Suffix Ordering in Temne: A Case for Morphotactics

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1. Introduction

Explaining why affixes occur in the order in which they do in languages has been an issue of much controversy. While some like Bybee (1985) and Rice (2000) argue that the order of affixes may be explained in terms of semantic scope, others like Baker (1985) claim that it can be explained in terms of an interaction between syntax and morphology. There is also the proposal by McCarthy and Prince (1993) that phonology determines the relative order of co-occurring affixes in some languages. Hyman (2003), on the other hand, argues for the possibility of explaining the order of affixes in terms of morphology. In this paper, I present an analysis of suffix ordering and combination in Temne, a Southern Atlantic language spoken in Sierra Leone. I argue that neither phonology nor semantic scope can fully account for the order of suffixes in the language. Alternatively, I illustrate that the order of suffixes and the ways in which they combine are determined by the morphotactics.

One of the earliest works on verbal suffixes in Temne was by Wilson (1961). Wilson identifies seven verbal suffixes, namely -ʌ, -r, -s, -s/th, -nɛ, -ʌnɛ, -i corresponding to the benefactive, directional, causative, iterative, negative, instrumental/reciprocal and reversive respectively. He states that these suffixes "may be either used singly or in a sequence of two or sometimes three" Wilson (1961: 27). Valuable as it is, Wilson's work on Temne verb extensions is not only brief, but also silent about the way in which these suffixes are ordered. Reference to Temne verb extensions is also found in Becher (2000), Hyman (2007), and Becher and Drolc (2007). However, since the focus of these papers is not specifically on Temne, information about verbal suffixes is also brief. A detailed study of Temne verb extensions is found in Kanu (2004), upon which some of the arguments in this paper are built.

The paper is organized as follows: Section 2 presents the structure of verbal suffixes and accounts for the restrictions on their combinations in terms of the morphotactics. Section 3 deals with the co-occurrence of suffixes. In section 4, an account for the complementary of suffixes is presented. Section 5 advances an argument against semantic scope in accounting for suffix ordering in the language. Section 6 is the conclusion.

2. The structure of verbal suffixes

A distinction among verbal suffixes may be based on the effect that these suffixes have on the valence of their base. Suffixes in Temne, such as the causative and applicatives, increase the number of arguments that can appear in a clause. The causative is realized as -s or -ʌ. The choice between the two causative allomorphs is phonologically conditioned. Causative -ʌ combines only with verbs ending with -əs or -θ as in *θəkəs*-ʌ 'cause to learn', *səkəθ*-ʌ 'cause to push' and *kɔθ*-ʌ 'cause to walk'. Causative -s, on the other hand, is less restrictive. It combines with all other verbs. Examples (1) and (2) illustrate the use of the causative suffixes.[1]

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[1] The abbreviations used in this study are the following: 3SG-third person singular; 3PL-third person plural; 3SG.AGR-third person singular agreement; BEN-benefactive; CAUS-causative; CL-noun class marker; DEF-definite article; DIR-directional suffix; GER-gerund marker; INDEF-indefinite article; INSTR-instrumental; IO-indirect object;

(1) ɔ̀-lángbà ɔ̀ θɔ́mɔ̀-s ɔ́-wáθ-bɛ́rà
DEF-man 3SG.AGR dance-CAUS DEF-child-female
'The man made the girl dance.'

(2) ɔ̀ θə́kə̀s-ʌ̀ ɔ́-wàθ kʌ́-làm
3SG learn-CAUS DEF-child GER-fishing
'S/he made the child learn fishing.'

Other valence-increasing suffixes include the benefactive -ʌ̀, instrumental -ʌ́nɛ̀ and the directional/locative realized as -r. Examples (3) – (6) illustrate the use of valence-increasing suffixes.

(3) ɔ́-bɔ́kɔ̀ ɔ̀ nʌ́kàθ-ʌ̀ ɔ́-wòs kɔ́ŋ ɛ́-bánà
DEF-woman 3SG.AGR fry-BEN DEF-husband POSS DEF- banana
'The woman fries the bananas for her husband.'

(4) ɔ́-bɔ́kɔ̀ ɔ̀ nʌ́kàθ-ʌ́nɛ̀ ɛ́-bánà mʌ́rò mə̀-yĭm
DEF-woman 3SG.AGR fry-INSTR DEF-banana oil CL-red
'The woman fries the bananas with red palm oil.'

