 NC1:DEF-child mine NC3:DEF-rice
 ‘Mom served my child the rice on my behalf.’

In (160b), the two new participants are marked by the first person singular object marker *mī*, which is S and the nominal *šwàŋ kàlīmī* ‘my child’ that is W. In this example, the participant W *šwàŋ kàlīmī* ‘my child’ gets the food, while the event described by the predicate is performed on behalf of the participant that is expressed by the object marker *mī*.

The differences between the participants S and W deserve some attention. The two differ in semantics, syntax and in their distribution. Semantically, S is defined here as ‘S such that X performs E on S’s behalf, affecting the interests of W’. Thus, the participant role of S entails the role of W, defined here as ‘W such as X performs E affecting the interests of W’. Concerning syntax, in constructions where S and W co-occur, the participant S is always adjacent to the verb, and outranks W which is the secondary object in a homogeneous object construction. In terms of distribution, the participant W can co-occur with I, while the participant S cannot. Thus, the participants S and W are different.

Schema B4 states ‘[X performs E] using I’, where I represents the participant that is assigned the participant role of INSTRUMENT. Example (161b) illustrates this schema.

- (161) a. *š-yà* *š* *gbál* *šŋ-mīshīdī*
 NC1:DEF-old woman NC1.SUBJ:DEF sweep NC3:DEF-mosque
 ‘The old woman swept the mosque.’
- b. *š-yà* *š* *gbál-à* *šŋ-mīshīdī*
 NC1:DEF-old woman NC1.SUBJ:DEF sweep-BEN NC3:DEF-mosque
- à-gbàlš* *à-kùr*
 NC3:INDEF-broom NC3:INDEF-old
 ‘The old woman swept the mosque with an old broom.’

In (161b), the verb *gbálà* ‘X sweeps Y for W’ is derived from the verb stem *gbál* ‘X sweeps Y’. In this example, the participant X *óyà* ‘old woman’ performs the event E of sweeping Y *áymìshìdi* ‘mosque’, using I *àgbàlò àkùr* ‘old broom’. Note that in this case the participant whose interests are affected by this event is not specified; thus, the participant W is not expressed.

Schema B5 is a combination of schema B2 and schema B4, and it states ‘X performs E affecting the interests of W, using I’. Example (162b) illustrates this schema.

- (162) a. *ó-kàràndè* *ó* *gbál* *áŋ-rèkà*
 NC1:DEF-student NC1.SUBJ:DEF write NC3:DEF-letter
 ‘The student wrote the letter.’
- b. *ó-kàràndè* *ó* *gbál-à* *mì*
 NC1:DEF-student NC1.SUBJ:DEF write-BEN 1SG.OBJ
- áŋ-rèkà* *k-à-thànkè* *k-à-yìm*
 NC3:DEF-letter NC2-INDEF-pen NC2-INDEF-red
 ‘The student wrote the letter for me with a red pen.’

The derived verb *gbálà* ‘X writes Y for W using I’ is derived from the verb stem *gbál* ‘X writes Y’. In this example, the participant *ókàràndè* ‘student’ is X and performs the event E of writing the letter Y, using I *kàthànkè kàyìm* ‘red pen’. The performance of this event affects the interests of W that is expressed by the object marker *mì*.

3.4.2 Combination of the benefactive applicative with a verb root

Out of the 300 verbs used in this analysis, 281 (i.e., 94 %) combine with schema B2 or B3 of the benefactive applicative. This means that any verb that takes

schema B2 also takes schema B3. These verbs cut across the syntactic type transitive, intransitive and ditransitive verbs. Table 31 illustrates a sample of these verbs.⁹

Table 31. *Sample of verbs combining with schema B2*

<i>root</i>	<i>gloss</i>	<i>root +BEN</i>	<i>gloss</i>
<i>bá</i>	X possesses Y	<i>bá-n-λ</i>	X possesses Y affecting the interests of W ¹⁰
<i>bék</i>	X arrives	<i>bék-λ</i>	X arrives affecting the interests of W
<i>béγ</i>	X agrees with Y	<i>béγ-λ</i>	X agrees with Y affecting the interests of W
<i>bápàr</i>	X is present	<i>bápàr-λ</i>	X is present affecting the interests of W
<i>bór</i>	X peels off Y	<i>bór-λ</i>	X peels off Y affecting the interests of W
<i>bók</i>	X cries	<i>bók-λ</i>	X cries affecting the interests of W
<i>bóγ</i>	X makes Y (heaps)	<i>bóγ-λ</i>	X makes Y affecting the interests of W
<i>bó</i>	X borrows Y	<i>bó-n-λ</i>	X borrows Y affecting the interests of W
<i>chép</i>	X plants Y	<i>chép-λ</i>	X plants Y affecting the interests of W
<i>chén</i>	X slaughters Y	<i>chén-λ</i>	X slaughters Y affecting the interests of W
<i>chís</i>	X is inebriated	<i>chís-λ</i>	X is inebriated affecting the interests of W
<i>đi</i>	X eats Y	<i>đi-λ</i>	X eats Y affecting the interests of W
<i>đir-λ</i>	X sleeps	<i>đir-λ</i>	X sleeps affecting the interests of W
<i>fál</i>	X flies	<i>fál-λ</i>	X flies affecting the interests of W
<i>gbál</i>	X writes Y	<i>gbál-λ</i>	X writes Y affecting the interests of W
<i>gbók</i>	X scrubs Y	<i>gbók-λ</i>	X scrubs Y affecting the interests of W
<i>gból</i>	X grinds Y	<i>gból-λ</i>	X grinds Y affecting the interests of W
<i>gbál</i>	X sweeps Y	<i>gbál-λ</i>	X sweeps Y affecting the interests of W
<i>gbám</i>	X pounds Y	<i>gbám-λ</i>	X pounds Y affecting the interests of W
<i>gbép</i>	X climbs Y	<i>gbép-λ</i>	X climbs Y affecting the interests of W
<i>kóth</i>	X walks	<i>kóth-λ</i>	X walks affecting the interests of W
<i>kál</i>	X pours Y	<i>kál-λ</i>	X pours Y affecting the interests of W
<i>kór-λ</i>	X is pregnant	<i>kór-λ</i>	X is pregnant and it affects the interests of W
<i>kúlò</i>	X cries	<i>kúlò-λ</i>	X cries affecting the interests of W
<i>láp</i>	X is ashamed	<i>láp-λ</i>	X is ashamed affecting the interests of W
<i>lóm</i>	X speaks	<i>lóm-λ</i>	X speaks affecting the interests of W
<i>mútà</i>	X dives	<i>mútà-λ</i>	X dives affecting the interests of W
<i>mér</i>	X swallows Y	<i>mér-λ</i>	X swallows Y affecting the interests of W
<i>mún</i>	X drinks Y	<i>mún-λ</i>	X drinks Y affecting the interests of W
<i>pá</i>	X says Y	<i>pá-n-λ</i>	X says Y affecting the interests of W
<i>póγ</i>	X ends Y	<i>póγ-λ</i>	X ends Y affecting the interests of W
<i>shéth</i>	X builds Y	<i>shéth-λ</i>	X builds Y affecting the interests of W
<i>tátá</i>	X is promiscuous	<i>tátá-λ</i>	X is promiscuous affecting the interests of W
<i>thómò</i>	X dances	<i>thómò-λ</i>	X dances affecting the interests of W
<i>tóγ</i>	X cooks Y	<i>tóγ-λ</i>	X cooks Y affecting the interests of W
<i>wáy</i>	X buys Y	<i>wáy-λ</i>	X buys Y affecting the interests of W

⁹ I schematize the verbs using schema B2.

¹⁰ Some verbs take the epenthetic *-n-* between the root and the suffix *-λ*. These verbs include the verbs *bá-n-λ*, *bó-n-λ*, and *pá-n-λ* in Table 31.

As with schema I2, I3 and I4 of the instrumental applicative, the selection of schema B2 or B3 is based on the speaker's desired meaning. If the speaker's desired meaning is basically schema B2, only the participant W is added to the valence of the verb. On the other hand, if the speaker's desired meaning is schema B3, then both the beneficiary/maleficiary W and the substitutive S are added to the clause.

All the verbs that are incompatible with schemas B4 and B5 are also incompatible with schema I2 of the instrumental applicative. This is because the three schemas (B4, B5 and I2) necessarily take an instrument as complement. Therefore, out of the 281 (i.e., 94 %) verbs that combine with schema B2 and B3, only 256 (i.e., 85.3%) combine with schema B4 and B5. A sample of these verbs is given in Table 32 below.

Table 32. *Some verbs in the sample that combine with schemas B4 and B5*

<i>verb root</i>	<i>gloss</i>	<i>verb + INST</i>	<i>gloss</i>
<i>bɔ̃li</i>	X picks Y	<i>bɔ̃li-ínè</i>	X picks Y using I affecting the interests of W
<i>bémpà</i>	X makes Y	<i>bémpà-ínè</i>	X makes Y using I affecting the interests of W
<i>bánkàli</i>	X rolls Y	<i>bánkàli-ínè</i>	X rolls Y using I affecting the interests of W
<i>báp</i>	X meets Y	<i>báp-ínè</i>	X meets Y using I affecting the interests of W
<i>bàràfi</i>	X pops off Y	<i>bàràfi-ínè</i>	X pops off Y using I affecting the interests of W
<i>bés</i>	X digs out Y	<i>bés-ínè</i>	X digs out Y using I affecting the interests of W
<i>chén</i>	X slaughters Y	<i>chén-ínè</i>	X slaughters Y using I affecting the interests of W
<i>cher</i>	X lets Y go	<i>cher-ínè</i>	X lets Y go using I affecting the interests of W
<i>chîm</i>	X fights Y	<i>chîm-ínè</i>	X fights Y using I affecting the interests of W
<i>fî</i>	X dies	<i>fî-ínè</i>	X dies using I affecting the interests of W
<i>fithà</i>	X throws away Y	<i>fithà-ínè</i>	X throws away Y using I affecting the interests of W
<i>fôn</i>	X shaves	<i>fôn-ínè</i>	X shaves Y using I affecting the interests of W
<i>fùrùp</i>	X blows off Y	<i>fùrùp-ínè</i>	X blows off Y using I affecting the interests of W
<i>fúthà</i>	X boils Y	<i>fúthà-ínè</i>	X boils Y using I affecting the interests of W
<i>gbáj</i>	X hangs Y	<i>gbáj-ínè</i>	X hangs Y using I affecting the interests of W
<i>gbáshì</i>	X takes/lifts up Y	<i>gbáshì-ínè</i>	X lifts up Y using I affecting the interests of W
<i>gbáy</i>	X separates Y	<i>gbáy-ínè</i>	X separates Y using I affecting the interests of W
<i>gbók</i>	X scrubs Y	<i>gbók-ínè</i>	X scrubs Y using I affecting the interests of W
<i>gból</i>	X grinds Y	<i>gból-ínè</i>	X grinds Y using I affecting the interests of W
<i>gbák</i>	X cuts Y	<i>gbák-ínè</i>	X cuts Y using I affecting the interests of W
<i>gbékàr</i>	X clips Y	<i>gbékàr-ínè</i>	X clips Y using I affecting the interests of W
<i>gbál</i>	X sweeps Y	<i>gbál-ínè</i>	X sweeps Y using I affecting the interests of W
<i>gbám</i>	X pounds Y	<i>gbám-ínè</i>	X pounds Y using I affecting the interests of W

<i>gbénkàrà</i>	X yells	<i>gbénkàrà-ínè</i>	X yells by means of I affecting the interests of W
<i>gbénth</i>	X yells	<i>gbénth-ínè</i>	X yells using I affecting the interests of W
<i>gbép</i>	X climbs Y	<i>gbép-ínè</i>	X climbs Y using I affecting the interests of W
<i>kánthà</i>	X closes Y	<i>kánthà-ínè</i>	X closes Y using I affecting the interests of W
<i>kàràḡ</i>	X reads Y	<i>kàràḡ-ínè</i>	X reads Y using I affecting the interests of W
<i>kásàrà</i>	X endangers Y	<i>kásàrà-ínè</i>	X endangers Y using I affecting the interests of W
<i>kàshì</i>	X retracts Y	<i>kàshì-ínè</i>	X retracts Y using I affecting the interests of W
<i>kàrà</i>	X brings Y	<i>kàrà-ínè</i>	X brings Y using I affecting the interests of W
<i>káwòndì</i>	X preaches Y	<i>káwòndì-ínè</i>	X preaches Y using I affecting the interests of W
<i>ḡáà</i>	X lifts up Y	<i>ḡáà-ínè</i>	X lifts up Y using I affecting the interests of W
<i>pólò</i>	X crowns Y	<i>pólò-ínè</i>	X crowns Y using I affecting the interests of W
<i>pìkàthà</i>	X smashes Y	<i>pìkàthà-ínè</i>	X smashes Y using I affecting the interests of W
<i>pìḡ</i>	X picks Y	<i>pìḡ-ínè</i>	X picks Y using I affecting the interests of W
<i>rànà</i>	X piggybacks Y	<i>rànà-ínè</i>	X piggybacks Y using I affecting the interests of W
	X puts Y on R's		X puts Y on R's head using I affecting the interests of W
<i>déḡ</i>	head	<i>déḡ-ínè</i>	
<i>rós</i>	X serves Y	<i>rós-ínè</i>	X serves Y using I affecting the interests of W
<i>rúnkàt</i>	X mixes Y	<i>rúnkàt-</i>	X mixes Y using I affecting the interests of W
<i>rúsàḡ</i>	X nurtures Y	<i>rúsàḡ-ínè</i>	X nurtures Y using I affecting the interests of W
<i>ráf</i>	X stabs Y	<i>ráf-ínè</i>	X stabs Y using I affecting the interests of W
<i>rám</i>	X pays Y to R	<i>rám-ínè</i>	X pays Y to R using I affecting the interests of W
<i>rúnkàth</i>	X rinses Y	<i>rúnkàth-ínè</i>	X rinses Y using I affecting the interests of W
<i>sàkàth</i>	X shifts to Y	<i>sàkàth-ínè</i>	X shifts to Y using I affecting the interests of W
<i>shéth</i>	X builds Y	<i>shéth-ínè</i>	X builds Y using I affecting the interests of W

Verbs that take schemas B4 and B5 when they are combined with the benefactive applicative also co-occur with the instrumental applicative *-ínè*. The following example shows the verb *gbál* ‘X writes Y’ combining both with schema B2 of the benefactive applicative *-à* and schema I2 of the instrumental applicative *-ínè*.

- (163) a. *ḡ-kàràndè* *ḡ* *gbál* *ḡḡ-rèkà*
 NC1:DEF-student NC1.SUBJ:DEF write NC3:DEF-letter
 ‘The student wrote the letter.’
- b. *ḡ-kàràndè* *ḡ* *gbál-à* *ḡḡ-rèkà*
 NC1:DEF-student NC1.SUBJ:DEF write-BEN NC3:DEF-letter
- k-à-thànkè* *k-à-yìḡ*
 NC2-INDEF-pen NC2-INDEF-red
 ‘The student wrote the letter with a red pen.’

- c. *ǎ-káràndè* *ǎ* *gbál-ǎnè* *ǎŋ-rèkà*
 NC1:DEF-student NC1.SUBJ:DEF write-INST NC2:DEF-letter
- k-ǎ-thǎnkè* *k-ǎ-yìm*
 NC2-INDEF-pen NC2-INDEF-red
- ‘The student wrote the letter with a red pen.’

Examples (163b) and (163c) are synonymous even though the verb in (163b) is combined with the benefactive applicative and the verb in (163c) is combined with the instrumental applicative. Note that the verbs (i.e., 281) that take the benefactive applicative, which also combine with schema B2 and B3, outnumber the verbs that combine with the instrumental applicative *-ǎnè*. This means that the benefactive applicative is more productive than the instrumental applicative *-ǎnè* 193 (i.e., 64.33%).

However not every verb that combines with schemas B2 and B3 also combines with schemas B4 and B5. The verbs, which are listed in Table 33, do not combine with schema B4 or B5. This means that with the exception of the verbs in Table 33, the rest of the verbs that combine with schemas B2 and B3 also combine with schemas B4 and B5.

Table 33. *Verbs in the sample that do not combine with schemas B4 and B5*

<i>root</i>	<i>gloss</i>	<i>root + BEN</i>	<i>gloss</i>
<i>bá</i>	X owns Y	<i>bá-n-ǎ</i>	X owns Y affecting the interests of W
<i>báns-ǎ</i>	X is angry	<i>báns-ǎ-ǎ</i>	X is angry affecting the interests of W
<i>béǎth</i>	X worships Y	<i>béǎth-ǎ</i>	X worships Y affecting the interests of W
<i>béy</i>	X belches	<i>béy-ǎ</i>	X belches affecting the interests of W
<i>bék</i>	X arrives	<i>bék-ǎ</i>	X arrives affecting the interests of W
<i>béŋ</i>	X agrees with Y	<i>béŋ-ǎ</i>	X agrees with Y affecting the interests of W
<i>báǎr</i>	X is present	<i>báǎr-ǎ</i>	X is present affecting the interests of W
<i>bór</i>	X peels off Y	<i>bór-ǎ</i>	X peels off Y affecting the interest of W
<i>bók</i>	X cries	<i>bók-ǎ</i>	X cries affecting the interests of W
<i>ǎǎlǎ</i>	X whispers to Y	<i>ǎǎlǎ</i>	X whispers to Y affecting the interests of W
<i>gbéyǎ</i>	X hates Y	<i>gbéyǎ-ǎ</i>	X hates Y affecting the interests of W
<i>gbéléy</i>	X reminds Y	<i>gbéléy-ǎ</i>	X reminds Y affecting the interests of W

<i>gbînd</i>	X warns Y	<i>gbînd-λ</i>	X warns Y affecting the interests of W
<i>gbîŋ</i>	X swears	<i>gbîŋ-λ</i>	X swears affecting the interests of W
<i>mômò</i>	X thanks Y	<i>mômò-λ</i>	X thanks Y affecting the interests of W
<i>nál</i>	X insults Y	<i>nál-λ</i>	X insults Y affecting the interests of W
<i>ŋómì</i>	X makes an ugly face	<i>ŋómì-λ</i>	X makes an ugly face affecting the interests of W
<i>ŋónkàl</i>	X snores	<i>ŋónkàl-λ</i>	X snores affecting the interests of W
<i>rúbà</i>	X blesses Y	<i>rúbà-λ</i>	X blesses Y affecting the interests of W
<i>sór</i>	X coughs	<i>sór-λ</i>	X coughs affecting the interests of W
<i>tátà</i>	X prostitutes	<i>tátà-λ</i>	X prostitutes affecting the interests of W
<i>tásàm</i>	X sneezes	<i>tásàm-λ</i>	X sneezes affecting the interests of W
<i>yánfà</i>	X undermines Y	<i>yánfà-λ</i>	X undermines Y affecting the interests of W
<i>tú</i>	X is sick	<i>tú-λ</i>	X is sick affecting the interests of W
<i>yémà</i>	X wants Y	<i>yémà-λ</i>	X wants Y affecting the interests of W

Some of the verbs that are compatible with the benefactive applicative have assumed idiosyncratic meanings. These verbs are listed in Table 34.

Table 34. *Derived verbs with idiosyncratic meanings*

<i>root</i>	<i>gloss</i>	<i>root + BEN</i>	<i>gloss</i>
<i>bék</i>	X arrives	<i>bék-λ</i>	X arrives affecting the interests of W/ A makes X arrive
<i>dī</i>	X eats Y	<i>dī-λ</i>	X eats Y affecting the interests of W/ X exploits W
<i>kóth</i>	X walks	<i>kóth-λ</i>	X walks affecting the interests of W/ A causes X to walk in vain
<i>wóŋ</i>	X puts on Y	<i>wóŋ-λ</i>	X puts on Y affecting the interests of W/ A causes X to enter Y
<i>sákàth</i>	X shifts to Y	<i>sákàth-λ</i>	X shifts to Y affecting the interests of W/ A causes X to shift to Y

All the derived verbs in Table 34 have two meanings. The first meaning is based on schema B2 ‘[X performs E] affecting the interests of W’. With the exception of the verb *dī* ‘X exploits Y’, the second meaning of the verbs in Table 34 is based on the causative schema (see Section 3.1.1), and this observation is in consonance with the claim by Wilson (1961, 2007); Kamarah (1994, 2007) and Kanu (2004, 2009a) that the suffix *-λ* is an allomorph of causative *-s*. The following example illustrates these two meanings of the derived verb *bék.λ* ‘X arrives in the interests of W’ or ‘A causes X to arrive’.

- (164) a. *ǎ-thèm* *ǎ* *bék*
 NC1:DEF-old man NC1.SUBJ:DEF arrive
 ‘The old man arrived.’
- b. *ǎ-bǎkǎ* *ǎ* *bék-à* *ǎ-thèm*
 NC1:DEF-woman NC1.SUBJ:DEF arrive-BEN NC1:DEF-old man
 ‘The woman caused the old man to arrive.’
 ‘The woman arrived for the old man.’

I analyze the causative and benefactive form of the derived verb *békà* as two different verbs. In other words, the derived verb *békà* is analyzed here as two homophonous verbs, one a benefactive form and another a causative form based on a suppletive allomorph of the causative suffix. Thus, for a verb like *békà*, only the context is able to tell the intended meaning of the speaker.

The verb *dǎyà* ‘X eats Y affecting the interests of W’ or ‘X exploits W’ that is derived from the verb stem *dǎ* ‘X eats Y’ has both schema B2 and an idiosyncratic meaning. The compositional meaning of the derived verb is expressed in example (165).

- (165) a. *ǎ-làngbà* *ǎ* *dǎ* *é-bànà*
 NC1:DEF-man NC1.SUBJ:DEF eat NC7:DEF-banana
 ‘The man ate the bananas.’
- b. *ǎ-làngbà* *ǎ* *dǎ-à* *sù* *é-bànà*
 NC1:DEF-man NC1.SUBJ:DEF eat-BEN 1PL.OBJ NC7:DEF-banana
 ‘The man ate the bananas for us/against our wishes.’

The meaning of the derived verb *dǎyà* ‘X eats Y affecting the interests of W’ in (165b) is predictably derived from its component parts. However, the idiosyncratic meaning ‘X exploits Y’ of this derived verb is non-compositional.

Out of the 300 verbs in the example, only 19 verbs do not co-occur with the benefactive applicative. These verbs are listed in Table 35.

Table 35. *Verbs in the sample that do not combine with the BEN applicative*

<i>root</i>	<i>gloss</i>	<i>root + CAUS</i>
<i>báfàlè</i>	X laughs at X or Y	* <i>báfàlè-à</i>
<i>bénè</i>	X hides Y	* <i>bénè-à</i>
<i>bóshìnè</i>	X longs for Y	* <i>bóshìnè-à</i>
<i>dìnè</i>	X disappears	* <i>dìnè-à</i>
<i>fúmpò</i>	X falls down	* <i>fúmpò</i>
<i>gbárò</i>	X trickles on Y	* <i>gbárò</i>
<i>gbánè</i>	X hangs Y on himself	* <i>gbánè-à</i>
<i>gbíthànè</i>	X confesses Y	* <i>gbíthànè-à</i>
<i>gbúkè</i>	X runs	* <i>gbúkè-à</i>
<i>gbégbà</i>	X faints	* <i>gbégbà-à</i>
<i>lánè</i>	X believes in Y	* <i>lánè-à</i>
<i>nánè</i>	X remembers Y	* <i>nánè-à</i>
<i>pànè</i>	X forgets Y	* <i>pànè-à</i>
<i>púthànè</i>	X offends Y	* <i>púthànè-à</i>
<i>sák.ànè</i>	X scatters	* <i>sák.ànè-à</i>
<i>sókànè</i>	X is in confusion	* <i>sókànè-à</i>
<i>támtámnè</i>	X thinks of Y	* <i>támtámnè-à</i>
<i>táns.ànè</i>	X imitates Y	* <i>táns.ànè-à</i>
<i>yókànè</i>	X gets up	* <i>yókànè-à</i>

I have not seen any convincing semantic, morphological or syntactic reason why the verbs in Table 35 do not combine with the benefactive applicative. Therefore, I attribute their failure to combine with the benefactive applicative to idiosyncratic lexical restriction.

3.4.3 *Mapping and argument realization in a benefactive construction*

As with constructions with other valence-increasing morphemes, the mapping between participant roles and grammatical relations in a benefactive construction is governed by the participant hierarchy and the precedence hierarchy. In addition, certain semantically plausible benefactive constructions that rank post-verbal arguments based on the participant hierarchy and precedence hierarchy are blocked if they violate the prominence hierarchy. In the following sub-sections, I examine each of these principles in the benefactive construction.

3.4.3.1 The participant hierarchy in a benefactive construction

In a homogeneous object benefactive construction, participant roles map onto grammatical relations in the order of precedence of the participant hierarchy: X » S » W » R » Y » I. Note that the participants R and S never co-occur. The argument X maps onto the subject, and each of the remaining arguments (S, W, Y, I) occupies the highest available object slot in the order of precedence shown by the participant hierarchy. Example (166b) illustrates the participant hierarchy in a homogeneous object benefactive construction taking schema B5.

- (166) a. *ǎ-wàth rùnì* *ǎ* *gbáiy* *k-á-gbàrà*
 NC1:DEF-child.male NC1.SUBJ:DEF break NC2-DEF-palm nut
 ‘The boy broke the palm nut.’
- b. *ǎ-wàth rùnì* *ǎ* *gbáiy-à*
 NC1:DEF-child.male NC1.SUBJ:DEF break-BEN
- ǎ-yà* *k-á-gbàrà* *à-sàr*
 NC1:DEF-old woman NC2-palm nut NC3:INDEF-stone
 ‘The boy broke the palm nut for the old woman using a stone.’

The verb *gbáiyà* ‘X breaks Y using I affecting the interests of W’ in (166b) is derived from the verb stem *gbáiy* ‘X breaks Y’. In this example, the participant *ǎwàth rùnì* ‘boy’ is X and is the subject, the participant *ǎyà* ‘old woman’ is W and is the primary object; the participant *kágbàrà* ‘palm nut’ is Y and is the secondary object, while the participant *àsàr* ‘stone’ that is I is the tertiary object. This example indicates that the participant W outranks Y and I, and Y outranks I. Thus, the participant hierarchy is X » W » Y » I. Note that this ranking of participant roles is maintained even when all the post-verbal arguments are expressed by object markers.

Evidence for the ranking of the participant roles W, R and Y comes from example (167b) which illustrates schema B2 ‘[X performs E] affecting the interests of W’, using the ditransitive verb *sɔŋ* ‘X gives Y to R’.

- (167) a. *ɔ-wàth.rùni* *ɔ* *sɔŋ* *kɔ*
 NC1:DEF-child.male NC1.SUBJ:DEF give NC1.OBJ
- kì*
 NC2.OBJ
 ‘The boy gave it to him/her.’
- b. *ɔ-wàth.rùni* *ɔ* *sɔŋ-à* *mì*
 NC1:DEF-child.male NC1.SUBJ:DEF give-BEN 1SG.OBJ
- kɔ* *kì*
 NC1.OBJ NC2.OBJ
 ‘The boy gave it to him/her for me.’

The verb *sɔŋà* ‘X gives Y to R affecting the interests of W’ in (167b) is derived from the verb stem *sɔŋ* ‘X gives Y to R’. In this example, the participant X *ɔwàth rùni* ‘boy’ is the subject. The participant W is expressed by the object marker *mì*, and is the primary object; the participant R is expressed by the object marker *kɔ*, and is the secondary object, while the participant Y that is expressed by the object marker *kì* is the tertiary object. Thus, the participant hierarchy is X » W » R » Y.

Evidence for the ranking of the participant roles Y and I comes from example (168b) which illustrates schema B4 ‘X performs E using I’ of the benefactive applicative. This schema is illustrated using the transitive verb *gbál* ‘X sweeps Y’.

- (168) a. *ɔ-yà* *ɔ* *gbál* *ɔŋ-mìshidì*
 NC1:DEF-old woman NC1.SUBJ:DEF sweep NC3:DEF-mosque
 ‘The old woman swept the mosque.’

- b. \acute{o} -yà \acute{o} *gbál-à* *àṣ-mîshìdì*
 NC1:DEF-old woman NC1.SUBJ:DEF sweep-BEN NC3:DEF-mosque
- à-gbàlò* *à-kùr*
 NC3:INDEF-broom NC3:INDEF-old
- ‘The old woman swept the mosque with an old broom.’

In (168b), the verb *gbál à* ‘X sweeps Y using I’ is derived from the verb stem *gbál* ‘X sweeps Y’. In this example, the participant X *óyà* ‘old woman’ is the subject, Y *àṣmîshìdì* ‘mosque’ is the primary object and the participant I *àgbàlò àkùr* ‘old broom’ is the secondary object. Thus, the participant hierarchy is X » Y » I. This hierarchy is maintained even when all the post-verbal arguments are expressed by object marker.¹¹ Examples (167b) and (168b) also indicate that the grammatical relation that is assigned to the participant Y is not fixed. In (167b), for example, Y is the tertiary object, while in (168b), Y maps onto the primary object.

3.4.3.2 *The precedence hierarchy in a benefactive construction*

The precedence hierarchy requires arguments that are realized as object markers to be assigned higher grammatical relations than nominal objects. This in turn affects the mapping between participant roles and grammatical relations, since the participant corresponding to an object marker in a construction, by implication, maps onto a higher grammatical relation than the participant that is expressed by a nominal object.

¹¹ The participant I and S never co-occur. Therefore, I cannot precisely tell the ranking between these two participants. However, I can predict that the participant S outranks the participant I since the participant W, which is outranked by S, also outranks I. In addition, the participants S and R never co-occur. However, since in a homogeneous object construction W always outranks R, I can predict that the participant S, which also outranks W, also outranks R.

The participant W, Y or I can map onto the primary object. Example

(169b) illustrates the participant W as the primary object.

- (169) a. *ǎ-làngbà* *ǎ* *bór* *é-yòkà*
 NC1:DEF-man NC1.SUBJ:DEF peel NC7:DEF-cassava
 ‘The man peeled the cassava.’
- b. *ǎ-làngbà* *ǎ* *bór-à* *kò*
 NC1:DEF-man NC1.SUBJ:DEF peel-BEN NC1.OBJ
- é-yòkà* *à-thìs*
 NC7:DEF-cassava NC3:INDEF-knife
 ‘The man peeled the cassava for him/her with a knife.’

In (169b), the participant W is expressed by the object marker *kò* and maps onto the primary object, while Y *éyòkà* ‘cassava’ and I *àthìs* ‘knife’ that are nouns map onto the secondary object and tertiary object respectively. The sentence is ungrammatical if the order of the post-verbal arguments in (169b) is reversed.

Note that in (169b), the participant I maps onto the lowest grammatical relation even though both Y and I are expressed as nouns. However, in (170b) where I is expressed by the object marker *yi*, and Y by a nominal *éyòkà* ‘cassava’, the participant I outranks Y, and is the secondary object, while Y is the tertiary object.

- (170) a. *ǎ-làngbà* *ǎ* *bór* *é-yòkà*
 NC1:DEF-man NC1.SUBJ:DEF peel NC7:DEF-cassava
 ‘The man peeled the cassava.’
- b. *ǎ-làngbà* *ǎ* *bór-à* *kò* *yi*
 NC1:DEF-man NC1.SUBJ:DEF peel-BEN NC1.OBJ NC3.OBJ
- é-yòkà*
 NC7:DEF-cassava
 ‘The man peeled the cassava for him/her with it.’

Thus, in (170b), the participant I and W that are expressed as object markers map onto higher grammatical relations than the participant Y *éyòkà* ‘cassava’ that is a noun.

The participant I can also map onto the primary object, while the participants W and Y map onto more peripheral object positions, as demonstrated by (171b).

- (171) a. *ǎ-làngbà* *ǎ* *bór* *é-yòkà*
 NC1DEF-man NC1.SUBJ:DEF peel NC7:DEF-cassava
 ‘The man peeled the cassava.’
- b. *ǎ-làngbà* *ǎ* *bór-à* *ɲì*
 NC1:DEF-man NC1.SUBJ:DEF peel-BEN NC3.OBJ
- ǎ-wàth* *é-yòkà*
 NC1:DEF-child NC7-cassava
 ‘The man peeled the cassava for the child using it (knife).’

In (171b), the participant I that is expressed by an object marker *ɲì* is the primary object, while W and Y that are expressed by nouns are the secondary object and tertiary object respectively.

Example (172) shows that the precedence hierarchy applies to the participant S, W and Y.

- (172) a. *ǎ-wàth rùní* *ǎ* *wáy-à* *mì*
 NC1:DEF-child.male NC1.SUBJ:DEF buy-BEN 1SG.OBJ
- ǎ-yà* *á-mànt*
 NC1:DEF-old woman NC3-water
 ‘The boy bought the water for the old woman on my behalf.’

- b. *ɔ̌-wàth rùnì* *ɔ̌* *wáy-à* *mì*
 NC1:DEF-child.male NC1.SUBJ:DEF buY-BEN 1SG.OBJ
- k̀* *á-m̀nt*
 NC1.OBJ NC3:DEF-water
- ‘The boy bought the water for him/her on my behalf.’
- c. *ɔ̌-wàth rùnì* *ɔ̌* *wáy-à* *mì*
 NC1:DEF-child.male NC1.SUBJ:DEF buY-BEN 1SG.OBJ
- m̀* *ɔ̌-yà*
 NC10.OBJ NC1:DEF-old woman
- ‘The boy bought it for the old woman on my behalf.’

The verb *wáyà* ‘X buys Y on behalf of S, affecting the interests of W’ in (172) is derived from the verb stem *wáy* ‘X buys Y’. In example (172a), the participant S, which is expressed by the object marker *mì*, outranks the participants W *ɔ̀yà* ‘old woman’ and Y *ám̀nt* that are nouns. In example (172b), the participant S expressed by the object marker *mì* and the participant W, expressed by the object marker *k̀*, precede the participant Y *ám̀nt* ‘water’ that is a noun. In (172c), the participant S is expressed by the object marker *mì*, and Y is expressed by the object markers *m̀*. Both participants (i.e., S and Y) outrank the participant W *ɔ̀yà* ‘old woman’ that is a noun. In all these examples, the participant that is expressed by an object marker outranks the participant that is a nominal. These examples also indicate that in a construction where the precedence hierarchy and the participant hierarchy apply, the precedence hierarchy outranks the participant hierarchy.

The participant S is always the primary object in benefactive constructions combining with schema B3 [X performs E] on behalf of S, affecting

the interests of W' in which this participant appears. Thus, the participant S is like the participant L in that there are restrictions on the kinds of heterogeneous object constructions that are allowed. The following heterogeneous object benefactive constructions listed in (173) where the participant S is not the primary object are disallowed.

- (173) a. *Y(OM) » S(NOM) » W(NOM)
 b. *W(OM) » S(NOM) » Y(NOM)
 c. *W(OM) » Y(OM) » S(NOM)

On the other hand, the benefactive constructions schematized in (174) in which the participant S is the primary object are permissible and are realized.

- (174) a. S(OM) » W(OM) » Y(NOM)
 b. S(OM) » Y(OM) » W(NOM)
 c. S(OM) » W(OM) » Y(NOM)

The basic difference between the constructions in (173) that are impermissible and the constructions in (174) that are permissible is that in the latter the participant S maps onto the primary object, while in the former, either the participant Y or W is the primary object. The constraint in (175) captures the grammaticality and ungrammaticality of the two sets of constructions.

- (175) *Constraint on heterogeneous object benefactive constructions:*
 If there is an object marker in a benefactive construction where the participant S is expressed, that object marker is S.

The constraint above describes grammatical benefactive constructions like (174). Constructions like (173) where the participant S does not map onto the primary object violate this constraint.

3.4.3.3 The prominence hierarchy in a benefactive construction

As with the causative, locative and instrumental construction, certain semantically plausible benefactive constructions that combine object markers are blocked if the order of precedence determined by the participant hierarchy or precedence hierarchy violates the prominence hierarchy. This phenomenon is illustrated in the following benefactive construction.

- (176) a *ʃ-làngbà* *ʃ* *kál* *mà*
 NC1:DEF-man NC1.SUBJ:DEF pour NC10.OBJ
 ‘The man poured it (water).’
- b **ʃ-làngbà* *ʃ* *kál-à* *kò* *mì*
 NC1:DEF-man NC1.SUBJ:DEF pour-BEN NC1:OBJ 1SG.OBJ
- mà*
 NC10.OBJ
- Intended meaning: ‘The man poured it (water) for me on his/her behalf.’
- c. *ʃ-làngbà* *ʃ* *kál-à* *kò* *mà*
 NC1:DEF-man NC1.SUBJ:DEF pour-BEN NC1:OBJ NC10.OBJ
- tà* *tàmì*
 for mine
- ‘The man poured it (the water) for me on his/her behalf.’

In (176b), the participant S is expressed by the object marker *kò* and precedes the participant W that is expressed by the object marker *mì*. Thus, though (176b) obeys the participant hierarchy by placing the participant S before W, and W before Y, it is still impossible because the order of the object markers (i.e., **kò* » *mì*) violates the prominence hierarchy which bans any construction where the third person object marker *kò* precedes the first person object object marker *mì*. To

express the intended meaning of (176b), a construction like (176c) that combines the morphological benefactive with the periphrastic expression is alternately used.

3.4.4 Summary of the benefactive applicative

The benefactive applicative adds up to two applied objects to the valence of the verb. The applied objects correspond to the beneficiary W, substitutive S or instrument I. If only one applied object is introduced to the clause, it is either the benefactive W, as in a schema B2 construction or instrument I, as in a schema B4 construction. It can never be the substitutive S since the substitutive S is added only to a clause that already has the beneficiary W. In addition, when two applied objects are added to the clause, these applied objects are W and S, as in a schema B3 construction or S and W as in a schema B5 construction. It can never be S and I. Thus, the applied objects occur in certain patterns.

In terms of semantics, the benefactive applicative is heterogeneously polysemous, and is associated with five schemas, identified as B1 (i.e., the super-schema), and the sub-schemas B2, B3, B4 and B5 that are expressed in the meaning of the derived verbs. These schemas differ from each other in the type of event and participants that are involved in each event. Schema B2 involves the new participant W; schema B3 includes the new participants S and W; schema B4 involves the new participant I, while schema B5 includes the new participants I and W.

In terms of combination, schemas B2 and B3 are the most productive. These schemas are compatible with all the 281 verbs in the sample that combine with the benefactive applicative, while schema B4 or B5 combines with only 256

of these verbs. The verbs that combine with the benefactive applicative cut across all the syntactic types: transitive, intransitive and ditransitive verbs. However, unlike the intransitive and transitive verbs, only one applied object W, or I, can be added to the valence of a ditransitive verb that combines with the benefactive applicative.

Furthermore, the study indicates that the participant hierarchy and the precedence hierarchy (OM » NOM) govern the mapping and realization of arguments in the benefactive construction. The participant hierarchy applies to homogeneous object construction and constructions where two NOMs or OMs co-occur. The participant roles map onto grammatical relations in the order of precedence specified by the participant hierarchy X » S » W » R » Y » I.

In relation to the precedence hierarchy, post-verbal arguments appear in the order of precedence OMs » NOMs, which means that post-verbal arguments that are expressed by object markers map onto a higher grammatical relation than object nominals. However, there are restrictions in the pattern in which post-verbal arguments can combine. If expressed, the participant S is always the primary object. In addition, certain semantically plausible benefactive constructions are blocked if they violate the prominence hierarchy.

3.5 Summary of main findings in chapter 3

Valence-increasing suffixes in Temne can be divided into causative and applicatives. Some of the applicatives (benefactive and instrumental) are typologically unusual in that they can add up to two applied objects to the clause. The benefactive applicative can add a benefactive W, substitutive S and

instrument I to the clause. However, only S and W or W and I can appear in the same construction. The applied objects added by the instrumental applicative are the comitative C and the instrument I.

In connection with semantics, applicative morphemes in Temne are polysemous; each is associated with more than two schemas that are closely related to each other. The selection of each schema of an affix by a particular verb root is idiosyncratic and determined lexically. The different affixes differ in their productivity. Also, the various schemas of a single affix differ in their productivity.

In terms of the mapping between participant roles and grammatical relations, the results of the study indicate that in constructions with a single valence-increasing suffix on the verb, the participant hierarchy and the precedence hierarchy govern the mapping and realization of arguments in a construction. In a homogeneous object construction, each valence-increasing morpheme exhibits a certain participant hierarchy. These participant hierarchies are listed in (177).

- (177) a. Causative construction: A » X » Y
b. Locative construction: X » L » R » Y
c. Instrumental construction: X » C » R » Y » I
d. Benefactive construction: X » S » W » R » Y » I

For each construction with a certain valence-increasing suffix on the verb, grammatical relations are assigned to participant roles in the order of precedence specified by the participant hierarchy. The mapping proceeds from the left to the right of the hierarchy. Thus, if a particular event expressed by a verb taking an applicative has an S, L, or C, that participant will be expressed as the primary

object; if not, then the next highest participant in the hierarchy is expressed as the primary object. This participant will be W, if W is present, otherwise R, if there is an R. The same procedure is followed for the secondary object. Thus, if W is present and is expressed as the primary object, and if there is an R, the participant R is expressed as the secondary; otherwise Y is the secondary object.

The participant hierarchies in (177) may be collapsed, as shown in Figure 11:

$$A \gg X \gg \left\{ (X_{\text{causee}}), L, C, S \gg W \right\} \gg R \gg Y \gg I$$

Figure 11. The participant hierarchy

The participant hierarchy illustrated in Figure 11 corresponds loosely to proposed semantic role hierarchies by Bresnan & Kanerva (1989) and Givon (1984) in that the INSTRUMENT is the lowest ranked grammatical relation and the AGENT, which may be A or X in Figure 11, is the highest ranked. The participants L, C, S and sometimes W occupy the primary object in the homogeneous object constructions in which they appear. Evidence for the ranking of the participant X above C, L, and S comes from non-causative constructions where X is the subject and C, L and W are objects. However, the relative ranking of the participants X(causee), L, C, S or W is still unclear, but will be investigated in Chapter 4, where verb suffixes that co-occur are examined.

In heterogeneous object constructions, the precedence hierarchy determines the mapping and realization of arguments. The precedence hierarchy, as shown in Chapter 2, is a general principle of Temne and states that the participant that is expressed by an object marker maps onto a higher grammatical

relation than the participant that is expressed by a nominal. In constructions where two nominal objects co-occur with an argument that is expressed by an object marker, both the participant hierarchy and the precedence hierarchy apply. However, the precedence hierarchy outranks the participant hierarchy.

Although the precedence hierarchy generally holds in Temne, it is limited by two constraints. The first constraint concerns the locative applicative, and states that if there is an object marker in a ditransitive-based locative construction, then that object marker must express L and is the primary object. The second constraint relates to the benefactive applicative and it states that if there is an object marker in a construction where the participant S is expressed, then that object marker must express S and is the primary object. The basic difference between the two constraints is that the constraint on the locative construction is limited to ditransitive verbs, while the constraint on the substitutive extends to transitive and intransitive verbs as well.

In addition, certain semantically plausible constructions are blocked if the order of precedence of objects as determined by the participant hierarchy and precedence hierarchy violates the prominence hierarchy, which is shown in Figure 12.

$$\left. \begin{array}{l} 1 \\ 2 \end{array} \right\} \gg 3_{\text{ANIM}} \gg 3_{\text{INANIM}}$$

Figure 12. The prominence hierarchy in Temne

The prominence hierarchy, which is first discussed in Chapter 2, is an inviolable principle of Temne grammar, and applies to constructions where at least two post-verbal arguments are expressed by object markers. It requires the object markers

in a construction to occur in the order of precedence: 1/2 » 3ANIM » 3INANIM. This means that any construction where the first person or second person object marker follows a third person animate or third person inanimate object marker is ungrammatical.

Finally, the participants that are introduced by valence-increasing suffixes in Temne are characterized by certain properties that are peculiar to each participant. Table 36 summarizes these properties.

Table 36. *Properties of objects in a homogeneous object construction*

<i>properties</i>	<i>L</i>	<i>C</i>	<i>I</i>	<i>S</i>	<i>W</i>
1 Basic grammatical relation (GR) is	PO	PO	oblique	PO	PO/SO
2 Incompatible with the participant	-	R	S	I, R	-
3 Must be OM if there is an OM ¹²	yes	no	no	yes	no

Some questions have emerged from the analysis in this chapter; they include: (i) What are the relative rankings of the participants C, L, S and W? (ii) Are the same participant hierarchies found in constructions with a single valence-increasing suffix followed in constructions with two valence-increasing suffixes in the verb stem? (iii) Do co-occurring suffixes have the same range of polysemous meanings as they do when they occur separately? (iv) Do the same constraints on the co-occurrence of objects hold in constructions where two suffixes co-occur? These questions are among the questions addressed in Chapter 4.

¹² Note that in the case of the locative, this property is applicable only to ditransitive verbs.

Chapter 4

Co-occurrence of valence-increasing suffixes

In this chapter, I address the question of which valence-increasing suffixes can co-occur and what classes of verb roots can combine with each set of suffixes. I investigate the meanings associated with suffixes that co-occur and the compositional pathway involved in the derivation of each meaning. Also, I answer the question of whether the meaning of a verb that is derived from combining with two suffixes can be predicted from the meaning of its component parts. In connection with syntax, I examine the number of arguments each set of suffixes can add to the valence of the verb and the order of these arguments in the construction. In addition, I investigate whether the principles that govern the mapping and realization of arguments in constructions where only one suffix occurs on a verb can be extended to constructions where two or more suffixes are added to a verb stem.