(5) ɔ́-lángbà ɔ̀ yĭrə̀-r ʌ́-rùmà
DEF-man 3SG AGR sit-LOC DEF-shirt
'The man sits on the shirt.'

(6) ɔ́-θèm ɔ̀ fĭθà-r ɔ́-bɔ́kɔ̀ ʌ́ŋ-sápɔ̀
DEF-old man 3SG.AGR throw-DIR DEF-woman DEF-key
'The old man throws the key at the woman.'

Typically, a given root combining with -r is either always directional or locative. Thus, it is natural to say that the root imposes a directional or locative reading on -r. Accordingly, -r is a simple morpheme and it is itself neutral with regard to the directional versus locative opposition.

There are also suffixes that reduce the number of arguments of the verb. These include the reflexive, realized as -nɛ̀ and the reciprocal, which is marked as -ʌ́nɛ̀. Examples of the use of the reflexive and reciprocal suffix are illustrated in (7) and (8) respectively.

(7) Màrɛ́ŋ ɔ̀ shél-nɛ̀
Marie 3SG.AGR laugh-REFL
'Marie laughs at herself.'

(8) ʌ́ŋ-tə̀n yĭ kʌ́-yèk áŋ kʌ́lĭy-ʌ́nɛ̀[2]
DEF-dog and DEF-monkey 3PL.AGR look-RECIP
'The dog and the monkey are looking at each other.'

Some suffixes do not affect valence. They include the iterative, reversive, and the negative suffix. The reversive and negative suffixes are marked as -ĭ and -ɛ̀ respectively. Examples (9) and (10) illustrate the reversive and negative suffixes in structure.

ITER-iterative; LOC-locative; NEG-negative marker; POSS-possessive; RECIP-reciprocal; REFL-reflexive; REV-reversive.

[2] The palatal -y- is often inserted between two vowels to avoid a VV sequence. Similarly, the vowel -ə- is also often inserted between consonants to avoid a consonant cluster.

(9) ɔ́-wàθ ɔ̀ súnt-ɨ̌ ʌ́ŋ-bíθrʌ̀
DEF-child 3SG.AGR cork-REV DEF-bottle
'The child uncorks the bottle.'

(10) ɔ̀-drɛ́bà ɔ̀ wáy-ɛ̀ ɛ́-θɔ̀k
DEF-driver 3SG.AGR buy-NEG DEF-wood
'The driver did not buy the wood.'

The iterative suffix is marked as -s or -θ. The distribution of the two is idiosyncratic and lexically determined by the radical, though iterative -s is more productive than iterative -θ. Examples (11a) and (11b) illustrate the iterative suffixes.

(11) a. ɔ̀ tɔ́rɨ̌-s áŋ -ʧɨ̀k ʌ́-ròŋ
3SG show-ITER DEF-stranger DEF-road
'He repeatedly showed the strangers the road.'

b. ɔ́-bɔ́kɔ̀ ɔ̀ sáp-əθ ʌ́-mʌ̌nt
DEF-woman 3SG.AGR bail-ITER DEF-water
'The woman bails the water repeatedly.'

Up to five suffixes can occur as extensions on the same verb. The examples below illustrate extensions with three, four and five suffixes.

(12) ɔ́-bɔ́kɔ̀ ɔ̀ wáy-ʌ̀-nɛ̀-yɛ̀ ɛ́-lòp
DEF-woman 3SG.AGR buy-BEN-REFL-NEG DEF-fish
'The woman did not buy the fish for herself.'

(13) áŋ-fɛ̀θ áŋ lɔ́m-ɔ̀s-ɔ̀r-ʌ́nɛ̀-yɛ̀ mʌ́-sàr
DEF-child 3PL.AGR throw-ITER-DIR-RECIP-NEG DEF-stones
'The children did not repeatedly throw the stones at each other.'

(14) ɔ́-wàθ ɔ̀ kóθ-ɪ́-r-ʌ̀-nɛ̀-yɛ̀ ʌ́ŋ-gbàsà
DEF-child 3SG.AGR tie-REV-DIR-BEN-REFL-NEG DEF-head-tie
'The child did not untie the head-tie for himself/herself.'