The chapter is divided into six sections. Section 4.1 is concerned with the constraints on the co-occurrence of valence-increasing suffixes. Section 4.2 deals with the co-occurrence of the suffixes CAUS + INST. Section 4.3 is concerned with the co-occurrence of LOC + INST. It is followed by Section 4.4 which is focused on the co-occurrence of LOC + BEN. Section 4.5 is about the co-occurrence of BEN + INST, and is followed by a summary of the chapter in Section 4.6.

4.1 Constraints on co-occurring valence-increasing suffixes

Although there are four valence-increasing suffixes in Temne, only six combinatorial possibilities exist. Out of these six possible combinations, only four

are realized; they are CAUS + INST, LOC + BEN, LOC + INST and BEN + INST. The combinations *CAUS + LOC, and *CAUS + BEN are disallowed. Table 37 shows the permissible (+) and impermissible (-) combinations of valence-increasing suffixes. The verb suffixes listed in the columns are the first suffixes that appear after the verb; the second suffixes are listed in the rows.

Table 37. *Combination of valence-increasing suffixes*

	CAUS	LOC	BEN	INST
CAUS	-	*	*	+
LOC		-	+	+
BEN			-	+
INST				-

Table 37 also indicates that no valence-increasing suffix can be repeated; this means that we cannot have two locative, causative, instrumental or benefactive morphemes in the same verb stem.

Valence-increasing suffixes in Temne occur in a fixed order, which may be described by means of morphological templates. The templates consist of “slots” that specify the position that is occupied by each suffix. In (178), I illustrate these templates.

- (178) a. Verb + CAUS + INST
 b. Verb + LOC + INST
 c. Verb + LOC + BEN
 d. Verb + BEN + INST

Example (179) illustrates the template shown in (178a) above.

- (179) a. \acute{s} - $b\acute{a}k\acute{a}$ \acute{s} $m\acute{u}n$ $\acute{a}n-t\acute{a}l$
 NC1:DEF-woman NC1.SUBJ:DEF drink NC3:DEF-medicine
 ‘The woman drank the medicine.’

- b. *ǝ-bǝkǝ* *ǝ* *mún-ǝs-ǻnè*
 NC1:DEF-woman NC1.SUBJ:DEF drink-CAUS-INST
- ǝ-wǝth* *ǻŋ-tǝl* *k-ǝ-bèp*
 NC1:DEF-child NC3:DEF-medicine NC2-INDEF-spoon
 ‘The woman made the child drink the medicine with a spoon.’
 ‘The woman used a spoon (as a means) to make the child drink the
 medicine.’
- c. **ǝ-bǝkǝ* *ǝ* *mún-ǻnè-s*
 NC1:DEF-woman NC1.SUBJ:DEF drink-INST-CAUS
- ǝ-wǝth* *ǻŋ-tǝl* *k-ǝ-bèp*
 NC1:DEF-child NC3:DEF-medicine NC2-INDEF-spoon
 Intended meanings:
 ‘The woman made the child drink the medicine with a spoon.’
 ‘The woman used a spoon (as a means) to make the child drink the
 medicine.’

The verb *múnǝsǻnè* ‘X drinks Y using I’ in (179b) is derived from the verb stem *mún* ‘X drinks Y’. In this example (179b), the causative and instrumental suffixes co-occur in the order CAUS + INST, and the sentence is grammatical. The new participants are the causer argument A *ǝbǝkǝ* ‘woman’ that is the subject and the applied object *kǝbèp* ‘spoon’ that is the instrument. The participant X *ǝwǝth* ‘child’ is the causee and is the primary object. In example (179c), the order of the two suffixes is reversed; the instrumental precedes the causative (*INST + CAUS), yielding an ungrammatical sentence. Thus, examples (179b) and (179c) indicate that the causative suffix and the instrumental applicative occur only in the order CAUS + INST.

Example (180) illustrates the template in (178b) which is schematized as verb + LOC + INST.

- (180) a. *ǎ-kèy* *ǎ* *kéyà* *á-pàlà*
 NC1:DEF-thief NC1.SUBJ:DEF steal NC3:DEF-rice
 ‘The thief stole (bags) of rice.’
- b. *ǎ-kèy* *ǎ* *kéy-ǎr-ánè*
 NC1:DEF-thief NC1.SUBJ:DEF steal-LOC-INST
- ǎ-bàkà* *á-pàlà* *à-làrì*
 NC1:DEF-woman NC3:DEF-rice NC3:INDEF-lorry
 ‘The thief used a lorry to steal (bags of) rice from the woman.’
- c. **ǎ-kèy* *ǎ* *kéy-ánè-ǎr*
 NC1:DEF-thief NC1.SUBJ:DEF steal-INST-LOC
- ǎ-bàkà* *á-pàlà* *à-làrì*
 NC1:DEF-woman NC3:DEF-rice NC3:INDEF-lorry
 Intended meaning:
 ‘The thief used a lorry to steal (bags of) rice from the woman.’

The verb *kéyàr-ánè* ‘X steals Y from L using I’ in (180) is derived from the verb stem *kéyà* ‘X steals Y’. In (180b), the locative and the instrumental applicatives co-occur in the order LOC + INST, and the sentence is grammatical. The applied objects are L *ǎbàkà* ‘woman’, which is the SOURCE and I *àlàrì* ‘lorry’, which is the INSTRUMENT. In (180c), the locative and instrumental applicatives co-occur in the order INST + LOC, and the sentence is ungrammatical. The contrast in grammaticality between (180b) and (180c) demonstrates that the locative and instrumental applicatives co-occur only in the order LOC + INST.

Example (181) illustrates the morphological template verb + LOC + BEN shown in (178c).

- (181) a. *ǎ-wàth* *ǎ* *thílà* *è-lòp*
 NC1:DEF-child NC1.SUBJ:DEF sell NC7:INDEF-fish
 ‘The child sold some fish.’

- b. *ǎ-wàth* *ǎ* *thìlà-r-à* *mǐ*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN 1SG.OBJ
 ǎ-thèm *è-lòp*
 NC1:DEF-old man NC7:INDEF-fish
 ‘The child sold some fish to the old man for me.’
- c. **ǎ-wàth* *ǎ* *thìlà-à-r* *mǐ*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN 1SG.OBJ
 ǎ-thèm *è-lòp*
 NC1:DEF-old man NC7:INDEF-fish
 Intended meaning: ‘The child sold some fish to the old man for me.’

The verb *thìlàrà* ‘X sells Y to L for W’ is derived from the verb stem *thìlà* ‘X sells Y’. In (181b), the locative and the benefactive applicative co-occur in the order LOC + BEN and the sentence is grammatical. The applied object expressed by the object marker *mǐ* is L and is the GOAL, while the applied object W *ǎthèm* ‘old man’ is the BENEFICIARY. In (181c), the locative and benefactive applicatives co-occur in the order BEN + LOC in the same verb stem *thìlà* ‘X sells Y’, but the sentence is ungrammatical. The contrast in grammaticality between (181b) and (181c) provides evidence that the locative and benefactive applicatives co-occur only in the order LOC + BEN.

Like the locative and benefactive applicatives, the instrumental and benefactive also co-occur in a fixed order, expressed by the template verb + BEN + INST in (178d). Example (182b) illustrates this template.

- (182) a. *ǎ-wàth* *ǎ* *yák* *íŋ-fàt*
 NC1:DEF-child NC1.SUBJ:DEF wash NC3:DEF-pot
 ‘The child washed the pot.’

- b. *ǝ-wàth* ǝ *yák-ǻnè*
 NC1:DEF-child NC1.SUBJ:DEF buy-BEN:INST
- ǝ-bǝkǝ* *ǻŋ-fǻt* *m-ǝ-sòdà*
 NC1:DEF-woman NC3:DEF-pot NC10-INDEF-caustic.soda
 ‘The child washed the pot for the woman using caustic soda
 (soap).’
- c. **ǝ-wàth* ǝ *yák-ǻnè-ǻ*
 NC1:DEF-child NC1.SUBJ:DEF buy-INST-BEN
- ǝ-bǝkǝ* *ǻŋ-fǻt* *m-ǝ-sòdà*
 NC1:DEF-woman NC3:DEF-pot NC10-INDEF-caustic.soda
 Intended meaning: ‘The child washed the pot for the woman
 using caustic soda (soap).’

The derived verb *yákǻnè* ‘X washes Y for W using I’ in (182b) is derived from the basic verb *yák* ‘X washes Y’. In this example, the instrumental and benefactive suffixes co-occur in the order INST + BEN and the sentence is grammatical. In (182b), the applied objects are W *ǝbǝkǝ* ‘woman’ that is the beneficiary and I *mǝsòdà* ‘causatic soda soap’ that is the instrument. In (182c), the order of the instrumental and benefactive applicatives is reversed and the sentence is ungrammatical, indicating that the benefactive and instrumental applicatives do not co-occur in the order *INST + BEN. To sum up, examples (179-182) demonstrate that valence-increasing suffixes in Temne occur in a fixed order that is best described by morphological templates.

In the following sections, I examine each set of co-occurring suffixes, pointing out the meanings of the derived verbs and their compositional pathway. I also identify the verbs that are compatible and incompatible with each and the principles that determine the order in which grammatical relations are assigned to participant roles.

4.2 Co-occurrence of CAUS + INST

When the causative and instrumental applicative co-occur, two arguments are introduced to the clause; they are the causer argument A and the instrument I. Like the causative on its own, the combination of the two suffixes with a verb has the syntactic effect of demoting the subject X of the basic verb to an object position. The set of suffixes CAUS + INST co-occurs with intransitive and transitive verbs, but not with ditransitive verbs. The following example illustrates an intransitive-based CAUS + INST construction.

- (183) a. *ǝ-wàth* *ǝ* *dírà*
 NC1:DEF-child NC1.SUBJ:DEF sleep
 ‘The child slept.’
- b. *ǝ-yà* *ǝ* *dír-əs-ínè*
 NC1:DEF-old woman NC1.SUBJ:DEF sleep-CAUS-INST
- ǝ-wàth* *m-ə-səth*
 NC1:DEF-child NC10-INDEF-tricks
 ‘The old woman used tricks (as a means) to make the child sleep.’

Example (183a) illustrates the basic verb *dírà* ‘X sleeps’ and (183b) illustrates the derived verb *dírəsínè* ‘A causes X to sleep using I’, where the participant X *ǝwàth* ‘child’ that is the subject of the basic verb is demoted to the primary object. The added participant A *ǝyà* ‘old woman’ that is the causer argument becomes the subject of the causative construction, while the applied object *məsəth* ‘tricks’ that is I maps onto the secondary object.

Example (184) illustrates a CAUS + INST construction that is derived from the transitive verb *dī* ‘X eats Y’.

- (184) a. *ɔ̀-wàth̃* *ɔ̀* *dī* *è-fùfù*
 NC1:DEF-child NC1.SUBJ:DEF eat NC7:INDEF-fufu
 ‘The child ate fufu.’
- b. *ɔ̀-yà* *ɔ̀* *dī-s-ánè* *ɔ̀-wàth̃*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1:DEF-child
- è-fùfù* *k-à-bép*
 NC7:INDEF-fufu NC2-INDEF-spoon
 ‘The woman used a spoon (as a means) to make the child eat fufu.’
 ‘The woman made the child use a spoon to eat fufu.’

The derived verb *dīsánè* ‘A causes X to eat Y using I’ in (184b) is derived from the verb stem *dī* ‘X eats Y’. In this example, the new participant A *ɔ̀yà* ‘old woman’ that is the causer argument is the subject and the applied object *kàbèp* ‘spoon’ is the tertiary object. The participant X *ɔ̀wàth̃* ‘child’ that is the subject of the basic verb is demoted to the primary object, while the participant Y *èfùfù* ‘fufu’ is the secondary object. As indicated in the gloss, this example has two interpretations. In one case, the instrument *kàbèp* ‘spoon’ is used by the causer argument A as a means to get the participant X *ɔ̀wàth̃* ‘child’ eat Y *èfùfù*. The second interpretation maintains that the instrument is used by the participant X as a tool to eat Y. These two readings will be examined in detail in the Section 4.2.1.

4.2.1 Semantics of CAUS + INST

In general, most verbs that are derived from combining with co-occurring valence-increasing suffixes are semantically compositional. The term “compositionality” is used here in the sense of Beck & Mel’čuk (2011): “A complex sign AB is compositional if and only if $AB = A \oplus B$, which means that the meaning of AB is a regular sum of the meanings of A and B” (p 180). Thus,

the term “compositionality”, as used here, “is a binary distinction: AB either is or is not the linguistic union of A and B” (p. 181).

In this chapter, I describe the derivation of the composite meaning of each derived verb in terms of a tree diagram in the sense of Langacker (1987). Following Langacker (1987), each tree diagram comprises three primary structures and three relationships. In this chapter, I use lower case letters [a, b, c, d, e] to represent these structures. In each structure, the variables [a] and [b] represent a component structure, and are combined to derive the composite meaning represented by [c]. The derivation moves upwards in the tree, from the most basic to the most complex. Similarly, in a three-layer structure, the variables [c] and [d] are each component structures that are combined to derive the composite meaning [e]. The component structures [a] and [b], and [c] and [d] establish a “horizontal correspondence” of “integration”, while [a]-[c] and [b]-[d] (i.e., the vertical correspondences) establish the compositional relationship. Thus, following Langacker (1987), the structure [ab] is the “expected” outcome of the “integrative relationship”. This means that the content of the structure [ab] is the sum of [a] and [b]. With this in view, I now consider the derivation of the composite meaning of a verb that is combined with the suffix CAUS + INST.

When a verb stem is combined with the suffixes CAUS + INST, two meanings are realized, as seen in example (184b). I refer to these meanings as the I-in- E_2 schema and the I-in- E_1 schema. In the I-in- E_2 schema, ‘A performs E_1 causing X to perform E_2 (on Y), using I’, the instrument is used by the participant X(causee) to perform E_2 . This schema captures the meaning of CAUS + INST

constructions like ‘the woman made the child use a spoon to eat fufu’, illustrated in example (184b). In what I refer to as the I-in- E_1 schema ‘A performs E_1 using I, causing X to perform E_2 (on Y)’, the instrument is used by the participant A (i.e., the causer argument) to perform E_1 . This schema captures the meaning of CAUS + INST constructions like ‘the woman used a tool/means to make the child eat fufu’.

There are two slightly different compositional pathways involved in the derivation of these two schemas. Figure 13 represents the ordered compositional pathway involved in the derivation of the I-in- E_2 schema.

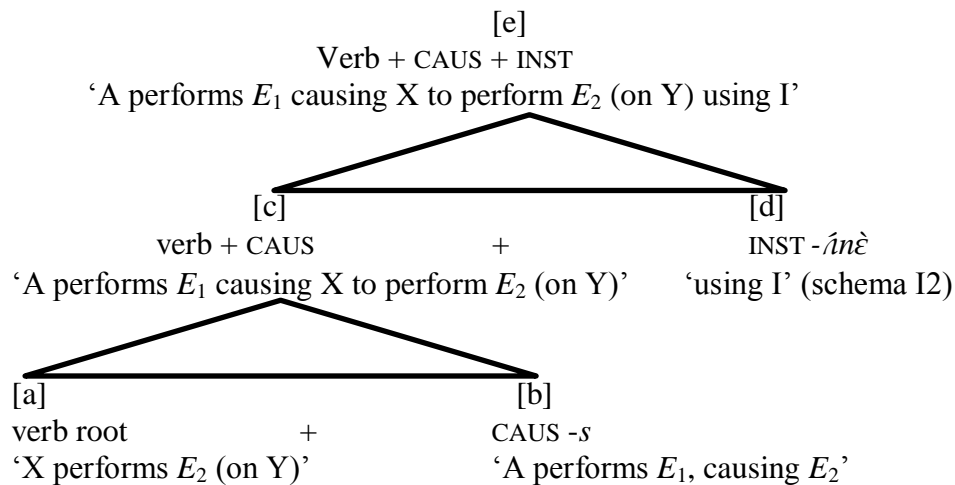


Figure 13. Compositional pathway of schema I-in- E_2

As indicated in Figure 13, to derive schema I-in- E_2 , structure [a] (i.e., the meaning of the verb root) is combined with the meaning of the causative suffix (i.e., structure [b]), resulting in the derived meaning ‘A performs E_1 causing X to perform E_2 (on Y)’, identified in Figure 13 as structure [c]. This meaning (i.e., structure [c]) is then combined with schema I2 of the instrumental applicative, which is identified as structure [d]. Note that schema I2 [X performs E, using I] is the only schema of the instrumental applicative that combines with the meaning

of the causativized verb. The combination of the causative schema (i.e., structure [c]) and schema I2 of the instrumental applicative (i.e., structure [d]) yields the composite meaning ‘A performs E_1 causing X to perform E_2 (on Y), using I’, which is identified as structure [e] in Figure 13. This meaning is illustrated in example (185).

- (185) a. \acute{o} -wàth̄ \acute{o} *dī* è-fùfù
 NC1:DEF-child NC1.SUBJ:DEF eat NC7:INDEF-fufu
 ‘The child ate fufu.’
- b. \acute{o} -yà \acute{o} *dī-s* \acute{o} -wàth̄
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1:DEF-child

 è-fùfù
 NC7:INDEF-fufu
 ‘The woman made the child eat fufu.’
 ‘The woman fed the child fufu.’
- c. \acute{o} -yà \acute{o} *dī-s-ánè* \acute{o} -wàth̄
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1:DEF-child

 è-fùfù *k-à-bép*
 NC7:INDEF-fufu NC2-INDEF-spoon
 (i) ‘The woman made the child use a spoon to eat fufu.’
 (ii) ‘The woman used a spoon to make the child eat fufu.’

Example (185a) illustrates the bare verb. The derived verb *dīs* ‘A causes X to eat Y in (185b) is derived from the verb stem *dī* ‘X eats Y’. In this example (185b), the causative suffix is combined with the verb resulting in the derivation of the meaning of a causativized verb schematized as ‘A performs E_1 causing X to perform E_2 (on Y)’. This schema is then combined with schema I2 ‘[X performs E] using I’ of the instrumental applicative in (185c), resulting in the derivation of schema I-in- E_2 , ‘A performs E_1 causing X to perform E_2 (on Y), using I’, which captures number (i) in example (185c).

In addition to schema I-in- E_2 , combining the suffixes CAUS + INST with a verb yields yet another meaning, which I schematize as ‘A performs E_1 using I causing X to perform E_2 (on Y)’. I refer to this meaning as schema I-in E_1 , and Figure 14 illustrates the compositional pathway involved in the derivation this schema.

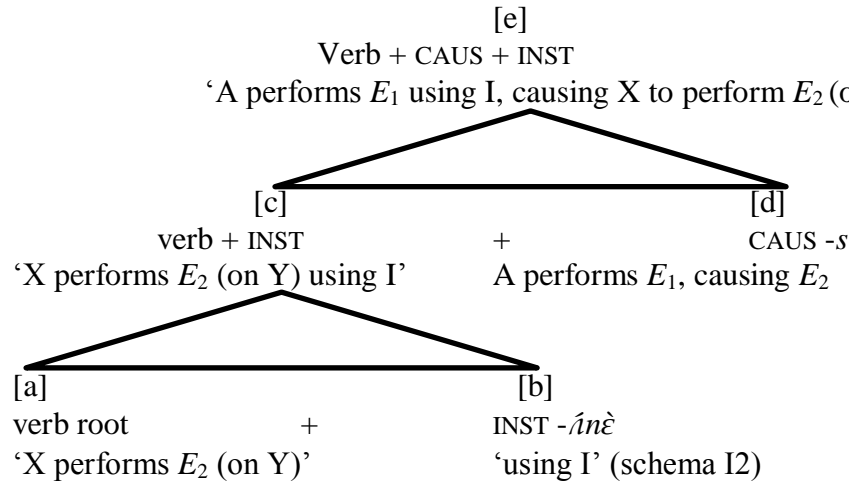


Figure 14. *Compositional pathway of schema I-in- E_1*

As shown in Figure 14, to derive schema I-in- E_1 , structure [a] (i.e., the meaning of the verb root) is combined with schema I2 of the instrumental applicative (i.e., structure [b]), resulting in the derived meaning ‘A performs E (on Y) using I’, identified in Figure 14 as structure [c]. This meaning (i.e., structure [c]) is then combined with the meaning of a causativized verb, ‘A performs E_1 , causing E_2 ’, which is identified as structure [d], yielding the composite meaning ‘A performs E_1 using I, causing X to perform E_2 (on Y)’, which is identified as structure [e] in Figure 14. This schema captures number (ii) in example (185c).

4.2.2. Combination of CAUS + INST with a verb root

In the previous chapter, I demonstrated that out of the 300 verbs in the sample, 44 (14.6%) co-occur with the causative suffix and all of these verbs also co-occur with the instrumental applicative when it appears alone on a verb. Out of the 44 verbs listed in Table XV in the appendix that co-occur with the causative and instrumental applicative, only the 9 verbs listed in Table 38 co-occur with both suffixes when they are combined.

Table 38. *Verbs that co-occur with CAUS + INST*

<i>root</i>	<i>gloss</i>	<i>root + CAUS + INST</i>	<i>gloss</i>
<i>bálà</i>	X marries Y	<i>bál-às-ínè</i>	A uses I as a means to make X marry Y
<i>chís</i>	X is inebriated	<i>chís-às-ínè</i>	A causes X to be inebriated with I
<i>dī</i>	X eats Y	<i>dī-s-ínè</i>	Using I as a means A causes X to eat Y/ A causes X to eat Y using I
<i>dīrì</i>	X sleeps	<i>dīr-às-ínè</i>	Using I as a means, A causes X to sleep/ A causes X to sleep using I/ X seduces Y by means of I
<i>kúlò</i>	X cries	<i>kúli-às-ínè</i>	Using I as a means, A causes X to cry
<i>kóth</i>	X walks	<i>kóth-à-ínè</i>	Using I as a means, A causes X to walk/ A causes X to walk using I as a tool
<i>láp</i>	X is ashamed	<i>láp-às-ínè</i>	A causes X to feel ashamed about I (I's bad behaviour)
<i>mótà</i>	X dives	<i>mótà-s-ínè</i>	Using I as a means, A causes X to dive/ A causes X to dive using I
<i>yírì</i>	X sits down	<i>yír-às-ínè</i>	Using I as a means, A causes X to sit down/ A causes X to sit down with I

Out of the verbs listed in Table 38, only the verb *láp* ‘X is ashamed of Y’ is incompatible with the instrumental applicative on its own. In this case, the variable I is not an instrument, but a motive, which implies that the meaning of the derived verb *lápàs* ‘A causes X to feel ashamed about I’ is non-compositional. The remaining verbs in Table 38 combine with the causative or instrumental applicative when each suffix occurs separately.

In addition, with the exception of the derived verbs *lápàsínè* ‘A causes X to feel ashamed about I’ and *diràsínè* ‘A seduces X by means of I’ (based on the verb stem *dirì* ‘X sleeps’), all other derived verbs in Table 38 are compositional. The derived verbs *diràsínè* ‘X seduces Y using I’ is idiosyncratic semantically; hence, it drops the causative schema, maintaining only schema I2 ‘[X performs E] using I’ of the instrumental applicative. Thus, strictly speaking, the extended meaning of the derived verb *diràsínè* ‘X seduces Y using I’ is not fully compositional, as it lacks the causative schema, which is consistent with the findings in this study that non-compositional meanings are inherited from one of the two base + suffix combination.

Some of the verbs that combine with both the causative and the instrumental applicative when each suffix appears alone on a verb do not combine with the two suffixes when they co-occur. These verbs are listed in Table XVII in the appendix. As far as I know, there is no semantic, morphological or syntactic reason that blocks the co-occurrence of these verbs with the causative and instrumental applicative. Therefore, I attribute their failure to combine with CAUS + INST to idiosyncratic lexical restrictions.

4.2.3 Mapping and argument realization in a CAUS + INST construction

As in constructions where only a single valence-increasing suffix is attached to the verb, the participant hierarchy and the precedence hierarchy determine the order in which grammatical relations are assigned to participant roles in a CAUS + INST construction. In addition, the prominence hierarchy blocks certain

semantically plausible CAUS + INST constructions. I will examine each of these principles in the following sub-sections.

4.2.3.1 *The participant hierarchy in a CAUS + INST construction*

In a homogeneous object CAUS + INST construction, the participant hierarchy is A » X » Y » I. This means that the participant A that is the causer argument is the subject, and the demoted subject X of the basic verb is the primary object. In a transitive-based CAUS + INST construction, the participant Y is the secondary object, and I is the tertiary object. Thus, the element to the extreme left on the hierarchy is assigned the highest open grammatical relation (subject), while the participant to the extreme right maps onto the lowest grammatical relation. The following example illustrates the participant hierarchy in an intransitive-based homogeneous object CAUS + INST construction.

- (186) a. *ǎ-wàth* *ǎ* *kúlǎ*
 NC1:DEF-child NC1.SUBJ:DEF cry
 ‘The child cried.’
- b. *ǎ-bǎkǎ* *ǎ* *kúli-s-ǎnè* *ǎ-wàth*
 NC1:DEF-woman NC1.SUBJ:DEF cry-CAUS-INST NC1:DEF-child
- k-ǎ-shèthè*
 NC2-INDEF-cane
 ‘The woman used a cane to make the child cry.’

The derived verb *kúlisǎnè* ‘A causes X to cry using I’ is derived from the verb stem *kúlǎ* ‘X cries’. In example (186b), the participant *ǎbǎkǎ* ‘woman’ is the subject, the demoted subject *ǎwàth* ‘child’ of the basic verb is the primary object. The participant I *kǎshèthè* ‘cane’ is the secondary object. Thus, the participant hierarchy is A » X » I.

In a transitive-based CAUS + INST construction, the participant Y is the secondary object and I is the tertiary object, as illustrated in (187b).

- (187) a. *ɔ̀-wàth* *ɔ̀* *dī* *è-fùfù*
 NC1:DEF-child NC1.SUBJ:DEF eat NC7:INDEF-fufu
 ‘The child ate fufu.’
- b. *ɔ̀-yà* *ɔ̀* *dī-s-ánè* *ɔ̀-wàth*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1:DEF-child
- è-fùfù* *k-à-bép*
 NC7:INDEF-fufu NC3-INDEF-spoon
 ‘The old woman used a spoon (as a means) to make the child eat
 fufu.’
 ‘The old woman made the child use a spoon (as a tool) to eat *fufu*.’

The derived verb *dīsánè* ‘A causes X to eat Y using I’ is derived from the verb stem *dī* ‘X eats Y’. In (187b), the participant X *ɔ̀wàth* ‘child’ is the primary object, Y *èfùfù* ‘fufu’ is the secondary object, I *kàbèp* ‘spoon’ is the tertiary object, A *ɔ̀yà* is the subject, and the participant hierarchy is A » X » Y » I. Thus, the participant I can be in one of two grammatical relations and the difference in reading has no effect on the participant hierarchy or the order of the objects.

4.2.3.2 The precedence hierarchy in a CAUS + INST construction

In heterogeneous object CAUS + INST constructions, the precedence hierarchy plays a part in determining the order in which grammatical relations are assigned to participants. In this case, the arguments that are expressed as object markers are closer to the verb than the nominal objects. This implies that the participant roles corresponding to the object markers are assigned higher grammatical relations than the participant roles corresponding to the nominal objects, as demonstrated by the examples in (188).

- (188) a. *ǝ-yà* *ǝ* *ǝi-s-ánè* *ǝ-wàth*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1:DEF-child

è-fùfù *k-à-bép*
 NC7:INDEF-fufu NC2-INDEF-spoon
 ‘The old woman used a spoon (as a means) to make the child eat fufu.’
 ‘The old woman made the child use a spoon to eat fufu.’
- b. *ǝ-yà* *ǝ* *ǝi-s-ánè* *yì*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC7.OBJ

ǝ-wàth *k-à-bép*
 NC1:DEF-child NC2-INDEF-spoon
 ‘The old woman used a spoon (as a means) to make the child eat it.’
 ‘The old woman made the child use a spoon to eat it (fufu).’
- c. *ǝ-yà* *ǝ* *ǝi-s-ánè* *kò*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC1.OBJ

kì *è-fùfù*
 NC2.OBJ NC7:INDEF-fufu
 ‘The old woman used it (as a means) to make him/her eat fufu.’
 ‘The old woman made him/her use it to eat fufu.’

The derived verb *ǝisánè* ‘A causes X to eat Y using I’ is derived from the verb stem *ǝi* ‘X eats Y’. In (188b), which illustrates a homogeneous object CAUS + INST construction, Y *èfùfù* ‘fufu’ maps onto the secondary object, X *ǝwàth* ‘child’ is the primary object and I *kàbèp* ‘spoon’ is the tertiary object. However, in the heterogeneous object CAUS + INST construction in (188a) Y, expressed as the object marker *yì*, is the primary object, while X *ǝwàth* ‘child’ and I *kàbèp* ‘spoon’ that are nominal arguments are the secondary object and tertiary object respectively.

Similarly, in (188c) both X and I that are expressed as object markers are assigned higher grammatical relations than Y that is a nominal object. Thus, the examples in (188) indicate that there is no one-to-one mapping between participant roles and grammatical relations, and the precedence hierarchy governs the order in which participant roles are assigned to grammatical relations.

4.2.3.3 The prominence hierarchy in a CAUS + INST construction

It is impossible to illustrate the prominence hierarchy in a CAUS + INST construction. This is because constructions that could have been used to illustrate the prominence hierarchy also violate the participant hierarchy. Therefore, it is difficult to say that any particular CAUS + INST construction is blocked only by the prominence hierarchy.

4.2.4 Summary of the co-occurrence of CAUS + INST

The set of suffixes CAUS + INST is compatible with only 9 verbs even though 44 verbs in the sample are compatible with both the causative and the instrumental applicative when each appears alone on a verb. In terms of syntax, I showed that combining CAUS + INST with a verb has the syntactic effect of adding two arguments A and I to the clause, and demoting the participant X that is the subject of the basic verb to an object position. The set of suffixes CAUS + INST is compatible with transitive and intransitive verbs. However, like the causative suffix ditransitive verbs are not compatible with CAUS + INST.

In connection with the semantics of CAUS + INST, the study indicates that a causativized verb predictably takes only schema I2 '[X performs E] using I' of the

instrumental applicative, resulting in two closely related meanings. In what I refer to as the I-in- E_1 meaning, the instrument is used by the participant A to perform E_1 , while in the I-in- E_2 meaning, the instrument is used by the participant X to perform E_2 . Two of the derived verbs *diràsínè* ‘X seduces Y using I’ and *lápàsínè* ‘A causes X to feel ashamed about I’ have assumed idiosyncratic meanings and are non-compositional.

In terms of the relative ranking of arguments, evidence from homogeneous object CAUS + INST constructions indicates that the causer argument A ranks higher than X, which in turn ranks higher than Y, and Y also ranks higher than I. Thus, the participant hierarchy in a homogeneous object CAUS + INST construction is A » X » Y » I, which is consistent with the hierarchy I proposed in Chapter 3 based on the relative ranking of X(causee) and Y, and Y and I. Finally, in heterogeneous object CAUS + INST constructions, there is evidence that the precedence hierarchy determines the mapping and realization of post-verbal arguments.

4.3 Co-occurrence of LOC + INST

When the applicative morphemes LOC + INST are combined with a verb, the valence of the verb is increased by two applied objects L and I. The applied object L corresponds to the participant role of LOC, GOAL or SOURCE, while the participant I corresponds to the role of INSTRUMENT. The set of applicatives LOC + INST is compatible with transitive and intransitive verbs, but not ditransitive verbs. Example (189) illustrates an intransitive-based LOC + INST construction.

- (189) a. *ǎ-lángbà* *ǎ* *yírà*
 NC1:DEF-man NC1.SUBJ:DEF sit
 ‘The man sat down.’
- b. *ǎ-làngbà* *ǎ* *yírà-r-ánè* *k-á-sòy*
 NC1:DEF-man NC1.SUBJ:DEF sit-LOC-INST NC2-DEF-horse
- à-fǎsò*
 NC3:INDEF-strength
 ‘The man sat on the horse with strength.’

The derived verb *yíràránè* ‘X sits down on Y with I’ in (189) is derived from the verb stem *yírà* ‘X sits down’. In this example where the locative and instrumental applicatives co-occur, two applied objects are added to the clause, L *kásòy* ‘horse’ and I *àfǎsò* ‘strength’. The participant L is the primary object and I is the secondary object.

Example (190b) illustrates a transitive-based LOC + INST construction.

- (190) a. *ǎ-wàth* *ǎ* *lám* *áy-sàr*
 NC1:DEF-man NC1.SUBJ:DEF throw NC3:DEF-stone
 ‘The child threw the stone.’
- b. *ǎ-wàth* *ǎ* *lám-àr-ánè* *é-bàmp*
 NC1:DEF-child NC1.SUBJ:DEF throw-LOC-INST NC7:DEF-bird
- áy-sàr* *à-fàk*
 NC3:DEF-stone NC3:INDEF-sling
 ‘The child threw the stone at the birds using a sling.’

The derived verb *lámàránè* ‘X throws Y with I’ in (190) is derived from the verb stem *lám* ‘X throws Y’. In (190b) where LOC + INST are attached to the transitive verb stem *lám* ‘X throws Y’, the applied object L *ébàmp* ‘birds’ and I *àfàk* ‘sling’ are introduced to the clause and are assigned the participant role of GOAL and INST respectively. Thus, in the intransitive and transitive-based LOC + INST

constructions, the applicatives LOC + INST add the applied objects L and I to the valence of the verb. Also, like the suffixes CAUS + INST, the pair of suffixes LOC + INST does not combine with ditransitive verbs.

4.3.1. Semantics of LOC + INST

In chapter 3, I showed that when the locative applicative alone is combined with a verb any one of the three schemas associated with the locative applicative is instantiated in the meaning of the derived verb. These schemas are L3 '[X performs E] at L', schema L4 '[X performs E] directed towards L' and schema L5 '[X performs E] directed away from L'. Which one of the locative schemas is used with a particular verb in the LOC + INST construction is determined by which of the locative schemas appears with the verb when it combines with the locative alone. When the locative applicative co-occurs with the instrumental applicative, one of these three locative schemas combines with schema I2 '[X performs E] using I' of the instrumental applicative. I refer to the different LOC + INST schemas as L3-I2, L4-I2 and L5-I2.

Schema L3-I2 of the LOC + INST construction may be formulated as 'X performs E at L, using I'. Figure 15 illustrates the compositional pathway involved in the derivation of this schema.

c. *ǎ-làngbà* *ǎ* *yírà-r-ǎnè* *ǎ-kùmà*
 NC1:DEF-man NC1.SUBJ:DEF sit-LOC-INST NC3:DEF-box

t-ǎ-gbàràkà

NC6-INDEF-crutches

‘The man sat on the box using crutches.’

The verb *yíràrǎnè* ‘X sits down on L using I’ in (191b) is derived from the verb stem *yírà* ‘X sits down’. This example (191b) illustrates schema L3, which is derived from combining the verb *yírà* ‘X sits down’ with the locative applicative. Example (191c) where the locative and instrumental applicative co-occur on the verb is a sum of the meaning of both schema L3 of the locative applicative and schema I2 of the instrumental applicative. The applied object L, which is expressed by the nominal *ǎkùmà* ‘box’, is assigned the participant role of LOCATION.

Another schema of the locative suffix is identified as L4-I2 which states ‘[X performs E] directed at L, using I’. Figure 16 illustrates the compositional pathway of this schema.

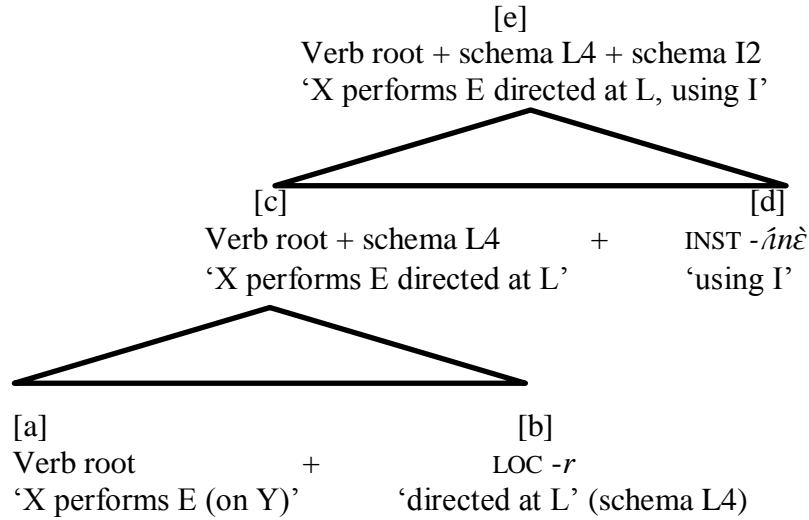


Figure 16. Compositional pathway of schema L4-I2

The first layer of the derivation involves the combination of the verb root with schema L4 ‘directed at L’ of the locative applicative. This derivation yields schema L4 ‘[X performs E] directed at L’ of the locative applicative. Schema L4 is then combined with schema I2 ‘[X performs E] using I’ of the instrumental applicative, resulting in the derivation of schema L4-I2 ‘[X performs E] directed towards L, using I’. Like schema L3-I2, this schema is predictably derived from the component meaning of the derived verbs. Example (192b) illustrates this schema.

- (192) a. *ǎ-lángbà* *ǎ* *lám* *ín-sàr*
 NC1:DEF-man NC1.SUBJ:DEF throw NC3:DEF-stone
 ‘The man threw the stone’
- b. *ǎ-làngbà* *ǎ* *lám-ǎr* *è-bàmp*
 NC1:DEF-man NC1.SUBJ:DEF throw-LOC NC7:INDEF-bird
- ín-sàr*
 NC3:DEF-stone
 ‘The man threw a stone at the birds.’

As with the other schemas of the derived LOC + INST verb, the derivation of schema L5-I2 begins with the combination of the verb root (i.e., structure [a]) in Figure 17 with the locative applicative (structure [b]), yielding schema L5 ‘[X performs E] directed away from L’, identified as structure [c]. Schema I2 ‘[X performs E], using I’ of the instrumental applicative is then added to schema L5 of the locative applicative, resulting in schema L5-I2 which states ‘[X performs E] directed away from L, using I’, identified as structure [e]. Example (193b) illustrates this schema of the LOC + INST construction.

- (193) a. *ɔ̌-kèy* *ɔ̌* *kéyà* *á-pàlà*
NC1:DEF-thief NC1.SUBJ:DEF steal NC3:DEF-rice
‘The thief stole (bags) of rice.’
- b. *ɔ̌-kèy* *ɔ̌* *kéy-àr* *ɔ̌-bàkò*
NC1:DEF-thief NC1.SUBJ:DEF steal-LOC NC1:DEF-woman
- á-pàlà*
NC3:DEF-rice
‘The thief stole (bags of) rice from the woman.’
- c. *ɔ̌-kèy* *ɔ̌* *kéy-àr-ánè*
NC1:DEF-thief NC1.SUBJ:DEF steal-LOC-INST
- ɔ̌-bàkò* *á-pàlà* *à-làrì*
NC1:DEF-woman NC3:DEF-rice NC3:INDEF-lorry
‘The thief used a lorry to steal (bags of) rice from the woman.’

The verb *kéyàr* ‘X steals Y from L’ is derived from the verb stem *kéy* ‘X steals Y’. Example (193b) combines the basic verb with schema L5 of the locative applicative, and the applied object is *ɔ̌bàkò* ‘woman’. Example (193c) combines schema L5 of the locative applicative and schema I2 of the instrumental applicative, resulting in the derivation of schema L5-I2. The applied objects L and

I are marked by the participant *ɔ̀b̀d̀k̀d̀* ‘woman’ that is assigned the participant role of SOURCE and I *̀l̀d̀r̀ì* ‘lorry’ that is the instrument.

To sum up, a verb that is combined with LOC + INST takes either schema L3-I2, L4-I2 or L5-I2, depending on the verb. The choice of the L-schemas is determined by the schema that the verb stem takes with only L. The basic difference between these three schemas is based on the type of event and participant that is involved in the event. In what I refer to as schema L3-I2, the derived verb denotes a static event, and the participant L is a LOCATION. With schema L4-I2, the derived verb denotes direction towards L and the participant L is assigned the role of GOAL. Finally, with the derived verbs taking schema L5-I2, the directionality of the event is away from L, and the participant L is assigned the participant role of SOURCE.

4.3.2 Combination of LOC + INST with a verb root

Out of the 67 verbs in the sample that combine with both the locative and instrumental applicatives, only the 7 verbs in Table 39 combine with both applicatives.

Table 39. *Verbs taking LOC + INST*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>gbáshì</i>	X takes/lifts up Y	<i>gbáshì-r-̀ínè</i>	X takes Y from L using I
<i>gbíp</i>	X catches Y	<i>gbíp-̀àr-̀ínè</i>	X catches Y from L using I
<i>báni</i>	X reclaims Y	<i>báni-r-̀ínè</i>	X reclaims Y from L by means of I
<i>lám</i>	X throws Y	<i>lám̀àr-̀ínè</i>	X throws Y at L using I
<i>yír̀à</i>	X sits down	<i>yír̀-̀àr-̀ínè</i>	X sits down on L with I
<i>bók</i>	X cries	<i>bók-̀àr-̀ínè</i>	X cries facing L by means of I
<i>bóyà</i>	X donates Y	<i>bóyà-r-̀ínè</i>	X donates Y to L by means of I

The verbs *gbáshìrínè* ‘X takes/lifts up Y from L, using I’, *gbìpirínè* ‘X catches Y from L, using I’ and *bánìrínè* ‘X reclaims Y from L by means of I’ take schema L5-12. On the other hand, the verbs *lámàrínè* ‘X throws Y at L, using I’, *bésàrínè* ‘X digs out Y towards L, using I’ and *bókàrínè* ‘X cries facing L by means of I’ and *bóyàrínè* ‘X donates Y to L by means of I’ take schema L4-I2, while the verb *yíràrínè* ‘X sits on L, using I’ takes schema L3-I2. The specific schema of L in the combination verb + LOC + INST is the schema that surfaces when only the locative applicative is combined with the verb.

In addition to the verbs in Table 39 are the verbs *fǔfàrínè* ‘X rebukes L’ derived from the verb stem *fǔf* ‘X says Y’ and the verb *bésàrínè* ‘X undermines L’, which also combine with LOC + INST. Syntactically, the derived verb *fǔfàrínè* replaces the participant Y of the basic verb with L. It also drops schema I2 of the instrumental applicative, maintaining only schema L3 of the locative applicative. In other words, the derived verb *fǔfàrínè* ‘X rebukes Y’ has assumed an idiomatic meaning that is not a function of all its component parts. Also, the derived verb *bésàrínè* ‘X undermines L’ drops the object Y of the basic verb and takes the locative participant L. This verb also drops schema I2 of the instrumental applicative, maintaining only schema L3 of the locative applicative. This means that the derived verb *bésàrínè* ‘X undermines L’ is not a complete function of its component parts.

Some verbs take what looks as LOC + INST, but the derived verb expresses schema B2 of the benefactive applicative, as illustrated by the following example.

- (194) a. *ɔ̌-kàràmɔ̌kɔ̌* *ɔ̌* *gbál* *ɔ̌-rèkà*
 NC1:DEF-teacher NC1.SUBJ:DEF write NC3:INDEF-letter
 ‘The teacher wrote a letter.’
- b. *ɔ̌-kàràmɔ̌kɔ̌* *ɔ̌* *gbál-àr-ínè* *mì*
 NC1:DEF-teacher NC1.SUBJ:DEF write-LOC-INST 1SG.OBJ
- ɔ̌-rèkà*
 NC3:INDEF-letter
 ‘The teacher wrote a letter for me.’
- c. *ɔ̌-kàràmɔ̌kɔ̌* *ɔ̌* *gbál-à* *mì*
 NC1:DEF-teacher NC1.SUBJ:DEF write-BEN 1SG.OBJ
- ɔ̌-rèkà*
 NC3:INDEF-letter
 ‘The teacher wrote a letter for me.’

In both (194b) and (194c), LOC + INST adds one, but not two applied objects, and this applied object is expressed by the object marker *mì*. The applied object *mì* is a benefactive object W, rather than a locative L or instrument I. Verb stems in the sample that take what looks like LOC + INST, but express schema B2 are listed in Table 40 below.

Table 40. *Stems with LOC + INST expressing schema B2*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>bémpà</i>	X makes Y	<i>bémpà-r-ínè</i>	X makes Y affecting the interests of W
<i>bánkàlì</i>	X rolls Y	<i>bánkàlì-r-ínè</i>	X rolls Y affecting the interests of W
<i>búlì</i>	X chisels Y	<i>búlì-r-ínè</i>	X chisels Y affecting the interests of W
<i>gbák</i>	X cuts Y	<i>gbák-àr-ínè</i>	X cuts Y affecting the interests of W
<i>gbál</i>	X writes Y	<i>gbál-à-r-ínè</i>	X writes Y affecting the interests of W
<i>lóm</i>	X talks about Y	<i>lóm-àr-ínè</i>	X talks about Y affecting the interests of W

The verbs in Table 40 have identifiable LOC + INST morphemes even though they do not express schema L3-I2 which similar derived verbs often express. Synchronically, these verbs are merely idiomatic, yielding only schema B2 of the benefactive applicative, which states ‘[X performs E] affecting the interests of

W'. Therefore, the verbs listed in Table 40 add to the evidence that the meaning of morphologically derived verbs can be non-compositional.

4.3.3 Mapping and argument realization in a LOC + INST construction

Like constructions where only the locative or instrumental applicative is attached to the verb, the participant hierarchy and the precedence hierarchy determine the mapping between participant roles and grammatical relations in a LOC + INST construction. In addition, certain semantically plausible LOC + INST constructions are blocked if the order of precedence of the participant hierarchy and precedence hierarchy violates the prominence hierarchy. I will examine each of these principles in the following sub-sections.

4.3.3.1 The participant hierarchy in a LOC + INST construction

The participant hierarchy in a LOC + INST construction where all the post-verbal arguments are either nominals or object markers is X » L » Y » I, which means that the participant X is the subject and L is the primary object. In a transitive-based LOC + INST construction, Y is the secondary object and it precedes I, the tertiary object. Example (195b) illustrates the participant hierarchy in a transitive-based LOC + INST construction.

- (195) a. *ɔ̀-láŋbà* *ɔ̀* *lám* *áŋ-sà̀r*
 NC1:DEF-man NC1.SUBJ:DEF throw NC3:DFEF-stone
 'The man threw the stone.'
- b. *ɔ̀-làŋbà* *ɔ̀* *lám-à̀r-Ánè* *k-á-yèk*
 NC1:DEF-man NC1.SUBJ:DEF throw-LOC-INST NC2-DEF-monkey
- áŋ-sà̀r* *à̀-lànth*
 NC3:DEF-stone NC3:INDEF-sling
 'The man threw a stone at the monkey using a sling.'

The derived verb *lámàr-ánè* ‘X throws Y with I’ in (195) is derived from the verb stem *lám* ‘X throws Y’. In example (195b), the participant X *ǎ̀làngbà* ‘man’ is the subject, L *ká̀yèk* ‘monkey’ is the primary object, Y *á̀nsàr* ‘stone’ is the secondary object and I *à̀lànth* ‘sling’ is the tertiary object. Thus, this example indicates that in a LOC + INST construction where all the objects are nominals, L maps onto a higher grammatical relation than Y. In addition, the participant I maps onto the lowest grammatical relation in the construction just as in a homogeneous object construction where only the instrumental applicative is attached to the verb. Note that ditransitive-based LOC + INST constructions are impossible in Temne.

4.3.3.2 *The precedence hierarchy in a LOC + INST construction*

In a heterogeneous object LOC + INST construction, the precedence hierarchy and participant hierarchy determine the order in which post-verbal arguments map onto grammatical relations. In this case, the objects that are realized as object markers and their corresponding participant roles are assigned higher grammatical relations than the participant role that is assigned to the nominal objects. Example (196b) illustrates a heterogeneous object LOC + INST construction.

- (196) a. *ǎ̀làngbà* *ǎ̀* *lám* *á̀nsàr*
 NC1:DEF-man NC1.SUBJ:DEF throw NC3:DEF-stone
 ‘The man threw the stone.’
- b. *ǎ̀làngbà* *ǎ̀* *lám-ǎ̀r-ánè* *kò*
 NC1:DEF-man NC1.SUBJ:DEF throw-LOC-INST NC1.OBJ
- á̀nsàr* *à̀lànth*
 NC3:DEF-stone NC3:INDEF-sling
 ‘The man threw a stone at him/her with a sling.’

- c. *ǎ-làngbà* *ǎ* *lám-ǎr-ánè* *ɲì*
NC1:DEF-man NC1.SUBJ:DEF throw-LOC-INST NC3.OBJ
- k-á-yèk* *à-lànth*
 NC2-DEF-monkey NC3:INDEF-sling`
‘The man threw it at the monkey using a sling.’
- d. *ǎ-làngbà* *ǎ* *lám-ǎr-ánè* *ɲì*
NC1:DEF-man NC1.SUBJ:DEF throw-LOC-INST NC3.OBJ
- k-á-yèk* *áɲ-sàr*
 NC2-DEF-monkey NC3:DEF-stone
‘The man threw a stone at the monkey using it (a sling).’

In (196b), the object marker that expresses L is the primary object, while Y *áɲsàr* ‘stone’ and I *àlànth* ‘sling’ that are expressed by nouns are the secondary object and tertiary object respectively. In (196c), Y is expressed by the object marker *ɲì* and is the primary object, while L and I that are expressed as nouns are the secondary object and tertiary object respectively. In addition, the participant I can be promoted to the primary object if it is expressed by an object marker and L and Y are expressed by nominals, as demonstrated (196d). In this example, (196d), the object marker *ɲì* that expresses I is the primary object, while the nouns that express L *ká-yèk* ‘monkey’ and Y *áɲsàr* ‘stone’ are the secondary object and tertiary object respectively. These examples indicate that the grammatical relation that is assigned to an object in a LOC + INST construction is not fixed.

4.3.3.3 *The prominence hierarchy in a LOC + INST construction*

The prominence hierarchy requires the participants expressed by object markers to appear in the order 1/2 » 3ANIM » 3INANIM. Thus, the sentence ‘the man

redeemed him/her from me using it (three shillings)’ is possible in a construction with object markers, as in (197b).

- (197) a. *ǎ-làngbà* *ǎ* *báni* *kò*
 NC1:DEF-man NC1.SUBJ:DEF reclaim NC1.OBJ
 ‘The man redeemed him/her.’
- b. *ǎ-làngbà* *ǎ* *báni-r-ánè* *mì*
 NC1:DEF-man NC1.SUBJ:DEF redeem-LOC-INST 1SG.OBJ
- kò* *ɣì*
 NC1.OBJ NC3.OBJ
 ‘The man redeemed him/her from me using it (three shillings).’

In (197b), the participant L is expressed by the object marker *mì* and precedes the participant Y that is expressed by the object marker *kò*, which in turn precedes the participant *ɣì* that is the instrument I. Thus, (197b) obeys the prominence hierarchy and indicates that the sentence ‘the man redeemed him/her from me using it (three shillings)’ is possible in Temne. However, the sentence ‘the man redeemed me from him/her using it (three shillings)’ is impossible in a construction where post-verbal arguments are expressed by object markers, as the ungrammaticality of (198b) indicates.

- (198) a. *ǎ-làngbà* *ǎ* *báni* *mì*
 NC1:DEF-man NC1.SUBJ:DEF redeem 1SG.OBJ
 ‘The man redeemed me.’
- b. **ǎ-làngbà* *ǎ* *báni-r-ánè* *kò*
 NC1:DEF-man NC1.SUBJ:DEF redeem-LOC-INST NC2.OBJ
- mì* *ɣì*
 1SG.OBJ NC3.OBJ
 Intended meaning: ‘The man redeemed me from him/her using it (three shillings).’

The object Y of the basic verb in (198a) is expressed by the first person object marker *mì*. In (198b), two applied objects are added to the valence of the verb by the locative and instrumental applicatives. The new arguments are L and I and are expressed by the third person object marker *kḁ* and the third person inanimate object marker *ɲì*. Thus, (198b) obeys the participant hierarchy. However, it is still ungrammatical because it violates the prominence hierarchy, which bans any LOC + INST construction where the third person animate object marker *kḁ* outranks the first person object marker *mì* (i.e., *3ANIM » 1SG).

4.3.4 Summary of the co-occurrence of LOC + INST

Out of the 67 verbs that occur with the locative and instrumental applicative when each appears alone on a verb, the set of applicatives LOC + INST co-occurs with 7 verbs in a compositional order. They also occur with six other verbs and these verbs take only schema B2 of the benefactive applicative.

In connection with semantics, a verb that is combined with LOC + INST takes either schema L3-I2, L4-I2 or L5-I2. Also, it is the root + L combination that determines which schema of L is used in a LOC + INST construction. In addition, the only available schema of I is I2 '[X performs E] using I'. However, some of the derived verbs have assumed idiomatic meanings.

In terms of syntax, combining the applicatives LOC + INST with a verb has the effect of increasing the valence of the verb by two applied objects, L and I. In a homogeneous object construction, the applied object L is assigned a higher grammatical relation than I. The relative order of L and I in the construction

mirrors the compositional pathway involved in the derivation of the composite meaning of the derived LOC + INST verb.

Concerning the mapping and realization of arguments in a LOC + INST construction, the study indicates that in a homogeneous object LOC + INST construction, the participant hierarchy $X \gg L \gg Y \gg I$ determines the order in which participant roles map onto grammatical relations. In the case of heterogeneous object LOC + INST constructions, the precedence hierarchy, which requires a participant expressed by an object marker to precede a participant that is expressed by a nominal, governs the order of the post-verbal arguments in the construction. In both homogeneous and heterogeneous object LOC + INST constructions, a certain participant can be in one of two grammatical relations. In addition, semantically plausible LOC + INST constructions are blocked if the order of object markers determined by the participant hierarchy and or precedence hierarchy violates the prominence hierarchy.

In addition, the restriction that the participant L must be an object marker (OM) in a ditransitive-based locative construction, discussed in Chapter 3, does not apply in a LOC + INST construction. This constraint is expected to apply to a LOC + INST construction if the constraint is based on the number of objects in the construction, since the number of objects in a transitive-based LOC + INST construction is the same as in a ditransitive-based locative construction.

4.4 Co-occurrence of LOC + BEN

The co-occurrence of the applicatives LOC + BEN on a verb has the syntactic effect of adding the applied objects identified as L and W to the valence of the verb. The

applied object L may be assigned the participant role of LOCATION, GOAL or SOURCE depending on which of these three participant roles it is assigned when it combines with the verb stem on its own. Concerning the benefactive applicative, I showed that when it occurs alone on a verb, it increases the valence of the verb by adding the applied object W, S or I. Sometimes it adds both W and S or W and I to the clause. However, when the benefactive and locative applicatives co-occur, only the applied object W is added to the clause.

The set of applicatives LOC + BEN combines only with transitive and intransitive verbs. Ditransitive verbs are incompatible with LOC + BEN. Also, it is impossible to combine transitive-based LOC + BEN constructions with three nominal objects. The following example illustrates a LOC + BEN construction that is derived from the intransitive verb *yîrâ* ‘X sits down’.

- (199) a. *ǎ-lángbà* *ǎ* *yîrâ*
 NC1:DEF-man NC1.SUBJ:DEF sit
 ‘The man sat down.’
- b. *ǎ-làngbà* *ǎ* *yîrâ-r-â*
 NC1:DEF-man NC1.SUBJ:DEF sit-LOC-BEN
- ǎ-bàkà* *âŋ-bènt*
 NC1:DEF-woman NC3:DEF-stool
 ‘The man sat on the stool for the woman.’

The verb *yîrârâ* ‘X sits on L affecting the interests of W’ is derived from the basic verb *yîrâ* ‘X sits down’. In (199b) where LOC + BEN are attached to the verb, the valence of the verb is increased by two applied objects L, *âŋbènt* ‘stool’ that is the secondary object and W *ǎbàkà* ‘woman’ that is the primary object. The participant

L specifies the location of the event described by the predicate, while the participant *ɔ̀b̀d̀k̀d̀* ‘woman’ is the entity whose interests are affected by this event.

The set of applicatives LOC + BEN also combines with transitive verbs.

When LOC + BEN combines with a transitive verb, the applied objects L and W are also added to the clause, as demonstrated in example (200).

- (200) a. *ɔ̀-láŋgbà* *ɔ̀* *wáy* *áŋ-t̀d̀l̀*
 NC1:DEF-man NC1.SUBJ:DEF buy NC3:DEF-medicine
 ‘The man bought the medicine.’
- b. *ɔ̀-làŋgbà* *ɔ̀* *wáy-ə̀r-à* *mì*
 NC1:DEF-man NC1.SUBJ:DEF buy-LOC-BEN 1SG.OBJ
- ɔ̀-chìk* *áŋ-t̀d̀l̀*
 NC1:DEF-stranger NC3:DEF-medicine
 ‘The man bought the medicine from the stranger for me.’
- c. *ɔ̀-làŋgbà* *ɔ̀* *wáy-ə̀r-à* *mì* *k̀d̀*
 NC1:DEF-man NC1.SUBJ:DEF buy-LOC-BEN 1SG.OBJ NC1.OBJ
- ŋì*
 NC3.OBJ
 ‘The man bought it (the medicine) from him/her (the stranger) for me.’

The verb *wáyə̀r-à* ‘X buys Y from L affecting the interests of W’ is derived from the basic verb *wáy* ‘X buys Y’. In (206), the applied object W, expressed by the object marker *mì*, is the primary object, while L *ɔ̀chìk* ‘stranger’ is the secondary object. The participant Y *áŋt̀d̀l̀* ‘medicine’ is the tertiary object. In (200c) where all the post-verbal arguments are expressed by object markers, the participant W expressed by the object marker *mì* is also the primary object, L expressed by the object marker *k̀d̀*, is the secondary object, while Y *ŋì* is the tertiary object. Thus, in both (200b) and (200c), the participant W is the primary object. Ditransitive verbs

derivation of schema L3 of the locative applicative ‘[X performs E] at L’, which is identified as structure [c] in Figure 18. The second layer of the derivation involves the combination of schema B2 ‘[X performs E] affecting the interests of W’ of the benefactive applicative (i.e., structure [d]) with schema L3 of the locative applicative (i.e., structure c), yielding schema L3-B2 ‘[X performs E] at L affecting the interests of W’, identified as structure [e] in Figure 18. The meaning of each derived verb that takes schema L3-B2 is a composite function of its component parts. Also, in this derivation, the order of the applied objects does not mirror the order of the affixes with respect to the verb stem. Example (201) illustrates schema L3-B2 of the LOC + BEN.

- (201) a. *ǝ-wàth bèrà* *ǝ* *yírà*
 NC1:DEF-child.girl NC1.SUBJ:DEF sit
 ‘The girl sat down.’
- b. *ǝ-wàth bèrà* *ǝ* *yírà-r* *áŋ-bènt*
 NC1:DEF-child.girl NC1.SUBJ:DEF sit-LOC NC3:DEF-stool
 ‘The girl sat on the stool.’
- c. *ǝ-wàth bèrà* *ǝ* *yírà-r-à* *ǝ-bòkò*
 NC1:DEF-child.girl NC1.SUBJ:DEF sit-LOC-BEN NC1:DEF-stool
- áŋ-bènt*
 NC3:DEF-stool
 ‘The girl sat on the stool for the woman.’

The verb *yíràrà* ‘X sits down on L for W’ is derived from the verb stem *yírà* ‘X sits down’. In (201b), only the locative applicative *-r* is combined with the verb *yírà* ‘X sits down’. The added participant is L *áŋbènt* ‘stool’ and is assigned the role of a LOCATION. In example (201c), both the locative and benefactive applicatives are combined with the bare verb *yírà* ‘X sits down’. The participant

X *ḡwàth bèrà* ‘girl’ is the subject. The applied objects are the participant W *ḡbḡkḡ* ‘woman’, which is the BENEFICIARY and L *ḡjbènt* ‘stool’ that is the LOCATION.

In addition to schema L3-B2, verbs that combine with the locative and benefactive applicative can also take schema L4-B2 which states ‘[X performs E] towards L affecting the interests of W’. This schema differs from schema L3-B2 in the sense that it denotes direction towards L. Figure 19 illustrates the compositional pathway involved in the derivation of schema L4-B2.

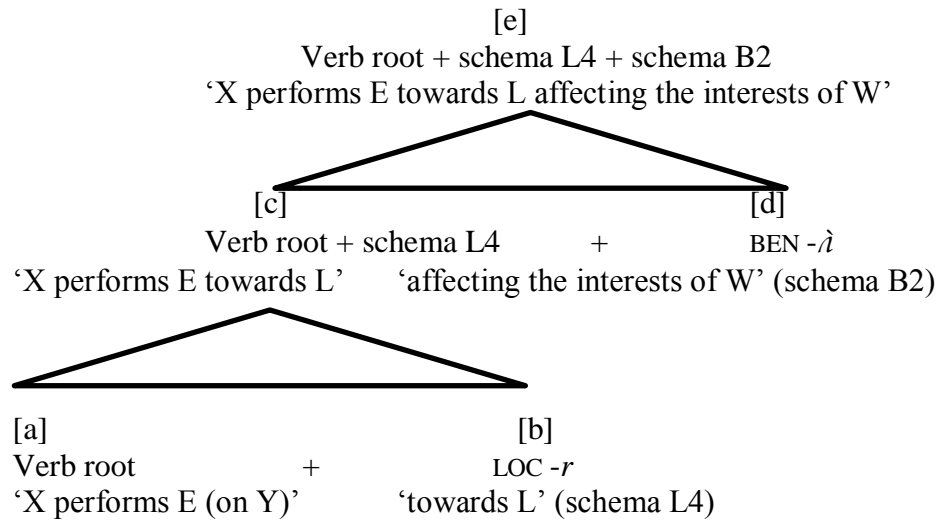


Figure 19. Compositional pathway of schema L4-B2

As with the derivation of schema L3-B2, the first layer of the compositional pathway of schema L4-B2 involves the combination of the verb root with schema L4 ‘towards L’ of the locative applicative, resulting in the derivation of the meaning schematized as ‘[X performs E] towards L’, which is identified as structure [c] in Figure 19. The second layer of the derivation combines schema B2 ‘[X performs E] affecting the interests of W’ of the benefactive applicative (i.e., structure [d]) with schema L4 of the derived locative verb, identified as structure [c]. This combination yields schema L4-B2 ‘[X performs E] towards L affecting

the interests of W'. Here too the order of the applied objects does not mirror the order in which the affixes are added to the verb stem. Example (202) illustrates schema L4-B2 of LOC + BEN.

- (202) a. *ǎ-wàth bèrà* *ǎ* *thómò*
 NC1:DEF-child.girl NC1.SUBJ:DEF dance
 'The child danced.'
- b. *ǎ-wàth bèrà* *ǎ* *thómò-r* *ǎ-làngbà*
 NC1:DEF-child.girl NC1.SUBJ:DEF dance-LOC NC1:DEF-man
 'The girl danced towards the man.'
- c. *ǎ-wàth bèrà* *ǎ* *thómò-r-à*
 NC1:DEF-child.girl NC1.SUBJ:DEF dance-LOC-BEN
- ǎ-bòkò* *ǎ-làngbà*
 NC1:DEF-woman NC3:DEF-man
 'The girl danced towards the man for the woman.'

The verb *thómòr* 'X dances towards L for W' is derived from the basic verb *thómò* 'X dances'. In (202b), only the locative applicative *-r* is combined with the verb *thómò* 'X dances'. The added participant is L *ǎlàngbà* 'man' and is assigned the role of a GOAL. In (202c) both the locative and benefactive applicatives are combined with the basic verb *thómò* 'X dances'. In this example, the participant X *ǎwàthbèrà* 'girl' is the subject, the participant W *ǎbòkò* 'woman' is the BENEFICIARY and the participant L *ǎlàngbà* 'man' is the GOAL.

The co-occurrence of the locative and the benefactive applicative on a verb can also yield schema L5-B2, which states '[X performs E] away from L, affecting the interests of W'. The basic difference between schema L5-B2 and schema L4-B2 or schema L3-B2 is that it denotes direction away from L. Figure

20 illustrates the compositional layers involved in the derivation of schema L5-B2.

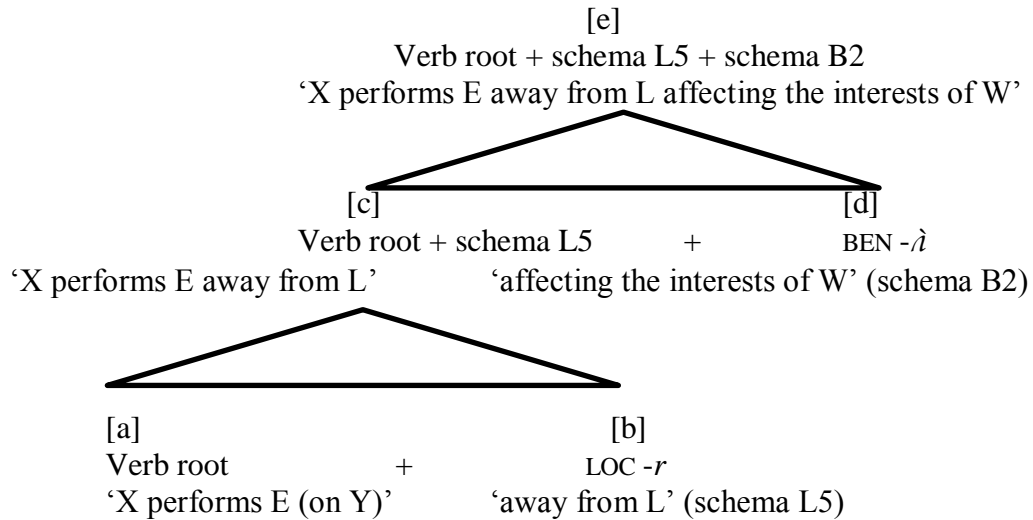


Figure 20. Compositional pathway of schema L5-B2

The derivation of schema L5-B2 begins with the combination of the basic meaning of the verb with schema L5 of the locative applicative, which states ‘away from L’. The combination of a verb stem with this locative schema results in the derivation of schema L5, ‘[X performs E] away from L’ of the derived locative verb. This schema is then combined with schema B2 of the benefactive applicative ‘[X performs E] affecting the interests of W’, resulting in the derivation of schema L5-B2 ‘[X performs E] away from L affecting the interests of W’. As with schema L3-B2 and schema L4-B2, the order of the applied objects does not reflect the order in which the suffixes are added to the verb stem in the derivation of schema L5-B2. Example (203) illustrates schema L5-B2 of LOC + BEN.

- (203) a. *ǎ-thèm* *ǎ* *wáy* *k-á-thànkè*
 NC1:DEF-old man NC1.SUBJ:DEF buy NC2-DEF-pen
 ‘The old man bought the pen.’

- b. *ǎ-thèm* *ǎ* *wáy-ǎr* *ǎ-treda*
 NC1:DEF-old man NC1.SUBJ:DEF buy-LOC NC1:DEF-trader

k-ǎ-th\ànkè
 NC1:DEF-pen

‘The old man bought the pen from the trader.’

- c. *ǎ-thèm* *ǎ* *wáy-ǎr-à* *k*
 NC1:DEF-man NC1.SUBJ:DEF buy-LOC-BEN NC1.OBJ

ǎ-trèdà *k-ǎ-th\ànkè*
 NC1:DEF-trader NC2:DEF-pen

‘The old man bought the pen from the trader for him/her.’

The verb *wáyǎr* ‘X buys Y from L for W’ is derived from the basic verb *wáy* ‘X buys Y’. In (203b), only the locative applicative *-r* is combined with the basic verb *wáy* ‘X buys Y’. In this example, the applied object is L *ǎtrèdà* ‘trader’ and is the SOURCE. In (203c), both the locative and benefactive applicatives are combined with the basic verb *wáy* ‘X buys Y’, resulting in the addition of the new participants W that is expressed by the object marker *k* and the participant L *ǎtrèdà* ‘trader’ that is the SOURCE.

In all the derivations of schema L3-B2, L4-B2 and L5-B2 discussed above, which one of these three combined schemas a verb stem selects depends on which schema the verb stem takes when it combines with the locative applicative on its own. Thus, a verb stem selects schema L5-B2 because schema L5 is also what the verb stem selects when it combines with the locative applicative. Also, the verb selects schema L4-B2 if schema L4 is what the verb stem selects when it combines with the locative applicative alone. In addition, the verb selects schema L3-B2 if schema L3 is also the schema that the verb stem selects when it takes only the locative applicative *-r*. Each of the three schemas

associated with a verb that is combined with LOC + BEN is a composite function of the parts of the derived verb.

To sum up, when the two applicatives LOC + BEN are combined with a verb, the derived verb assumes one of the three schemas L3-B2, L4-B2 or L5-B2. The difference in the three schemas is based on the type of event and participant that is involved in the event. Schema L3-B2 involves a static event; schema L4-B2 involves direction towards L, while schema L5-B2 involves direction away from L. Thus, the difference in the three schemas of a verb that is combined with LOC + BEN corresponds to the variation in the schemas of the locative applicative L3, L4 and L5.

4.4.2 Combination of LOC + BEN with a verb root

Out of the 101 verbs listed in Table XXI in the appendix that co-occur with the locative and benefactive applicatives when each appears alone on a verb, 70 verbs combine with the LOC + BEN together, and are listed in Table XXII in the appendix. Out of these 70 verbs, 35 are instantiations of the allative schema L4-B2, and are listed in Table 41.

Table 41. *Verbs combining with schema L4-B2*

<i>root</i>	<i>gloss</i>	<i>root-LOC</i> <i>+BEN</i>	<i>gloss</i>
<i>bēs</i>	X digs out Y	<i>bēs-àr-à</i>	X digs out Y towards L affecting the interests of W
<i>béth</i>	X bursts into tears	<i>béth-àr-à</i>	X bursts into tears facing L affecting the interests of W
<i>báns.à</i>	X is angry	<i>báns-àr-à</i>	X is angry at L affecting the interests of W
<i>bóy</i>	X mentions Y	<i>bóy-àr-à</i>	X mentions Y to L affecting the interests of W
<i>béy</i>	X belches	<i>béy-àr-à</i>	X belches towards L affecting the interests of W
<i>bók</i>	X cries	<i>bók-àr-à</i>	X cries facing L affecting the interests of W
<i>bóyà</i>	X donates Y	<i>bóyà-àr-à</i>	X donates Y to L affecting the interests of W
<i>bús</i>	X takes off Y	<i>bús-àr-à</i>	X takes off Y before L affecting the interests of W
<i>chéchì</i>	X spreads Y	<i>chéchì-r-à</i>	X spreads Y to L affecting the interests of W
<i>chér</i>	X lets Y go	<i>chér-àr-à</i>	X lets Y go in the direction of L affecting the interests of W
<i>chîs</i>	X is inebriated	<i>chîs-àr-à</i>	X is inebriated and directs his foolish speech at L affecting the interests of W
<i>fithà</i>	X throws Y	<i>fithà-r-à</i>	X throws away Y to L affecting the interests of W
<i>gbák</i>	X cuts Y	<i>gbák-àr-à</i>	X cuts Y from L affecting the interests of W
<i>gbánthì</i>	X ends Y	<i>gbánthì-r-à</i>	X ends Y in L affecting the interests of W
<i>gbéth</i>	X yells	<i>gbéth-àr-à</i>	X yells at L affecting the interests of W
<i>gbál</i>	X writes Y	<i>gbál-àr-à</i>	X writes Y to L affecting the interests of W
<i>gbép</i>	X climbs Y	<i>gbép-àr-à</i>	X climbs Y towards L affecting the interests of W
<i>ɣómì</i>	X makes an ugly face	<i>ɣómì-r-à</i>	X makes an ugly face to L affecting the interests of W
<i>ɣánt</i>	X pukes Y	<i>ɣánt-àr-à</i>	X pukes Y towards L affecting the interests of W
<i>ɣát</i>	X ascends	<i>ɣát-àr-à</i>	X ascends towards L affecting the interests of W
<i>ɣét</i>	X minces Y	<i>ɣét-àr-à</i>	X minces Y towards L affecting the interests of W
<i>kóth</i>	X walks	<i>kóth-àr-à</i>	X walks towards L affecting the interests of W
<i>lák</i>	X throws Y	<i>lák-àr-à</i>	X throws Y at L affecting the interests of W
<i>lóm</i>	X says Y	<i>lóm-àr-à</i>	X says Y to L affecting the interests of W
<i>lóm</i>	X throws Y	<i>lóm-àr-à</i>	X throws Y to L affecting the interests of W

<i>léŋ</i>	X sings	<i>léŋ-àr-à</i>	X sings Y to L affecting the interests of W
<i>sónkò</i>	X shouts	<i>sónkò-r-à</i>	X shouts at L affecting the interests of W
<i>sór</i>	X coughs	<i>sór-àr-à</i>	X coughs towards Y affecting the interests of W
<i>shém</i>	X rejects Y	<i>shém-àr-à</i>	X rejects Y and the rejection targets L affecting the interests of W
<i>táy</i>	X closes Y	<i>táy-àr-à</i>	X closes Y (e.g., door) in direction of L affecting the interests of W
<i>tátá</i>	X flirts	<i>tátá-r-à</i>	X flirts with L affecting the interests of W
<i>thómò</i>	X dances	<i>thómò-r-à</i>	X dances towards L affecting the interests of W
<i>thìlà</i>	X sells Y	<i>thìlà-r-à</i>	X sells Y to L affecting the interests of W
<i>thúf</i>	X spits Y out	<i>thúf-àr-à</i>	X spits Y out towards L affecting the interests of W
<i>wóŋ</i>	X enters Y	<i>wóŋ-àr-à</i>	X enters Y in the direction L affecting the interests of W

For each derived verb in Table 41, the applied object L corresponds only to the participant role GOAL. In addition, all the verbs in Table 41 take only schema L4 of the locative applicative.

Out of the 70 verbs that co-occur with LOC + BEN, only the 10 verbs listed in Table 42 take the ablative schema L5-B2. For each of these verbs, the applied objects can only be W and L, where L is assigned the participant role of SOURCE.

Table 42. *Verbs combining with schema L5-B2*

<i>root</i>	<i>gloss</i>	<i>root + LOC + BEN</i>	<i>gloss</i>
<i>báni</i>	X reclaims Y	<i>báni-r-à</i>	X reclaims Y from L affecting the interests of W
<i>gbáshì</i>	X takes away Y	<i>gbáshì-r-à</i>	X takes Y from L affecting the interests of W
<i>káshì</i>	X retracts Y	<i>káshì-r-à</i>	X retracts Y from L affecting the interests of W
<i>kéyà</i>	X steals Y	<i>kéy-àr-à</i>	X steals Y from L affecting the interests of W
<i>lémpì</i>	X swoops down on Y	<i>lémpì-r-à</i>	X swoops down on Y from L affecting the interests of W
<i>lìy</i>	X pulls Y	<i>lìy-àr-à</i>	X pulls Y from L affecting the interests of W
<i>m'ánk</i>	X hides Y	<i>m'ánk-àr</i>	X hides Y from L affecting the interests of W
<i>thólà</i>	X begs Y	<i>thólì-r-à</i>	X begs Y from L affecting the interests of W
<i>wáy</i>	X buys Y	<i>wáy-àr-à</i>	X buys Y from L affecting the interests of W
<i>yép</i>	X lends Y from R	<i>yép-àr-à</i>	X lends Y from R affecting the interests of W
<i>yíf</i>	X asks for Y	<i>yíf-àr-à</i>	X asks for Y from L affecting the interests of W

The verb root *yép* in Table 42 is ambiguous and has the English translations ‘lend’ and ‘borrow’, and is glossed as ‘X lends Y’ or ‘X borrows Y’. Also, it is both mono-transitive and ditransitive just as the verb root *yíf* ‘X asks Y’ or ‘X asks R about Y’. The following example illustrates the transitive use of the verb *yép* ‘X borrows’ or ‘X lends Y’.

- (204) *ǎ-làngbà* *ǎ* *yép* *à-rùmà*
 NC1:DEF-man NC1.SUBJ:DEF borrow/lend NC3:INDEF-shirt
 ‘The man borrowed a shirt.’
 ‘The man lent a shirt.’

In (204), only one post-verbal argument is expressed. Example (205) illustrates the ditransitive use of the verb *yép* ‘X borrows or lends Y to/from R’.

(205) *ǎ-làngbà* *ǎ* *yép* *ǎ-wàth*
 NC1:DEF-man NC1.SUBJ:DEF borrow/lend NC1:DEF-child

ǎ-rùmà

NC3:INDEF-shirt

‘The man borrowed a shirt from the child.’

‘The man lent a shirt to the child.’

Examples (205) and (204) indicate that the verb root *yép* ‘X borrows or lends Y (to/from R)’ has two valencies. However, since the set of suffixes LOC + BEN does not combine with ditransitive verbs, only the mono-transitive valence form combines with the two applicatives. Therefore, the derivation does not involve the participant R.

Example (206) illustrates the derived verb *yépàrǎ* ‘X lends Y to L affecting the interests of W’.

(206) a. *ǎ-làngbà* *ǎ* *yép* *ǎ-rùmà*
 NC1:DEF-man NC1.SUBJ:DEF borrow/lend NC3:INDEF-shirt
 ‘The man borrowed a shirt.’
 ‘The man lent a shirt.’

b. *ǎ-lángbà* *ǎ* *yép-ǎr-ǎ* *mǐ*
 NC1:DEF-man NC1.SUBJ:DEF borrow-LOC-BEN 1SG.OBJ

ǎ-wàth

NC1:DEF-child

ǎ-rùmà

NC3:INDEF-shirt

‘The man borrowed a shirt for me that was passed onto the child.’

When both the locative and benefactive applicative are combined with this verb, as in (206b), the derived verb *yépàrǎ* ‘X borrows Y from L affecting the interests of W’ assumes schema L5-B2 of the LOC + BEN construction and the participant L is assigned the role of SOURCE, as illustrated in (206b).

The verbs in Table 43 take only the static schema L3-B2 when they are combined with LOC + BEN. In this case, the applied object L can only be assigned

the participant role of LOC. Note that these verbs also combine with schema L3 when the locative applicative *-r* alone is combined with the verb.

Table 43. *Verbs taking schema L3-B2*

<i>root</i>	<i>gloss</i>	<i>root + LOC + BEN</i>	<i>gloss</i>
<i>dīf</i>	X kills Y	<i>dīf-ðr-à</i>	X kills Y at L affecting the interests of W
<i>fâl</i>	X flies	<i>fâl-ðr-à</i>	X hovers in the area L affecting the interests of W
<i>fñthà</i>	X lies down	<i>fñth-ðr-à</i>	X lies down in or on L affecting the interests of W
<i>gbéthà</i>	X cuts down Y	<i>gbéthà-r-à</i>	X cuts down Y in L affecting the interests of W
<i>kâl</i>	X pours Y	<i>kâl-ðr-à</i>	X pours Y in L affecting the interests of W
<i>kâshì</i>	X denies doing Y	<i>kâshì-r-à</i>	X denies doing Y in L affecting the interests of W
<i>râf</i>	X stabs Y	<i>râf-ðr-à</i>	X stabs Y in the presence of L affecting the interests of W/ X enacts Y affecting the interests of W
<i>súnt</i>	X corks Y	<i>súnt-ðr-à</i>	X corks Y in the presence of L affecting the interests of W
<i>tók</i>	X scolds Y	<i>tók-ðr-à</i>	X scolds Y in L affecting the interests of W
<i>yîrà</i>	X sits down	<i>yîr-ðr-à</i>	X sits down on Y affecting the interests of W

Some of the verbs that combine with schema L3-B2 have also assumed extended meanings that are not fully compositional. These verbs include *dīfðrà* ‘X exploits Y for W’ derived from the verb stem *dīf* ‘X kills Y’, *râfðrà* ‘X enacts Y affecting the interests of W’ derived from the verb stem *râf* ‘X stabs Y’, *fâlðrà* ‘X hovers over L’ derived from the bare verb *fâl* ‘X flies’, and *râfðrà* ‘X enacts Y affecting the interests of W’ derived from the verb stem *râf* ‘X stabs or plants Y’. In the case of the derived verbs *fâlðrà* ‘X hovers over L’, schema L3 of the locative applicative is dropped maintaining only schema B2 of the benefactive applicative. On the other hand, the derived verb *fâlðrà* ‘X hovers over Y’ drops schema B2 ‘[X performs E] affecting the interests of W’, maintaining only schema L2. These

idiosyncratic meanings, which are not predictably derived from the combination of the verb with the LOC + BEN, are not captured by any of the schemas of the LOC + BEN construction.

Although LOC + BEN is productive relative to CAUS + INST or LOC + INST, not all the verbs that combine with each applicative separately co-occur with the two applicative morphemes used together. Table 44 lists those verbs that take each applicative separately but do not co-occur with LOC + BEN.

Table 44. *Verbs combining with LOC and BEN, but incompatible with LOC + BEN*

<i>root</i>	<i>gloss</i>	<i>root + LOC + BEN</i>
<i>bɔ́</i>	X lends Y to R	* <i>bɔ́-r-à</i>
<i>bɔ́l</i>	X grows tall	* <i>bɔ́l-à-r-à</i>
<i>bɔ́lì</i>	X picks Y	* <i>bɔ́lì-r-à</i>
<i>bánkàlì</i>	X rolls Y	* <i>bánkàlì-r-à</i>
<i>bék</i>	X arrives	* <i>bék-à-r-à</i>
<i>bóŋ</i>	X makes Y (heaps)	* <i>bóŋ-à-r-à</i>
<i>bór</i>	X peels off Y	* <i>bór-à-r-à</i>
<i>búlì</i>	X chisels Y	* <i>búlì-r-à</i>
<i>chén</i>	X slaughters Y	* <i>chén-à-r-à</i>
<i>dī</i>	X eats Y	* <i>dī-r-à</i>
<i>dīr-à</i>	X sleeps in Y	* <i>dīr-à-r-à</i>
<i>fāshì</i>	X crosses Y	* <i>fāshì-r-à</i>
<i>fóy</i>	X floats	* <i>fóy-à-r-à</i>
<i>gbébà</i>	X faints	* <i>gbébà-r-à</i>
<i>gból</i>	X grinds Y	* <i>gból-à-r-à</i>
<i>gbáŋ</i>	X hangs Y	* <i>gbáŋ-à-r-à</i>
<i>gbálì</i>	X lines up Y	* <i>gbálì-r-à</i>
<i>gbám</i>	X creeps	* <i>gbám-à-r-à</i>
<i>gbíp</i>	X catches Y	* <i>gbíp-à-r-à</i>
<i>kánthà</i>	X closes Y	* <i>kánthà-r-à</i>
<i>mém</i>	X tests Y	* <i>mém-à-r-à</i>
<i>mér</i>	X swallows Y	* <i>mér-à-r-à</i>
<i>náp</i>	X hits Y	* <i>náp-à-r-à</i>
<i>nóy</i>	X withdraws Y	* <i>nóy-à-r-à</i>
<i>pólò</i>	X crowns Y	* <i>pólò-r-à</i>
<i>páy</i>	X jumps	* <i>páy-à-r-à</i>
<i>shéth</i>	X builds Y	* <i>shéth-à-r-à</i>
<i>thánthì</i>	X extends Y	* <i>thánthì-r-à</i>
<i>tú</i>	X is sick	* <i>tú-r-à</i>

As far as I know, the verbs in Table 44 do not form a consistent semantic, syntactic or morphological set that can prevent the suffixes LOC + BEN from combining with these verbs. Therefore, I attribute their failure to combine with LOC + BEN to idiosyncratic lexical restrictions.

4.4.3 Mapping and argument realization in a LOC + BEN construction

Constructions emerging from the co-occurrence of LOC + BEN in a verb indicate that the participant hierarchy and the precedence hierarchy govern the order of participants and the mapping from participant roles to grammatical relations in a LOC + BEN construction. In addition, certain semantically plausible LOC + BEN constructions that rank participants based on the participant hierarchy or precedence hierarchy are blocked if the order of object markers violates the prominence hierarchy. In this section, I examine each of these principles vis-à-vis the LOC + BEN construction.

4.4.3.1 The participant hierarchy in a LOC + BEN construction

In a LOC + BEN construction, the participant hierarchy is X » W » L » Y, which means that for the intransitive base W is the primary object, L is the secondary object, and X is the subject. Example (207b) illustrates an intransitive-based LOC + BEN construction that is compatible with schema L3-B2.

- (207) a. *ǰ-wàth bèrà* *ǰ* *thómð*
 NC1:DEF-child.girl NC1.SUBJ:DEF dance
 ‘The child danced.’

- b. *ǎ-wàth bɛ̀rà* *ǎ* *thóm̀-ɾ-à*
 NC1:DEF-child.girl NC1.SUBJ:DEF dance-LOC-BEN
- ǎ-b̀k̀k̀* *ǎ-làngbà*
 NC1:DEF-woman NC3:DEF-man
- ‘The girl danced towards the man for the woman.’

The verb *thóm̀r̀à* ‘X dances towards L for W’ in (207b) is derived from the basic verb *thóm̀* ‘X dances’. In this example, the participant X *ǎwàth bɛ̀rà* ‘girl’ is the subject, W *ǎb̀k̀k̀* ‘woman’ is the primary object and L *ǎlàngbà* ‘man’ is the secondary object. This example indicates that when the participants W and L co-occur, W is assigned a higher grammatical relation than L.

The example below illustrates a transitive-based LOC + BEN construction where all the post-verbal arguments are expressed by object markers. In this example, the participant hierarchy is X » W » L » Y.

- (208) a. *ǎ-wàth* *ǎ* *thìlà* *ɣà*
 NC1:DEF-child NC1.SUBJ:DEF sell NC5.OBJ
 ‘The child sold them (some fish).’
- b. *ǎ-wàth* *ǎ* *thìlà-ɾ-à* *mì*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN 1SG.OBJ
- k̀* *ɣà*
 NC1.OBJ NC5.OBJ
 ‘The child sold them to him/her for me.’

In (208b), the participant W expressed by the object marker *mì* maps unto the primary object, L expressed by the object marker *k̀* is the secondary object and *ɣà* is the tertiary object. Thus, the participant hierarchy is X » W » L » Y. Examples (208b) and (207b) indicate that when W and L co-occur in a construction, W is assigned a higher grammatical relation than L.

4.4.3.2 The precedence hierarchy in a LOC + BEN construction

In a heterogeneous object LOC + BEN construction, the precedence hierarchy governs the mapping of participant roles to grammatical relations. In this case, any participant that is expressed as an object marker is assigned a higher grammatical relation than the participant that is a nominal. Example (209b) and (209c) illustrates a heterogeneous object LOC + BEN construction.

- (209) a. *ɔ̌-wàth* *ɔ̌* *thìlà* *è-lòp*
 NC1:DEF-child NC1.SUBJ:DEF sell NC7:INDEF-fish
 ‘The child sold some fish.’
- b. *ɔ̌-wàth* *ɔ̌* *thìlà-r-à* *mì*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN 1SG.OBJ
 ɔ̌-thèm *è-lòp*
 NC1:DEF-old man NC7:INDEF-fish
 ‘The child sold some fish to the old man for me.’
- c. *ɔ̌-wàth* *ɔ̌* *thìlà-r-à* *mì*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN 1SG.OBJ
 ɲà *ɔ̌-thèm*
 NC5.OBJ NC1:DEF-old man
 ‘The child sold them (some fish) to the old man for me.’

The verb *thìlà-r-à* ‘X sells Y to L for W’ is derived from the verb stem *thìlà* ‘X sells Y’. Example (209b) has the configuration W(OM) » L(NOM) » Y(NOM). In this example (209b), the applied object W expressed by the object marker *mì* is the primary object, while L and Y expressed by nominals are the secondary object and tertiary object respectively. Example (209c) has the configuration W(OM) » Y(OM) » L(NOM). In this example, the participants W and Y are expressed by object markers and are the primary object and secondary object respectively. The participant L, which is the nominal *ɔ̌-thèm* ‘old man’, is the tertiary object.

Thus, examples (209b) and (209c) indicate that the participant that is expressed by an object marker maps onto a higher grammatical relations than the participant that is a nominal. These examples also demonstrate that the grammatical relation that is assigned to the participants L and Y in a LOC + BEN construction varies.

Also, in a heterogenous object LOC + BEN construction, the primary object, which must be expressed by an object marker, can only be W, not L or Y. This means that potential LOC + BEN constructions listed in (210) are impossible.

- (210) a. *L(OM) » W(NOM) » Y(NOM)
 b. *Y(OM) » W(NOM) » L(NOM)

Any participant that is the primary object in a LOC + BEN construction is always construed as W (i.e., the beneficiary) by Temne native speakers. On the other hand, the constructions schematized in (211) are grammatical, since the participant W is the primary object and is expressed by an object marker.

- (211) a. W(OM) » Y(OM) » L(NOM)
 b. W(OM) » Y(NOM) » L(NOM)

To capture the grammaticality and ungrammaticality of the two sets of constructions (i.e., 210 and 211), I appeal to the constraint in (212).

- (212) *Constraint on a LOC + BEN construction:*
 If there is an object marker in a LOC + BEN construction, that object marker is W. The construction is ungrammatical otherwise.

The constraint in (212) captures the fact that the participant W is always the primary object in a LOC + BEN construction because it is higher on the participant hierarchy. This constraint resembles the constraint on locatives in ditransitives and the constraint on S in benefactive constructions in that it stipulates which

participants L *k̀* and the participant W that is expressed by the first person object marker *m̀i*. Like (213b)), example (213c) obeys the prominence hierarchy since the object markers appear in the order 1 » 3ANIM » 3INANIM.

Example (213c) indicates that the sentence ‘the child sold it to him/her for me’ is possible in Temne. However, the sentence ‘the child sold it to me for him/her’ is impossible, as indicated by the ungrammaticality of (214).

- (214) a. *ɔ̀-wàth* *ɔ̀* *th̀il̀à* *k̀i*
 NC1:DEF-child NC1.SUBJ:DEF sell NC2.OBJ
 ‘The child sold it.’
- b. **ɔ̀-wàth* *ɔ̀* *th̀il̀à-r-̀l̀* *k̀*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC-BEN NC1.OBJ
- m̀i* *k̀i*
 1SG.OBJ NC2.OBJ
 Intended meaning: ‘The child sold it to me for him/her.’
- c. *ɔ̀-wàth* *ɔ̀* *th̀il̀à-r* *m̀i*
 NC1:DEF-child NC1.SUBJ:DEF sell-LOC 1SG.OBJ
- k̀i* *t̀à* *t̀ɔ̀ŋ*
 NC2.OBJ for his/hers
 ‘The child sold it to me for him/her.’

Note that (214b) obeys the participant hierarchy. In this construction, the participant W is expressed by the third person animate object marker *k̀* and precedes the participant L that is expressed by the first person object marker *m̀i*, which in turn precedes the third person inanimate object marker *k̀i*. However, the ranking of the object markers (i.e., 3ANIM » 1 » 3INANIM) in (214b) violates the prominence hierarchy, which bans any construction where the third person animate object marker *k̀* outranks the first person object marker *m̀i*, hence

making the sentence ‘the child sold it to me for him/her’ impossible with LOC + BEN applicatives in Temne. To express this meaning, the periphrastic construction in (214c) is used instead.

4.4.4 Summary of the co-occurrence of LOC + BEN

Out of the 101 verbs in the sample that occur with the locative and benefactive applicatives, 70 verbs combine with LOC + BEN. In terms of syntax, adding LOC + BEN to a verb increases the valence of the verb by two applied objects, L and W. In both homogeneous and heterogeneous object constructions, W maps onto a higher grammatical relation than L.

Concerning semantics, a verb that combines with LOC + BEN takes either schema L3-B2, L4-B2 or L5-B2. The choice of the L-schemas is determined by which of these schemas the verb stem takes when it is combined with only the locative suffix. Thus, the meaning of a verb + LOC determines the meaning of a verb + LOC + BEN. In terms of compositionality, the meaning of most of the verbs that take each schema of a LOC + BEN construction is compositional. On the other hand, since combining a verb with LOC + BEN yields one of the three schemas L3-B2, L4-B2, or L5-B2, it is impossible to predict the meaning of LOC + BEN without referring to the verbs the two suffixes are combined with. Also, a small set of the derived verbs have assumed idiosyncratic meanings that are unpredictable.

In connection with the mapping and realization of arguments in a LOC + BEN construction, the participant hierarchy and prominence hierarchy govern the pattern in which participant roles map onto grammatical relations. The participants map onto grammatical relations based on the participant hierarchy X

» W » L » Y. In a heterogeneous object LOC + BEN construction, the participant W, which has to be expressed by an object marker, is always assigned a higher grammatical relation than the participant L and Y. A construction where the participant that is adjacent to the verb is not W is ruled out. Thus, in a LOC + BEN construction, the precedence hierarchy holds among the participants L and Y, but not W. In this case, the participant Y or L that is expressed by an object marker is assigned a higher grammatical relation than the participant that is a nominal. This means that there is no fixed grammatical relation for the participants L and Y. Also, semantically plausible LOC + BEN constructions that violate the prominence hierarchy are blocked.

4.5 Co-occurrence of BEN + INST

When the benefactive $-\lambda$ and the instrumental $-\acute{\lambda}n\acute{e}$ are combined, the underlying representation is $\lambda-\acute{\lambda}n\acute{e}$, but the surface representation is always $-\acute{\lambda}n\acute{e}$ due to the fusion of the benefactive morpheme $-\lambda$ and the $-\acute{\lambda}$ of the instrumental applicative. Depending on the verb, the set of applied objects W, I or W, C and I are added to the clause when the benefactive and instrumental applicatives co-occur.

The applicatives BEN + INST combine with transitive and intransitive verbs. The following example illustrates an intransitive-based BEN + INST construction derived from the verb stem $th\acute{o}m\grave{o}$ ‘X dances’.

- (215) a. \acute{o} - $\lambda\grave{a}ngb\grave{a}$ \acute{o} $th\acute{o}m\grave{o}$
 NC1:DEF-man NC1.SUBJ:DEF dance
 ‘The man danced.’

- b. *ǎ-lángbà* *ǎ* *thóm-ǎnè* *mǐ*
 NC1:DEF-man NC1.SUBJ:DEF buy-BEN:INST 1SG.OBJ
- ǎ-bǎkǎ* *t-ǎ-gbàràkà*
 NC1:DEF-woman NC2-INDEF-stilts
- ‘The man together with the woman danced for me using stilts.’

The derived verb *thómǎnè* ‘X dances for W together with C using I’ in (215b) is derived from the basic verb *thómǎ* ‘X dances’. In this example (i.e., 215b) where the verb is combined with BEN + INST, there are three applied objects: the benefactive W expressed by the object marker *mǐ*, the comitative C *ǎbǎkǎ* ‘woman’ and the instrument I *tǎgbàràkà* ‘stilts’. The participant W is the primary object, C is the secondary object and I is the tertiary object.

Example (216) illustrates a BEN + INST construction derived from the transitive verb *yák* ‘X washes Y’.

- (216) a. *ǎ-wàth* *ǎ* *yák* *ǎf-ǎt*
 NC1:DEF-child NC1.SUBJ:DEF wash NC3:DEF-pot
 ‘The child washed the pot.’
- b. *ǎ-wàth* *ǎ* *yák-ǎnè*
 NC1:DEF-child NC1.SUBJ:DEF buy-BEN:INST
- ǎ-bǎkǎ* *ǎf-ǎt* *m-ǎ-sòdà*
 NC1:DEF-woman NC3:DEF-pot NC10-INDEF-caustic.soda
 ‘The child washed the pot for the woman using caustic soda (soap).’

The derived verb *yákǎnè* ‘X washes Y for W using I’ in (216b) is derived from the basic verb *yák* ‘X washes Y’. In this example where the verb is combined with BEN + INST, the applied object W *ǎbǎkǎ* ‘woman’ is the primary object, I *mǎsòdà* ‘caustic soda soap’ is the tertiary object and Y *ǎf-ǎt* ‘pot’ is the secondary object.

The sentence also has the interpretation of the participant X performing an action

E, using an instrument I and affecting the interests of the participant W. Note that this example does not include a comitative C participant, since the verb *yák* ‘X washes Y’ is not compatible with that schema of the instrumental applicative. Also, no ditransitive verb combined with BEN + INST is found in the corpus or elicitation tasks.

4.5.1 Semantics of the BEN + INST construction

A verb that occurs with BEN + INST has two possible combinations. First, it combines schema B2 ‘[X performs E] affecting the interests of W’ of the benefactive applicative and schema I2 ‘[X performs E] using I’ of the instrumental applicative. This combination results in the derivation of schema B2-I2 which states ‘[X performs E] using I, affecting the interests of W’.

Secondly, a verb that is combined with BEN + INST can combine schema B2 of the benefactive applicative and schema I4 ‘[X performs E] together with C, using I’ of the instrumental applicative. This combination results in the derivation of schema B2-I4 which states ‘[X performs E] together with C using I affecting the interests of W’. In this section, I discuss the compositional pathway involved in the derivation of each of these two schemas.

The derivation of schema B2-I2 begins with the combination of a basic verb with the benefactive applicative. This combination results in the realization of schema B2 ‘[X performs E] affecting the interests of W’ of the derived benefactive verb. Schema B2 is then combined with schema I2 ‘[X performs E] using I’ of the instrumental applicative, resulting in the derivation of schema B2-

I2 ‘[X performs E] using I, affecting the interests of W’. Figure 21 illustrates the derivation of schema B2-I2.

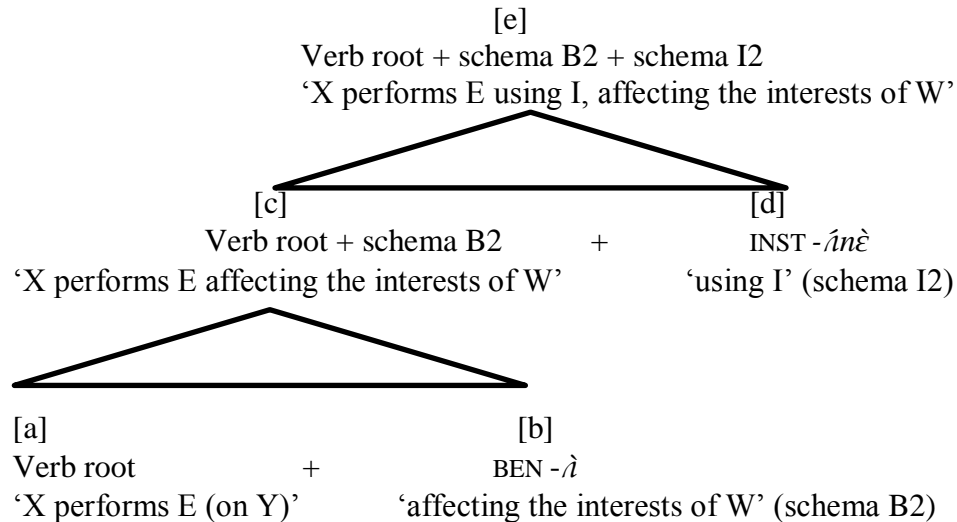


Figure 21. Compositional pathway of schema B2-I2

Example (216), which is repeated in (217), illustrates the compositional pathway of the derivation of schema B2-I2, using the verb stem *yák* ‘X washes Y’.

- (217) a. *ǎ-wàth* *ǎ* *yák* *âŋ-fât*
 NC1:DEF-child NC1.SUBJ:DEF wash NC3:DEF-pot
 ‘The child washed the pot.’
- b. *ǎ-wàth* *ǎ* *yák-à*
 NC1:DEF-child NC1.SUBJ:DEF wash-BEN
- ǎ-bàkà* *âŋ-fât*
 NC1:DEF-woman NC3:DEF-pot
 ‘The child washed the pot for the woman.’
- c. *ǎ-wàth* *ǎ* *yák-âñè*
 NC1:DEF-child NC1.SUBJ:DEF buy-BEN:INST
- ǎ-bàkà* *âŋ-fât* *m-à-sòdà*
 NC1:DEF-woman NC3:DEF-pot NC10-INDEF-caustic.soda
 ‘The child washed the pot for the woman using caustic soda soap.’

In (217b), the meaning of the verb stem is combined with the benefactive applicative yielding schema B2. In (217c), schema I2 of the instrumental applicative is combined with schema B2 of the benefactive applicative, resulting in schema B2-I2 which captures the meaning of (217c).

In addition to schema B2-I2, a verb that is combined with BEN + INST also takes schema B2-I4 ‘[X performs E] together with C using I affecting the interests of W’. The derivation of schema B2-I4 begins with the combination of a verb stem with the benefactive applicative, resulting in the derivation of schema B2 ‘[X performs E] affecting the interests of W’. Schema I4 ‘[X perform E] together with C, using I’ of the instrumental applicative is then combined with schema B2, resulting in the derivation of schema B2-I4. Figure 22 illustrates the compositional pathway of schema B2-I4.

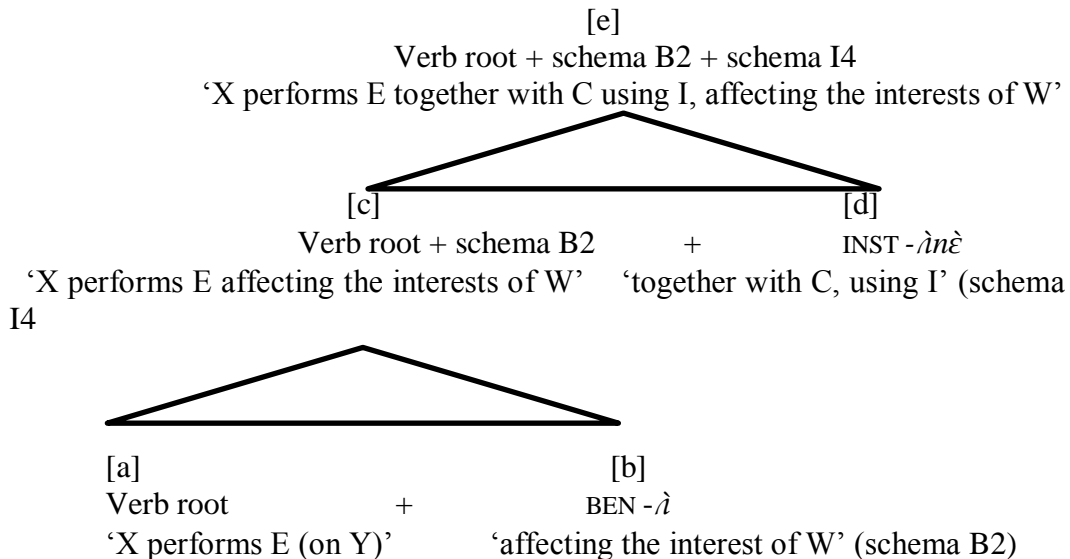


Figure 22. Compositional pathway of schema B2-I4

The examples below illustrate the compositional pathway involved in the derivation of schema B2-I4, using the verb *f\u0302sh\u0302i* 'X crosses Y'.

- (218) a. *ǎ-lángbà* *ǎ* *fǎshì* *k-ǎ-bàth*
 NC1:DEF-man NC1.SUBJ:DEF cross NC2-DEF-river
 ‘The man crossed the river.’
- b. *ǎ-làngbà* *ǎ* *fǎshì-ǎ* *mì*
 NC1:DEF-man NC1.SUBJ:DEF cross-BEN 1SG.OBJ
- k-ǎ-bàth*
 NC2-DEF-river
 ‘The man crossed the river for me.’
- c. *ǎ-làngbà* *ǎ* *fǎshì-ǎnè* *mì*
 NC1:DEF-man NC1.SUBJ:DEF cross-BEN-INST 1ST.OBJ
- ǎ-bǎkǎ* *k-ǎ-bàth* *ǎ-bìl*
 NC1:DEF-woman NC2-DEF-river NC3:INDEF-boat
- ǎ-kùr*
 NC3:INDEF-old
 ‘The man together with the woman crossed the river for me in
 (using) an old boat.’

In (218b), the meaning of the basic verb is combined with the benefactive applicative resulting in the derivation of schema B2 ‘[X performs E] affecting the interests of W’. Schema B2 is then combined with schema I4 ‘[X performs E] together with C, using I’ in (218c). This combination yields schema B2-I4 of the BEN + INST construction. Schema B2-I4 differs from schema B2-I2 in the sense that it includes the participant C that co-participates with X in performing the event expressed by the predicate.

So far, I have shown that a verb that is combined with BEN + INST combines with schema B2-I2 or schema B2-I4. The selection of one of these two schemas is determined by the instrument. Thus, if a verb stem takes schema I4 of the instrumental applicative, the derived BEN + INST verb inevitably assumes

schema B2-I4. On the other hand, if the verb stem does not take schema I4, the derived BEN + INST verb predictably assumes schema B2-I2.

4.5.2 Combination of BEN + INST with a verb root

In the previous section, I showed that the applicatives BEN + INST are associated with two schemas, B2-I2 and B2-I4. In terms of combination, any verb that combines with BEN + INST takes schema B2-I2, and therefore any verb that takes schema B2-I4 also takes schema B2-I2. However, not every verb that takes schema B2-I2 also takes schema B2-I4. This is because schema B2-I4 is limited to verbs that take a comitative as complement when combined with the instrumental applicative alone.

All the 193 verbs in the sample that combine with the instrumental applicative when it occurs alone on a verb also combine with BEN + INST. Every verb that combines with BEN + INST takes schema B2-I2, and Table 45 comprises a sample of these verbs.

Table 45. *Sample of verbs combining schema B2-I2*¹³

<i>verb root</i>	<i>gloss</i>	<i>verb + INST</i>	<i>gloss</i>
<i>bál̀̀</i>	X marries Y	<i>bál̀̀-̀̀nè</i>	X marries Y for W by means of I
<i>bám̀̀bà</i>	X piggybacks Y	<i>bám̀̀bà-̀̀nè</i>	X piggybacks Y for W, using I
<i>báni</i>	X reclaims Y	<i>báni-̀̀nè</i>	X reclaims Y for W, using I
<i>ból</i>	X gets tall	<i>ból-̀̀nè</i>	X gets tall for W, by means of I
<i>dú</i>	X plaits Y's hair	<i>dú-̀̀nè</i>	X plaits Y's hair for W, using I
<i>fɔ́f</i>	X speaks	<i>fɔ́f-̀̀nè</i>	X speaks for W using I (microphone)
<i>fɔ́k</i>	X wraps Y	<i>fɔ́k-̀̀nè</i>	X wraps Y for W, using I
<i>fə́nthà</i>	X lies down	<i>fə́nth-̀̀nè</i>	X lies down for W, using I
<i>fə́shì</i>	X crosses Y	<i>fə́shì-̀̀nè</i>	X crosses Y for W by means of I
<i>kóth</i>	X ties Y (a bundle)	<i>kóth-̀̀nè</i>	X ties Y for W, using I
<i>kúl</i>	X ripens Y	<i>kúl-̀̀nè</i>	X ripens Y for W, by means of I
<i>kúlò</i>	X cries	<i>kúlò-̀̀nè</i>	X cries for W, by means of I
<i>kúlùŋ</i>	X mixes Y	<i>kúlùŋ-̀̀nè</i>	X mixes Y with I for W
<i>kúth</i>	X fetches Y (water)	<i>kúth-̀̀nè</i>	X fetches Y for W, using I
<i>káchì</i>	X excludes Y	<i>káchì-̀̀nè</i>	X excludes Y for W, by means of I

¹³ The preposition “for” is a short form of the expression “affecting the interests of”.

<i>kárà</i>	X brings Y	<i>kárà-ǎnè</i>	X brings Y for W, using I
<i>káwóndì</i>	X preaches Y	<i>káwóndì-ǎnè</i>	X preaches Y for W, using I
<i>lóm</i>	X talks about Y	<i>lóm-ǎnè</i>	X talks about Y for W, using I
<i>lám</i>	X throws away Y	<i>lám-ǎnè</i>	X throws away Y for W, using I
<i>lémpì</i>	X snatches Y	<i>lémpì-ǎnè</i>	X snatches Y for W, using I
<i>léy</i>	X sings Y	<i>léy-ǎnè</i>	X sings Y for W, using I
<i>lásàr</i>	X destroys Y	<i>lásàr-ǎnè</i>	X destroys Y for W, using I
<i>lìy</i>	X pulls Y	<i>lìy-ǎnè</i>	X pulls Y for W, using I
<i>lómì</i>	X identifies Y	<i>lómì-ǎnè è</i>	X identifies Y for W, using I
<i>láfàthì</i>	X turns over Y	<i>láfàthì-ǎnè</i>	X turns over Y for W, using I
<i>lák</i>	X throws away Y	<i>lák-ǎnè</i>	X throws away Y for W, using I
<i>már</i>	X helps Y	<i>már-ǎnè</i>	X helps Y for W, by means of I
<i>mótà</i>	X dives	<i>mótà-ǎnè</i>	X dives for W, using I
<i>mér</i>	X swallows Y	<i>mér-ǎnè</i>	X swallows Y for W, using I
<i>mún</i>	X drinks Y	<i>mún-ǎnè</i>	X drinks Y for W, using I
<i>mánk</i>	X buries/hides Y	<i>mánk-ǎnè</i>	X buries Y for W, by means of I
<i>nákàth</i>	X fries Y	<i>nákàth-ǎnè</i>	X fries Y for W, using I
<i>nál</i>	X insults Y	<i>nál-ǎnè</i>	X insults Y for W by means of I
<i>náshì</i>	X wipes Y	<i>náshì-ǎnè</i>	X wipes off Y for W, using I
<i>wóp</i>	X holds Y	<i>wóp-ǎnè</i>	X holds Y for W, using I

Table 46 below lists all the verbs combined with BEN + INST which, in addition to expressing schema B2-I2, also express schema B2-I4.

Table 46. *Verbs combining with schema B2-I4*

<i>verb root</i>	<i>gloss</i>	<i>verb + ǎnè</i>	<i>gloss</i>
<i>thómò</i>	X dances	<i>thómò-ǎnè</i>	X and C dance together using I affecting the interests of W
<i>bék</i>	X arrives	<i>bék-ǎnè</i>	X and C arrive together using I affecting the interests of W
<i>bàkà</i>	X travels	<i>bàkà-ǎnè</i>	X and C travel together using I affecting the interests of W
<i>búkò</i>	X bathes	<i>búkò-ǎnè</i>	X and C bathe together using I affecting the interests of W
<i>bàyát</i>	X bets	<i>bàyát-ǎnè</i>	X and C bet using I as a stake affecting the interests of W
<i>chúm</i>	X fights Y	<i>chúm-ǎnè</i>	X and C fight Y together using I, affecting the interests of W
<i>dir-à</i>	X sleeps	<i>dir-ǎnè</i>	X and C sleep together with I affecting the interests of W
<i>fànth-à</i>	X lies down	<i>fànth-ǎnè</i>	X and C lie down together using I affecting the interests of W
<i>fàshì</i>	X crosses Y	<i>fàshì-ǎnè</i>	X and C cross Y together using I affecting the interests of W
<i>fál</i>	X flies	<i>fál-ǎnè</i>	X and C fly together using I affecting the interests of W
<i>gbép</i>	X climbs Y	<i>gbép-ǎnè</i>	X and C climb Y with I affecting the interests of W
<i>gbúkè</i>	X runs	<i>gbúkè-ǎnè</i>	X and C run together using I affecting the interests of W
<i>lák</i>	X throws Y'	<i>lák-ǎnè</i>	X and C throw Y with I affecting the interests of W
<i>náshì</i>	X wipes Y'	<i>náshì-ǎnè</i>	X and C wipe Y using I for W

A few verbs taking BEN + INST have assumed idiomatic meanings. These verbs include the derived verb *tām̄l̄nē*, derived from *tām̄l̄* ‘stand’ that has assumed the idiosyncratic meaning ‘X rebukes Y’. Also, the meaning of the derived verb *wóp̄l̄nē* ‘X is caught red-handed’ that is derived from the verb stem *wóp̄* ‘X holds Y’ is not a function of its component parts. In other words, the meaning of each of these verbs is not predictable from the meaning of their component parts. Learners of the language would have to learn their meanings individually.

4.5.3. Mapping and argument realization in a BEN + INST construction

As with all the constructions I have analysed so far, the mapping between participant roles and grammatical relations in a BEN + INST construction is governed by the participant hierarchy and the precedence hierarchy. Note that it is impossible to have a BEN + INST construction where the participants W, C, Y and I are all expressed by nominals. Also, certain semantically plausible BEN + INST constructions are blocked if the order of object markers violates the prominence hierarchy. In the following sub-sections, I examine each of these principles vis-à-vis the BEN + INST construction.

4.5.3.1 The participant hierarchy in a BEN + INST construction

In a homogeneous object BEN + INST construction, the participant hierarchy is X » W » C » Y » I. This means that the participant X is the subject, W is the primary object, C is the secondary object, Y is the tertiary object and I is the quaternary object. Example (219) illustrates this participant hierarchy in a transitive-based BEN + INST construction taking schema B2-I2.

- (219) a. *ɔ̀-wàth* *ɔ̀* *yák* *áŋ-fát*
 NC1:DEF-child NC1.SUBJ:DEF wash NC3:DEF-pot
 ‘The child washed the pot.’
- b. *ɔ̀-wàth* *ɔ̀* *yák-ǎnè* *ɔ̀-bòkò*
 NC1:DEF-child NC1.SUBJ:DEF wash-BEN:INST NC1:DEF-woman

áŋ-fát *m-à-sòdà*
 NC3:DEF-pot NC10-INDEF-caustic soda
 ‘The child washed the pot for the woman using caustic soda soap.’
- c. *ɔ̀-wàth* *ɔ̀* *yák-ǎnè* *kò*
 NC1:DEF-child NC1.SUBJ:DEF wash-BEN:INST NC1.OBJ

ŋì *mà*
 NC3.OBJ NC10.OBJ
 ‘The child washed it (the pot) for him/her using it (caustic soda).’

The verb *yákǎnè* ‘X washes Y for W using I’ is derived from the verb stem *yák* ‘X washes Y’. In (219b), the participant X *ɔ̀wàth* ‘child’ is the subject, W *ɔ̀bòkò* ‘woman’ is the primary object, Y *áŋfát* ‘pot’ is the secondary object and I *màsòdà* ‘caustic soda’ is the tertiary object. This example (219b) illustrates a construction where the participants W and I co-occur, and the participant W outranks I. The participant hierarchy X » W » C » Y » I is maintained even when all the objects in the construction are expressed by object markers, as illustrated in (219c).

Example (220a) illustrates a homogeneous object BEN + INST construction where the participants W and C co-occur.

- (220) *ɔ̀-làngbà* *ɔ̀* *thómò-ǎnè* *mǐ*
 NC1:DEF-man NC1.SUBJ:DEF dance-BEN:INST 1SG.OBJ

kò *chì*
 NC1.OBJ NC6.OBJ
 ‘The man together with him/her danced with them (stilts).’

In (220), the verb *thómàǎnè* ‘X dances together with C for W, using I’ is derived from the verb stem *thómà* ‘X dances’. In this example, X is the subject, W expressed by the object marker *mì*, is the primary object, C expressed by the object marker *kà* is the secondary object and I, which is expressed as *chì*, is the tertiary object. This example indicates that when the participants W, C and I co-occur the participant W outranks C, which in turn outranks I. Thus, the participant hierarchy is X » W » C » I.

4.5.3.2 The precedence hierarchy in a BEN + INST construction

In heterogeneous object constructions where the arguments are a combination of a nominal and an object marker, the precedence hierarchy governs the relative order of post-verbal arguments. In general, the post-verbal arguments that are expressed by object markers are assigned to the highest available grammatical relation, followed by the nominal objects. However, if the participants C and W are expressed in a construction, W has to be an object marker and must outrank C, as indicated in (221a).

- (221) a. *ǎ-làngbà* *ǎ* *thómà-ǎnè* *mì*
 NC1:DEF-man NC1.SUBJ:DEF dance-BEN:INST 1SG.OBJ
- ǎ-bàkà* *t-à-gbàràkà*
 NC1:DEF-woman NC6-INDEF-stilt
- ‘The man together with the woman danced with stilts for me.’
- b. *ǎ-làngbà* *ǎ* *thómà-ǎnè* *mì*
 NC1:DEF-man NC1.SUBJ:DEF dance-BEN:INST 1SG.OBJ
- chì* *ǎ-bàkà*
 NC6:OBJ. NC1:DEF-woman
- ‘The man together with the woman danced with them (stilts) for me.’

The verb *thómàǎnè* ‘X and C dance together for W, using I’ is derived from the verb stem *thómà* ‘X dances’. In (221a), the participant W is expressed by the object marker *mì* and it outranks the participant C *óbàkà* ‘woman’ and I *tàgbàràkà* ‘stilts’ that are expressed by nouns. Note that the ranking of the participants C *óbàkà* ‘woman’ and I *tàgbàràkà* ‘stilts’ that are both nominals is based on the participant hierarchy. In (221b), the participant I is expressed by the object marker *chì* and it precedes the participant C *óbàkà* ‘woman’ that is expressed by a nominal. In this example, the participants I and W, expressed by object markers, precede the participant C that is a nominal.

To sum up, the participant I can map onto the secondary object as in (221b), and tertiary object as in (221a), but it can never map onto the primary object in a BEN + INST construction. Also, the participant C can map onto the secondary object as in (221a) or the tertiary object as in (221b), but can never map onto the primary object. This is because in a heterogeneous object BEN + INST construction, the primary object can only be W and W must be expressed by an object marker. Thus, the constructions schematized in (222) are disallowed.

- (222) a. *I(OM) » C(NOM) » Y(NOM)
 b. *Y(OM) » I(OM) » C(NOM)
 c. *C(OM) » W(OM) » I(NOM)

On the other hand, the BEN + INST constructions listed in (223) are permissible and realized.

- (223) a. W(OM) » I(OM) » C(NOM)
 b. W(OM) » C(OM) » I(OM)
 c. W(OM) » C(NOM) » I(NOM)
 d. W(OM) » Y(NOM) » I(NOM)
 e. W(OM) » Y(OM) » I(OM)

The contrast in grammaticality between the constructions listed in (222) and those listed (223) is due to a violation of the constraint on BEN + INST constructions in (224).

- (224) *Constraint on the BEN + INST construction:*
 If there is an object marker in a BEN + INST construction, that object marker is W. The construction is ungrammatical otherwise.

The constraint above describes grammatical BEN + INST constructions like (223), where the only object marker in the construction expresses W, and W is the primary object. Constructions like (222) where the participant W does not map onto the primary object violates this constraint.

4.5.3.3 *The prominence hierarchy in a BEN + INST construction*

Certain semantically plausible BEN + INST constructions are blocked if the order of object markers violates the prominence hierarchy. The prominence hierarchy requires the participants expressed as object markers to appear in the order of precedence 1/2 » 3ANIM » 3INANIM, as illustrated in (225).

- (225) *ǎ-làngbà* *ǎ* *thómǎ-ǎnè* *mǐ*
 NC1:DEF-man NC1.SUBJ:DEF climb-BEN:INST 1SG.OBJ
- kǎ* *chǐ*
 NC1.OBJ NC6.OBJ

‘The man together with him/her danced for me using them (stilts).’

The verb *thómàǎnè* ‘X dances together with C using I’ is derived from the verb stem *thómà* ‘X dances’. In example (225), the first person object marker *mì* precedes the third person animate object marker *kò*, which in turn precedes the third person inanimate object marker *chì*. Thus, (225) indicates that the sentence ‘the man together with him/her danced for me with them’ is possible in Temne. However, the sentence ‘the man together with me danced for him/her with them’ is impossible with the BEN + INST, as indicated by the ungrammaticality of (226).

(226) *ǎ-làngbà ǎ thómà-ǎnè kò mì
 NC1:OBJ-man NC1.SUBJ:DEF climb-BEN:INST NC2.OBJ 1SG.OBJ

chì
 NC6.OBJ

Intended meaning: ‘The man together with me danced for him/her with them (stilts).’

Example (226) is impossible because the third person object marker *kò* precedes the first person object marker *mì*, hence it violates the prominence hierarchy which bans any construction where the object markers appear in the order 3ANIM » 1. Note that (226) obeys the participant hierarchy since the participant W, expressed by the object marker *kò* precedes the participant C *mì*, which in turn precedes the participant I *chì*.

4.5.4 Summary of the co-occurrence of BEN + INST

In this section, I have shown that when BEN + INST are attached to a verb, they introduce W and I and potentially C; these participants correspond to the participant role of BENEFICIARY, INSTRUMENT and COMITATIVE respectively. In both the homogeneous and heterogeneous object BEN + INST constructions, the

participant W is always the primary object and outranks the participants C, I and Y. Transitive and intransitive verbs combine with BEN + INST. Ditransitive-based BEN + INST constructions are not found in the corpus or accepted by consultants during the elicitation tasks.

Concerning semantics, a verb that is combined with BEN + INST takes schemas B2-I2, which states: '[X performs E] using I affecting the interests of W'. Each verb that is combined with BEN + INST takes schema B2-I2, but not every verb that takes schema B2-I2 also takes schema B2-I4. Schema B2-I4 is limited to verbs that take a comitative C as complement.

In connection with the mapping and realization of arguments, evidence from the data on BEN + INST constructions indicate that the participant hierarchy and precedence hierarchy determine the mapping and relative ranking of post-verbal arguments in the construction. If the participants W and C are both expressed, the participant W must be expressed by an object marker and is higher ranked than C. The participant hierarchy in a BEN + INST construction is X » W » C » Y » I. In addition, the data indicate that semantically plausible BEN + INST constructions that violate the prominence hierarchy are blocked.

4.6 Summary of the co-occurrence of valence-increasing suffixes

In this chapter, I have examined valence-increasing suffixes vis-à-vis their co-occurrence possibilities, the classes of verb stems that combine with each set of suffixes, the order in which the suffixes occur in the verb stem, and the syntactic effect of adding a set of suffixes to a verb stem. I have also examined the

principles underlying the mapping and realization of arguments in a construction with valence-increasing suffixes on the verb.

Concerning the combination of valence-increasing suffixes, the data analyzed indicate that four combinatorial possibilities of these suffixes are realized. They are CAUS + INST, LOC + INST, LOC + BEN and BEN + INST. The suffixes occur in a fixed order and any repetition of the same suffix in a verb stem is disallowed. Also, the combinations *CAUS + LOC and *CAUS + BEN are not found in the corpus or accepted by consultants during the elicitation tasks.

In terms of their combination with verb stems, all the co-occurring suffixes combine with transitive and intransitive verbs. None of these suffixes combine with ditransitive verbs. Out of these four sets of suffixes, the set BEN + INST combines with 193 verbs in the sample, more than any other set of co-occurring suffixes. In addition, the suffixes CAUS + INST has the lowest number of tokens (i.e., 7 verbs), which follows from the low frequency of verbs that combine with the causative suffix.

Concerning semantics, valence-increasing suffixes are heterogeneously polysemous. Each set of suffixes that co-occur has more than one schema. The suffixes combine with the basic schema of each constituent suffix. In the case of the suffixes LOC + BEN, schema L3, L4 or L5 of the locative suffix selects schema B2 '[X performs E] affecting the interests of W' of the benefactive suffix. One of these three schemas of the locative suffix also selects schema I2 '[X performs E] using I' of the instrumental applicative when LOC + INST co-occur. Regarding the suffixes BEN + INST, schema B2 of the benefactive applicative selects schema I2

‘[X performs E] using I’ or schema I4 ‘[X performs E] together with C, using I’ of the instrumental applicative.

In addition, when the causative suffix and the instrumental applicative co-occur, the derived verb has two possible meanings. In what I refer to as the I-in E_1 meaning, the instrument is used by the causer argument A to perform E_1 , while in the I-in- E_2 schema, the instrument is used by Xcausee to perform E_2 . For the remaining set of suffixes, the meaning of one of the applicatives depends on the selectional restrictions of the verb, and the meaning of the other is fixed.

In relation to the mapping and realization of post-verbal arguments, the participant hierarchy and precedence hierarchy play a decisive role, just as in constructions where only a single suffix is combined with a verb. In (227), I summarize the participant hierarchy in homogeneous object constructions where the suffixes co-occur on a verb.

- (227) a. CAUS + INST construction: A » X » Y » I
 b. LOC + INST construction: X » L » Y » I
 c. LOC + BEN construction: X » W » L » Y
 d. BEN + INST construction: X » W » C » Y » I

The participant hierarchies outlined in (227) indicate that the applied object W outranks L and C. The relative order of the applied objects W and L does not mirror the order in which these suffixes are added to the verb stem. Thus, the applied object W is closer to the verb than L even though the benefactive applicative that introduces W is added to the verb stem after the locative suffix that introduces L. The participant hierarchies in (227) may be collapsed, as in (228).

(228) A » X » S » W » {L, C} » R » Y » I

The participant hierarchy in (228) means that the participant A is the highest ranked in a construction. If A is not expressed, the participant X is the highest ranked, while the participant I is the lowest ranked.

In addition, although not all the combinations of participants in (228) are realized, certain predictions can be made. For instance, since the participant S always outranks W, and W outranks L and C, it can be predicted that S also outranks L and C. Also, evidence for the ranking of the participant X above C, L, and S comes from non-causative constructions where X is the subject. However, since X(causee) never occurs with C, L or S, it is impossible to assume that a demoted X(causee) is any different from a non-demoted X, hence the absence of Xcausee in the participant hierarchy in (228).

In heterogeneous object constructions, the precedence hierarchy and sometimes the participant hierarchy determine the mapping and realization of arguments in the construction. Note that in heterogeneous object constructions, the participant hierarchy applies only to constructions where more than one argument is expressed by a nominal or object marker. In relation to the precedence hierarchy, the participant that is expressed by an object marker outranks the participant that is a noun. Also, in constructions where the precedence hierarchy and participant hierarchy apply, the precedence hierarchy outranks the participant hierarchy.

In Chapter 3, I observed that there are constraints about which arguments must be expressed by an object marker. I showed that in a ditransitive-based locative construction with three post-verbal arguments, the participant L must be

expressed by an object marker. However, since ditransitive verbs do not co-occur with LOC + BEN or LOC + INST, it is impossible to assess if this constraint holds in these constructions. Also, since combining BEN + INST or LOC + BEN with a verb does not result in adding the participant S to the clause, it is impossible to know if the constraint that requires the participant S to be the primary object and therefore to be expressed by an object marker still holds in constructions with co-occurring suffixes on the verb.

However, two new constraints surfaced in this Chapter. The first constraint applies to a LOC + BEN construction, and it stipulates that if there is an object marker in a LOC + BEN construction, that object marker is W. The second constraint applies to a BEN + INST construction, and it states that if there is an object marker in a BEN + INST construction, that object marker is W. The two constraints indicate that W outranks L and I.

Evidence from constructions with co-occurring suffixes on the verb indicates that certain semantically plausible constructions that combine object markers are blocked if the order of precedence determined by the participant hierarchy or prominence hierarchy violates the precedence hierarchy.

Table 47 summarizes the properties of post-verbal arguments in homogeneous object construction.

Table 47. *Properties of objects in a homogeneous object construction*

<i>Properties</i>	<i>X</i>	<i>L</i>	<i>C</i>	<i>I</i>	<i>S</i>	<i>W</i>
Basic GR	PO	PO/SO	PO	OBL	PO	PO/SO
Incompatible with:	W, S, C, L, R	S, C, X	L, S, X	S	L, C, I, X	C, X
Must be OM if there is an OM	no	no	no	no	yes	no

The basic grammatical relations that are assigned to the participants X, C, I and W are the same in heterogeneous object constructions where one or two valence-increasing suffixes are combined with a verb. However, when the locative and benefactive suffixes are combined, L is the secondary object, but not the primary object. In addition, if only one object marker appears in a LOC + BEN construction, the object marker must express W, not L.

In addition, Table 47 indicates that some participants are incompatible. One reason why some participants do not co-occur is that the suffixes that introduce these participants never co-occur. Another reason why two participants do not co-occur is that the suffix which adds one of the participants to the clause does not add this participant when this suffix co-occurs with another suffix. A case in point is the participant L, which does not co-occur with the participant S or C because the benefactive applicative that adds S to the clause does not do so when it is combined with the locative suffix that introduces L. Also, the instrumental applicative that introduces the participant C does not do so when it is combined with the locative applicative.

Finally, a single token of the co-occurrence of three applicatives, LOC + BEN + INST was found in the corpus. The construction which bears this combination is given in (229).

- (229) *mìnè yámò ǝ-wàth kàm.à ǝ dè*
 I hire NC1:DEF-child so.that NC1:DEF.SUBJ come
- gbál-àr-ǎnè mǐ kò áŋ-rèka*
 write-LOC-BEN:INST 1SG.OBJ NC1.OBJ NC3:DEF-letter
- k-à-thànkè k-à-yìm*
 NC2-INDEF-pen NC2-INDEF-red
 ‘It was I that hired the child to write for me a letter to him/her with a red pen.’

In (229) where the verb *gbál* ‘X writes Y’ is combined with the three applicatives LOC + BEN + INST, the participants that are expressed by object markers *mǐ* (i.e., W) and *kò* (i.e., L) are the primary object and secondary object respectively. These participants outrank the post-verbal nominal participants Y *áŋrèka* ‘letter’ and I *kàthànkè kàyìm* ‘red pen’. The participant Y *áŋrèka* ‘letter’ is the tertiary object and I *kàthànkè kàyìm* is the quaternary object; thus, the precedence hierarchy is maintained. The relative ranking of the object markers *mǐ* » *kò* (i.e., 1 » 3ANIM) indicates that the prominence hierarchy is also obeyed by this construction. However, (229) was rejected by 80% of the consultants. Therefore, this construction was not included in the analysis following the methodology pursued in this study, which is to analyze constructions that are approved by at least 70% of the consultants.

Chapter 5

Conclusion

This dissertation aimed at investigating the combinatorial properties of valence-increasing suffixes, and the semantic and syntactic effects of combining these suffixes with a verb stem in the Yoni dialect of Temne. To address the research questions in the study, I examined constructions with one or two valence-increasing suffixes on the verb. These constructions were drawn from two sources: recorded Temne spoken corpus and direct elicitations. The analysis was also based on a sample of 300 common verbs that were identified in the corpus. These verbs were combined with each valence-increasing suffix. The various meanings of the derived verbs were noted and judgement tests were conducted with fifteen native speakers of the language to verify the data. Only data points that were confirmed by 70% of the consultants were included in the analysis.

The spoken corpus comprised of transcribed speech representing face-to-face conversations, telephone conversations, songs, Christian and Muslim sermons, narratives and radio broadcasts that were recorded in Sierra Leone in June 2008. Thus, the data represent contemporary use of the language. The majority of the participants were monolingual Temne speakers between the ages of 10-70 years, representing the Yoni dialect.

By using corpus data, I was able to figure out the relative frequency of constructions with valence-increasing suffixes on a verb. The corpus data revealed that the benefactive construction is the most frequent, followed by the instrumental construction, which is in turn followed by the locative construction.

The causative construction is the least frequent in the corpus. The relative frequency of these construction types corresponds to the number of verb stems that combines with each of the four suffixes. The study showed that out of the 300 verb stems analyzed, the benefactive suffix combines with 281 (i.e., 94%) verbs; the instrumental suffix combines with 193 (i.e., 64%) verbs, the locative combines with 87 (i.e., 29%) verbs; and the causative suffix combines with 44 (i.e., 14.6%) verbs. Also, the corpus data revealed that the periphrastic constructions are more frequent than their corresponding morphological constructions.

In addition, certain combinations of a verb and a valence-increasing suffix that were not known of in previous studies surfaced in the corpus. One example of these combinations relates to the distribution of the causative allomorphs *-ɔ̃*, *-s*. Previous researchers including Kamarah (1994, 2007) and Kanu (2004), who did not use corpus-based data in their studies, have claimed that the two causative allomorphs differ in the sense that causative *-ɔ̃* combines with verbs ending in *-th*, while causative *-s* does not combine with these verbs. However, corpus-based data used in this study revealed that not all verbs ending with *-th* combine with causative *-ɔ̃* (see Table 15 for a list of these verbs). In addition, tokens of verbs ending in *-th* that combine with causative *-s* were found in the corpus. Thus, nuances, rare combination of verbs with suffixes, patterns of co-occurrence between suffixes and context-dependent readings of constructions that would not have been found through introspection all surfaced in the corpus.

The data for the study were also drawn from direct elicitations. Using this method, I was able to do cross-combination of the suffixes and checked these

combinations with native speakers of the language. This strategy also gave me an insight into the full range of suffixes that co-occur, and the verbs that combine with each suffix. It also revealed the full list of suffixes that are mutually exclusive, and gave hints on possible reasons why these suffixes do not co-occur. In this chapter, I summarize the main findings in the study.

5.1 Summary of the main findings

In this section, I summarize the main findings in the study. I classify these findings into three main groups: combinatorial properties of valence-increasing suffixes summarized in Section 5.1.1, the semantic effects of the suffixes on a verb stem summarized in Section 5.1.2, and a summary of the syntactic effects of the suffixes is given in Section 5.1.3.

5.1.1 Combinatorial properties of valence-increasing suffixes

Only four (i.e., CAUS + INST, LOC + INST, LOC + BEN, and BEN + INST) of the six combinatorial possibilities of valence-increasing suffixes were confirmed by all the consultants. Certain combinations of suffixes were neither found in the corpus nor accepted by the consultants during the elicitation tasks. These suffix combinations are *CAUS + LOC and *CAUS + BEN, and no convincing explanation was found as to why they do not co-occur.

In addition, a single token of the co-occurrence of LOC + BEN + INST was found in the corpus (see example 229). However, this construction was rejected by more than 70% of the consultants. Therefore, it was not included in the

analysis following the methodology pursued in this study, which is to analyze only the constructions that are approved by at least 70% of the consultants.

The results of the study also revealed that neither the mirror principle (Baker, 1985) nor semantic scope (Bybee, 1985) can account in full for the relative ordering of valence-increasing suffixes on the verb stem. Evidence against semantic scope comes from constructions like (230) where the causative suffix is combined with the instrumental applicative.

- (230) *ǎ-bǎkǎ* *ǎ* *mún-ǎs-ǎnè* *ǎ-wǎth*
 NC1:DEF-woman NC1.SUBJ:DEF drink-CAUS-INST NC1:DEF-child
- ǎŋ-tǎl* *k-ǎ-bèp*
 NC3:DEF-medicine NC2-INDEF-spoon
- (a) ‘The woman used a spoon (as a tool) to make the child drink the medicine.’
 (b) ‘The woman made the child drink the medicine with a spoon.’

In this construction type, the derived verb has both an applicativized-causative meaning (230a) and a causativized-applicative meaning (230b). Thus, in (230a) the surface order of the suffixes mirrors semantic scope since the applicative instrument acts on the higher verb E_1 . In contrast, in (230b) the surface order of suffixes does not correlate with semantic scope, since the applicative instrument acts on the lower verb E_2 , *di* ‘eat’. Therefore, (230b) indicates that the order of the suffixes CAUS + INST does not always mirror semantic scope.

Evidence against the mirror principle comes from LOC + BEN constructions like (231).

- (231) a. *ǎ-lǎngbà* *ǎ* *yírǎ*
 NC1:DEF-man NC1.SUBJ:DEF sit
 ‘The man sat down.’

- b. *ɔ̀-làngbà* *ɔ̀* *yírà-r* *áɣ-bènt*
 NC1:DEF-man NC1.SUBJ:DEF sit-LOC NC3:DEF-stool
 ‘The man sat on the stool.’
- c. *ɔ̀-làngbà* *ɔ̀* *yírà-r-à* *ɔ̀-bɔ̀kò*
 NC1:DEF-man NC1.SUBJ:DEF sit-LOC-BEN NC3:DEF-stool
- áɣ-bènt*
 NC3:DEF-stool
 ‘The man sat on the stool for the woman.’

The verb *yíràrà* ‘X sits on L affecting the interests of W’ is derived from the basic verb *yírà* ‘X sits down’. Example (231a) illustrates the basic intransitive verb *yírà* ‘X sits down’. In (231b), the locative applicative *-r* is combined with the verb stem, and the applied object *áɣbènt* ‘stool’ is added to the clause. In (231c), the benefactive applicative *-à* is combined with derived locative verb. By the mirror principle, it is expected that the applied object L, *áɣbènt* ‘stool’ of the locative applicative is added to clause before the applied object W, *ɔ̀bɔ̀kò* ‘woman’ of the benefactive applicative since the locative applicative combines with the verb before the benefactive applicative does. However, as indicated in (231c), the applied object W *ɔ̀bɔ̀kò* ‘woman’ of the benefactive applicative is closer to the verb and is the primary object, while the applied object L *áɣbènt* ‘stool’ of the locative applicative is farther away from the verb and is the secondary object. Thus, example (231c) indicates that the relative order of verb suffixes cannot be described based on the mirror principle.

However, there is ample evidence that the order of suffixes is fixed, and is best described by morphological templates. These templates, which are listed in

(232), consist of “slots” that specify the position that is occupied by each verb suffix relative to the other.

- (232) a. Verb + CAUS + INST
 b. Verb + LOC + INST
 c. Verb + LOC + BEN
 d. Verb + BEN + INST

In the case of (232a) where the causative suffix and the instrumental applicative co-occur, the causative occupies the slot immediately after the verb, while the instrumental applicative occupies the slot after it. In all the combinations in (232), the linear order of the two suffixes is irreversible.

In connection with the classes of verb stems that combine with each valence-increasing suffix, the study revealed that transitive and intransitive verbs combine with valence-increasing suffixes when each of these suffixes appear alone, or when they co-occur in a verb stem. Ditransitive verbs only combine with the instrumental, locative and benefactive applicatives. However, certain restrictions hold when a ditransitive verb is combined with a locative, instrumental or a benefactive applicative. Table 48 summarizes these restrictions and the properties of ditransitive verbs in general.

Table 48. *Summary of the properties of ditransitive verbs*

<i>do not combine with:</i>	<i>combine with</i>	<i>other restrictions</i>
CAUS	LOC	In a ditransitive-based locative construction, L must be expressed by an object marker.
CAUS + INST		
LOC + INST	BEN	The benefactive applicative cannot add both W and S or W and I to a ditransitive verb.
LOC + BEN		
BEN + INST	INST	The instrumental applicative cannot add both I and C to a ditransitive verb.

Table 48 lists the suffixes that combine with ditransitive verbs and suffixes that do not combine with these verbs. It also shows that no set of co-occurring suffixes combines with ditransitive verbs.

As indicated in Table 48, ditransitive verbs do not combine with the causative suffix, and no convincing evidence was found about why ditransitive verbs do not combine with the causative suffix. However, Temne has causativized verbs that are derived from transitive and intransitive stems, which is consistent with the claim by Haspelmath (2005:1) that “if a language has causative verbs derived from transitive bases, then it also has causatives derived from intransitive bases”.

5.1.2 Semantic effects of valence-increasing suffixes

Verbs that are derived from combining with a valence-increasing suffix are in general polysemous. With the exception of the causative suffix, each valence-increasing suffix or set of valence-increasing suffixes combines with more than one schema. Table 49 lists these schemas and the participant roles that are associated with each valence-increasing suffix.

Table 49. *List of schemas and participant roles of valence-increasing suffixes*

<i>suffixes</i>	<i>schema</i>	<i>participant role</i>	<i>description of schema</i>
CAUS	-	AGENT	A performs E_1 , causing X to perform E_2 (on Y)
LOC	L3	LOCATION	[X performs E] at L
	L4	GOAL	[X performs E] directed towards L
	L5	SOURCE	[X performs E] directed away from L
INST	I2	INSTRUMENT	[X performs E] using I
	I3	COMITATIVE	[X performs E] accompanied by C
	I4	INSTRUMENT COMITATIVE	[X performs E] using I accompanied by C
BEN	B2	BENEFICIARY/ MALEFICIARY	[X performs E] affecting the interests of W
	B3	SUBSTITUTIVE, BENEFICIARY/ MALEFICIARY	[X performs E] on behalf of S, affecting the interests of W
	B4	INSTRUMENT	[X performs E] using I
	B5	INSTRUMENT BENEFICIARY/ MALEFICIARY	[X performs E] using I affecting the interests of W
CAUS + INST	I-in- E_1	AGENT INSTRUMENT	A performs E_1 , using I causing X to perform E_2 (on Y)
	I-in- E_2	AGENT INSTRUMENT	A performs E_1 causing X to perform E_2 (on Y) using I
LOC + INST	L3-I2	LOCATION INSTRUMENT	[X performs E] located at L, using I
	L4-I2	GOAL INSTRUMENT	[X performs E] directed at L, using I
	L5-I2	SOURCE INSTRUMENT	[X performs E] directed away from L, using I
LOC + BEN	L3-B2	LOCATION BENEFICIARY/ MALEFICIARY	[X performs E] at L affecting the interests of W
	L4-B2	GOAL, BENEFICIARY/ MALEFICIARY	[X performs E] towards L affecting the interests of W
	L5-B2	SOURCE BENEFICIARY/ MALEFICIARY	[X performs E] away from L affecting the interests of W
BEN + INST	B2-I2	BENEFICIARY/ MALEFICIARY INSTRUMENT	[X performs E] using I, affecting the interests of W
	B2-I4	BENEFICIARY/ MALEFICIARY INSTRUMENT	[X performs E] together with C, using I affecting the interests of W

The schemas of each suffix or set of suffixes differ only slightly. For example, schemas L3 of the locative suffix differs from schemas L4 and L5 in that it denotes a static location and the added participant is assigned the participant role of LOCATION. Schema L4 differs from schema L3 and L5 in the

sense that it denotes motion towards L, and the added participant is assigned the role of GOAL. Schema L5 is different from schemas L3 and L4 in the sense that it denotes motion away from L, and the new participant is assigned the role of SOURCE.

Unlike the locative applicative where the choice of a schema is not free, the selection of one of the three schemas (I2, I3 or I4) of the instrumental applicative by a verb is free, and is determined by the speaker's desired meaning. Thus, if the speaker's desired meaning is schema I3, the participant C is added to the construction and is the primary object, while Y (if expressed) is the secondary object. On the other hand, if the speaker's desired meaning is schema I4, the participants C and I are both added to the construction.

Moreover, when the set of suffixes LOC + INST, LOC + BEN, and BEN + INST are combined with a verb, some of the schemas that they take when they appear separately on a verb are not expressed. For example, the set of suffixes LOC + INST combines with schema I3 '[X performs E] accompanied by C', and schema I4 '[X performs E] using I accompanied by C'. Each of these schemas comes along with a comitative participant. However, none of these two schemas is expressed when the instrumental applicative co-occurs with the causative, locative or benefactive suffix. Also, when the benefactive suffix co-occurs with the locative or instrumental suffix, schema B3 '[X performs E] on behalf of S, affecting the interests of W' that adds a substitutive S to the clause is not expressed. Thus, the co-occurrence of the LOC + INST or LOC + BEN revealed that when two suffixes co-

occur, some of the schemas that are associated with individual suffixes are not expressed.

The data analyzed in this study showed that some of the meanings of the derived verbs are predictably derived from the meaning of their component parts. A case in point is the causative suffix; when the causative suffix *-s* is combined with a verb expressing E_2 , the causativized verb is interpreted by the schema ‘A performs E_1 causing X to perform E_2 (on Y)’. Thus, apart from the idiosyncratic meanings of a handful of verbs, each verb that is combined with the causative suffix in Temne is interpreted by the same schema. Therefore, generalizations can easily be made about the meaning of the causative suffix.

However, some of the derived verbs have assumed arbitrary meanings that require each of these derived verbs to be analysed individually. One piece of evidence comes from the derived verbs *kóthà* ‘X walks in vain’ and *lómàs* ‘X prosecutes Y’, which have assumed idiomatic meanings. Note that these verbs are derived from the verb stem *kóth* ‘X walks’ and *lóm* ‘X says Y’. As Croft (2001:16) observes, “all idioms are semantically idiosyncratic, which means that they do not follow general rules of semantic interpretation. Instead, they have their own rules of semantic interpretation”. Therefore, generalizations cannot easily be made about idiosyncratic meanings. In this regard, the meaning of each derived verb would have to be analysed individually, hence the need for a construction-based approach, argued for by Goldberg (1992, 1995, 2006), for analysing the meaning of morphologically derived verbs.

Thus, data on valence-increasing suffixes in Temne lead to the conclusion that the construction-based approach and the rule-based approach are both crucial for analysing the meaning of derived verbs. Therefore, the result of this study patterns with the observation by Van Valin (2007), who in the review of Goldberg (2006), states:

Goldberg vigorously advocates a particularist, radical constructionist view of grammar, which she consistently sets in opposition to the generalist approach of generative grammar. The contrast is stark, and, in my own view, the reality of grammar lies somewhere in the middle between these two extremes.

Van Valin (2007: 239)

5.1.3 *Syntactic effects of valence-increasing suffixes*

Valence-increasing suffixes in Temne are also characterized by syntactic properties that are typologically rare. Among these properties is the number of applied objects a certain suffix can add to the valence of the verb. The study revealed that the benefactive applicative can introduce an instrument I, a benefactive W and a substitutive S object. Out of these three applied objects, a maximum of two can be added to the valence of the verb; they are either the benefactive object W and substitutive object S or the benefactive object W and instrument I. Example (233b) illustrates a benefactive construction with the applied objects W and S.

- (233) a. *yàŋlŋ* *ɔ́* *rós* *ŋŋ-nàk*
 mom NC1.SUBJ:DEF serve NC3:DEF-rice
 ‘Mom served the rice.’

- b. *yàŋ àŋ* *ɔ́* *rós-à* *mì* *ɔ́-wàŋ*
 mom NC1.SUBJ:DEF serve-BEN 1SG.OBJ NC1:DEF-child
- kàlmi* *àŋ-nàk*
 mine NC3:DEF-rice
- ‘Mom served my child the rice on my behalf.’

In example (233b), the substitutive object S is marked by the object marker *mì*, while the benefactive object W is expressed by the nominal *ɔ́wàŋ kàlmi* ‘my child’.

Example (234b) demonstrates a benefactive construction with the applied objects W and I.

- (234) a. *ɔ́-bàkò* *ɔ́* *bés* *m-à-wòn*
 NC3:DEF-woman NC1.SUBJ:DEF dig NC10-INDEF-bush.yam
 ‘The woman dug out bush yams.’
- b. *ɔ́-bàkò* *ɔ́* *bés-à* *àŋ-fèth*
 NC3:DEF-woman NC1.SUBJ:DEF dig-BEN NC3:DEF-children
- m-à-wòn* *à-pìkàs*
 NC10-DEF-bush.yam NC3:INDEF-pickaxe
- ‘The woman dug out bush yams with a pickaxe for the children.’

In (234b), the benefactive object W is expressed by the argument *àŋfèth* ‘children’, while the instrument I is expressed by the argument *àpìkàs* ‘pickaxe’.

Note that the substitutive and the instrument never co-occur.

The instrumental applicative also adds a maximum of two applied objects to the clause; they are the instrument I and the comitative C. The following example illustrates an instrumental construction with the instrument I and the comitative C.

- (235) a. *ɔ́-lángbà* *ɔ́* *fəshì* *k-à-bàth*
 NC1:DEF-man NC1.SUBJ:DEF cross NC2-DEF-river
 ‘The man crossed the river.’

- b. *ɔ̀-làngbà* *ɔ̀* *fǎshì-ánè* *ɔ̀-yà*
 NC1:DEF-man NC1.SUBJ:DEF cross-INST NC1:DEF-old woman
- k-á-bàth* *à-bìl* *à-thòyì*
 NC2-DEF-river NC3:INDEF-boat NC3:INDEF-leaking
- ‘The man together with the old woman crossed the river in a leaking boat.’

In example (235b), the comitative object is expressed by the nominal *ɔ̀yà* ‘old woman’ and the instrument I is expressed by the nominal *àbìl àthòyì* ‘leaking boat’.

Unlike the instrumental and the benefactive applicatives, the locative applicative introduces only the applied object L, which may be expressed as a LOCATION, GOAL or SOURCE. Example (236b) illustrates the applied object L as a LOCATION.

- (236) a. *áŋ-tàŋ* *ɔ̀* *fǎnthà*
 NC3:DEF-dog NC1.SUBJ:DEF lie down
 ‘The dog lay down.’
- b. *áŋ-tàŋ* *ɔ̀* *fǎnth-àr* *áŋ-yàrì*
 NC1:DEF-dog NC1.SUBJ:DEF lie down-LOC NC3:DEF-cat
 ‘The dog lay on the cat.’

In (236b), the applied object L is expressed by the nominal *áŋyàrì* ‘cat’ and is assigned the participant role of LOCATION. On the other hand, in (237b) the participant L is a SOURCE.

- (237) a. *ɔ̀-bàkò* *ɔ̀* *wáy* *k-à-làth*
 NC1:DEF-woman NC1.SUBJ:DEF buy NC2-INDEF-tilapia.fish
 ‘The woman bought some tilapia fish.’

- b. *ɔ̀-bɔ̀kɔ̀* *ɔ̀* *wáy-ɛ̀r* *ɔ̀-trèdà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1:DEF-trader

k-à-làth

NC2-INDEF-tilapia.fish

‘The woman bought some tilapia fish from the trader.’

In (237b), the applied object L is expressed by the argument *ɔ̀trèdà* ‘trader’ and is assigned the participant role of SOURCE. However, in (238b), the applied object L is a GOAL.

- (238) a. *ɔ̀-làngbà* *ɔ̀* *súth* *k-à-fánkè*
 NC1:DEF-man NC1.SUBJ:DEF shoot NC2-INDEF-witch.gun
 ‘The man shot a witch gun.’

- b. *ɔ̀-làngbà* *ɔ̀* *súth-ɛ̀r* *ɔ̀-bɔ̀kɔ̀*
 NC1:DEF-man NC1.SUBJ:DEF shoot-LOC NC1:DEF-woman

k-à-fánkè

NC2-INDEF-witch.gun

‘The man shot a witch gun at the woman.’

The argument *ɔ̀bɔ̀kɔ̀* ‘woman’ in (238b) is the applied object L and is assigned the participant role of GOAL. Thus, examples (236b), (237b) and (238b) indicate that the locative suffix introduces one applied object that is expressed as a LOCATION, SOURCE or GOAL, depending on the verb it is combined with.

Furthermore, in this dissertation I have examined the principles underlying the mapping and realization of arguments in a construction with a valence-increasing suffix on the verb. The results of the study showed that the participant hierarchy and precedence hierarchy govern the mapping and realization of arguments in a construction. In addition, certain semantically plausible constructions that rank object markers based on the participant hierarchy and or

precedence hierarchy are blocked if they violate the prominence hierarchy. In the following sub-section, I summarize how these three principles work.

5.1.3.1 The participant hierarchy

In a homogeneous object construction, defined in this dissertation as a construction where all the post-verbal arguments are either expressed by nominals or by object markers, the participant hierarchy in Figure 23 governs the mapping and realization of arguments in the construction.

A » X » S » W » {L, C} » R » Y » I

Figure 23. The participant hierarchy in Temne

Note that some of the combinations of the participants in Figure 23 are not realized. However, some assumptions can be made. For instance, from homogeneous object constructions combining schema B3 ‘[X performs E] on behalf of S, affecting the interests of W’, it is apparent that the participant S outranks W, as they appear in the order S » W. Also, from a LOC + BEN construction, it is evident that the participants W and L occur in the order W » L. Thus, given these two set of co-occurrences, it can be assumed that the participant S outranks L and they occur in the order S » L. In addition, evidence for ranking the participant X above the participants C, L and S comes from non-causative constructions where X is the subject. Also, since X(causee) shown in Chapter 3 never occurs with the participants C, L or S, there is no reason to assume that a demoted X is any different than a non-demoted X.

The participants and their participant roles in each homogeneous object construction are assigned grammatical relations that determine their precedence.

Concerning the benefactive construction, the participant S is the primary object if it is expressed, else W is the primary object, and R that is the secondary object comes after it. However, if R is not present, Y is the secondary object and is followed by I, which is the most peripheral object. Therefore, in a transitive-based homogeneous object benefactive construction illustrating schema B2 '[X performs E] affecting the interests of W', for example, the participant X, which corresponds to the participant role of AGENT, is invariably the subject. The participant W which corresponds to the BENEFICIARY/MALEFICIARY is the primary object, and the participant Y, usually the THEME/PATIENT, is the secondary object.

Although the INSTRUMENT in a homogeneous object construction always maps onto the most oblique grammatical relation, one is never certain about the specific grammatical relation it may correspond to, as this depends on the presence or absence of other participant roles (e.g., THEME, PATIENT or EXPERIENCER) in the construction. In an intransitive-based homogeneous object instrumental construction illustrating schema I3, the participant X, which corresponds to the AGENT, is the subject. The participant C, which corresponds to the COMITATIVE, is the primary object and the participant I that is the INSTRUMENT maps onto the secondary object. However, in a transitive-based homogeneous object instrumental construction illustrating schema I3, the INSTRUMENT is not the secondary object, rather the tertiary object, while the participant Y that is often the THEME/PATIENT maps onto the secondary object.

The analysis above leads to the conclusion that in constructions with two or more of the same type of objects, participant roles map onto grammatical

relations based on the participant hierarchy for individual constructions. As observed by Butt (2006), participant roles map onto grammatical relations by means of “hierarchical linking”, whereby the highest ranked participant role maps onto the highest grammatical relation and the lowest ranked participant role maps onto the lowest grammatical relation in the construction. This matching of participant roles and grammatical relations by means of a hierarchy has also been proposed in the literature by Grimshaw (1990), Bresnan & Kanerva (1989), Dowty (1991) among others.

Bresnan and Zaenen (1990), for instance, have proposed a universal thematic hierarchy *agent » beneficiary » experiencer/goal » instrument » patient/theme » locative*. By this view, the highest ranked participant role occupies the highest or left-most ranked grammatical relation and the lowest or right-most ranked thematic role maps onto the lowest grammatical relation in the hierarchy. However, data from Temne does not conform to this thematic hierarchy. Thus, whereas the instrument outranks the theme and locative in the thematic hierarchy by Bresnan and Zaenen (1990), in the participant hierarchy in Figure 23, the instrument occupies the most peripheral position. This means that it is outranked by the locative which is represented by the variable L. The locative outranks Y, which is often the PATIENT/THEME, and R, which often corresponds to the RECIPIENT.

5.1.3.2 *The precedence hierarchy*

The precedence hierarchy, schematized as OM » NOM, states that a participant that is expressed by an object marker is closer to the verb and is assigned a higher

grammatical relation than a participant that is expressed by a nominal argument. Thus, as with homogeneous object constructions, in heterogeneous object constructions post-verbal arguments as well as their corresponding participant roles shift from one grammatical relation to the other based on the precedence hierarchy.

Although the precedence hierarchy holds in Temne, there are restrictions on which participant can be expressed by an object marker in a construction where there is only one object marker. The first constraint concerns the locative applicative, and it states that in a locative applicative construction that is based on a ditransitive verb, the participant L must be expressed by an object marker (OM). The construction is ungrammatical otherwise. This constraint captures the fact that constructions with three nominals are ruled out. Also, it implies that the participant L is always the primary object in a ditransitive-based locative construction because it is higher on the participant hierarchy. Thus, the constructions in (239) are permissible.

- (239) a. L(OM) » Y(OM) » R(NP)
b. L(OM) » R(OM) » Y(NP)
c. L(OM) » R(NP) » Y(NP)

On the other hand, ditransitive-based locative constructions listed in (240) are impermissible.

- (240) a. *Y(OM) » L(NP) » R(NP)
b. *R(OM) » L(NP) » Y(NP)

The basic difference between the constructions in (240) that are disallowed and the constructions in (239) that are allowed is that in the latter the participant L

maps onto the primary object, while in the former either the participant Y or R is the primary object.

The second constraint relates to the benefactive applicative and it states that if there is an object marker in a benefactive construction where the participant S is expressed, that object marker is S. Thus, the benefactive constructions in (241) where the participant S is the primary object are permissible and are realized.

- (241) a. S(OM) » W(OM) » Y(NOM)
b. S(OM) » Y(OM) » W(NOM)

On the other hand, the benefactive constructions listed in (242) where the participant S is not the primary object are disallowed.

- (242) a. *Y(OM) » S(NOM) » W(NOM)
b. *W(OM) » S(NOM) » Y(NOM)
c. *W(OM) » Y(OM) » S(NOM)

The basic difference between the constructions in (242) that are impermissible and the constructions in (241) that are permissible is that in the latter the participant S maps onto the primary object, while in the former, either the participant Y or W is the primary object.

The third constraint states that if there is an object marker in a LOC + BEN construction, the object marker must express W. Therefore, the constructions in (243) are ruled out.

- (243) a. *L(OM) » W(NOM) » Y(NOM)
b. *Y(OM) » W(NOM) » L(NOM)

Any participant that is the primary object in a LOC + BEN construction is always construed as W (i.e., the beneficiary) by native speakers of Temne; therefore it must be expressed by an object marker.

The constructions in (244) are grammatical, since W is the primary object and is expressed by an object marker.

- (244) a. W(OM) » Y(OM) » L(NOM)
 b. W(OM) » Y(NOM) » L(NOM)

The fourth constraint states that if there is an object marker in a BEN + INST construction, it must express W. Thus, the constructions listed in (245) are disallowed, as they violate the BEN + INST constraint.

- (245) a. *I(OM) » C(NOM) » Y(NOM)
 b. *Y(OM) » I(OM) » C(NOM)
 c. *C(OM) » W(OM) » I(NOM)

On the other hand, the BEN + INST constructions listed in (246) are permissible and are realized.

- (226) a. W(OM) » I(OM) » C(NOM)
 b. W(OM) » C(OM) » I(OM)
 c. W(OM) » C(NOM) » I(NOM)
 d. W(OM) » Y(NOM) » I(NOM)
 e. W(OM) » Y(OM) » I(OM)

Thus, the four constraints summarized above are identical in the sense that they stipulate which participant must be expressed by an object marker in a heterogeneous object construction where only one object marker is expressed. These participants are L in a ditransitive-based locative construction, S in a benefactive construction, W in a LOC + BEN or BEN + INST construction.

Heterogeneous object constructions that comply with the precedence hierarchy provide evidence that participant roles do not consistently map onto any specific grammatical relations in Temne. This is to say, a given participant role can map onto more than two grammatical relations. To indicate how the precedence hierarchy works, I consider the following heterogeneous object locative construction which illustrates schema L5, ‘[X performs E] directed away from L’.

- (247) a. *ǎ-bðkð* *ǎ* *wáy-ðr* *ǎ-trèdà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1:DEF-trader

k-ð-làth
 NC2-INDEF-tilapia.fish

‘The woman bought some tilapia fish from the trader.’

- b. *ǎ-bðkð* *ǎ* *wáy-ðr* *ɣà*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC5.OBJ

ǎ-trèdà
 NC1-trader

‘The woman bought them from the trader.’

- c. *ǎ-bðkð* *ǎ* *wáy-ðr* *kð*
 NC1:DEF-woman NC1.SUBJ:DEF buy-LOC NC1.OBJ

k-ð-làth
 NC2-INDEF-tilapia fish

‘The woman bought some tilapia fish from him/her.’

In (247), the verb *wáyðr* ‘X buys Y from L’ is derived from the verb stem *wáy* ‘X buys Y (fish)’. In the homogeneous object construction in (247a), the participant *ǎtrèdà* ‘trader’, which is the SOURCE, is adjacent to the verb and is the primary object. The participant Y *kàlàth* ‘tilapia fish’, which is the THEME, is the secondary object.

However, in the heterogeneous object construction in (247b), the participant *ɔ̀trèdà* ‘trader’ that is assigned the participant role of SOURCE becomes the secondary object, while the THEME, which is expressed by the object marker *ɲà*, is the primary object. In (247c), the THEME is expressed by the nominal *k̀làth* ‘tilapia fish’ and is the secondary object, while the SOURCE which is expressed by the object marker *k̀* maps onto the primary object. Thus, these examples indicate that, despite its participant role, the participant that is expressed by an object marker is assigned a higher grammatical relation than the participant that is expressed by a nominal. In this regard, the grammatical relation that is assigned to the participant role of SOURCE or THEME varies across constructions.

The following example illustrates the precedence hierarchy in a heterogeneous object CAUS + INST construction.

- (248) a. *ɔ̀-yà* *ɔ̀* *dī-s-ánè*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST
- ɔ̀-wàth* *è-fùfù* *k-à-bép*
 NC1:DEF-child NC7:INDEF-fufu NC2-INDEF-spoon
 ‘The old woman used a spoon (as a means) to make the child eat fufu.’
 ‘The old woman made the child use a spoon (as a tool) to eat fufu.’
- b. *ɔ̀-yà* *ɔ̀* *dī-s-ánè* *yĩ*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC7.OBJ
- ɔ̀-wàth* *k-à-bép*
 NC1:DEF-child NC2-INDEF-spoon
 ‘The old woman used a spoon (as a means) to make the child eat it (fufu).’
 ‘The old woman made the child use a spoon (as a tool) to eat it (fufu).’

- c. *ḡ-yà* *ḡ* *dī-s-Ánè* *kḡ*
 NC1:DEF-old woman NC1.SUBJ:DEF eat-CAUS-INST NC2.OBJ
- kì* *è-fùfù*
 NC.OBJ NC7:INDEF-fufu
- ‘The old woman used it (as a means) to make him/her eat fufu.’
 ‘The old woman made him/her use it (as a tool) to eat fufu.’

The derived verb *dī-s-Ánè* ‘A causes X to eat Y, using I’ is derived from the verb stem *dī* ‘X eats Y’. In the homogeneous object CAUS + INST construction in (248a), the participant *èfùfù* ‘fufu’ that is the THEME maps onto the secondary object, *ḡwàth* ‘child’ that is the PATIENT is the primary object and *kàbèp* ‘spoon’ that is the INSTRUMENT is the tertiary object. However, in the heterogeneous object CAUS + INST construction in (248b) the THEME that is expressed by the object marker *yì* is the primary object, while the PATIENT *ḡwàth* ‘child’ and INSTRUMENT *kàbèp* ‘spoon’ that are nominal arguments map onto the secondary object and tertiary object respectively.

In (248c), both the PATIENT *kḡ* and the INSTRUMENT *kì* are expressed as object markers and are assigned higher grammatical relations than the THEME *èfùfù* ‘fufu’ that is a nominal object. Thus, the examples in (248) indicate that there is no one-to-one mapping between grammatical relation and the participant role of INSTRUMENT, THEME or PATIENT. In other words, in a construction with a valence-increasing suffix on a verb, participant roles are not uniquely connected with syntactic positions.

5.1.3.3 The prominence hierarchy

In addition to the precedence hierarchy and participant hierarchy, evidence from the data analysed indicate that semantically plausible constructions are blocked if the ranking of object markers determined by the participant hierarchy or precedence hierarchy violates the prominence hierarchy 1/2 » 3ANIM » 3INANIM. Example (249b) where the first person singular object marker *mì* precedes the third person plural object marker *chì* illustrates the prominence hierarchy in a locative construction.

- (249) a. *əŋ* *mʌnk-ə̀r* *mì* *ɣà*
 2SG.SUBJ hide-LOC 1SG.OBJ NC5.OBJ
 ‘You hid them from me.’
- b. **əŋ* *mʌnk-ə̀r* *ɣà* *mì*
 2SG.SUBJ hide-LOC NC5.OBJ 1SG.OBJ
 Intended meaning: ‘You hid me from them.’
- c. *əŋ* *mʌnk* *mì* *ròŋ* *ɣà* *rò*
 2SG.SUBJ hide 1SG.OBJ theirs them to
 ‘You hid me from them.’

The derived verb *mʌnkə̀r* ‘X hides Y from L’ is derived from the verb stem *mʌnk* ‘X hides Y’. Example (249a), which illustrates a homogeneous object construction, indicates that the sentence: ‘You hid them from me’ is possible in Temne. However, the sentence ‘You hid me from them’ is impossible with the locative applicative, as demonstrated by the ungrammaticality of (249b). The impossibility of (249b) follows from a violation of the prominence hierarchy, which blocks any construction where the third person object marker *ɣà* precedes the first person object marker *mì*. The data analysed in this dissertation indicate that the prominence hierarchy is an inviolable part of Temne grammar.

In addition, this dissertation has provided an insight into the question of how grammatical relations are defined in Temne. As demonstrated in Chapter 2, Temne has no verb agreement or case marking. Word order is the only available strategy for coding grammatical relations other than the subject. Therefore, in a declarative sentence the pre-verbal argument is the subject and the post-verbal arguments are the objects. A subject that is expressed by a noun is also different from all other arguments in the sentence in the sense that it immediately precedes the subject marker, which agrees with the controlling nominal subject in number, noun class and definiteness.

The objects in a sentence also differ from each other by the linear order in which they occur in the construction. The object that appears immediately after the verb is the primary object, and immediately precedes the secondary object. The tertiary object appears immediately after the secondary object and immediately precedes the quaternary object. In addition, ditransitive-based homogeneous object constructions indicate that Temne places the participant R (often the RECIPIENT) closer to the verb than Y, which is often the THEME. Therefore, Temne is a “primary object language” in the sense of Dryer (1986).

This dissertation leaves a few questions unanswered. First, certain verbs that are expected to combine with certain suffixes are found to be incompatible with these suffixes. Among these are ditransitive verbs, which do not combine with co-occurring valence-increasing suffixes. Also, ditransitive verbs do not combine with the causative suffix when it appears separately on a verb even though they combine with the locative, instrumental or benefactive applicative.

Restrictions on the number of arguments that a causativized verb can support has been proposed as to why ditransitive verbs do not combine with the causative affix in languages like *Tukang Besi* (Donohue, 1999), but this reason is not found to be responsible for the failure of ditransitive verbs to combine with the causative suffix in *Temne*. Thus, the reason why ditransitive verbs fail to combine with the causative suffix remains unclear. Also, it is still not clear why the causative suffix does not co-occur with the locative or benefactive suffix even though it co-occurs with the instrumental applicative. These two areas deserve attention in a future research.

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Appendix

Table I.
List of 300 verb samples used in the analysis in this study

<i>no. in the list</i>	<i>verb root</i>	<i>gloss</i>
1	<i>bā</i>	X has Y
2	<i>bāl̃</i>	X marries Y
3	<i>bámbà</i>	X piggybacks Y
4	<i>báni</i>	X redeems/reclaims Y
5	<i>bánsà</i>	X is angry
6	<i>báŋl̃</i>	X gives a handful of Y to R
7	<i>bó</i>	X borrows Y from R/ X lends Y to R
8	<i>bóf̃thàr</i>	X beats up Y
9	<i>ból</i>	X gets tall
10	<i>bólì</i>	X picks Y
11	<i>bóm</i>	X defecates
12	<i>bóthàr</i>	X loves/likes Y
13	<i>bóy</i>	X immerses Y/X mentions Y to R
14	<i>béf̃àth</i>	X worships Y
15	<i>báf̃l̃è</i>	X laughs
16	<i>bék</i>	X arrives
17	<i>bákà</i>	X carries Y
18	<i>bémpà</i>	X makes Y
19	<i>bénè</i>	X hides Y
20	<i>bánkàl̃ì</i>	X rolls Y
21	<i>bént</i>	X deprives R of Y
22	<i>béŋ</i>	X agrees with Y
23	<i>báp</i>	X meets Y
24	<i>bápàr</i>	X is present in Y
25	<i>bér</i>	X visits Y
26	<i>bár̃f̃ì</i>	X pops off Y (balloon/swelling)
27	<i>bés</i>	X digs out Y
28	<i>bét</i>	X sucks Y
29	<i>bát</i>	X holds Y
30	<i>béth</i>	X bursts into tears
31	<i>béy</i>	X belches
32	<i>bók</i>	X cries
33	<i>bóndàs</i>	X enlarges Y
34	<i>bónt</i>	X names Y
35	<i>bóŋ</i>	X makes Y (heaps)
36	<i>bôr</i>	X peels off Y
37	<i>bósh̃inè</i>	X longs for Y
38	<i>bót</i>	X puts down Y
39	<i>boya</i>	X donates Y to R
40	<i>búkò</i>	X washes Y/ X bathes
41	<i>búlì</i>	X makes a hole in Y
42	<i>búm</i>	X guards Y
43	<i>bús</i>	X takes off Y (clothing)
44	<i>bák</i>	X loads Y

45	<i>bálbál</i>	X chases Y
46	<i>bálàr</i>	X approaches Y
47	<i>bálà</i>	X hunts Y
48	<i>báy</i>	X brings Y
49	<i>bár</i>	X adds Y
50	<i>báthò</i>	X worships Y
51	<i>báyàt</i>	X bets Y
52	<i>chép</i>	X plants Y
53	<i>chéchì</i>	X spreads Y
54	<i>chélà</i>	X calls Y
55	<i>chén</i>	X slaughters Y
56	<i>cher</i>	X releases Y
57	<i>chîm</i>	X fights Y
58	<i>chîs</i>	X is inebriated
59	<i>dákàr</i>	X intertwines Y (rope)
60	<i>dámàr</i>	X cures Y
61	<i>déy</i>	X puts Y on top of R
62	<i>dér</i>	X comes/arrives
63	<i>dī</i>	X eats Y
64	<i>dīf</i>	X kills Y
65	<i>dīm</i>	X misplaces Y
66	<i>dīnè</i>	X disappears from Y
67	<i>dīrà</i>	X sleeps
68	<i>dú</i>	X plaits/braids Y's hair
69	<i>fǒf</i>	X speaks
70	<i>fǒfàlà</i>	X whispers to Y
71	<i>fók</i>	X wraps Y
72	<i>fǒnthà</i>	X lies down
73	<i>fǒshì</i>	X crosses Y
74	<i>fī</i>	X dies
75	<i>fīthà</i>	X throws Y away
76	<i>fón</i>	X shaves
77	<i>fór</i>	X gossips about Y
78	<i>fóy</i>	X floats
79	<i>fúmpò</i>	X falls down
80	<i>fúmpòr</i>	X grabs Y
81	<i>fúrùp</i>	X blows (mouth) to nurse Y (a fire)
82	<i>fúthà</i>	X half-cooks Y, X boils Y (bananas)
83	<i>fǎk</i>	X drops Y
84	<i>fǎl</i>	X flies
85	<i>gbényà</i>	X hates Y
86	<i>gbónthò</i>	X mixes Y
87	<i>gbákì</i>	X answers Y
88	<i>gbál</i>	X writes down Y
89	<i>gbálì</i>	X lines up Y
90	<i>gbám</i>	X (a plant) grows along Y (ground)
91	<i>gbánè</i>	X places Y on X's shoulder
92	<i>gbánthà</i>	X hits Y
93	<i>gbáy</i>	X hangs Y
94	<i>gbárò</i>	X trickles on Y

95	<i>gbáshì</i>	X takes/lifts up Y
96	<i>gbáy</i>	X separates Y
97	<i>gbók</i>	X scrubs Y
98	<i>gból</i>	X grinds Y
99	<i>gbéyà</i>	X yells in agony
100	<i>gbéjà</i>	X faints
101	<i>gbák</i>	X cuts Y
102	<i>gbékàr</i>	X traps Y
103	<i>gbál</i>	X sweeps Y
104	<i>gbélèṅ</i>	X reminds Y
105	<i>gbám</i>	X pounds Y
106	<i>gbénkàrà</i>	X yells
107	<i>gbéth</i>	X yells
108	<i>gbép</i>	X climbs Y
109	<i>gbápàr</i>	X covers Y
110	<i>gbát</i>	X hunts Y
111	<i>gbéthà</i>	X cuts Y
112	<i>gbīnd</i>	X warns Y
113	<i>gbīṅ</i>	X swears
114	<i>gbīp</i>	X chooses Y
115	<i>gbīthànè</i>	X admits to doing Y
116	<i>gbón</i>	X touches Y
117	<i>gbópì</i>	X takes a chip on Y
118	<i>gbúkè</i>	X runs
119	<i>gbál</i>	X quarrels
120	<i>gbám</i>	X sips Y
121	<i>gbánth</i>	X smashes Y
122	<i>gbánthì</i>	X completes/finishes Y
123	<i>gbás</i>	X divides Y
124	<i>gbát</i>	X knocks Y
125	<i>kó</i>	X goes to Y
126	<i>kál</i>	X roasts Y
127	<i>káì</i>	X welcomes Y
128	<i>kánthà</i>	X closes Y
129	<i>kàràṅ</i>	X reads Y
130	<i>kásàrà</i>	X endangers/destroys Y
131	<i>káshì</i>	X retracts Y (wood) from a fire
132	<i>kópàrà</i>	X asks for Y
133	<i>kóth</i>	X walks
134	<i>kál</i>	X pours Y
135	<i>káì</i>	X looks at Y
136	<i>kérà</i>	X carries Y
137	<i>kèth</i>	X scraps Y
138	<i>kéyà</i>	X steals Y
139	<i>kóchì</i>	X unties Y
140	<i>kóm</i>	X gives birth to Y
141	<i>kòrì</i>	X greets Y
142	<i>kórà</i>	X gets pregnant
143	<i>kóth</i>	X ties Y (a bundle)
144	<i>kúl</i>	X makes Y (banana) ripe

145	<i>kúlò</i>	X cries
146	<i>kúlùŋ</i>	X mixes Y
147	<i>kúth</i>	X fetches Y (water)
148	<i>káchì</i>	X excludes Y
149	<i>kàrà</i>	X brings Y
150	<i>káshì</i>	X refuses Y/to do E
151	<i>káwòndì</i>	X preaches Y
152	<i>lánè</i>	X believes in Y
153	<i>láp</i>	X is ashamed of Y
154	<i>lóm</i>	X talks about Y
155	<i>lám</i>	X throws Y away
156	<i>lémpì</i>	X snatches Y
157	<i>léŋ</i>	X sings Y
158	<i>lòsàr</i>	X destroys Y
159	<i>lìŋ</i>	X pulls Y
160	<i>lómì</i>	X identifies Y
161	<i>láfàthì</i>	X turns over Y
162	<i>lák</i>	X throws Y away
163	<i>láp</i>	X lights Y (fire)
164	<i>már</i>	X helps Y
165	<i>mómò</i>	X thanks Y
166	<i>mòràkà</i>	X undermines Y
167	<i>mótà</i>	X dives
168	<i>mótàhà</i>	X surpasses Y
169	<i>mém</i>	X tests Y
170	<i>mér</i>	X swallows Y
171	<i>múmpàl</i>	X kisses Y
172	<i>mún</i>	X drinks Y
173	<i>mánk</i>	X buries/hides Y
174	<i>màsàr</i>	X breast feeds Y
175	<i>nákèth</i>	X fries Y
176	<i>nál</i>	X insults Y
177	<i>nánè</i>	X remembers Y
178	<i>náshì</i>	X wipes off Y
179	<i>nóy</i>	X takes away Y from R
180	<i>nánk</i>	X sees Y
181	<i>númpàthà</i>	X folds Y
182	<i>nút</i>	X feeds Y
183	<i>nántà</i>	X marries Y
184	<i>náp</i>	X hits Y
185	<i>ŋáŋ</i>	X bites Y
186	<i>ŋómì</i>	X makes an ugly face
187	<i>ŋónkàl</i>	X snores
188	<i>ŋori</i>	X uproots Y
189	<i>ŋésàm</i>	X breathes
190	<i>ŋét</i>	X minces Y
191	<i>ŋándòŋ</i>	X swims
192	<i>ŋánt</i>	X pukes/vomits Y
193	<i>ŋáp</i>	X wins Y (a lawsuit)
194	<i>ŋát</i>	X ascends

195	<i>ηάτλ</i>	X lifts ups Y
196	<i>pá</i>	X says Y
197	<i>pólò</i>	X crowns Y
198	<i>pánè</i>	X forgets Y
199	<i>pīkàthà</i>	X smashes/crushes Y
200	<i>pīm</i>	X harvests Y
201	<i>póη</i>	X completes/finishes Y
202	<i>pól</i>	X claps/slaps Y
203	<i>púlàkì</i>	X makes Y look miserable
204	<i>púthànè</i>	X offends Y
205	<i>pát</i>	X cooks Y (meat)
206	<i>páy</i>	X jumps over Y/gets ready for Y
207	<i>ránkà</i>	X curses Y
208	<i>rápèrì</i>	X does a U-turn
209	<i>rànà</i>	X is piggybacks Y
210	<i>déη</i>	X puts Y on R's head
211	<i>ráp</i>	X prostitutes herself
212	<i>rós</i>	X serves Y
213	<i>rúbà</i>	X blesses Y
214	<i>rúnkàt</i>	X mixes Y
215	<i>rúsà̀m</i>	X nurtures Y
216	<i>ráf</i>	X stabs Y
217	<i>rám</i>	X pays Y to R
218	<i>ránkàth</i>	X rinses Y
219	<i>sákàth</i>	X moves to the position of Y
220	<i>sákàthì</i>	X spreads Y
221	<i>sákànè</i>	X scatters about
222	<i>sáp</i>	X scoops Y
223	<i>sár̀à</i>	X carries Y on X's head
224	<i>sókànè</i>	X confuses Y/X is in confusion
225	<i>sóm</i>	X chews Y
226	<i>sóm̀pà</i>	X disturbs Y
227	<i>sónkò</i>	X shouts at Y
228	<i>sóη</i>	X gives R to Y
229	<i>sór</i>	X coughs
230	<i>sòth</i>	X sews Y
231	<i>sòthà̀là</i>	X ignites Y
232	<i>sòthànè</i>	X detects Y
233	<i>sòthà</i>	X gets Y
234	<i>shék</i>	X ties Y
235	<i>shél</i>	X laughs at Y
236	<i>shém</i>	X rejects Y
237	<i>shérà</i>	X saws Y (a piece of wood)
238	<i>shéth</i>	X builds Y
239	<i>shím</i>	X breaks Y
240	<i>sóm</i>	X sends Y
241	<i>sóm̀à̀r̀à</i>	X sends Y to R
242	<i>súnì</i>	X steps on Y's injury
243	<i>súnt</i>	X corks Y
244	<i>sáp</i>	X beats Y

245	<i>sát</i>	X puts Y on top
246	<i>táj</i>	X closes/locks up Y
247	<i>tátá</i>	X prostitutes herself
248	<i>tók</i>	X scolds Y
249	<i>tólà</i>	X puts his hands on Y's eyes
250	<i>tòrì</i>	X shows Y to R
251	<i>tósà</i>	X joins Y
252	<i>tál</i>	X listens to Y
253	<i>támà</i>	X stands
254	<i>táp</i>	X begins with Y
255	<i>tàsàm</i>	X sneezes
256	<i>téy</i>	X leaves behind Y
257	<i>thàs</i>	X surpasses Y
258	<i>thómò</i>	X dances
259	<i>thóy</i>	X burns Y
260	<i>théns</i>	X finds Y
261	<i>thánth</i>	X scrapes Y
262	<i>thílà</i>	X sells Y
263	<i>thínkàr</i>	X presses on Y
264	<i>thíth</i>	X chooses Y
265	<i>thólà</i>	X begs Y
266	<i>thónkàlà</i>	X gathers Y
267	<i>thór</i>	X climbs down Y
268	<i>thúf</i>	X spits Y
269	<i>thúnth</i>	X measures Y
270	<i>thám</i>	X tastes Y
271	<i>thánthì</i>	X stretches Y
272	<i>thápì</i>	X misses Y
273	<i>tháy</i>	X bends Y
274	<i>tój</i>	X cooks Y
275	<i>tú</i>	X falls sick
276	<i>túŋ</i>	X hits Y
277	<i>túrà</i>	X attacks Y
278	<i>támítámnè</i>	X remembers Y
279	<i>tánsànnè</i>	X imitates Y
280	<i>táj</i>	X follows Y
281	<i>tánpò</i>	X sits up late
282	<i>wáy</i>	X buys Y
283	<i>wój</i>	X puts on Y (clothes)
284	<i>wól</i>	X plays
285	<i>wón</i>	X delays
286	<i>wóp</i>	X holds onto Y
287	<i>yéf</i>	X mills Y (corn)
288	<i>yágbà</i>	X hurries Y
289	<i>yák</i>	X washes Y
290	<i>yánfà</i>	X undermines Y
291	<i>yó</i>	X does E/X has an affair with Y
292	<i>yémà</i>	X wants Y
293	<i>yép</i>	X borrows Y
294	<i>yér</i>	X gives Y to R

295	<i>yèr</i>	X shivers
296	<i>yéthà</i>	X squeezes Y
297	<i>yíf</i>	X asks R about Y
298	<i>yīnkàthà</i>	X shakes Y
299	<i>yīr̀̀</i>	X sits down
300	<i>yókà̀̀</i>	X gets up

Table II.
Verbs in the sample that combine with the causative suffix

<i>root</i>	<i>gloss</i>	<i>root + CAUS</i>	<i>gloss</i>
<i>bál̀̀</i>	X marries Y	<i>bál̀̀-̀̀s</i>	A causes X marry Y
<i>bani</i>	X redeems Y	<i>bani-s</i>	A causes X to redeem Y
<i>báns̀̀</i>	X is angry	<i>báns̀̀-̀̀s</i>	A causes X to be angry
<i>ból</i>	X grows tall	<i>ból-̀̀s</i>	A causes X to grow tall
<i>bóm</i>	X defecates	<i>bóm-̀̀s</i>	A causes X to defecate/ X beats the crap out of Y
<i>bék</i>	X arrives	<i>bék-̀̀s</i>	A causes X to arrive
<i>bés</i>	X digs out Y	<i>bés̀̀s</i>	A causes X to dig out Y
<i>béth</i>	X cries	<i>béth-̀̀s</i>	A causes X to cry
<i>bór</i>	X peels off Y	<i>bór-̀̀s</i>	A causes X to peel off Y
<i>bók</i>	X cries	<i>bók-̀̀s</i>	A causes X to cry
<i>bóy</i>	X digs out Y	<i>bóy-̀̀s</i>	A causes X to dig out Y
<i>chép</i>	X plants Y	<i>chép-̀̀s</i>	A causes X to plant Y
<i>chén</i>	X slaughters Y	<i>chén-̀̀s</i>	A causes X to slaughter Y
<i>chís</i>	X is drunk	<i>chís-̀̀s</i>	A made X drunk
<i>đi</i>	X eats Y	<i>đi-s</i>	A causes X to eat Y
<i>đir̀̀</i>	X sleeps	<i>đir̀̀-̀̀s</i>	A causes X to sleep/ X seduces Y
<i>fál</i>	X flies	<i>fál-̀̀s</i>	A causes X to fly
<i>gbál</i>	X writes Y	<i>gbál-̀̀s</i>	A causes X to write Y
<i>gbók</i>	X scrubs Y	<i>gbók-̀̀s</i>	A causes X to scrub Y
<i>gból</i>	X grinds Y	<i>gból-̀̀s</i>	A causes X to grind Y
<i>gból</i>	X sweeps Y	<i>gból-̀̀s</i>	A causes X to sweep Y
<i>gbám</i>	X pounds Y	<i>gbám-̀̀s</i>	A causes X to pound Y
<i>gbép</i>	X climbs Y	<i>gbép-̀̀s</i>	A causes X to climb Y
<i>kóth</i>	X walks	<i>kóth-̀̀̀</i>	A made X walk in vain/ A causes X to walk
<i>kál</i>	X pours Y	<i>kál-̀̀s</i>	A causes X to pour Y
<i>kóm</i>	X gives birth to Y	<i>kóm-̀̀s</i>	A bears a child with X
<i>kór̀̀</i>	X is pregnant	<i>kór̀̀-̀̀s</i>	A impregnates X
<i>kúl̀̀</i>	X cries	<i>kúl̀̀-̀̀s</i>	A causes X to cry
<i>láp</i>	X is ashamed	<i>láp-̀̀s</i>	A causes X to be ashamed
<i>lóm</i>	X says Y	<i>lóm-̀̀s</i>	A made X say Y/ X prosecutes Y
<i>mútà</i>	X dives	<i>mútà-s</i>	A causes X to dive
<i>mér</i>	X swallows Y	<i>mér-̀̀s</i>	A causes X to swallow Y
<i>mún</i>	X drinks Y	<i>mún-̀̀s</i>	A causes X to drink Y

<i>ɲánt</i>	X pukes Y	<i>ɲánt-às</i>	A causes X to puke Y
<i>póɲ</i>	X ends Y	<i>póɲ-às</i>	A causes X to end Y
<i>sàkàth</i>	X moves over there	<i>sàkàth-à</i>	A causes X to move over there
<i>shéth</i>	X builds Y	<i>shéth-às</i>	A causes X to build Y
<i>tátá</i>	X prostitutes	<i>tátá-s</i>	A causes X to prostitute
<i>thómò</i>	X dances	<i>thómò-s</i>	A causes X to dance
<i>tóɲ</i>	X cooks Y	<i>tóɲ-às</i>	A causes X to cook Y
<i>wáy</i>	X buys Y	<i>wáy-às</i>	A causes X to buy Y
<i>wóɲ</i>	X puts on Y	<i>wóɲ-às</i>	A causes X to put on Y
<i>yírà</i>	X sits down	<i>yírà-s</i>	A causes X to sit down

Table III.

Verbs in the sample that do not combine with the causative suffix

<i>verb root</i>	<i>gloss</i>	<i>verb + CAUS</i>
<i>bá</i>	X has Y	* <i>bá-s</i>
<i>bám̀bà</i>	X piggybacks Y	* <i>bám̀bà-s</i>
<i>báɲà</i>	X gives a hand full of Y to R	* <i>báɲà-s</i>
<i>bó</i>	X borrows Y from R	* <i>bó-s</i>
<i>bófàthà</i>	X beats up Y	* <i>bófàthà-às</i>
<i>bólì</i>	X picks Y	* <i>bólì-s</i>
<i>bóthà</i>	X loves Y	* <i>bóthà-às</i>
<i>bóy</i>	X immerses Y/X mentions Y to R	* <i>bóy-às</i>
<i>béfàth</i>	X worships Y	* <i>béfàth-às</i>
<i>báfàlè</i>	X laughs	* <i>báfàlè-s</i>
<i>bákà</i>	X carries Y	* <i>bákà-s</i>
<i>bémpà</i>	X makes Y	* <i>bémpà-s</i>
<i>bénè</i>	X hides Y	* <i>bénè-s</i>
<i>bánkàlì</i>	X rolls Y	* <i>bánkàlì-s</i>
<i>bént</i>	X denies /deprives Y of R	* <i>bént-às</i>
<i>béɲ</i>	X agrees with Y	* <i>béɲ-às</i>
<i>báp</i>	X meets Y	* <i>báp-às</i>
<i>bápà</i>	X is present	* <i>bápà-às</i>
<i>bér</i>	X visits Y	* <i>bér-s</i>
<i>bàràfì</i>	X pops off Y	* <i>bàràfì-s</i>
<i>bét</i>	X sucks Y	* <i>bét-às</i>
<i>bát</i>	X holds Y	* <i>bát-às</i>
<i>béy</i>	X belches	* <i>béy-às</i>
<i>bóndàs</i>	X enlarges Y	* <i>bóndàs-às</i>
<i>bónt</i>	X names Y	* <i>bónt-s</i>
<i>bór</i>	X peels off Y	* <i>bór-s</i>
<i>bóshìnè</i>	X longs for Y	* <i>bóshìnè-s</i>
<i>bót</i>	X puts down Y	* <i>bót-às</i>
<i>Boya</i>	X puts down Y	* <i>boya-s</i>
<i>búkò</i>	X washes Y/ X takes a shower	* <i>búkò-s</i>
<i>búlì</i>	X makes a hole in Y	* <i>búlì-s</i>
<i>búm</i>	X drives Y	* <i>búm-s</i>

<i>bús</i>	X takes off Y from R	* <i>bús-s</i>
<i>bák</i>	X loads Y	* <i>bák-s</i>
<i>bálbál</i>	X chases Y	* <i>bálbál-s</i>
<i>bálàr</i>	X approaches Y	* <i>bálàr-s</i>
<i>báll</i>	X hunts Y	* <i>báll-s</i>
<i>báy</i>	X brings Y	* <i>báy-s</i>
<i>bár</i>	X adds Y	* <i>bár-à-s</i>
<i>báthò</i>	X worships Y	* <i>báthò-s</i>
<i>báyàt</i>	X bets Y	* <i>báyàt-à-s</i>
<i>chéchì</i>	X spreads Y	* <i>chéchì-s</i>
<i>chélà</i>	X calls Y	* <i>chélà-s</i>
<i>cher</i>	X lets Y go	* <i>cher-à-s</i>
<i>chím</i>	X fights Y	* <i>chím-à-s</i>
<i>dákàr</i>	X wines Y	* <i>dákàr-à-s</i>
<i>dámàr</i>	X cures Y	* <i>dámàr-à-s</i>
<i>déŋ</i>	X puts Y on R's head	* <i>déŋ-à-s</i>
<i>dér</i>	X comes/arrives	* <i>dér-à-s</i>
<i>díf</i>	X kills Y	* <i>díf-à-s</i>
<i>dím</i>	X misplaces Y	* <i>dím-à-s</i>
<i>dìnè</i>	X disappears from Y	* <i>dìnè-s</i>
<i>dú</i>	X plaits Y's hair	* <i>dú-s</i>
<i>fǒf</i>	X speaks	* <i>fǒf-à-s</i>
<i>fǒfàlà</i>	X whispers to Y	* <i>fǒfàlà-s</i>
<i>fǒk</i>	X wraps Y	* <i>fǒk-à-s</i>
<i>fǎnthà</i>	X lies down	* <i>fǎnthà-s</i>
<i>fǎshì</i>	X crosses Y	* <i>fǎshì-s</i>
<i>fì</i>	X dies	* <i>fì-s</i>
<i>fúthà</i>	X throws away Y	* <i>fúthà-s</i>
<i>fón</i>	X shaves	* <i>fón-à-s</i>
<i>fór</i>	X gossips Y	* <i>fór-s</i>
<i>fóy</i>	X floats	* <i>fóy-à-s</i>
<i>fúmpò</i>	X falls down	* <i>fúmpò-s</i>
<i>fúmpàr</i>	X grabs Y	* <i>fúmpàr-à-s</i>
<i>fúrùp</i>	X blows off/enkindles Y	* <i>fúrùp-à-s</i>
<i>fúthà</i>	X cooks Y	* <i>fúthà-s</i>
<i>fál</i>	X flies	* <i>fál-à-s</i>
<i>gbéŋyà</i>	X hates Y	* <i>gbéŋyà-s</i>
<i>gbónthò</i>	X mixes Y	* <i>gbónthò-s</i>
<i>gbákì</i>	X answers Y	* <i>gbákì-s</i>
<i>gbáì</i>	X lines up Y	* <i>gbáì-s</i>
<i>gbám</i>	X (a plant) grows along Y	* <i>gbám-à-s</i>
<i>gbánè</i>	X hangs Y on X's shoulder	* <i>gbánè-s</i>
<i>gbánthà</i>	X hits Y	* <i>gbánthà-s</i>
<i>gbáy</i>	X hangs Y	* <i>gbáy-à-s</i>
<i>gbárò</i>	X trickles on Y	* <i>gbárò-s</i>
<i>gbáshì</i>	X takes/lifts up Y	* <i>gbáshì-s</i>
<i>gbáy</i>	X separates Y	* <i>gbáy-à-s</i>
<i>gbéyà</i>	X yells in agony	* <i>gbéyà-s</i>
<i>gbébà</i>	X faints	* <i>gbébà-s</i>
<i>gbák</i>	X cuts Y	* <i>gbák-à-s</i>

<i>gbékàr</i>	X traps Y	* <i>gbékàr-às</i>
<i>gbélèṅ</i>	X reminds Y	* <i>gbélèṅ-às</i>
<i>gbénkàrà</i>	X yells	* <i>gbénkàrà-s</i>
<i>gbénth</i>	X yells	* <i>gbénth-às</i>
<i>gbápàr</i>	X covers Y	* <i>gbápàr-às</i>
<i>gbát</i>	X hunts Y	* <i>gbát-às</i>
<i>gbéthà</i>	X cuts Y	* <i>gbéthà-s</i>
<i>gbínd</i>	X warns Y	* <i>gbínd-às</i>
<i>gbíṅ</i>	X swears	* <i>gbíṅ-às</i>
<i>gbíp</i>	X chooses Y	* <i>gbíp-às</i>
<i>gbíthànè</i>	X admits Y	* <i>gbíthànè-s</i>
<i>gbóṅ</i>	X touches Y	* <i>gbóṅ-às</i>
<i>gbópì</i>	X makes a chip on Y	* <i>gbópì-s</i>
<i>gbúkè</i>	X runs	* <i>gbúkè-s</i>
<i>gbál</i>	X quarrels	* <i>gbál-às</i>
<i>gbám</i>	X sips Y	* <i>gbám-às</i>
<i>gbánth</i>	X smashes Y	* <i>gbánth-às</i>
<i>gbánthì</i>	X completes/finishes Y	* <i>gbánthì-s</i>
<i>gbás</i>	X divides Y	* <i>gbás-às</i>
<i>gbát</i>	X knocks Y	* <i>gbát-às</i>
<i>kó</i>	X goes to Y	* <i>kó-s</i>
<i>kál</i>	X roasts Y	* <i>kál-às</i>
<i>káli</i>	X welcomes Y	* <i>káli-s</i>
<i>kánthà</i>	X closes Y	* <i>kánthà-s</i>
<i>kàràṅ</i>	X reads Y	* <i>kàràṅ-às</i>
<i>kásàrà</i>	X endangers Y	* <i>kásàrà-s</i>
<i>káshì</i>	X retracts Y	* <i>káshì-s</i>
<i>kópàrà</i>	X asks for Y	* <i>kópàrà-s</i>
<i>káli</i>	X looks at Y	* <i>káli-s</i>
<i>kérà</i>	X carries Y	* <i>kérà-s</i>
<i>kèth</i>	X scraps Y	* <i>kèth-às</i>
<i>kéyà</i>	X steals Y	* <i>kéyà-s</i>
<i>kóchì</i>	X unties Y	* <i>kóchì-s</i>
<i>kóri</i>	X greets Y	* <i>kóri-s</i>
<i>kóth</i>	X ties Y (a bundle)	* <i>kóth-às</i>
<i>kúl</i>	X makes Y ripe	* <i>kúl-às</i>
<i>kúlùṅ</i>	X mixes Y	* <i>kúlùṅ-às</i>
<i>kúth</i>	X fetches Y (water)	* <i>kúth-às</i>
<i>káchì</i>	X excludes Y	* <i>káchì-s</i>
<i>kárà</i>	X brings Y	* <i>kárà-s</i>
<i>káshì</i>	X refuses (to do Y)	* <i>káshì-s</i>
<i>káwóndì</i>	X preaches Y	* <i>káwóndì-s</i>
<i>lánè</i>	X believes in Y	* <i>lánè-s</i>
<i>lám</i>	X throws away Y	* <i>lám-às</i>
<i>lèmpì</i>	X snatches Y	* <i>lèmpì-s</i>
<i>léṅ</i>	X sings Y	* <i>léṅ-às</i>
<i>làsàr</i>	X destroys Y	* <i>làsàr-às</i>
<i>lìṅ</i>	X pulls Y	* <i>lìṅ-às</i>
<i>lómì</i>	X identifies Y	* <i>lómì-s</i>
<i>láfàthì</i>	X turns over Y	* <i>láfàthì-s</i>

<i>lák</i>	X throws away Y	*lák-às
<i>már</i>	X helps Y	*már-às
<i>mómò</i>	X thanks Y	*mómò-s
<i>móràkà</i>	X undermines Y	*móràkà-s
<i>móthà</i>	X surpasses Y	*móthà-s
<i>mém</i>	X tests Y	*mém-às
<i>múmpàl</i>	X kisses Y	*múmpàl-às
<i>mánk</i>	X buries/hides Y	*mánk-às
<i>másàr</i>	X breast feeds Y	*màsàr-às
<i>nákèth</i>	X fries Y	*nákèth-às
<i>nál</i>	X insults Y	*nál-às
<i>nánè</i>	X remembers Y	*nánè-s
<i>náshì</i>	X wipes Y	*náshì-s
<i>nóy</i>	X takes away Y from R	*nóy-às
<i>nónk</i>	X sees Y	*nónk-às
<i>númpàthà</i>	X folds Y	*númpàthà-s
<i>nút</i>	X feeds Y	*nút-às
<i>nántà</i>	X marries Y	*nántà-s
<i>náp</i>	X hits Y	*náp-às
<i>háj</i>	X bites Y	*háj-às
<i>hómì</i>	X makes an ugly face	*hómì-s
<i>hónkàl</i>	X snores	*hónkàl-às
<i>hóri</i>	X uproots Y	*hóri-s
<i>hésàm</i>	X breathes	*hésàm-às
<i>hét</i>	X minces Y	*hét-às
<i>hándèh</i>	X swims	*hándèh-às
<i>háp</i>	X wins Y (a lawsuit)	*háp-às
<i>hát</i>	X ascends	*hát-às
<i>hátà</i>	X lifts ups Y	*hátà-s
<i>pá</i>	X says Y	*pá-s
<i>pólò</i>	X crowns Y	*pólò-s
<i>pónè</i>	X forgets Y	*pónè-s
<i>pìkàthà</i>	X smashes Y	*pìkàthà-s
<i>pím</i>	X plucks off Y	*pím-às
<i>pól</i>	X claps/slaps Y	*pól-às
<i>púlàkì</i>	X makes Y look miserable	*púlàkì-s
<i>púthànè</i>	X offends Y	*púthànè-s
<i>pát</i>	X cooks Y	*pát-às
<i>páy</i>	X jumps over Y/gets ready for Y	*páy-às
<i>ránkà</i>	X curses Y	*ránkà-s
<i>rápàrì</i>	X does a U-turn	*rápàrì-s
<i>rànà</i>	X carries Y of his back	*rànà-s
<i>déh</i>	X puts Y on R's head	*déh-às
<i>ráp</i>	X prostitutes	*ráp-às
<i>rós</i>	X serves Y	*rós-às
<i>rúbà</i>	X blesses Y	*rúbà-s
<i>rúnkàt</i>	X mixes Y	*rúnkàt-às
<i>rúsàm</i>	X nurtures Y	*rúsàm-às
<i>ráf</i>	X stabs Y	*ráf-às
<i>rám</i>	X pays R, Y	*rám-às

<i>ránkàth</i>	X rinses Y	* <i>ránkàth-às</i>
<i>sákàthì</i>	X spreads Y	* <i>sákàthì-s</i>
<i>sákànè</i>	X scatters about	* <i>sákànè-s</i>
<i>Sap</i>	X scoops Y	* <i>sap-às</i>
<i>sárì</i>	X carries Y on X's head	* <i>sárì-s</i>
<i>sókànè</i>	X confuses Y/X is in confusion	* <i>sókànè-s</i>
<i>sóm</i>	X chews Y	* <i>sóm-às</i>
<i>sòmjà</i>	X disturbs Y	* <i>sòmjà-s</i>
<i>sònkòr</i>	X shouts at Y	* <i>sònkòr-às</i>
<i>sòŋ</i>	X gives R to Y	* <i>sòŋ-às</i>
<i>sòr</i>	X coughs	* <i>sòr-às</i>
<i>sòth</i>	X sews Y	* <i>sòth-às</i>
<i>sòthàlà</i>	X ignites Y	* <i>sòthàlà-s</i>
<i>sòthànè</i>	X detects Y	* <i>sòthànè-s</i>
<i>sòthà</i>	X gets Y	* <i>sòthà-s</i>
<i>shél</i>	X laughs at Y	* <i>shél-às</i>
<i>shém</i>	X rejects Y	* <i>shém-às</i>
<i>shérà</i>	X saws Y (a piece of wood)	* <i>shérà-s</i>
<i>shéth</i>	X builds Y	* <i>shéth-às</i>
<i>shúm</i>	X breaks Y	* <i>shúm-às</i>
<i>sóm</i>	X sends Y	* <i>sóm-às</i>
<i>sómàrà</i>	X sends Y to R	* <i>sómàrà-s</i>
<i>súnì</i>	X steps on Y's injury	* <i>súnì-s</i>
<i>súnt</i>	X corks Y	* <i>súnt-às</i>
<i>sáp</i>	X beats Y	* <i>sáp-às</i>
<i>sát</i>	X puts Y on top	* <i>sát-às</i>
<i>táŋ</i>	X closes/locks Y	* <i>táŋ-às</i>
<i>tók</i>	X scolds Y	* <i>tók-às</i>
<i>tólà</i>	X puts his hands in Y's eyes	* <i>tólà-s</i>
<i>tòrì</i>	X shows R, Y	* <i>tòrì-s</i>
<i>tòsà</i>	X joins Y	* <i>tòsà-s</i>
<i>tól</i>	X listens to Y	* <i>tól-às</i>
<i>tómà</i>	X stands	* <i>tómà-s</i>
<i>tòp</i>	X begins Y	* <i>tòp-às</i>
<i>tòsòm</i>	X sneezes	* <i>tòsòm-às</i>
<i>téy</i>	X leaves behind Y	* <i>téy-às</i>
<i>thàs</i>	X surpasses Y	* <i>thàs-às</i>
<i>thóy</i>	X burns Y	* <i>thóy-às</i>
<i>théns</i>	X finds Y	* <i>théns-às</i>
<i>thànth</i>	X scrapes Y	* <i>thànth-às</i>
<i>thìlà</i>	X sells Y	* <i>thìlà-s</i>
<i>thìnkàr</i>	X presses on Y	* <i>thìnkàr-às</i>
<i>thùth</i>	X chooses Y	* <i>thùth-às</i>
<i>thólà</i>	X begs Y	* <i>thólà-s</i>
<i>thónkàlà</i>	X gathers Y	* <i>thónkàlà-s</i>
<i>thór</i>	X climbs down Y	* <i>thór-às</i>
<i>thúf</i>	X spits Y	* <i>thúf-às</i>
<i>thúnth</i>	X measures Y	* <i>thúnth-às</i>
<i>thám</i>	X tastes Y	* <i>thám-às</i>
<i>thánthì</i>	X stretches Y	* <i>thánthì-s</i>

<i>thápi</i>	X misses Y	<i>*thápi-s</i>
<i>tháy</i>	X bends Y	<i>*tháy-às</i>
<i>tú</i>	X falls sick	<i>*tú-s</i>
<i>túŋ</i>	X hits Y	<i>*túŋ-às</i>
<i>túra</i>	X attacks Y	<i>*túra-s</i>
<i>támtámnè</i>	X remembers Y	<i>*támtámnè-s</i>
<i>tánsànè</i>	X remembers Y	<i>*tánsànè-s</i>
<i>táŋ</i>	X follows Y	<i>*táŋ-às</i>
<i>tánpò</i>	X sits up late	<i>*tánpò-s</i>
<i>wól</i>	X plays	<i>*wól-às</i>
<i>wón</i>	X delays	<i>*wón-às</i>
<i>wóp</i>	X holds onto Y	<i>*wóp-às</i>
<i>yéf</i>	X mills Y (corn)	<i>*yéŋ-às</i>
<i>yágbà</i>	X hurries Y	<i>*yágbà-s</i>
<i>yák</i>	X washes Y	<i>*yák-às</i>
<i>yánfà</i>	X undermines Y	<i>*yánfà-s</i>
<i>yó</i>	X does Y	<i>*yó-s</i>
<i>yémà</i>	X wants Y	<i>*yémà-s</i>
<i>yép</i>	X borrows Y	<i>*yéŋ-às</i>
<i>yér</i>	X gives R, Y	<i>*yéŋ-às</i>
<i>yèr</i>	X shivers	<i>*yéŋ-às</i>
<i>yéthà</i>	X squeezes Y	<i>*yéthà-s</i>
<i>yíf</i>	X gives R, Y	<i>*yíf-às</i>
<i>yínkàthà</i>	X shakes Y	<i>*yínkàthà-s</i>
<i>yókànè</i>	X gets up	<i>*yókànè-s</i>

Table IV.

Verbs in the sample that combine with the locative applicative

<i>root</i>	<i>gloss</i>	<i>root + BEN</i>	<i>gloss</i>
<i>ŋómì</i>	X makes an ugly face	<i>ŋómì-r</i>	X makes an ugly face towards L
<i>ŋánt</i>	X pukes Y	<i>ŋánt-àŋ</i>	X pukes Y on L
<i>ŋát</i>	X climbs Y	<i>ŋát-àŋ</i>	X climbs Y towards L
<i>ŋét</i>	X minces Y	<i>ŋét-àŋ</i>	X minces Y in the direction of L
<i>bó</i>	X lends Y to R	<i>bó-r</i>	X borrows Y from R (that is analogous to L)
<i>ból</i>	X grows tall	<i>ból-àŋ</i>	X grows tall in the presence of L
<i>bólì</i>	X plucks off Y	<i>bólì-r</i>	X plucks off Y in the presence of L
<i>bémpà</i>	X makes Y	<i>bémpà-r</i>	X beautifies Y
<i>bánkàkì</i>	X rolls Y	<i>bánkàkì-r</i>	X rolls Y towards L
<i>bés</i>	X digs out Y	<i>bés-àŋ</i>	X digs out Y towards L
<i>béth</i>	X begins to cry	<i>béth-àŋ</i>	X begins to cry facing L
<i>bóy</i>	X mentions Y/ X immerses Y	<i>bóy-àŋ</i>	X mentions Y to L/ X immerses Y in L
<i>bànì</i>	X redeems Y	<i>bànì-r</i>	X redeems Y from L
<i>báns-à</i>	X is angry	<i>báns-àŋ</i>	X is angry at L
<i>bék</i>	X arrives	<i>bék-àŋ</i>	X arrives in L

<i>béy</i>	X belches	<i>béy-àr</i>	X belches facing L
<i>bóy</i>	X makes Y (heaps)	<i>bóy-àr</i>	X makes Y (heaps) on L
<i>bók</i>	X cries	<i>bók-àr</i>	X cries facing Y
<i>bór</i>	X peels off Y	<i>bór-àr</i>	X peels off Y in front of L
<i>bóyà</i>	X donates Y	<i>bóyà-àr</i>	X donates Y to L
<i>búli</i>	X makes a hole in Y	<i>búli-r</i>	X makes a hole in Y in the presence of L
<i>bús</i>	X takes off Y	<i>bús-àr</i>	X takes off Y in the presence of L
<i>chéchì</i>	X spreads Y	<i>chéchì-r</i>	X spreads Y all over L
<i>chén</i>	X slaughters Y	<i>chén-àr</i>	X slaughters Y in L
<i>chér</i>	X lets go Y	<i>chér-àr</i>	X lets go Y on L
<i>chìs</i>	X is inebriated	<i>chìs-àr</i>	X is inebriated and directs his foolish talks at L
<i>dī</i>	X eats Y	<i>dī-r</i>	X eats Y before L/ X exploits Y
<i>dīf</i>	X kills Y	<i>dīf-àr</i>	X enslaves Y
<i>dīr-à</i>	X sleeps	<i>dīr-àr</i>	X sleeps in L
<i>fǒf</i>	X says Y	<i>fǒf-àr</i>	X says Y to L/ X rebukes Y
<i>fál</i>	X flies	<i>fál-àr</i>	X flies towards Y
<i>fǎnth-à</i>	X lies down	<i>fǎnth-àr</i>	X lies down on L X is in the habit of doing E to Y
<i>fǎshì</i>	X crosses Y	<i>fǎshì-r</i>	X crosses Y towards L
<i>fī</i>	X dies	<i>fī-r</i>	X dies in our presence
<i>fithà</i>	X throws Y	<i>fithà-r</i>	X throws Y towards L
<i>fóy</i>	X floats	<i>fóy-àr</i>	X floats on Y, where L is
<i>gbéba</i>	X faints	<i>gbéba-r</i>	X faints in the presence of L
<i>gbák</i>	X cuts Y	<i>gbák-àr</i>	X cuts Y from L
<i>gbál</i>	X sweeps Y	<i>gbál-àr</i>	X sweeps Y towards L
<i>gból</i>	X grinds Y	<i>gból-àr</i>	X grinds Y on L
<i>gbám</i>	X pounds Y	<i>gbám-àr</i>	X is quiet/X crushes Y
<i>gbánthì</i>	X ends Y	<i>gbánthì-r</i>	X ends Y at L
<i>gbéth</i>	X yells	<i>gbéth-àr</i>	X yells at L
<i>gbáy</i>	X hangs Y	<i>gbáy-àr</i>	X hangs Y on L
<i>gbál</i>	X writes Y	<i>gbál-àr</i>	X writes Y to L
<i>gbáli</i>	X lines up Y	<i>gbáli-r</i>	X lines up Y in front of L
<i>gbám</i>	X creeps	<i>gbám-àr</i>	X (a plant) grows along L
<i>gbáshì</i>	X takes away Y	<i>gbáshì-r</i>	X takes away Y from L
<i>gbép</i>	X climbs Y	<i>gbép-àr</i>	X climbs Y towards L
<i>gbéthà</i>	X chops Y	<i>gbéthà-r</i>	X chops Y before L
<i>gbíp</i>	X catches Y	<i>gbíp-àr</i>	X catches Y from L
<i>kó</i>	X goes to Y	<i>kó-r</i>	X goes to Y where L is located
<i>kál</i>	X pours Y	<i>kál-àr</i>	X pours Y into L
<i>káshì</i>	X denies doing Y	<i>káshì-r</i>	X denies doing Y and the denial is directed at L
<i>kóth</i>	X walks	<i>kóth-àr</i>	X walks towards L
<i>kánthà</i>	X closes Y	<i>kánthà-r</i>	X closes Y in front of L
<i>káshì</i>	X retracts Y	<i>káshì-r</i>	X retracts Y from L
<i>kéy-à</i>	X steals Y	<i>kéy-àr</i>	X steals Y from L
<i>kóth</i>	X ties Y	<i>kóth-àr</i>	X ties Y at point L
<i>lák</i>	X throws Y	<i>lák-àr</i>	X throws Y towards L

<i>lóm</i>	X says Y	<i>lóm-àr</i>	X says Y to L/X rebukes Y
<i>lám</i>	X throws Y	<i>lám-àr</i>	X throws Y towards L
<i>lémpì</i>	X swoops down on Y	<i>lémpì-r</i>	X swoops down on Y from L
<i>léŋ</i>	X sings	<i>léŋ-àr</i>	X sings to L
<i>līŋ</i>	X pulls Y	<i>līŋ-àr</i>	X pulls Y from L
<i>mém</i>	X tests Y	<i>mém-àr</i>	X attempts an action
<i>mánk</i>	X hides Y	<i>mánk-àr</i>	X hides Y from L
<i>mér</i>	X swallows Y	<i>mér-àr</i>	X swallows Y absent mindedly
<i>nákàth</i>	X fries Y	<i>nákàth-àr</i>	X fries Y over and over
<i>náp</i>	X hits Y	<i>náp-àr</i>	X begins to perform an action
<i>nóy</i>	X withdraws Y	<i>nóy-àr</i>	X withdraws Y from L
<i>pólò</i>	X crowns Y	<i>pólò-r</i>	X crowns Y in L
<i>páy</i>	X jumps	<i>páy-àr</i>	X is ready for Y
<i>pá</i>	X says Y	<i>pá-r</i>	X presides over Y
<i>ráf</i>	X stabs Y	<i>ráf-àr</i>	X enacts Y (a law)
<i>ránkàth</i>	X rinses Y	<i>ránkàth-àr</i>	X rinses Y over and over
<i>sónkò</i>	X shouts	<i>sónkò-r</i>	X shouts at L
<i>sór</i>	X coughs	<i>sór-àr</i>	X coughs towards L
<i>sóth</i>	X sews Y	<i>sóth-àr</i>	X sews Y at point L
<i>shék</i>	X ties Y	<i>shék-àr</i>	X ties Y at point L
<i>shék</i>	X ties Y	<i>shék-àr</i>	X is determined
<i>shém</i>	X rejects Y	<i>shém-àr</i>	X rejects Y and the rejection is directed at L
<i>shéth</i>	X builds Y	<i>shéth-àr</i>	X builds Y on L
<i>súnt</i>	X corks Y	<i>súnt-àr</i>	X corks Y at point L
<i>tók</i>	X scolds Y	<i>tók-àr</i>	X scolds Y in the presence of L
<i>támà</i>	X stands	<i>tám-àr</i>	A causes X to stand up
<i>táy</i>	X shuts down Y	<i>táy-àr</i>	X shuts down Y in the direction of L
<i>tátá</i>	X flirts	<i>tátá-r</i>	X flirts with L/to entice L
<i>thám</i>	X tastes Y	<i>thám-àr</i>	X is in the habit of doing E, that is not tasting
<i>thómò</i>	X dances	<i>thómò-r</i>	X dances towards L
<i>thánthì</i>	X extends Y	<i>thánthì-r</i>	X extends Y in the direction of L
<i>tháy</i>	X bends Y	<i>tháy</i>	X bends Y towards L
<i>thóy</i>	X burns Y	<i>thóy-àr</i>	X burns Y beyond limit
<i>thás</i>	X passes Y	<i>thás-àr</i>	X exceeds the limit
<i>thîlà</i>	X sells Y	<i>thîlà-r</i>	X sells Y to L
<i>thólà</i>	X begs for Y	<i>thólì-r</i>	X begs for Y from L
<i>thúf</i>	X spits Y	<i>thúf-àr</i>	X spits Y on L
<i>tú</i>	X is sick	<i>tú-r</i>	X gets sick in L
<i>wóŋ</i>	X enters Y	<i>wóŋ-àr</i>	X enters Y in the direction of L
<i>wáy</i>	X buys Y	<i>wáy-àr</i>	X buys Y from L'
<i>wóp</i>	X holds Y	<i>wóp-àr</i>	X holds onto Y relentlessly
<i>yák</i>	X launders Y	<i>yák-àr</i>	X performs E (E is not laundering)
<i>yémà</i>	X wants Y'	<i>yémà-r</i>	X wants Y from L
<i>yép</i>	X lends Y to R	<i>yép-àr</i>	X borrows Y from L
<i>yíf</i>	X asks for Y	<i>yíf-àr</i>	X asks for Y from L
<i>yírà</i>	X sits down	<i>yírà</i>	X sits down on L

Table V.
Verbs in the sample that do not combine with the locative applicative

<i>verb root</i>	<i>gloss</i>	<i>verb root + LOC</i>
<i>bá</i>	X has Y	* <i>bá-r</i>
<i>bálà</i>	X marries Y	* <i>bálà-r</i>
<i>bámbà</i>	X piggybacks Y	* <i>bámbà-r</i>
<i>báŋà</i>	X gives a handful of Y to R	* <i>báŋà-r</i>
<i>bɔ́fàthà</i>	X beats up Y	* <i>bɔ́fàthà-r</i>
<i>bóthà</i>	X loves Y	* <i>bóthà-r</i>
<i>bé́fàth</i>	X worships Y	* <i>bé́fàth-r</i>
<i>bá́fàlè</i>	X laughs	* <i>bá́fàlè-r</i>
<i>bákà</i>	X carries Y	* <i>bákà-r</i>
<i>bénè</i>	X hides Y	* <i>bénè-r</i>
<i>bént</i>	X denies Y of R	* <i>bént-r</i>
<i>béŋ</i>	X agrees with Y	* <i>béŋ-r</i>
<i>báp</i>	X meet Y	* <i>báp-r</i>
<i>bápà</i>	X is present	* <i>bápà-r</i>
<i>bér</i>	X visits Y	* <i>bér-r</i>
<i>bàràfì</i>	X pops off Y	* <i>bàràfì-r</i>
<i>bét</i>	X sucks Y	* <i>bét-r</i>
<i>bát</i>	X holds Y	* <i>bát-r</i>
<i>bóndàs</i>	X enlarges Y	* <i>bóndàs-r</i>
<i>bónt</i>	X names Y	* <i>bónt-r</i>
<i>bóshìnè</i>	X longs for Y	* <i>bóshìnè-r</i>
<i>bót</i>	X puts down Y	* <i>bót-r</i>
<i>búkò</i>	X bathes/ X bathes Y	* <i>búkò-r</i>
<i>búm</i>	X drives Y	* <i>búm-r</i>
<i>bák</i>	X loads Y	* <i>bák-r</i>
<i>bálbál</i>	X chases Y	* <i>bálbál-r</i>
<i>bálà</i>	X approaches Y	* <i>bálà-r</i>
<i>bálà</i>	X hunts Y	* <i>bálà-r</i>
<i>báŋ</i>	X brings Y	* <i>báŋ-r</i>
<i>bár</i>	X adds Y	* <i>bár-r</i>
<i>báthò</i>	X worships Y	* <i>báthò-r</i>
<i>báyàt</i>	X bets Y	* <i>báyàt-r</i>
<i>chép</i>	X plants Y	* <i>chép-r</i>
<i>chélà</i>	X calls Y	* <i>chélà-r</i>
<i>chím</i>	X fights Y	* <i>chím-r</i>
<i>dákà</i>	X wines Y	* <i>dákà-r</i>
<i>dámà</i>	X cures Y	* <i>dámà-r</i>
<i>déŋ</i>	X puts Y on R's head	* <i>déŋ-r</i>
<i>dér</i>	X comes/arrives	* <i>dér-r</i>
<i>dīm</i>	X misplaces Y	* <i>dīm-r</i>
<i>dìnè</i>	X disappears from Y	* <i>dìnè-r</i>
<i>dú</i>	X plaits Y's hair	* <i>dú-r</i>
<i>fɔ́fàlà</i>	X whispers to Y	* <i>fɔ́fàlà-r</i>
<i>fók</i>	X wraps Y	* <i>fók-r</i>
<i>fón</i>	X shaves	* <i>fón-r</i>
<i>fór</i>	X gossips Y	* <i>fór-r</i>

<i>fúmpò</i>	X falls down	* <i>fúmpò-r</i>
<i>fúmpàr</i>	X grabs Y	* <i>fúmpàr-àr</i>
<i>fúrùp</i>	X blows off/enkindles Y	* <i>fúrùp-àr</i>
<i>fúthà</i>	X cooks Y (cassava)	* <i>fúthà-r</i>
<i>fál</i>	X flies	* <i>fál-àr</i>
<i>gbényà</i>	X hates Y	* <i>gbényà-r</i>
<i>gbónthò</i>	X mixes Y	* <i>gbónthò-r</i>
<i>gbákì</i>	X answers Y	* <i>gbákì-r</i>
<i>gbánè</i>	X hangs Y on X's shoulder	* <i>gbánè-r</i>
<i>gbánthà</i>	X hits Y	* <i>gbánthà-r</i>
<i>gbárò</i>	X trickles on Y	* <i>gbárò-r</i>
<i>gbáy</i>	X separates Y	* <i>gbáy-àr</i>
<i>gbók</i>	X scrubs Y	* <i>gbók-àr</i>
<i>gbéyà</i>	X yells in agony	* <i>gbéyà-r</i>
<i>gbékàr</i>	X traps Y	* <i>gbékàr-àr</i>
<i>gbélèy</i>	X reminds Y	* <i>gbélèy-àr</i>
<i>gbénkàrà</i>	X yells	* <i>gbénkàrà-àr</i>
<i>gbénth</i>	X yells	* <i>gbénth-àr</i>
<i>gbápàr</i>	X covers Y	* <i>gbápàr-àr</i>
<i>gbát</i>	X hunts Y	* <i>gbát-àr</i>
<i>gbínd</i>	X warns Y	* <i>gbínd-àr</i>
<i>gbíy</i>	X swears	* <i>gbíy-àr</i>
<i>gbíthànè</i>	X admits Y	* <i>gbíthànè-r</i>
<i>gbón</i>	X touches Y	* <i>gbón-àr</i>
<i>gbópì</i>	X makes a chip on Y	* <i>gbópì-r</i>
<i>gbúkè</i>	X runs	* <i>gbúkè-r</i>
<i>gbál</i>	X quarrels	* <i>gbál-àr</i>
<i>gbám</i>	X sips Y	* <i>gbám-àr</i>
<i>gbánth</i>	X smashes Y	* <i>gbánth-àr</i>
<i>gbás</i>	X divides Y	* <i>gbás-àr</i>
<i>gbát</i>	X knocks Y	* <i>gbát-àr</i>
<i>kál</i>	X roasts Y	* <i>kál-àr</i>
<i>kálì</i>	X welcomes Y	* <i>kálì-àr</i>
<i>kàràny</i>	X reads Y	* <i>kàràny-àr</i>
<i>kásàrà</i>	X endangers Y	* <i>kásàrà-r</i>
<i>kópàrà</i>	X asks for Y	* <i>kópàrà-r</i>
<i>kālì</i>	X looks at Y	* <i>kālì-r</i>
<i>kérà</i>	X carries Y	* <i>kérà-r</i>
<i>kéth</i>	X scraps Y	* <i>kéth-àr</i>
<i>kóchì</i>	X unties Y	* <i>kóchì-r</i>
<i>kóm</i>	X gives birth to Y	* <i>kóm-àr</i>
<i>kórì</i>	X greets Y	* <i>kórì-r</i>
<i>kórà</i>	X gets pregnant	* <i>kórà-r</i>
<i>kúl</i>	X makes Y ripe	* <i>kúl-àr</i>
<i>kúlò</i>	X cries	* <i>kúlò-r</i>
<i>kúlùny</i>	X mixes Y	* <i>kúlùny-àr</i>
<i>kúth</i>	X fetches Y (water)	* <i>kúth-àr</i>
<i>káchì</i>	X excludes Y	* <i>káchì-r</i>
<i>kárà</i>	X brings Y	* <i>kárà-r</i>
<i>káwóndì</i>	X preaches Y	* <i>káwóndì-àr</i>

<i>lánè</i>	X believes in Y	* <i>lánè-r</i>
<i>láp</i>	X is ashamed of Y	* <i>láp-àr</i>
<i>làsàr</i>	X destroys Y	* <i>làsàr-àr</i>
<i>lómì</i>	X identifies Y	* <i>lómì-r</i>
<i>lífàthì</i>	X turns over Y	* <i>lífàthì-r</i>
<i>láp</i>	X lights Y (fire)	* <i>láp-àr</i>
<i>már</i>	X helps Y	* <i>már-àr</i>
<i>mómò</i>	X thanks Y	* <i>mómò-r</i>
<i>móràkà</i>	X undermines Y	* <i>móràkà-r</i>
<i>mótà</i>	X dives	* <i>mótà-r</i>
<i>móthà</i>	X surpasses Y	* <i>móthà-r</i>
<i>múmpàl</i>	X kisses Y	* <i>múmpàl-àr</i>
<i>mún</i>	X drinks Y	* <i>mún-àr</i>
<i>másàr</i>	X breast feeds Y	* <i>másàr-àr</i>
<i>nál</i>	X insults Y	* <i>nál-àr</i>
<i>nánè</i>	X remembers Y	* <i>nánè-r</i>
<i>náshì</i>	X wipes Y	* <i>náshì-r</i>
<i>nánk</i>	X sees Y	* <i>nánk-àr</i>
<i>númpàthà</i>	X folds Y	* <i>númpàthà-r</i>
<i>nút</i>	X feeds Y	* <i>nút-àr</i>
<i>nántà</i>	X marries Y	* <i>nántà-r</i>
<i>háj</i>	X bites Y	* <i>háj-àr</i>
<i>hónkàl</i>	X snores	* <i>hónkàl-àr</i>
<i>hɔri</i>	X uproots Y	* <i>hɔri-r</i>
<i>hésàm</i>	X breathes	* <i>hésàm-àr</i>
<i>hándəh</i>	X swims	* <i>hándəh-àr</i>
<i>háp</i>	X wins Y (a lawsuit)	* <i>háp-àr</i>
<i>hátà</i>	X lifts ups Y	* <i>hátà-àr</i>
<i>pánè</i>	X forgets Y	* <i>pánè-r</i>
<i>píkàthà</i>	X smashes Y	* <i>píkàthà-r</i>
<i>pím</i>	X plucks off Y	* <i>pím-àr</i>
<i>póh</i>	X finishes Y	* <i>póh-àr</i>
<i>pól</i>	X claps/slaps Y	* <i>pól-àr</i>
<i>púlàkì</i>	X makes Y look miserable	* <i>púlàkì-r</i>
<i>púthànè</i>	X offends Y	* <i>púthànè-r</i>
<i>pát</i>	X cooks Y	* <i>pát-àr</i>
<i>ránkà</i>	X curses Y	* <i>ránkà-r</i>
<i>rápàrì</i>	X does a U-turn	* <i>rápàrì-r</i>
<i>ránà</i>	X piggybacks Y	* <i>ránà-r</i>
<i>déh</i>	X puts Y on R's head	* <i>déh-àr</i>
<i>ráp</i>	X prostitutes	* <i>ráp-àr</i>
<i>rós</i>	X serves Y (food)	* <i>rós-àr</i>
<i>rúbà</i>	X blesses Y	* <i>rúbà-r</i>
<i>rúnkàt</i>	X mixes Y	* <i>rúnkàt-àr</i>
<i>rúsàm</i>	X nurtures Y	* <i>rúsàm-àr</i>
<i>rám</i>	X pays R, Y	* <i>rám-àr</i>
<i>sákàth</i>	X shifts to Y	* <i>sákàth-àr</i>
<i>sákàthì</i>	X spreads Y	* <i>sákàthì-àr</i>
<i>sákànè</i>	X scatters about	* <i>sákànè-àr</i>
<i>sap</i>	X scoops Y	* <i>sap-àr</i>

<i>sárì</i>	X carries Y on X's head	* <i>sárì-àr</i>
<i>sókàné</i>	X confuses Y	* <i>sókàné-àr</i>
<i>sóm</i>	X sends Y	* <i>sóm-àr</i>
<i>sómpà</i>	X disturbs Y	* <i>sómpà-r</i>
<i>sóŋ</i>	X gives R to Y	* <i>sóŋ-àr</i>
<i>sóthàlà</i>	X ignites Y	* <i>sóthàlà-r</i>
<i>sóthànè</i>	X detects Y	* <i>sóthànè-r</i>
<i>sóthà</i>	X gets Y	* <i>sóthà-r</i>
<i>shél</i>	X laughs at Y	* <i>shél-àr</i>
<i>shérà</i>	X saws Y (a piece of wood)	* <i>shérà-r</i>
<i>shím</i>	X breaks Y	* <i>shím-àr</i>
<i>sóm</i>	X sends Y	* <i>sóm-àr</i>
<i>sómàrì</i>	X sends Y to R	* <i>sómàrì-r</i>
<i>súnì</i>	X steps on Y's injury	* <i>súnì-r</i>
<i>sáp</i>	X beats Y	* <i>sáp-àr</i>
<i>sát</i>	X puts Y on top	* <i>sát-àr</i>
<i>tólà</i>	X puts his hands in Y's eyes	* <i>tólà-r</i>
<i>tòrì</i>	X shows R, Y	* <i>tòrì-r</i>
<i>tòsà</i>	X joins Y	* <i>tòsà-r</i>
<i>tál</i>	X listens to Y	* <i>tál-àr</i>
<i>táp</i>	X begins Y	* <i>táp-àr</i>
<i>tàsàm</i>	X sneezes	* <i>tàsàm-àr</i>
<i>téy</i>	X leaves behind Y	* <i>téy-àr</i>
<i>théns</i>	X finds Y	* <i>théns-àr</i>
<i>thánth</i>	X scrapes Y	* <i>thánth-àr</i>
<i>thínkàr</i>	X presses on Y	* <i>thínkàr-àr</i>
<i>thúth</i>	X chooses Y	* <i>thúth-àr</i>
<i>thónkàlà</i>	X gathers Y	* <i>thónkàlà-r</i>
<i>thór</i>	X climbs down Y	* <i>thór-àr</i>
<i>thúnth</i>	X measures Y	* <i>thúnth-àr</i>
<i>thápì</i>	X misses Y	* <i>thápì-r</i>
<i>tóŋ</i>	X cooks Y	* <i>tóŋ-àr</i>
<i>túŋ</i>	X hits Y	* <i>túŋ-àr</i>
<i>túrà</i>	X attacks Y	* <i>túrà-r</i>
<i>támítámnè</i>	X remembers Y	* <i>támítámnè-r</i>
<i>tánsànè</i>	X remembers Y	* <i>tánsànè-r</i>
<i>táŋ</i>	X follows Y	* <i>táŋ-àr</i>
<i>tánpò</i>	X sits up late	* <i>tánpò-r</i>
<i>wól</i>	X plays	* <i>wól-àr</i>
<i>wón</i>	X delays	* <i>wón-àr</i>
<i>yéf</i>	X mills Y (corn)	* <i>yéf-àr</i>
<i>yágbà</i>	X hurries Y	* <i>yágbà-àr</i>
<i>yánfà</i>	X undermines Y	* <i>yánfà-r</i>
<i>yó</i>	X does Y	* <i>yó-r</i>
<i>yèr</i>	X shivers	* <i>yèr-àr</i>
<i>yéthà</i>	X squeezes Y	* <i>yéthà-r</i>
<i>yínkàthà</i>	X shakes Y	* <i>yínkàthà-r</i>
<i>yókàné</i>	X gets up	* <i>yókàné-r</i>

Table VI.
Verbs in the sample that combine with schema L3

<i>verb</i>	<i>gloss</i>	<i>verb + LOC</i>	<i>gloss</i>
<i>ból</i>	X grows tall	<i>ból-àr</i>	X grows tall in the presence of L
<i>bólì</i>	X picks Y (pepper)	<i>bólì-r</i>	X picks Y in the presence of L
<i>bóy</i>	X makes Y (heaps)	<i>bóy-àr</i>	X makes Y (heaps) on L
<i>bór</i>	X peels off Y	<i>bór-àr</i>	X peels off Y in the presence of L
<i>búli</i>	X makes a hole in Y	<i>búli-r</i>	X makes a hole in Y in the presence of L
<i>bús</i>	X takes off Y	<i>bús-àr</i>	X takes off Y in the presence of L
<i>chéchì</i>	X spreads Y	<i>chéchì-r</i>	X spreads Y all over L
<i>chén</i>	X slaughters Y	<i>chén-àr</i>	X slaughters Y in L
<i>chér</i>	X lets Y go	<i>chér-àr</i>	X lets Y go on L
<i>đi</i>	X eats Y	<i>đi-r</i>	X eats Y in the presence of L X exploits Y
<i>đir-à</i>	X sleeps in Y	<i>đir-àr</i>	X sleeps in Y where L is located
<i>fánth-à</i>	X lies down	<i>fánth-àr</i>	X lies down on L X habitually performs E to Y
<i>fì</i>	X dies	<i>fì-r</i>	X dies in the presence of L
<i>gból</i>	'X grinds Y'	<i>gból-àr</i>	'X grinds Y on L'
<i>gbébà</i>	X faints	<i>gbébà-r</i>	X faints in the presence of L
<i>gbéthà</i>	X chops Y	<i>gbéthà-r</i>	X chops Y before L
<i>gbáy</i>	X hangs Y	<i>gbáy-àr</i>	X hangs Y on L
<i>kóth</i>	X ties Y	<i>kóth-àr</i>	X ties Y at point L
<i>pólò</i>	X crowns Y	<i>pólò-r</i>	X crowns Y in the presence of L
<i>sóth</i>	X sews Y	<i>sóth-àr</i>	X sews Y at point L
<i>shék</i>	X ties Y	<i>shék-àr</i>	X ties Y at point L
<i>shéth</i>	X builds Y	<i>shéth-àr</i>	X builds Y on L
<i>súnt</i>	X corks Y	<i>súnt-àr</i>	X corks Y at point L
<i>tú</i>	X is sick	<i>tú-r</i>	X gets sick in L
<i>tók</i>	X scolds Y	<i>tók-àr</i>	X scolds Y in the presence of L
<i>yír-à</i>	X sits down	<i>yír-à</i>	X sits down on L

Table VII.
Verbs in the sample that combine with schema L4

<i>root</i>	<i>gloss</i>	<i>root + BEN</i>	<i>gloss</i>
<i>báns-à</i>	X is angry	<i>báns-àr</i>	X is angry at L
<i>bék</i>	X comes	<i>bék-àr</i>	X comes towards L
<i>bánkàkì</i>	X rolls Y	<i>bánkàlì-r</i>	X rolls Y towards L
<i>bés</i>	X digs out Y	<i>bés-àr</i>	X digs out Y towards L
<i>bóy</i>	X mentions Y	<i>bóy-àr</i>	X mentions Y to L
<i>bók</i>	X cries	<i>bók-àr</i>	X cries facing L
<i>bóyà</i>	X donates Y	<i>bóyà-àr</i>	X donates Y to L
<i>béy</i>	X belches	<i>béy-àr</i>	X belches facing L
<i>fǒf</i>	X says Y	<i>fǒf-àr</i>	X says Y to L X rebukes Y

<i>fāshì</i>	X crosses Y	<i>fāshì-r</i>	X crosses Y towards L
<i>fìthà</i>	X throws Y	<i>fìthà-r</i>	X throws Y towards L
<i>gbáì</i>	X lines up Y	<i>gbáì-r</i>	X lines up Y facing L
<i>gbál</i>	X writes Y	<i>gbál-àr</i>	X writes Y to L
<i>gbál</i>	X sweeps Y	<i>gbál-àr</i>	X sweeps Y towards L
<i>gbéth</i>	X yells	<i>gbéth-àr</i>	X yells at L
<i>gbép</i>	X climbs Y	<i>gbép-àr</i>	X climbs Y towards L
<i>gbáìnthì</i>	X ends Y	<i>gbáìnthì-r</i>	X ends Y towards L
<i>kánthà</i>	X closes Y	<i>kánthà-r</i>	X closes Y towards L
<i>káshì</i>	X denies doing Y	<i>káshì-r</i>	X denies doing Y and the denial is directed at L
<i>kó</i>	X goes to Y	<i>kó-r</i>	X goes to Y where L is also located
<i>kóth</i>	X walks	<i>kóth-àr</i>	X walks towards L
<i>kál</i>	X pours Y	<i>kál-àr</i>	X pours Y into L
<i>lóm</i>	X says Y	<i>lóm-àr</i>	X says Y to L/X rebukes Y
<i>lám</i>	X throws Y	<i>lám-àr</i>	X throws Y towards L
<i>léy</i>	X sings	<i>léy-àr</i>	X sings to L
<i>lák</i>	X throws Y	<i>lák-àr</i>	X throws Y towards L
<i>ηòmì</i>	X makes an ugly face	<i>ηòmì-r</i>	X makes an ugly face towards L
<i>ηát</i>	X climbs	<i>ηát-àr</i>	X climbs towards L
<i>ηánt</i>	X pukes Y	<i>ηánt-àr</i>	X pukes Y on L
<i>ηét</i>	X minces Y	<i>ηét-àr</i>	X minces Y in the direction of L
<i>sónkò</i>	X shouts	<i>sónkò-r</i>	X shouts at L
<i>sór</i>	X coughs	<i>sór-àr</i>	X coughs towards L
<i>shém</i>	X refuses Y	<i>shém-àr</i>	X refuses Y (food) and the refusal is directed at L
<i>táy</i>	X shuts down Y	<i>táy-àr</i>	X shuts down Y in the direction of L
<i>tátá</i>	X flirts	<i>tátá-r</i>	X flirts with/at L
<i>thómò</i>	X dances	<i>thómò-r</i>	X dances towards L
<i>thìlà</i>	X sells Y	<i>thìlà-r</i>	X sells Y to L
<i>tháy</i>	X bends Y	<i>tháy</i>	X bends Y towards L
<i>tháìnthì</i>	X extends Y	<i>tháìnthì-r</i>	X extends Y in the direction of L
<i>thúf</i>	X spits on Y	<i>thúf-àr</i>	X spits Y on L
<i>wóy</i>	X enters Y	<i>wóy-àr</i>	X enters Y in the direction of L

Table VIII.
Verbs in the sample that combine with schema L5

<i>verb</i>	<i>gloss</i>	<i>verb + LOC</i>	<i>gloss</i>
<i>báni</i>	X redeems Y	<i>báni-r</i>	X redeems Y from L
<i>bó</i>	X lends Y to R	<i>bó-r</i>	X borrows Y from R (R is analogous to L)
<i>gbáshì</i>	X takes away Y	<i>gbáshì-r</i>	X takes away Y from L
<i>gbíp</i>	X swoops down on Y	<i>gbíp-àr</i>	X swoops down on Y from L
<i>káshì</i>	X retracts Y	<i>káshì-r</i>	X retracts Y from L
<i>kéyà</i>	X steals Y'	<i>kéy-àr</i>	X steals Y from L
<i>lémpì</i>	X swoops down on Y	<i>lémpì-r</i>	X swoops down on Y from L
<i>mánk</i>	X hides Y	<i>mánk-àr</i>	X hides Y from L
<i>lìŋ</i>	X pulls Y	<i>lìŋ-àr</i>	X pulls Y from L
<i>nóy</i>	X withdraws Y	<i>nóy-àr</i>	X withdraws Y from L
<i>thólà</i>	X begs for Y	<i>thólì-r</i>	X begs for Y from L
<i>wáy</i>	X buys Y	<i>wáy-àr</i>	X buys Y from L
<i>yép</i>	X lends Y to R	<i>yép-àr</i>	X borrows Y from L
<i>yémà</i>	X wants Y	<i>yémà-r</i>	X wants Y from L
<i>yíf</i>	X asks for Y	<i>yíf-àr</i>	X asks for Y from L

Table IX.
Verbs in the sample that combine with the instrumental applicative

<i>verb root</i>	<i>gloss</i>	<i>verb + INST</i>	<i>gloss</i>
<i>bálà</i>	X marries Y	<i>bálà-ínè</i>	X marries Y by means of I
<i>bám̀bà</i>	X piggyback Y	<i>bám̀bà-ínè</i>	X piggybacks Y using I
<i>báni</i>	X redeems Y	<i>báni-ínè</i>	X redeems Y with I
<i>ból</i>	X gets tall	<i>ból-ínè</i>	X gets tall by means of I
<i>bólì</i>	X plucks off Y	<i>bólì-ínè</i>	X picks Y (pepper) with I
<i>bémpà</i>	X makes Y	<i>bémpà-ínè</i>	X makes Y with I
<i>bánkàlì</i>	X rolls Y	<i>bánkàlì-ínè</i>	X rolls Y with I
<i>báp</i>	X meets Y	<i>báp-ínè</i>	X meets Y buy means of I
<i>bàràfì</i>	X pops off Y	<i>bàràfì-ínè</i>	X pops off Y with I
<i>bés</i>	X digs out Y	<i>bés-ínè</i>	X digs out Y with I
<i>bét</i>	X sucks Y	<i>bét-ínè</i>	X sucks Y using I
<i>bát</i>	X holds Y	<i>bát-ínè</i>	X bets Y using I as a stake
<i>béy</i>	X belches	<i>béy-ínè</i>	X belches by means of I
<i>bók</i>	X cries	<i>bók-ínè</i>	X cries by means of I
<i>bóndàs</i>	X enlarges Y	<i>bóndàs-ínè</i>	X enlarges Y with I
<i>bónt</i>	X names Y	<i>bónt-ínè</i>	X names Y by chance
<i>bóŋ</i>	X makes Y	<i>bóŋ-ínè</i>	X makes Y (heaps) using I
<i>bór</i>	X peels off Y	<i>bór-ínè</i>	X peels off Y using I
<i>bót</i>	X puts down Y	<i>bót-ínè</i>	X puts down Y using I
<i>bóyà</i>	X donates Y	<i>bóyà-ínè</i>	X donates Y by chance
<i>búkò</i>	X bathes/bathes Y	<i>búkò-ínè</i>	X bathes/bathes Y using I
<i>búlì</i>	X chisels Y	<i>búlì-ínè</i>	X chisels Y using I
<i>búm</i>	X drives Y	<i>búm-ínè</i>	X scares Y using I
<i>bús</i>	X takes off Y	<i>bús-ínè</i>	X takes off Y using I

<i>bák</i>	X loads Y	<i>bák-ínè</i>	X loads Y using I
<i>bálbál</i>	X chases Y	<i>bálbál-ínè</i>	X chases Y using I
<i>bálàr</i>	X approaches Y	<i>bálàr-ínè</i>	X approaches Y using I
<i>bálà</i>	X hunts Y	<i>bálà-ínè</i>	X hunts Y using I (dogs)
<i>báyàt</i>	X bets Y	<i>báyàt-ínè</i>	X bets with Y using I
<i>chép</i>	X plants Y	<i>chép-ínè</i>	X plants Y using I
<i>chéchì</i>	X spreads Y	<i>chéchì-ínè</i>	X spreads Y with I
<i>chélà</i>	X calls Y	<i>chélà-ínè</i>	X calls Y using I
<i>chén</i>	X slaughters Y	<i>chén-ínè</i>	X slaughters Y using I
<i>cher</i>	X lets go Y	<i>cher-ínè</i>	X lets go Y by means of I
<i>chîm</i>	X fights Y	<i>chîm-ínè</i>	X fights Y using I
<i>chîs</i>	X is drunk	<i>chîs-ínè</i>	X is drunk by means of I
<i>dákàr</i>	X wines Y	<i>dákàr-ínè</i>	X wines Y using I
<i>dámàr</i>	X cures Y	<i>dámàr-ínè</i>	X cures Y with I
<i>dī</i>	X eats Y	<i>dī-ínè</i>	X eats Y using I
<i>dīf</i>	X kills Y	<i>dīf-ínè</i>	X kills Y using I
<i>dīm</i>	X misplaces Y	<i>dīm-ínè</i>	X misplaces Y by chance
<i>dīrà</i>	X sleeps	<i>dīrà-ínè</i>	X sleeps with Y using I
<i>dú</i>	X plaits Y's hair	<i>dú-ínè</i>	X plaits Y's hair using I
<i>fǒf</i>	X speaks to Y	<i>fǒf-ínè</i>	X speaks to Y using I
<i>fǒk</i>	X wraps Y	<i>fǒk-ínè</i>	X wraps Y using I
<i>fǎnthà</i>	X lies down	<i>fǎnthà-ínè</i>	X lies down with I
<i>fǎshì</i>	X crosses Y	<i>fǎshì-ínè</i>	X crosses Y by means of I
<i>fī</i>	X dies	<i>fī-ínè</i>	X dies by means of I
<i>fithà</i>	X throws away Y	<i>fithà-ínè</i>	X throws away Y using I
<i>fón</i>	X shaves Y	<i>fón-ínè</i>	X shaves Y using I
<i>fúrùp</i>	X blows off Y	<i>fúrùp-ínè</i>	X blows off Y using I
<i>fúthà</i>	X cooks Y	<i>fúthà-ínè</i>	X cooks Y using I
<i>fǎk</i>	X drops Y	<i>fǎk-ínè</i>	X drops Y using I
<i>fǎl</i>	X flies	<i>fǎl-ínè</i>	X flies with I
<i>gbónthò</i>	X mixes Y	<i>gbónthò-ínè</i>	X dilutes Y using I
<i>gbákì</i>	X answers Y	<i>gbákì-ínè</i>	X answers Y by means of I
<i>gbál</i>	X writes down Y	<i>gbál-ínè</i>	X writes Y using I
<i>gbánthà</i>	X hits Y	<i>gbánthà-ínè</i>	X hits Y with I
<i>gbáŋ</i>	X hangs Y	<i>gbáŋ-ínè</i>	X hangs Y using I
<i>gbáshì</i>	X takes/lifts up Y	<i>gbáshì-ínè</i>	X lifts up Y using I
<i>gbáy</i>	X separates Y	<i>gbáy-ínè</i>	X separates Y using I
<i>gbók</i>	X scrubs Y	<i>gbók-ínè</i>	X scrubs Y using I
<i>gból</i>	X grinds Y	<i>gból-ínè</i>	X grinds Y using I
<i>gbák</i>	X cuts Y	<i>gbák-ínè</i>	X cuts Y using I
<i>gbékàr</i>	X clips Y	<i>gbékàr-ínè</i>	X clips Y using I
<i>gbál</i>	X sweeps Y	<i>gbál-ínè</i>	X sweeps Y using I
<i>gbám</i>	X pounds Y	<i>gbám-ínè</i>	X pounds Y using I
<i>gbénkàrà</i>	X yells	<i>gbénkàrà-ínè</i>	X yells by means of I
<i>gbénth</i>	X yells	<i>gbénth-ínè</i>	X yells by means of I
<i>gbép</i>	X climbs Y	<i>gbép-ínè</i>	X climbs Y using I
<i>gbápàr</i>	X covers Y	<i>gbápàr-ínè</i>	X covers Y with I
<i>gbát</i>	X hunts Y	<i>gbát-ínè</i>	X hunts Y using I
<i>gbéthà</i>	X cuts Y	<i>gbéthà-ínè</i>	X cuts Y using I
<i>gbíp</i>	X catches Y	<i>gbíp-ínè</i>	X catches Y by means of I

<i>gbón</i>	X touches Y	<i>gbón-ínè</i>	X touches Y using I
<i>gbúkè</i>	X runs	<i>gbúkè-ínè</i>	X runs using I
<i>gbál</i>	X quarrels	<i>gbál-ínè</i>	X quarrels using I
<i>gbánth</i>	X crushes Y	<i>gbánth-ínè</i>	X crushes Y using I
<i>gbát</i>	X knocks Y	<i>gbát-ínè</i>	X knocks Y with I
<i>kál</i>	X roasts Y	<i>kál-ínè</i>	X roasts Y using I
<i>kánthà</i>	X closes Y	<i>kánthà-ínè</i>	X closes Y with I
<i>káràṅ</i>	X reads Y	<i>káràṅ-ínè</i>	X reads Y using I (lenses)
<i>kásàrà</i>	X destroys Y	<i>kásàrà-ínè</i>	X destroys Y using I
<i>káshì</i>	X retracts Y	<i>káshì-ínè</i>	X retracts Y using I
<i>kópàrà</i>	X asks for Y	<i>kópàrà-ínè</i>	X asks for Y by means of I
<i>kóth</i>	X walks	<i>kóth-ínè</i>	X walks using I
<i>kál</i>	X pours Y	<i>kál-ínè</i>	X pours Y using I
<i>káḽì</i>	X looks at Y	<i>káḽì-ínè</i>	X looks at Y using I
<i>kérà</i>	X carries Y	<i>kérà-ínè</i>	X carries Y using I
<i>kèth</i>	X scraps Y	<i>kèth-ínè</i>	X scraps Y using I
<i>kéyà</i>	X steals Y	<i>kéyà-ínè</i>	X steals Y using I
<i>kóchì</i>	X unties Y	<i>kóchì-ínè</i>	X unties I using I
<i>kóm</i>	X conceives Y	<i>kóm-ínè</i>	X conceives Y using I
<i>kóth</i>	X ties Y	<i>kóth-ínè</i>	X ties Y using I
<i>kúl</i>	X makes Y ripe	<i>kúl-ínè</i>	X ripens Y by means of I
<i>kúlò</i>	X cries	<i>kúlò-ínè</i>	X cries by means of I
<i>kúlùṅ</i>	X mixes Y	<i>kúlùṅ-ínè</i>	X mixes Y with I
<i>kúth</i>	X fetches Y	<i>kúth-ínè</i>	X fetches I using I
<i>káchì</i>	X excludes Y	<i>káchì-ínè</i>	X excludes Y by means of I
<i>kárà</i>	X brings Y	<i>kárà-ínè</i>	X brings Y using I
<i>káwòndì</i>	X preaches Y	<i>káwòndì-ínè</i>	X preaches Y using I
<i>lóm</i>	X talks about Y	<i>lóm-ínè</i>	X talks about Y using I
<i>lám</i>	X throws away Y	<i>lám-ínè</i>	X throws Y using I
<i>lémpì</i>	X snatches Y	<i>lémpì-ínè</i>	X snatches Y using I
<i>léṅ</i>	X sings Y	<i>léṅ-ínè</i>	X sings Y using I (piano)
<i>làsàr</i>	X destroys Y	<i>làsàr-ínè</i>	X destroys Y using I
<i>lìṅ</i>	X pulls Y	<i>lìṅ-ínè</i>	X pulls Y using I
<i>lómì</i>	X identifies Y	<i>lómì-ínè</i>	X identifies I by means of I
<i>láfàthì</i>	X turns over Y	<i>láfàthì-ínè</i>	X turns over Y using I
<i>lák</i>	X throws away Y	<i>lák-ínè</i>	X throws away Y using I
<i>már</i>	X helps Y	<i>már-ínè</i>	X helps Y by means of I
<i>mótà</i>	X dives	<i>mótà-ínè</i>	X dives using I
<i>mér</i>	X swallows Y	<i>mér-ínè</i>	X swallows Y using I
<i>mún</i>	X drinks Y	<i>mún-ínè</i>	X drinks Y using I
<i>máńk</i>	X buries/hides Y	<i>máńk-ínè</i>	X buries Y by means of I
<i>náńkàth</i>	X fries Y	<i>náńkàth-ínè</i>	X fries Y using I
<i>nál</i>	X insults Y	<i>nál-ínè</i>	X insults Y by means of I
<i>náshì</i>	X wipes Y	<i>náshì-ínè</i>	X wipes off Y using I
<i>nóy</i>	X takes Y from R	<i>nóy-ínè</i>	X takes Y from Y using I
<i>nút</i>	X feeds Y	<i>nút-ínè</i>	X feeds Y using I
<i>nántà</i>	X marries Y	<i>nántà-ínè</i>	X marries Y with Y
<i>náp</i>	X hits Y	<i>náp-ínè</i>	X hits Y with I
<i>ṅáṅ</i>	X bites Y	<i>ṅáṅ-ínè</i>	X bites Y with I
<i>ṅɔri</i>	X uproots Y	<i>ṅɔri-ínè</i>	X uproots Y with I

<i>ɲésəm</i>	X breathes	<i>ɲésəm-ínè</i>	X breathes using I
<i>ɲét</i>	X minces Y	<i>ɲét-ínè</i>	X minces Y with I (knife)
<i>ɲát</i>	X ascends	<i>ɲát-ínè</i>	X ascends by means of I
<i>ɲátà</i>	X lifts up Y	<i>ɲátà-ínè</i>	X lifts up I using I
<i>pólò</i>	X crowns Y	<i>pólò-ínè</i>	X crowns Y by means of I
<i>píkàthà</i>	X smashes Y	<i>píkàthà-ínè</i>	X smashes Y using I
<i>pùm</i>	X picks Y	<i>pùm-ínè</i>	X picks Y using I
<i>pól</i>	X claps/slaps Y	<i>pól-ínè</i>	X claps/slaps Y using I
<i>pát</i>	X cooks Y	<i>pát-ínè</i>	X cooks Y using I
<i>páy</i>	X jumps over Y	<i>páy-ínè</i>	X jumps over Y using I
<i>ránkà</i>	X curses Y	<i>ránkà-ínè</i>	X curses Y using I
<i>rànà</i>	X piggybacks Y	<i>rànà-ínè</i>	X piggybacks Y using I
<i>déɲ</i>	X puts Y on R	<i>déɲ-ínè</i>	X puts Y on R using I
<i>rós</i>	X serves Y	<i>rós-ínè</i>	X serves Y with I
<i>rúnkàt</i>	X mixes Y	<i>rúnkàt-</i>	X mixes Y using I
<i>rúsəm</i>	X nurtures Y	<i>rúsəm-ínè</i>	X nurtures Y by means of I
<i>ráf</i>	X stabs Y	<i>ráf-ínè</i>	X stabs Y using I
<i>rám</i>	X pays R, Y	<i>rám-ínè</i>	X pays Y using I
<i>ránkàth</i>	X rinses Y	<i>ránkàth-ínè</i>	X rinses Y using I
<i>sákàth</i>	X shifts to Y	<i>sákàth-ínè</i>	X shifts to Y by means of I
<i>sákàthì</i>	X spreads Y	<i>sákàthì-ínè</i>	X spreads Y by means of I
<i>sap</i>	X scoops Y	<i>sap-ínè</i>	X scoops Y using Y
<i>sárì</i>	X totes Y	<i>sárì-ínè</i>	X totes Y using I
<i>sóm</i>	X sends Y	<i>sóm-ínè</i>	X sends Y by means of I
<i>sòth</i>	X sews Y	<i>sòth-ínè</i>	X sews Y with I
<i>sòthàlà</i>	X ignites Y	<i>sòthàlà-ínè</i>	X ignites I by means of I
<i>shék</i>	X ties Y	<i>shék-ínè</i>	X ties Y using I
<i>shérà</i>	X saws Y (wood)	<i>shérà-ínè</i>	X saws Y with I (a saw)
<i>shéth</i>	X builds Y	<i>shéth-ínè</i>	X builds Y with Y
<i>shím</i>	X breaks Y	<i>shím-ínè</i>	X breaks Y with I
<i>súnì</i>	X ignites Y	<i>súnì-ínè</i>	X ignites Y using I
<i>súnt</i>	X corks Y	<i>súnt-ínè</i>	X corks Y using I
<i>sáp</i>	X beats Y	<i>sáp-ínè</i>	X beats Y with I
<i>sát</i>	X puts Y on top	<i>sát-ínè</i>	X puts Y on top using I
<i>táj</i>	X closes/locks Y	<i>táj-ínè</i>	X closes Y with I
	X puts his finger on Y's eyes	<i>tólà-ínè</i>	X puts his finger on Y's eyes using I
<i>tólà</i>			
<i>tórì</i>	X shows Y to R	<i>tórì-ínè</i>	X shows Y to R using I
<i>tósà</i>	X joins Y	<i>tósà-ínè</i>	X joins Y using I
<i>tál</i>	X listens to Y	<i>tál-ínè</i>	X keeps quiet/X waits Y
<i>támà</i>	X stands	<i>támà-ínè</i>	X stands using I
<i>táp</i>	X begins Y	<i>táp-ínè</i>	X begins Y using I
<i>thàs</i>	X surpasses Y	<i>thàs-ínè</i>	X surpasses Y using I
<i>thómò</i>	X dances	<i>thómò-ínè</i>	X dances using I
<i>thóy</i>	X burns Y	<i>thóy-ínè</i>	X burns Y with I
<i>thánth</i>	X scrapes Y	<i>thánth-ínè</i>	X scrapes Y with I
<i>thílà</i>	X sells Y	<i>thílà-ínè</i>	X sells Y by means of I
<i>thínkàr</i>	X presses on Y	<i>thínkàr-ínè</i>	X presses Y with I
<i>thólà</i>	X begs Y	<i>thólà-ínè</i>	X begs Y by means of I
<i>thór</i>	X climbs down Y	<i>thór-ínè</i>	X climbs down using I

<i>thúf</i>	X spits Y	<i>thúf-ínè</i>	X spits Y by means of I
<i>thúnth</i>	X measures Y	<i>thúnth-ínè</i>	X measure Y using I
<i>thám</i>	X tastes Y	<i>thám-ínè</i>	X tastes Y using I
<i>thánthì</i>	X stretches Y	<i>thánthì-ínè</i>	X stretches Y with I
<i>tháy</i>	X bends Y	<i>tháy-ínè</i>	X bends Y with I
<i>tóŋ</i>	X cooks Y	<i>tóŋ-ínè</i>	X cooks Y with I
<i>túŋ</i>	X hits Y	<i>túŋ-ínè</i>	X hits Y with Y
<i>wáy</i>	X buys Y	<i>wáy-ínè</i>	X buys Y using I
<i>wól</i>	X plays	<i>wól-ínè</i>	X plays using I
<i>wóp</i>	X holds onto Y	<i>wóp-ínè</i>	X holds Y with I
<i>yéf</i>	X mills Y (corn)	<i>yéf-ínè</i>	X mills Y with I
<i>yák</i>	X washes Y	<i>yák-ínè</i>	X washes Y with I
<i>yémà</i>	X wants Y	<i>yémà-ínè</i>	X wants Y by means of I
<i>yép</i>	X borrows Y	<i>yép-ínè</i>	X borrows Y by means of I
<i>yér</i>	X gives Y to R	<i>yér-ínè</i>	X gives Y to R using I
<i>yéthà</i>	X squeezes Y	<i>yéthà-ínè</i>	X squeezes Y using I
<i>yíf</i>	X asks R about Y	<i>yíf-ínè</i>	X asks Y about R using I
<i>yínkàthà</i>	X shakes Y	<i>yínkàthà-ínè</i>	X shakes Y using I
<i>yírà</i>	X sits down	<i>yírà-ínè-ínè</i>	X sits down by means of I

Table X.
Verbs in the sample that combine with schema I3 (also schema I4)

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>búkò</i>	X bathes	<i>búkò-ínè</i>	X bathes together with C
<i>báyàt</i>	X bets Y	<i>báyàt-ínè</i>	X and C bet
<i>chím</i>	X fights Y	<i>chím-ínè</i>	X fights with C
<i>dī</i>	X eats Y	<i>dī-ínè</i>	X together C eat Y
<i>dīrà</i>	X sleeps	<i>dīrà-ínè</i>	X and Y sleep together
<i>fánthà</i>	X lies down	<i>fánthà-ínè</i>	X sleeps with C
<i>fál</i>	X flies	<i>fál-ínè</i>	X flies with C
<i>gbéŋ</i>	X climbs Y	<i>gbéŋ-ínè</i>	X and C climb Y
<i>gbúkè</i>	X runs	<i>gbúkè-ínè</i>	X runs with C
<i>gbál</i>	X quarrels	<i>gbál-ínè</i>	X quarrels with C
<i>kóth</i>	X walks	<i>kóth-ínè</i>	X walks with C
<i>kérà</i>	X carries Y	<i>kérà-ínè</i>	X carries C along
<i>kárà</i>	X brings Y	<i>kárà-ínè</i>	X brings C along
<i>léŋ</i>	X sings Y	<i>léŋ-ínè</i>	X sings Y with C
<i>thór</i>	X climbs down	<i>thór-ínè</i>	X climbs down with C
<i>mótà</i>	X dives	<i>mótà-ínè</i>	X dives with C
<i>páy</i>	X jumps	<i>páy-ínè</i>	X jumps together with C

Table XI.

Verbs that do not combine with the instrumental applicative

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>
<i>bá</i>	X has Y	* <i>bá-ínè</i>
<i>bánsà</i>	X is angry	* <i>bánsà-ínè</i>
<i>báŋà</i>	X gives a hand full of Y to R	* <i>báŋà-ínè</i>
<i>bó</i>	X borrows Y from R	* <i>bó-ínè</i>
<i>bófàthàr</i>	X beats up Y	* <i>bófàthàr-ínè</i>
<i>bóm</i>	X shits	* <i>bóm-ínè</i>
<i>bóthàr</i>	X loves Y	* <i>bóthàr-ínè</i>
<i>bóy</i>	X mentions Y to R	* <i>bóy-ínè</i>
<i>béfàth</i>	X worships Y	* <i>béfàth-ínè</i>
<i>báfàlè</i>	X laughs	* <i>báfàlè-ínè</i>
<i>bék</i>	X arrives	* <i>bék-ínè</i>
<i>bákà</i>	X carries Y	* <i>bákà-ínè</i>
<i>bénè</i>	X hides Y	* <i>bénè-ínè</i>
<i>bént</i>	X denies R of Y	* <i>bént-ínè</i>
<i>béy</i>	X agrees	* <i>béy-ínè</i>
<i>bápàr</i>	X is present in Y	* <i>bápàr-ínè</i>
<i>bér</i>	X arrives in Y	* <i>bér-ínè</i>
<i>béth</i>	X begins to cry	* <i>béth-ínè</i>
<i>báy</i>	X brings Y	* <i>báy-ínè</i>
<i>bár</i>	X adds Y	* <i>bár-ínè</i>
<i>báthò</i>	X worships Y	* <i>báthò-ínè</i>
<i>déy</i>	X puts Y on R's head	* <i>déy-ínè</i>
<i>dér</i>	X comes/arrives	* <i>dér-ínè</i>
<i>dìnè</i>	X disappears from Y	* <i>dìnè-ínè</i>
<i>fɔfàlà</i>	X whispers to Y	* <i>fɔfàlà-ínè</i>
<i>fór</i>	X gossips Y	* <i>fór-ínè</i>
<i>fóy</i>	X floats	* <i>fóy-ínè</i>
<i>fúmpò</i>	X falls down	* <i>fúmpò-ínè</i>
<i>fúmpàr</i>	X grabs Y	* <i>fúmpàr-ínè</i>
<i>gbényà</i>	X hates Y	* <i>gbényà-ínè</i>
<i>gbáli</i>	X lines up Y	* <i>gbáli-ínè</i>
<i>gbám</i>	X creeps on Y	* <i>gbám-ínè</i>
<i>gbánè</i>	X hangs Y on X shoulder	* <i>gbánè-ínè</i>
<i>gbárò</i>	X trickles on Y	* <i>gbárò-ínè</i>
<i>gbéyà</i>	X yells in agony	* <i>gbéyà-ínè</i>
<i>gbébà</i>	X faints	* <i>gbébà-ínè</i>
<i>gbélèy</i>	X reminds Y	* <i>gbélèy-ínè</i>
<i>gbínd</i>	X warns Y	* <i>gbínd-ínè</i>
<i>gbíy</i>	X swears	* <i>gbíy-ínè</i>
<i>gbìthànè</i>	X admits Y	* <i>gbìthànè-ínè</i>
<i>gbópi</i>	X makes a chip on Y	* <i>gbópi-ínè</i>
<i>gbám</i>	X sips Y	* <i>gbám-ínè</i>
<i>gbánthì</i>	X completes/finishes Y	* <i>gbánthì-ínè</i>
<i>gbás</i>	X divides Y	* <i>gbás-ínè</i>
<i>kó</i>	X goes to Y	* <i>kó-ínè</i>
<i>káli</i>	X welcomes Y	* <i>káli-ínè</i>

<i>kóri</i>	X greets Y	* <i>kóri-ínè</i>
<i>kóra</i>	X gets pregnant	* <i>kóra-ínè</i>
<i>káshì</i>	X refuses (to do Y)	* <i>káshì-ínè</i>
<i>lánè</i>	X believes in Y	* <i>lánè-ínè</i>
<i>láp</i>	X is ashamed of Y	* <i>láp-ínè</i>
<i>láp</i>	X lits Y (fire)	* <i>láp-ínè</i>
<i>mómò</i>	X thanks Y	* <i>mómò-ínè</i>
<i>móràkà</i>	X undermines Y	* <i>móràkà-ínè</i>
<i>móthà</i>	X surpasses Y	* <i>móthà-ínè</i>
<i>mém</i>	X tests Y	* <i>mém-ínè</i>
<i>múmpàl</i>	X kisses Y	* <i>múmpàl-ínè</i>
<i>másàr</i>	X breast feeds Y	* <i>másàr-ínè</i>
<i>nánè</i>	X remembers Y	* <i>nánè-ínè</i>
<i>nánk</i>	X sees Y	* <i>nánk-ínè</i>
<i>númpàthà</i>	X folds Y	* <i>númpàthà-ínè-</i>
<i>ηóμι</i>	X makes an ugly face	* <i>ηóμι-ínè</i>
<i>ηóγκάλ</i>	X snores	* <i>ηóγκάλ-ínè</i>
<i>ηάנדəη</i>	X swims	* <i>ηάנדəη-ínè</i>
<i>ηάnt</i>	X pukes/vomits Y	* <i>ηάnt-ínè</i>
<i>ηάp</i>	X wins Y (a lawsuit)	* <i>ηάp-ínè</i>
<i>pá</i>	X says Y	* <i>pá-ínè</i>
<i>pánè</i>	X forgets Y	* <i>pánè-ínè</i>
<i>póη</i>	X finishes Y	* <i>póη-ínè</i>
<i>púlàkì</i>	X makes Y look miserable	* <i>púlàkì-ínè</i>
<i>púthànè</i>	X offends Y	* <i>púthànè-ínè</i>
<i>rápəri</i>	X does a U-turn	* <i>rápəri-ínè</i>
<i>ráp</i>	X prostitutes	* <i>ráp-ínè</i>
<i>rúbà</i>	X blesses Y	* <i>rúbà-ínè</i>
<i>sákànè</i>	X scatters about	* <i>sákànè-ínè</i>
<i>sókànè</i>	X confuses Y/X is in confusion	* <i>sókànè-ínè</i>
<i>sómpà</i>	X disturbs Y	* <i>sómpà-ínè</i>
<i>sónkòr</i>	X shouts at Y	* <i>sónkòr-ínè</i>
<i>sóη</i>	X gives R to Y	* <i>sóη-ínè</i>
<i>sór</i>	X coughs	* <i>sór-ínè</i>
<i>sóthànè</i>	X detects Y	* <i>sóthànè-ínè-</i>
<i>sóthà</i>	X gets Y	* <i>sóthà-ínè</i>
<i>shél</i>	X laughs at Y	* <i>shél-ínè</i>
<i>shém</i>	X rejects Y	* <i>shém-ínè</i>
<i>sóm</i>	X sends Y	* <i>sóm-ínè</i>
<i>sómərà</i>	X sends Y to R	* <i>sómərà-ínè</i>
<i>tátá</i>	X prostitutes	* <i>tátá-ínè</i>
<i>tók</i>	X scolds Y	* <i>tók-ínè</i>
<i>tásəm</i>	X hisses	* <i>tásəm-ínè</i>
<i>téy</i>	X leaves behind Y	* <i>téy-ínè</i>
<i>théns</i>	X finds Y	* <i>théns-ínè</i>
<i>thúth</i>	X chooses Y	* <i>thúth-ínè</i>
<i>thónkàlà</i>	X gathers Y	* <i>thónkàlà-ínè</i>
<i>thápì</i>	X misses Y	* <i>thápì-ínè</i>
<i>tú</i>	X falls sick	* <i>tú-ínè</i>
<i>túrà</i>	X attacks Y	* <i>túrà-ínè</i>

<i>támtámnè</i>	X remembers Y	<i>*támtámnè-ínè</i>
<i>tánsànè</i>	X remembers Y	<i>*tánsànè-ínè</i>
<i>táj</i>	X follows Y	<i>*táj-ínè</i>
<i>tánpò</i>	X sits up late	<i>*tánpò-ínè</i>
<i>wóh</i>	X puts on Y	<i>*wóh-ínè</i>
<i>wón</i>	X delays	<i>*wón-ínè</i>
<i>yágbà</i>	X hurries Y	<i>*yágbà-ínè</i>
<i>yánfà</i>	X undermines Y	<i>*yánfà-ínè</i>
<i>yó</i>	X does Y	<i>*yó-ínè</i>
<i>yèr</i>	X shivers	<i>*yèr-ínè</i>
<i>yókànè</i>	X gets up	<i>*yókànè-ínè</i>

Table XII.

Verbs that combine with the benefactive applicative (and schema B2)

<i>verb root</i>	<i>gloss</i>	<i>verb + BEN</i>	<i>gloss</i>
<i>bá</i>	X has Y	<i>bá-n-ì</i>	X has Y for W
<i>bál-ì</i>	X marries to Y	<i>bál-ì</i>	X marries to Y for W
<i>bámbà</i>	X is piggybacks Y	<i>bámbà-ì</i>	X piggybacks Y for W
<i>bánì</i>	X redeems Y	<i>bánì-ì</i>	X redeems Y for W
<i>bánsà</i>	X is angry	<i>bánsà-ì</i>	X is angry for W
<i>báj-ì</i>	X gives Y to R	<i>báj-ì-ì</i>	X gives Y to R for W
<i>bó</i>	X borrows Y from R	<i>bó-n-ì</i>	X borrows Y from R for W
<i>bófàthàr</i>	X beats up Y	<i>bófàthàr-ì</i>	X beats up Y for W
<i>ból</i>	X gets tall	<i>ból-ì</i>	X gets tall Y for W
<i>bólì</i>	X picks Y	<i>bólì-ì</i>	X picks Y for W
<i>bóm</i>	X defecates	<i>bóm-ì</i>	X defecates for W
<i>bóthàr</i>	X loves/likes Y	<i>bóthàr-ì</i>	X loves Y for W
<i>bóy</i>	X mentions Y	<i>bóy-ì</i>	X mentions Y for W
<i>béfàth</i>	X worships Y	<i>béfàth-ì</i>	X worships Y for W
<i>bék</i>	X arrives	<i>bék-ì</i>	X arrives for W
<i>bákà</i>	X carries Y	<i>bákà-ì</i>	X carries Y for W
<i>bémpà</i>	X makes Y	<i>bémpà-ì</i>	X makes Y for W
<i>bánkàlì</i>	X rolls Y	<i>bánkàlì-ì</i>	X rolls Y for W
<i>bént</i>	X denies Y of R	<i>bént-ì</i>	X denies R of Y for W
<i>béj</i>	X agrees with Y	<i>béj-ì</i>	X agrees with Y for W
<i>báp</i>	X meets Y	<i>báp-ì</i>	X meets Y for W
<i>bápàr</i>	X is present in Y	<i>bápàr-ì</i>	X is present in Y for W
<i>bér</i>	X visits Y	<i>bér-ì</i>	X visits Y for W
<i>bàràfì</i>	X pops off Y	<i>bàràfì-ì</i>	X pops off Y for W
<i>bés</i>	X digs out Y	<i>bés-ì</i>	X digs out Y for W
<i>bét</i>	X sucks Y	<i>bét-ì</i>	X sucks Y for W
<i>bát</i>	X holds Y	<i>bát-ì</i>	X holds Y for W
<i>béth</i>	X begins to cry	<i>béth-ì</i>	X begins to cry for W
<i>béy</i>	X belches	<i>béy-ì</i>	X belches Y for W
<i>bók</i>	X cries	<i>bók-ì</i>	X cries for W
<i>bóndàs</i>	X enlarges Y	<i>bóndàs-ì</i>	X enlarges Y for W
<i>bónt</i>	X names Y	<i>bónt-ì</i>	X names Y for W

<i>bóŋ</i>	X makes Y (heaps)	<i>bóŋ-à</i>	X makes Y (heaps) for W
<i>bór</i>	X peels off Y	<i>bór-à</i>	X peels Y for W
<i>bót</i>	X puts down Y	<i>bót-à</i>	X puts down Y for W
<i>boya</i>	X donates Y to R	<i>Boya-à</i>	X donates Y for W
<i>búkò</i>	X bathes Y	<i>búkò-à</i>	X washes Y for W
<i>búli</i>	X chisels Y	<i>búli-à</i>	X chisels Y for W
<i>búm</i>	X guards Y	<i>búm-à</i>	X guards Y for W
<i>bús</i>	X takes off Y	<i>bús-à</i>	X takes off Y for W
<i>bák</i>	X loads Y	<i>bák-à</i>	X loads Y for W
<i>bálbál</i>	X chases Y	<i>bálbál-à</i>	X chases Y for W
<i>bálàr</i>	X approaches Y	<i>bálàr-à</i>	X chases Y for W
<i>bálà</i>	X hunts Y	<i>bálà-à</i>	X hunts Y for W
<i>báy</i>	X brings Y	<i>báy-à</i>	X brings Y for W
<i>bár</i>	X adds Y	<i>bár-à</i>	X adds Y for W
<i>báthò</i>	X worships Y	<i>báthò-à</i>	X worships Y for W
<i>báyàt</i>	X bets Y	<i>báyàt-à</i>	X bets Y for W
<i>chép</i>	X plants Y	<i>chép-à</i>	X plants Y for W
<i>chéchì</i>	X spreads Y	<i>chéchì-à</i>	X spreads Y for W
<i>chélà</i>	X calls Y	<i>chélà-à</i>	X calls Y for W
<i>chén</i>	X slaughters Y	<i>chén-à</i>	X slaughters Y for W
<i>cher</i>	X lets go Y	<i>cher-à</i>	X lets go Y for W
<i>chím</i>	X fights Y	<i>chím-à</i>	X fights Y for W
<i>chís</i>	X is inebriated	<i>chís-à</i>	X is inebriated for W
<i>dákàr</i>	X intertwines Y	<i>dákàr-à</i>	X intertwines Y for W
<i>dámàr</i>	X cures Y	<i>dámàr-à</i>	X cures Y for W
<i>déy</i>	X totes Y	<i>déy-à</i>	X totes Y for W
<i>dér</i>	X comes/arrives	<i>dér-à</i>	X arrives in Y for W
<i>dī</i>	X eats Y	<i>dī-à</i>	X eats Y for W
<i>dīf</i>	X kills Y	<i>dīf-à</i>	X kills Y for W
<i>dīm</i>	X misplaces Y	<i>dīm-à</i>	X misplaces for W
<i>dīrà</i>	X sleeps	<i>dīrà-à</i>	X sleeps for W
<i>dú</i>	X braids Y's hair	<i>dú-à</i>	X braids Y's hair for W
<i>fɔf</i>	X speaks	<i>fɔf-à</i>	X says Y for W
<i>fɔfàlà</i>	X whispers to Y	<i>fɔfàlà</i>	X whispers to Y for W
<i>fɔk</i>	X wraps Y	<i>fɔk-à</i>	X wraps Y for W
<i>fənthà</i>	X lies down	<i>fənthà-à</i>	X sleeps with Y for W
<i>fəshì</i>	X crosses Y	<i>fəshì-à</i>	X crosses Y for W
<i>fī</i>	X dies	<i>fī-yà</i>	X dies for W
<i>fithà</i>	X throws away Y	<i>fithà-à</i>	X throws Y for W
<i>fón</i>	X shaves	<i>fón-à</i>	X shaves for W
<i>fór</i>	X gossips Y	<i>fór-à</i>	X gossips Y for W
<i>fóy</i>	X floats	<i>fóy-à</i>	X floats for W
<i>fúmpàr</i>	X grabs Y	<i>fúmpàr-à</i>	X grabs Y for W
<i>fúrùp</i>	X blows off Y	<i>fúrùp-à</i>	X blows up Y for W
<i>fúthà</i>	X boils Y	<i>fúthà-à</i>	X cooks Y for W
<i>fák</i>	X drops Y	<i>fák-à</i>	X drops Y for W
<i>fál</i>	X flies	<i>fál-à</i>	X flies for W
<i>gbényà</i>	X hates Y	<i>gbényà-à</i>	X hates Y for W
<i>gbónthò</i>	X dilutes Y	<i>gbónthò-à</i>	X dilutes Y for W
<i>gbákì</i>	X answers Y	<i>gbákì-à</i>	X answers Y for W

<i>gbál</i>	X writes down Y	<i>gbál-̀̀</i>	X writes Y for W
<i>gbá̀̀</i>	X lines up Y	<i>gbá̀̀-̀̀</i>	X lines up Y for W
<i>gbám</i>	X creeps on Y	<i>gbám-̀̀</i>	X creeps on Y for W
<i>gbánthà</i>	X hits Y	<i>gbánthà-̀̀</i>	X hits Y for W
<i>gbá̀̀</i>	X hangs Y	<i>gbá̀̀-̀̀</i>	X hangs on Y for W
<i>gbáshì</i>	X takes Y	<i>gbáshì-̀̀</i>	X takes Y for W
<i>gbáy</i>	X separates Y	<i>gbáy-̀̀</i>	X separates Y for W
<i>gbók</i>	X scrubs Y	<i>gbók-̀̀</i>	X scrubs Y for W
<i>gból</i>	X grinds Y	<i>gból-̀̀</i>	X grinds Y for W
<i>gbéjà</i>	X yells in agony	<i>gbéjà-̀̀</i>	X yells in agony for W
<i>gbák</i>	X cuts Y	<i>gbák-̀̀</i>	X cuts Y for W
<i>gbékàr</i>	X traps Y	<i>gbékàr-̀̀</i>	X traps Y for W
<i>gbál</i>	X sweeps Y	<i>gbál-̀̀</i>	X sweeps Y for W
<i>gbélè̀̀</i>	X reminds Y	<i>gbélè̀̀-̀̀</i>	X reminds Y for W
<i>gbám</i>	X pounds Y	<i>gbám-̀̀</i>	X pounds Y for W
<i>gbénkàrà</i>	X yells	<i>gbénkàrà-̀̀</i>	X yells for W
<i>gbénth</i>	X yells	<i>gbénth-̀̀</i>	X yells Y for W
<i>gbép</i>	X climbs Y	<i>gbép-̀̀</i>	X climbs Y for W
<i>gbápà̀̀</i>	X covers Y	<i>gbápà̀̀-̀̀</i>	X covers Y for W
<i>gbát</i>	X hunts Y	<i>gbát-̀̀</i>	X hunts Y for W
<i>gbéthà</i>	X cuts Y	<i>gbéthà-̀̀</i>	X cuts Y for W
<i>gbínd</i>	X warns Y	<i>gbínd-̀̀</i>	X warns Y for W
<i>gbí̀̀</i>	X swears	<i>gbí̀̀-̀̀</i>	X swears for W
<i>gbíp</i>	X chooses Y	<i>gbíp-̀̀</i>	X chooses Y for W
<i>gbón</i>	X touches Y	<i>gbón-̀̀</i>	X touches Y for W
<i>gbópi</i>	X chips Y	<i>gbópi-̀̀</i>	X chips Y for W
<i>gbál</i>	X quarrels	<i>gbál-̀̀</i>	X quarrels for W
<i>gbám</i>	X sips Y	<i>gbám-̀̀</i>	X sips Y for W
<i>gbánth</i>	X smashes Y	<i>gbánth-̀̀</i>	X smashes Y for W
<i>gbánthì</i>	X completes Y	<i>gbánthì-̀̀</i>	X completes Y for W
<i>gbás</i>	X divides Y	<i>gbás-̀̀</i>	X divides Y for W
<i>gbát</i>	X knocks Y	<i>gbát-̀̀</i>	X knocks Y for W
<i>kó</i>	X goes to Y	<i>kó-̀̀</i>	X goes to Y for W
<i>kál</i>	X roasts Y	<i>kál-̀̀</i>	X roasts Y for W
<i>ká̀̀</i>	X welcomes Y	<i>ká̀̀-̀̀</i>	X welcomes Y for W
<i>kánthà</i>	X closes Y	<i>kánthà-̀̀</i>	X closes Y for W
<i>kàrà̀̀</i>	X reads Y	<i>kàrà̀̀-̀̀</i>	X reads Y for W
<i>kásàrà</i>	X destroys Y	<i>kásàrà-̀̀</i>	X destroys Y for W
<i>káshì</i>	X retracts Y	<i>káshì-̀̀</i>	X retracts Y for W
<i>kópà̀̀</i>	X asks for Y	<i>kópà̀̀-̀̀</i>	X asks for Y for W
<i>kóth</i>	X walks	<i>kóth-̀̀</i>	X walks for W
<i>kál</i>	X pours Y	<i>kál-̀̀</i>	X pours Y for W
<i>ká̀̀</i>	X looks at Y	<i>ká̀̀-̀̀</i>	X looks at Y for W
<i>kérà</i>	X carries Y	<i>kérà-̀̀</i>	X carries Y for W
<i>kèth</i>	X scraps Y	<i>kèth-̀̀</i>	X scraps Y for W
<i>kéyà</i>	X steals Y	<i>kéyà-̀̀</i>	X steals Y for W
<i>kóchì</i>	X unties Y	<i>kóchì-̀̀</i>	X unties Y for W
<i>kóm</i>	X conceives Y	<i>kóm-̀̀</i>	X conceives Y for W
<i>kóri</i>	X greets Y	<i>kóri-̀̀</i>	X greets Y for W
<i>kórà</i>	X gets pregnant	<i>kórà-̀̀</i>	X gets pregnant for W

<i>ηάτλ</i>	X lifts ups Y	<i>ηάτλ-λ</i>	X lifts up Y for W
<i>πά</i>	X says Y	<i>πά-λ</i>	X says Y for W
<i>πόλῶ</i>	X crowns Y	<i>πόλῶ-λ</i>	X crowns Y for W
<i>πίκᾶθᾶ</i>	X smashes	<i>πίκᾶθᾶ-λ</i>	X smaches Y for W
<i>πίμ</i>	X picks off Y	<i>πίμ-λ</i>	X picks Y for W
<i>πόγ</i>	X finishes Y	<i>πόγ-λ</i>	X finishes Y for W
<i>πόλ</i>	X claps/slaps Y	<i>πόλ-λ</i>	X claps/slaps Y for W
<i>πούλᾶκῖ</i>	X chastises Y	<i>πούλᾶκῖ-λ</i>	X chastises Y for W
<i>πάτ</i>	X cooks Y	<i>πάτ-λ</i>	X cooks Y for W
<i>πάγ</i>	X jumps over Y	<i>πάγ-λ</i>	X jumps over Y for W
<i>ράνκᾶ</i>	X curses Y	<i>ράνκᾶ-λ</i>	X curses Y for W
<i>ράπᾶρῖ</i>	X does a Uturn	<i>ράπᾶρῖ-λ</i>	X does a Uturn for W
<i>ράνᾶ</i>	X is piggybacks Y	<i>ράνᾶ-λ</i>	X is piggybacks Y for W
<i>δέγ</i>	X puts Y on R's head	<i>δέγ-λ</i>	X puts Y on R for W
<i>ράπ</i>	X prostitutes	<i>ράπ-λ</i>	X prostitutes Y for W
<i>ρός</i>	X serves Y	<i>ρός-λ</i>	X serves Y for W
<i>ρούβᾶ</i>	X blesses Y	<i>ρούβᾶ-λ</i>	X blesses Y for W
<i>ρούνκᾶτ</i>	X dilutes Y	<i>ρούνκᾶτ-λ</i>	X dilutes Y for W
<i>ρούσᾶμ</i>	X nurtures Y	<i>ρούσᾶμ-λ</i>	X nurtures Y for W
<i>ράγ</i>	X stabs Y	<i>ράγ-λ</i>	X stabs Y for W
<i>ράμ</i>	X pays R, Y	<i>ράμ-λ</i>	X pays R, Y for W
<i>ράνκᾶθ</i>	X rinses Y	<i>ράνκᾶθ-λ</i>	X rinses Y for W
<i>σᾶκᾶθ</i>	X shifts to Y	<i>σᾶκᾶθ-λ</i>	X shifts Y for W
<i>σᾶκᾶθῖ</i>	X spreads Y	<i>σᾶκᾶθῖ-λ</i>	X spreads Y for W
<i>σᾶκᾶνῆ</i>	X scatters about	<i>σᾶκᾶνῆ-λ</i>	X scatters Y for W
<i>σᾶπ</i>	X scoops Y	<i>σᾶπ-λ</i>	X scoops Y for W
<i>σᾶρᾶ</i>	X carries Y	<i>σᾶρᾶ-λ</i>	X carries Y for W
<i>σóm</i>	X chews Y	<i>σóm-λ</i>	X chews Y for W
<i>σómπα</i>	X disturbs Y	<i>σómπα-λ</i>	X disturbs Y for W
<i>σόνκῶ</i>	X shouts at Y	<i>σόνκῶ-λ</i>	X shouts at Y for W
<i>σόνγ</i>	X gives R to Y	<i>σόνγ-λ</i>	X gives R to Y for W
<i>σór</i>	X coughs	<i>σór-λ</i>	X cough for W
<i>σῶθ</i>	X sews Y	<i>σῶθ-λ</i>	X sews Y for W
<i>σóθᾶλᾶ</i>	X ignites Y	<i>σóθᾶλᾶ-λ</i>	X ignites Y for W
<i>σóθᾶ</i>	X gets Y	<i>σóθᾶ-λ</i>	X gets Y for W
<i>shék</i>	X ties Y	<i>shék-λ</i>	X ties Y for W
<i>shél</i>	X laughs at Y	<i>shél-λ</i>	X laughs at Y for W
<i>shém</i>	X rejects Y	<i>shém-λ</i>	X rejects Y for W
<i>shérà</i>	X saws Y (wood)	<i>shérà-λ</i>	X saws Y for W
<i>shéth</i>	X builds Y	<i>shéth-λ</i>	X builds Y for W
<i>shîm</i>	X breaks Y	<i>shîm-λ</i>	X breaks Y for W
<i>sóm</i>	X sends Y	<i>sóm-λ</i>	X sends Y for W
<i>sómàρᾶ</i>	X sends Y to R	<i>sómàρᾶ-λ</i>	X sends Y for W
<i>súnì</i>	X steps on Y's injury	<i>súnì-λ</i>	X steps on Y for W
<i>súnt</i>	X corks Y	<i>súnt-λ</i>	X corks Y for W
<i>sáp</i>	X beats Y	<i>sáp-λ</i>	X beats Y for W
<i>sát</i>	X puts Y on top	<i>sát-λ</i>	X puts Y on top for W
<i>táy</i>	X closes/locks up Y	<i>táy-λ</i>	X closes Y for W
<i>tátá</i>	X prostitutes	<i>tátá-λ</i>	X prostitutes Y for W
<i>tók</i>	X scolds Y	<i>tók-λ</i>	X scolds Y for W

<i>tólà</i>	X irritates Y's eyes	<i>tólà-à</i>	X irritates Y's eyes for W
<i>tòrì</i>	X shows R, Y	<i>tòrì-à</i>	X shows R, Y for W
<i>tòsà</i>	X joins Y	<i>tòsà-à</i>	X joins Y for W
<i>tól</i>	X listens to Y	<i>tól-à</i>	X listens to Y for W
<i>támà</i>	X stands	<i>támà-à</i>	X stands Y for W
<i>táp</i>	X begins Y	<i>táp-à</i>	X begins Y for W
<i>tàsàm</i>	X hisses	<i>tàsàm-à</i>	X hisses for W
<i>téy</i>	X leaves behind Y	<i>téy-à</i>	X leaves behind Y for W
<i>thàs</i>	X surpasses Y	<i>thàs-à</i>	X surpasses Y for W
<i>thómò</i>	X dances	<i>thómò-à</i>	X dances Y for W
<i>thóy</i>	X burns Y	<i>thóy-à</i>	X burns Y for W
<i>théns</i>	X finds Y	<i>théns-à</i>	X finds Y for W
<i>thánth</i>	X scrapes Y	<i>thánth-à</i>	X scrapes Y for W
<i>thílà</i>	X sells Y	<i>thílà-à</i>	X sells Y for W
<i>thínkàr</i>	X presses on Y	<i>thínkàr-à</i>	X presses on Y for W
<i>thíth</i>	X chooses Y	<i>thíth-à</i>	X chooses Y for W
<i>thólà</i>	X begs Y	<i>thólà-à</i>	X begs Y for W
<i>thónkàlà</i>	X gathers Y	<i>thónkàlà-à</i>	X gathers Y for W
<i>thór</i>	X climbs down Y	<i>thór-à</i>	X climbs down Y for W
<i>thúf</i>	X spits Y	<i>thúf-à</i>	X spits Y for W
<i>thúnth</i>	X measures Y	<i>thúnth-à</i>	X measures Y for W
<i>thám</i>	X tastes Y	<i>thám-à</i>	X tastes Y for W
<i>thánthì</i>	X stretches Y	<i>thánthì-à</i>	X stretches Y for W
<i>thápì</i>	X misses Y	<i>thápì-à</i>	X misses Y for W
<i>tháy</i>	X bends Y	<i>tháy-à</i>	X bends Y for W
<i>tóη</i>	X cooks Y	<i>tóη-à</i>	X cooks Y for W
<i>tú</i>	X falls sick	<i>tú-à</i>	X falls Y for W
<i>túη</i>	X hits Y	<i>túη-à</i>	X hits Y for W
<i>túrà</i>	X attacks Y	<i>túrà-à</i>	X attacks Y for W
<i>táy</i>	X follows Y	<i>táy-à</i>	X follows Y for W
<i>tánpò</i>	X sits up late	<i>tánpò-à</i>	X sits up for W
<i>wáy</i>	X buys Y	<i>wáy-à</i>	X buys Y for W
<i>wóη</i>	X puts on Y	<i>wóη-à</i>	X puts on Y for W
<i>wól</i>	X plays	<i>wól-à</i>	X plays Y for W
<i>wón</i>	X delays	<i>wón-à</i>	X delays Y for W
<i>wóp</i>	X holds onto Y	<i>wóp-à</i>	X holds Y for W
<i>yéf</i>	X mills Y (corn)	<i>yéf-à</i>	X mills Y for W
<i>yágbà</i>	X hurries Y	<i>yágbà-à</i>	X hurries Y for W
<i>yák</i>	X washes Y	<i>yák-à</i>	X washes Y for W
<i>yánfà</i>	X undermines Y	<i>yánfà-à</i>	X undermines Y for W
<i>yó</i>	X has sex with Y	<i>yó-à</i>	X has sex with Y for W
<i>yémà</i>	X wants Y	<i>yémà-à</i>	X wants Y for W
<i>yép</i>	X borrows Y	<i>yép-à</i>	X borrows Y for W
<i>yér</i>	X gives R, Y	<i>yér-à</i>	X gives Y for W
<i>yèr</i>	X shivers	<i>yèr-à</i>	X shivers Y for W
<i>yéthà</i>	X squeezes Y	<i>yéthà-à</i>	X squeezes Y for W
<i>yíf</i>	X asks R about Y	<i>yíf-à</i>	X asks Y for W
<i>yínkàthà</i>	X shakes Y	<i>yínkàthà-à</i>	X shakes Y for W
<i>yírà</i>	X sits down	<i>yírà-à</i>	X sits Y for W

Table XIII.

Verbs in the sample that do not combine with schema B4 and B5

<i>root</i>	<i>gloss</i>	<i>root + BEN</i>	<i>gloss</i>
<i>bá</i>	X owns Y	<i>bá-n-à</i>	X owns Y for W
<i>báns-à</i>	X is angry	<i>báns-à-à</i>	X is angry for W
<i>béḟáth</i>	X worships Y	<i>béḟáth-à</i>	X worships Y for W
<i>béy</i>	X belches	<i>béy-à</i>	X belches for W
<i>bék</i>	X arrives	<i>bék-à</i>	X arrives for W/A makes X arrive
<i>béy</i>	X agrees with Y	<i>béy-à</i>	X agrees with Y for W
<i>bápàr</i>	X is present	<i>bápàr-à</i>	X is present for W
<i>bór</i>	X peels off Y	<i>bór-à</i>	X peels off Y for W
<i>bók</i>	X cries	<i>bók-à</i>	X cries for W
<i>ḟḟàlà</i>	X whispers to Y	<i>ḟḟàlà</i>	X whispers to Y for W
<i>gbéy-à</i>	X hates Y	<i>gbéy-à-à</i>	X hates Y for W
<i>gbélèy</i>	X reminds Y	<i>gbélèy-à</i>	X reminds Y for W
<i>gbínd</i>	X warns Y	<i>gbínd-à</i>	X warns Y for W
<i>gbíy</i>	X swears	<i>gbíy-à</i>	X swears for W
<i>mómò</i>	X thanks Y	<i>mómò-à</i>	X thanks Y for W
<i>nál</i>	X insults Y	<i>nál-à</i>	X insults Y for W
<i>ḡmì</i>	X grimaces	<i>ḡmì-à</i>	X grimaces for W
<i>ḡnkàl</i>	X snores	<i>ḡnkàl-à</i>	X snores for W
<i>rúbà</i>	X blesses Y	<i>rúbà-à</i>	X blesses Y for W
<i>sór</i>	X coughs	<i>sór-à</i>	X coughs for W
<i>tátà</i>	X prostitutes	<i>tátà-à</i>	X prostitutes for W
<i>tásàm</i>	X sneezes	<i>tásàm-à</i>	X sneezes for W
<i>yánfà</i>	X undermines Y	<i>yánfà-à</i>	X undermines Y for W
<i>tú</i>	X is sick	<i>tu-à</i>	X is sick for W
<i>yémà</i>	X wants Y	<i>yémà-à</i>	X wants Y for W

Table XIV.

Verbs that do not combine with the benefactive applicative

<i>root</i>	<i>gloss</i>	<i>root + CAUS</i>
<i>báḟàlè</i>	X laughs at X or Y	* <i>báḟàlè-à</i>
<i>bénè</i>	X hides Y	* <i>bénè-à</i>
<i>bóshìnè</i>	X longs for Y	* <i>bóshìnè-à</i>
<i>dīnè</i>	X disappears	* <i>dīnè-à</i>
<i>fúmpò</i>	X falls down	* <i>fúmpò</i>
<i>gbárò</i>	X trickles on Y	* <i>gbárò</i>
<i>gbánè</i>	X hangs Y on himself	* <i>gbánè-à</i>
<i>gbìthànè</i>	X confesses Y	* <i>gbìthànè-à</i>
<i>gbúkè</i>	X runs	* <i>gbúkè-à</i>
<i>gbégbà</i>	X faints	* <i>gbégbà-à</i>
<i>lánè</i>	X believes in Y	* <i>lánè-à</i>
<i>nánè</i>	X remembers Y	* <i>nánè-à</i>
<i>pánè</i>	X forgets Y	* <i>pánè-à</i>
<i>púthànè</i>	X offends Y	* <i>púthànè-à</i>

<i>sákànè</i>	X scatters	* <i>sákànè-à</i>
<i>sókànè</i>	X is in confusion	* <i>sókànè-à</i>
<i>támtámnè</i>	X thinks of Y	* <i>támtámnè-à</i>
<i>tánsànè</i>	X imitates Y	* <i>tánsànè-à</i>
<i>yókànè</i>	X gets up	* <i>yókànè-à</i>

Table XV.

Verbs in the sample that combine with the causative suffix and the instrumental suffix when each occurs separately

<i>root</i>	<i>gloss</i>
<i>bálà</i>	X marries Y
<i>bani</i>	X redeems Y
<i>bánsà</i>	X is angry
<i>ból</i>	X grows tall
<i>bóm</i>	X shits
<i>bék</i>	X arrives
<i>bés</i>	X digs out Y
<i>béth</i>	X cries
<i>bór</i>	X peels off Y
<i>bók</i>	X cries
<i>bóy</i>	X makes Y (heaps)
<i>chép</i>	X plants Y
<i>chén</i>	X slaughters Y
<i>chís</i>	X is inebriated
<i>di</i>	X eats Y
<i>dírà</i>	X sleeps
<i>fál</i>	X flies
<i>gbál</i>	X writes Y
<i>gbók</i>	X scrubs Y
<i>gból</i>	X grinds Y
<i>gból</i>	X sweeps Y
<i>gbóm</i>	X pounds Y
<i>gbép</i>	X climbs Y
<i>kóth</i>	X walks
<i>kál</i>	X pours Y
<i>kóm</i>	X gives birth to Y
<i>kórà</i>	X is pregnant
<i>kúlò</i>	X cries
<i>láp</i>	X is ashamed
<i>lóm</i>	X speaks
<i>mútà</i>	X dives
<i>mér</i>	X swallows Y
<i>mún</i>	X drinks Y
<i>ɣánt</i>	X pukes Y
<i>póy</i>	X ends Y
<i>sákàth</i>	X moves over there
<i>shéth</i>	X builds Y

<i>tátá</i>	X prostitutes
<i>thómò</i>	X dances
<i>thákàs</i>	X learns Y
<i>tóŋ</i>	X cooks Y
<i>wáy</i>	X buys Y
<i>wóŋ</i>	X puts on Y
<i>yírà</i>	X sits down

Table XVI.
Verbs that combine with CAUS + INST

<i>root</i>	<i>gloss</i>	<i>root + CAUS + INST</i>	<i>gloss</i>
<i>bálà</i>	X marries Y	<i>bál-às-ínè</i>	A uses I as a means to make X marry Y
<i>chís</i>	X is inebriated	<i>chís-às-ínè</i>	A causes X to be inebriated with I
<i>dī</i>	X eats Y	<i>dī-s-ínè</i>	Using I as a means, A causes X to eat Y/ A causes X to eat Y using I
<i>dīrà</i>	X sleeps	<i>dīr-às-ínè</i>	Using I as a means, A causes X to sleep/ A causes X to sleep using I/ X seduces Y by means of I
<i>kúlò</i>	X cries	<i>kúli-às-ínè</i>	Using I as a means, A causes X to cry
<i>kóth</i>	X walks	<i>kóth-à-ínè</i>	Using I as a means, A causes X to walk/ A causes X to walk using I as a tool
<i>láp</i>	X is ashamed	<i>láp-às-ínè</i>	A causes X to feel ashamed about I
<i>mótà</i>	X dives	<i>mótà-s-ínè</i>	Using I as a means, A causes X to dive/ A causes X to dive using I
<i>yírà</i>	X sits down	<i>yír-às-ínè</i>	Using I as a means, A causes X to sit down/ A causes X to sit down with I

Table XVII.
Verbs that do not combine with CAUS + INST
when the two suffixes co-occur

<i>root</i>	<i>gloss</i>	<i>root + CAUS</i>
<i>bānī</i>	X redeems Y	* <i>bānī-s-ínè</i>
<i>bānsà</i>	X is angry	* <i>bāns-às-ínè</i>
<i>ból</i>	X grows tall	* <i>ból-às-ínè</i>
<i>bóm</i>	X shits	* <i>bóm-às-ínè</i>
<i>bék</i>	X arrives	* <i>bék-às-ínè</i>
<i>bés</i>	X digs out Y	* <i>bésàs-ínè</i>
<i>béth</i>	X cries	* <i>béth-às-ínè</i>
<i>bór</i>	X peels off Y	* <i>bór-às-ínè</i>
<i>bók</i>	X cries	* <i>bók-às-ínè</i>
<i>bóŋ</i>	X makes Y (heaps)	* <i>bóŋ-às-ínè</i>
<i>chép</i>	X plants Y	* <i>chép-às-ínè</i>
<i>chén</i>	X slaughters Y	* <i>chén-às-ínè</i>
<i>fál</i>	X flies	* <i>fál-às-ínè</i>

<i>gbál</i>	X writes Y	* <i>gbál-às-ínè</i>
<i>gbók</i>	X scrubs Y	* <i>gbók-às-ínè</i>
<i>gból</i>	X grinds Y	* <i>gból-às-ínè</i>
<i>gbál</i>	X sweeps Y	* <i>gbál-às-ínè</i>
<i>gbám</i>	X pounds Y	* <i>gbám-às-ínè</i>
<i>gbép</i>	X climbs Y	* <i>gbép-às-ínè</i>
<i>kál</i>	X pours Y	* <i>kál-às-ínè</i>
<i>kóm</i>	X gives birth to Y	* <i>kóm-às-ínè</i>
<i>kór.à</i>	X is pregnant	* <i>kór-às-ínè</i>
<i>lóm</i>	X speaks	* <i>lóm-às-ínè</i>
<i>mér</i>	X swallows Y	* <i>mér-às-ínè</i>
<i>mún</i>	X drinks Y	* <i>mún-às-ínè</i>
<i>ɣánt</i>	X pukes Y	* <i>ɣánt-às-ínè</i>
<i>póɣ</i>	X ends Y	* <i>póɣ-às-ínè</i>
<i>sákàth</i>	X shifts over there	* <i>sákàth-à-ínè</i>
<i>shéth</i>	X builds Y	* <i>shéth-às-ínè</i>
<i>tátá</i>	X prostitutes	* <i>tátá-s-ínè</i>
<i>thómò</i>	X dances	* <i>thómò-s-ínè</i>
<i>tóɣ</i>	X cooks Y	* <i>tóɣ-às-ínè</i>
<i>wáy</i>	X buys Y	* <i>wáy-às-ínè</i>
<i>wóɣ</i>	X puts on Y	* <i>wóɣ-às-ínè</i>

Table XVIII
*Verbs in that combine with LOC and INST
when each appears separately.*

<i>verb root</i>	<i>gloss</i>
<i>bá</i>	X has Y
<i>báni</i>	X redeems Y
<i>ból</i>	X gets tall
<i>bólì</i>	X plucks off Y
<i>bémpà</i>	X makes Y
<i>bánkàlì</i>	X rolls Y
<i>bés</i>	X digs out Y
<i>béy</i>	X belches
<i>bók</i>	X cries
<i>bóɣ</i>	X makes Y (heaps)
<i>bór</i>	X peels off Y
<i>bóyà</i>	X puts down Y
<i>búlì</i>	X makes a hole in Y
<i>bús</i>	X takes off Y from R
<i>chéchì</i>	X spreads Y
<i>chén</i>	X slaughters Y
<i>chér</i>	X lets Y go
<i>chís</i>	X is inebriated
<i>ḍì</i>	X eats Y
<i>ḍif</i>	X kills Y
<i>fɔ̃f</i>	X speaks

<i>f̄nthà</i>	X lies down
<i>f̄shì</i>	X crosses Y
<i>fì</i>	X dies
<i>gbál</i>	X writes down Y
<i>gbáŋ</i>	X hangs Y
<i>gbáshì</i>	X takes/lifts up Y
<i>gból</i>	X grinds Y
<i>gbák</i>	X cuts Y
<i>gbál</i>	X sweeps Y
<i>gbép</i>	X climbs Y
<i>gbéthà</i>	X cuts Y
<i>gbíp</i>	X chooses Y
<i>káshì</i>	X retracts Y
<i>kóth</i>	X walks
<i>kál</i>	X pours Y
<i>kéyà</i>	X steals Y
<i>kóth</i>	X ties Y (a bundle)
<i>lóm</i>	X talks about Y
<i>lám</i>	X throws away Y
<i>lémpì</i>	X snatches Y
<i>léŋ</i>	X sings Y
<i>lìŋ</i>	X pulls Y
<i>lák</i>	X throws away Y
<i>mánk</i>	X buries/hides Y
<i>nóy</i>	X takes away Y from R
<i>ŋét</i>	X minces Y
<i>ŋát</i>	X ascends
<i>pá</i>	X says Y
<i>pólò</i>	X crowns Y
<i>ránkàth</i>	X rinses Y
<i>sóth</i>	X sews Y
<i>shék</i>	X ties Y
<i>shéth</i>	X builds Y
<i>súnt</i>	X corks Y
<i>táŋ</i>	X closes/locks Y
<i>thómò</i>	X dances
<i>thìlà</i>	X sells Y
<i>thólà</i>	X begs Y
<i>thúf</i>	X spits Y
<i>thánthì</i>	X stretches Y
<i>tháy</i>	X bends Y
<i>wáy</i>	X buys Y
<i>yémà</i>	X wants Y
<i>yép</i>	X borrows Y
<i>yíf</i>	X gives R, Y
<i>yìrà</i>	X sits down

Table XIX. *Verbs combining with LOC + INST*

<i>verb root</i>	<i>gloss</i>	<i>verb root</i>	<i>gloss</i>
<i>báni</i>	X redeems Y	<i>báni r-ínè</i>	X redeems Y from L by means of I
<i>bés</i>	X digs out Y	<i>bés-àr-ínè</i>	X undermines L
<i>bók</i>	X cries	<i>bók-àr-ínè</i>	X cries facing L by means of I
<i>boya</i>	X donates Y	<i>bóyà-r-ínè</i>	X donates Y to L by means of I
<i>fǒf</i>	X speaks	<i>fǒf-àr-ínè</i>	X rebukes L
<i>gbáshì</i>	X takes Y	<i>gbáshì-r-ínè</i>	X takes Y from L using I
<i>gbíp</i>	X catches Y	<i>gbíp-àr-ínè</i>	X catches Y from L with I
<i>lám</i>	X throws Y	<i>lámàr-ínè</i>	X throws Y at L using I
<i>yír̀̀</i>	X sits down	<i>yír̀̀-àr-ínè</i>	X sits down on L with I

Table XX. *Verbs combining with LOC and INST that do not combine with the two applicatives when they co-occur*

<i>verb root</i>	<i>gloss</i>	<i>verb + LOC + BEN</i>
<i>bá</i>	X has Y	* <i>bá-r-ínè</i>
<i>béy</i>	X belches	* <i>béy-àr-ínè</i>
<i>ból</i>	X grows tall	* <i>ból-àr-ínè</i>
<i>bólì</i>	X plucks Y	* <i>bólì-r-ínè</i>
<i>bóŋ</i>	X makes Y (heaps)	* <i>bóŋ-àr-ínè</i>
<i>bór</i>	X peels off Y	* <i>bór-àr-ínè</i>
<i>bús</i>	X takes off Y from R	* <i>bús-àr-ínè</i>
<i>chéchì</i>	X spreads Y	* <i>chéchì-àr-ínè</i>
<i>chén</i>	X slaughters Y	* <i>chén-àr-ínè</i>
<i>cher</i>	X lets go Y	* <i>cher-àr-ínè</i>
<i>chís</i>	X is inebriated	* <i>chís-àr-ínè</i>
<i>đì</i>	X eats Y	* <i>đìr-àr-ínè</i>
<i>đíf</i>	X kills Y	* <i>đíf-àr-ínè</i>
<i>fánthà</i>	X lies down	* <i>fánthà-r-ínè</i>
<i>fáshì</i>	X crosses Y	* <i>fánthà-r-ínè</i>
<i>fì</i>	X dies	* <i>fì-r-ínè</i>
<i>gbáŋ</i>	X hangs Y	* <i>gbáŋ-àr-ínè</i>
<i>gból</i>	X grinds Y	* <i>gból-àr-ínè</i>
<i>gbál</i>	X sweeps Y	* <i>gbál-àr-ínè</i>
<i>gbép</i>	X climbs Y	* <i>gbép-àr-ínè</i>
<i>gbéthà</i>	X cuts Y	* <i>gbéthà-r-ínè</i>
<i>kóth</i>	X walks	* <i>kóth-àr-ínè</i>
<i>kál</i>	X pours Y	* <i>kál-àr-ínè</i>
<i>kéyà</i>	X steals Y	* <i>kéyà-r-ínè</i>
<i>kóth</i>	X ties Y (a bundle)	* <i>kóth-àr-ínè</i>
<i>lémpì</i>	X snatches Y	* <i>lémpì-r-ínè</i>
<i>léŋ</i>	X sings Y	* <i>léŋ-àr-ínè</i>
<i>lìŋ</i>	X pulls Y	* <i>lìŋ-àr-ínè</i>
<i>lák</i>	X throws away Y	* <i>lák-àr-ínè</i>
<i>mánk</i>	X buries/hides Y	* <i>mánk-àr-ínè</i>
<i>nóy</i>	X takes Y from R	* <i>nóy-àr-ínè</i>

<i>ηét</i>	X minces Y	* <i>ηét-àr-ínè</i>
<i>ηát</i>	X ascends	* <i>ηát-àr-ínè</i>
<i>pá</i>	X says Y	* <i>pá-r-ínè</i>
<i>pólò</i>	X crowns Y	* <i>pólò-r-ínè</i>
<i>ránkàth</i>	X rinses Y	* <i>ránkàth-àr-ínè</i>
<i>sòth</i>	X sews Y	* <i>sòth-àr-ínè</i>
<i>shék</i>	X ties Y	* <i>shék-àr-ínè</i>
<i>shéth</i>	X builds Y	* <i>shéth-àr-ínè</i>
<i>súnt</i>	X corks Y	* <i>súnt-àr-ínè</i>
<i>táj</i>	X closes/locks Y	* <i>táj-àr-ínè</i>
<i>thómò</i>	X dances	<i>thómò-r-ínè</i>
<i>thìlà</i>	X sells Y	* <i>thìlà r-ínè</i>
<i>thólà</i>	X begs Y	* <i>thólà-r-ínè</i>
<i>thúf</i>	X spits Y	* <i>thúf-àr-ínè</i>
<i>thánthì</i>	X stretches Y	* <i>thánthì-r-ínè</i>
<i>tháy</i>	X bends Y	* <i>tháy-àr-ínè</i>
<i>wáy</i>	X buys Y	* <i>wáy-r-ínè</i>
<i>yémà</i>	X wants Y	* <i>yémà-r-ínè</i>
<i>yép</i>	X borrows Y	* <i>yép-àr-ínè</i>
<i>yíf</i>	X asks R, Y	* <i>yíf-àr-ínè</i>

Table XXI

Verbs combining with LOC and BEN when each occurs alone on a verb

<i>root</i>	<i>gloss</i>
<i>bó</i>	X lends Y to R
<i>ból</i>	X grows tall
<i>bólì</i>	X plucks off Y
<i>bémpà</i>	X makes Y
<i>bánkàlì</i>	X rolls Y
<i>bés</i>	X digs out Y
<i>béth</i>	X begins to cry
<i>bóy</i>	X mentions Y to R
<i>bánì</i>	X redeems Y
<i>báns-à</i>	X is angry
<i>bék</i>	X arrives
<i>béy</i>	X belches
<i>bóy</i>	X makes Y (heaps)
<i>bók</i>	X cries
<i>bór</i>	X peels off Y
<i>bóyà</i>	X donates Y
<i>búlì</i>	X makes a hole in Y
<i>bús</i>	X takes off Y
<i>chéchì</i>	X spreads Y
<i>chén</i>	X slaughters Y
<i>chér</i>	X lets Y go
<i>chís</i>	X is inebriated
<i>đì</i>	X eats Y

<i>pá</i>	X says Y
<i>r'áf</i>	X stabs Y
<i>r'ánkàth</i>	X rinses Y
<i>sónkò</i>	X shouts
<i>sór</i>	X coughs
<i>sóth</i>	X sews Y
<i>shék</i>	X ties Y
<i>shém</i>	X rejects Y
<i>shéth</i>	X builds Y
<i>súnt</i>	X corks Y
<i>tók</i>	X scolds Y
<i>táj</i>	X shuts down Y
<i>tátá</i>	X flirts
<i>thómò</i>	X dances
<i>th'ánthì</i>	X extends Y
<i>th'áy</i>	X bends Y
<i>thóy</i>	X burns Y
<i>thás</i>	X passes Y
<i>thílà</i>	X sells Y
<i>thól'ò</i>	X begs for Y
<i>thúf</i>	X spits on Y
<i>tú</i>	X is sick
<i>wóy</i>	X enters Y
<i>wáy</i>	X buys Y'
<i>yémà</i>	X wants Y'
<i>yép</i>	X lends Y to R
<i>yíf</i>	X asks for Y
<i>yír'ò</i>	X sits down

Table XXII.

Verbs combining with LOC + BEN when the two applicatives co-occur

<i>root</i>	<i>gloss</i>	<i>root + LOC + BEN</i>	<i>gloss</i>
<i>bés</i>	X digs out Y	<i>bés-àr-ò</i>	X digs out Y towards L for W
<i>béth</i>	X bursts into tears	<i>béth-àr-ò</i>	X bursts into tears before L for W
<i>báns'ò</i>	X is angry	<i>báns-àr-ò</i>	X is angry at L for W
<i>bóy</i>	X mentions Y	<i>bóy-àr-ò</i>	X mentions Y to L for W
<i>béy</i>	X belches	<i>béy-àr-ò</i>	X belches towards L for W
<i>bók</i>	X cries	<i>bók-àr-ò</i>	X cries facing L for W
<i>bóyà</i>	X donates Y	<i>bóyà-ò-ò</i>	X donates Y to L for W
<i>bús</i>	X takes off Y	<i>bús-àr-ò</i>	X takes off Y before L for W
<i>chéchì</i>	X spreads Y	<i>chéchì-r-ò</i>	X spreads Y to L for W
<i>chér</i>	X lets Y go	<i>chér-àr-ò</i>	X lets Y go to L for W
<i>chís</i>	X is inebriated	<i>chís-àr-ò</i>	X is inebriated at L for W
<i>fǒf</i>	X speaks	<i>fǒf-àr-ò</i>	X rebukes L for W
<i>fithà</i>	X throws Y	<i>fithà-r-ò</i>	X throws away Y to L for W
<i>gbák</i>	X cuts Y	<i>gbák-àr-ò</i>	X cuts Y from L for W
<i>gbál</i>	X sweeps Y	<i>gbál-àr-ò</i>	X sweeps Y towards L for W

<i>gbáinthù</i>	X ends Y	<i>gbáinthù-r-à</i>	X ends Y in L towards W
<i>gbéth</i>	X yells	<i>gbéth-àr-à</i>	X yells at L for W
<i>gbál</i>	X writes Y	<i>gbál-àr-à</i>	X writes Y to L for W
<i>gbép</i>	X climbs Y	<i>gbép-àr-à</i>	X climbs Y towards L for W
<i>ɲɔ̀mì</i>	X grimaces	<i>ɲɔ̀mì-r-à</i>	X grimaces facing L for W
<i>ɲánt</i>	X pukes Y	<i>ɲánt-àr-à</i>	X vomits Y towards L for W
<i>ɲát</i>	X ascends	<i>ɲát-àr-à</i>	X ascends towards L for W
<i>ɲét</i>	X minces Y	<i>ɲét-àr-à</i>	X minces Y towards L for W
<i>kóth</i>	X walks	<i>kóth-àr-à</i>	X walks towards L for W
<i>lák</i>	X throws Y	<i>lák-àr-à</i>	X throws Y at L for W
<i>lóm</i>	X says Y	<i>lóm-àr-à</i>	X says Y to L for W
<i>lám</i>	X throws Y	<i>lám-àr-à</i>	X throws Y to L for W
<i>léɲ</i>	X sings	<i>léɲ-àr-à</i>	X sings Y to L for W
<i>sónkò</i>	X shouts	<i>sónkò-r-à</i>	X shouts at L for W
<i>sór</i>	X coughs	<i>sór-àr-à</i>	X coughs towards Y for W
<i>shém</i>	X rejects Y	<i>shém-àr-à</i>	X rejects Y towards L for W
<i>táj</i>	X locks Y	<i>táj-àr-à</i>	X locks Y for W in direction of L
<i>tátá</i>	X flirts	<i>tátá-r-à</i>	X flirts to L for W
<i>thómò</i>	X dances	<i>thómò-r-à</i>	X dances towards L for W
<i>thilà</i>	X sells Y	<i>thilà-r-à</i>	X sells Y to L for W
<i>thúf</i>	X spits Y	<i>thúf-àr-à</i>	X spits Y towards L for W
<i>wóɲ</i>	X enters Y	<i>wóɲ-àr-à</i>	X enters L for W
<i>báni</i>	X redeems Y	<i>báni-r-à</i>	X redeems Y from L for W
<i>gbáshì</i>	X takes away Y	<i>gbáshì-r-à</i>	X takes Y from L for W
<i>káshì</i>	X retracts Y	<i>káshì-r-à</i>	X retracts Y from L for W
<i>kéyà</i>	X steals Y	<i>kéy-àr-à</i>	X steals Y from L for W
<i>lémpì</i>	X swoops down on Y	<i>lémpì-r-à</i>	X swoops down on Y from L for W
<i>líɲ</i>	X pulls Y	<i>líɲ-àr-à</i>	X pulls Y from L for W
<i>máink</i>	X hides Y	<i>máink-àr</i>	X hides Y from L for W
<i>thólà</i>	X begs for Y	<i>thólà-r-à</i>	X begs Y from L for W
<i>wáy</i>	X buys Y	<i>wáy-àr-à</i>	X buys Y from L for W
<i>yíf</i>	X asks Y	<i>yíf-àr-à</i>	X asks Y from L for W
<i>díf</i>	X kills Y	<i>díf-àr-à</i>	X kills Y in L for W/ X exploits Y for W
<i>fál</i>	X flies	<i>fál-àr-à</i>	X hovers L for W
<i>fánthà</i>	X lies down	<i>fánth-àr-à</i>	X lies down in or on L for W
<i>gbéthà</i>	X cuts down Y	<i>gbéthà-r-à</i>	X cuts down Y in L for W
<i>kál</i>	X pours Y	<i>kál-àr-à</i>	X pours Y in L for W
<i>káshì</i>	X denies doing Y	<i>káshì-r-à</i>	X denies doing Y in L for W
<i>nákàth</i>	X fries Y	<i>nákàth-àr-à</i>	X fries Y for W repeatedly
<i>ráf</i>	X stabs Y	<i>ráf-àr-à</i>	X enacts Y for W
<i>ráinkàth</i>	X rinses Y	<i>ráinkàth-àr-à</i>	X rinses Y for W repeatedly
<i>súnt</i>	X corks Y	<i>súnt-àr-à</i>	X corks Y in L for W
<i>tók</i>	X scolds Y	<i>tók-àr-à</i>	X scolds Y in L for W
<i>yírà</i>	X sits down	<i>yír-àr-à</i>	X sits down on Y for W
<i>bémpà</i>	X makes Y	<i>bémpà-r-à</i>	X makes Y for W
<i>fì</i>	X dies	<i>fì-r-à</i>	X finds Y for W
<i>kó</i>	X goes to Y	<i>kó-r-à</i>	X goes to Y for W
<i>kóth</i>	X ties Y	<i>kóth-àr-à</i>	X ties Y for W

<i>mém</i>	X tests Y	<i>mém-àr-à</i>	X tests Y for W
<i>sóth</i>	X sews Y	<i>sóth-àr-à</i>	X sews Y for W
<i>shék</i>	X ties Y	<i>shék-àr-à</i>	X ties Y for W
<i>tháy</i>	X bends Y	<i>tháy-àr-à</i>	X bends Y for W
<i>thóy</i>	X burns Y	<i>thóy-àr-à</i>	X over burns Y for W
<i>thás</i>	X passes Y	<i>thás-àr-à</i>	X exceeds Y for W
<i>yémà</i>	X wants Y	<i>yémà-r-à</i>	X wants Y for W

Table XXIII

*Verbs that do not combine with LOC + BEN
when the two applicatives co-occur*

<i>root</i>	<i>gloss</i>	<i>root + LOC + BEN</i>
<i>bó</i>	X lends Y to R	* <i>bó-r-à</i>
<i>ból</i>	X grows tall	* <i>ból-àr-à</i>
<i>bólì</i>	X plucks off Y	* <i>bólì-r-à</i>
<i>bánkàlì</i>	X rolls Y	* <i>bánkàlì-r-à</i>
<i>bék</i>	X arrives	* <i>bék-àr-à</i>
<i>bóy</i>	X makes Y (heaps)	* <i>bóy-àr-à</i>
<i>bór</i>	X peels off Y	* <i>bór-àr-à</i>
<i>búlì</i>	X makes a hole in Y	* <i>búlì-r-à</i>
<i>chén</i>	X slaughters Y	* <i>chén-àr-à</i>
<i>dī</i>	X eats Y	* <i>dī-r-à</i>
<i>dīr-à</i>	X sleeps in Y	* <i>dīr-àr-à</i>
<i>fāshì</i>	X crosses Y	* <i>fāshì-r-à</i>
<i>fóy</i>	X floats	* <i>fóy-àr-à</i>
<i>gbébà</i>	X faints	* <i>gbébà-r-à</i>
<i>gból</i>	'X grinds Y'	* <i>gból-àr-à</i>
<i>gbáy</i>	X hangs Y	* <i>gbáy-àr-à</i>
<i>gbálì</i>	X lines up Y	* <i>gbálì-r-à</i>
<i>gbám</i>	'X creeps'	* <i>gbám-àr-à</i>
<i>gbíp</i>	X catches Y	* <i>gbíp-àr-à</i>
<i>kánthà</i>	X closes Y	* <i>kánthà-r-à</i>
<i>mém</i>	X tests Y	* <i>mém-àr-à</i>
<i>mér</i>	X swallows Y	* <i>mér-àr-à</i>
<i>náp</i>	X hits Y	* <i>náp-àr-à</i>
<i>nóy</i>	X withdraws Y	* <i>nóy-àr-à</i>
<i>pólò</i>	X crowns Y	* <i>pólò-r-à</i>
<i>páy</i>	X jumps	* <i>páy-àr-à</i>
<i>shéth</i>	X builds Y	* <i>shéth-àr-à</i>
<i>thánthì</i>	X extends Y	* <i>thánthì-r-à</i>
<i>tú</i>	X is sick	* <i>tú-r-à</i>