2.1. Constraints on suffix ordering

Although up to five suffixes can occur as extensions in the same verb stem, there are restrictions on the order in which suffixes combine. Table 1 summarizes the restrictions on the combinations of pairs of suffixes. The second column shows all the suffixes that can occupy the first slot in the verb extension and the top row shows the suffixes that occupy the second slot. The blank cells show that the order of suffixes is grammatical, while the stars in the cells show that the order of suffixes is ungrammatical.

Table 1. Temne verb extensions and their combinations

		-i	**-s**	**-s**	**-r**	**-ʌ**	**-ʌnɛ**	**-ʌnɛ**	**-nɛ**	**-ɛ**
REV	**-i**	*	*	*						
CAUS	**-s**	*	*	*	*	*				
ITER	**-s**	*	*	*						
DIR/LOC	**-r**	*	*	*	*					
BEN	**-ʌ**	*	*	*	*	*				
RECIP	**-ʌnɛ**	*	*	*	*	*	*	*	*	
INSTR	**-ʌnɛ**	*	*	*	*	*	*	*	*	
REFL	**-nɛ**	*	*	*	*	*	*	*	*	
NEG	**-ɛ**	*	*	*	*	*	*	*	*	*

As Table 1 illustrates, the possibility for two suffixes to co-occur is determined by the order in which they appear after the verb root. For example, the order of suffixes CAUS-RECIP is grammatical, but *RECIP-CAUS is not. Similarly, CAUS-INSTR is possible, but *INSTR-CAUS is not. Table 1 also shows that the same suffix cannot occur more than once in the verb stem. In other words, combinations such as *CAUS-CAUS, *DIR-DIR, *REV-REV, *INSTR-INSTR are all ruled out. This therefore suggests the existence of a template in Temne that determines the order in which suffixes can occur in the verb stem. Figure 1 is a revised version of the template cited in Kanu (2004:22).

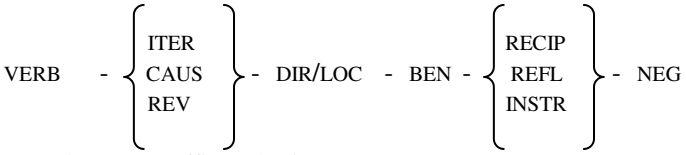

Figure 1. Suffix order in Temne

Figure 1 shows that CAUS, ITER and REV appear closer to the verb, while NEG appears last. DIR/LOC as well as BEN follows ITER/CAUS/REV. The suffixes RECIP/REFL/INSTR follow BEN. The order of suffixes is fixed. Thus, given a complex verb like *gbal-əs-ər-ʌ-nɛ-yɛ*, the linear position of suffixes is VERB-ITER-DIR-BEN-REFL-NEG. The order of suffixes that Figure 1 illustrates is similar to the Pan-Bantu default template C-A-R-P (Hyman, 2003) in that in both templates CAUS occurs closer to the verb, followed by an applicative and then the reciprocal/reflexive. The reversive is lexicalized. It is therefore natural that it occurs after the verb root. On the other hand, NEG is unambiguously inflectional. It follows therefore that it comes last in the verb extension following the view that inflectional suffixes follow derivational suffixes (Bybee, 1985).

In either order, some suffixes never co-occur. Among the non-co-occurring suffix pairs are CAUS and BEN, illustrated in (15) and (16).

(15) *ɔ́-yà ɔ̀ gbál-ə̀s-ʌ̀ ɔ́-wàθ ɔ́-θèm ʌ̀-rékà
DEF-woman 3SG.AGR write-CAUS-BEN DEF-child DEF-man INDEF-letter
Intended meaning: 'The woman made the child write a letter for the man.'

(16) *ɔ́-yà ɔ̀ gbál-ʌ̀-s ɔ́-wàθ ɔ́-θèm ʌ́-rékà
DEF-woman 3SG.AGR write-BEN-CAUS DEF-child DEF-man DEF-man
Intended meaning: 'The woman made the child write a letter for the man.'

The ungrammaticality of (16) follows from the template, which rules out the appearance of a benefactive before a causative suffix. However, this explanation cannot account for the ungrammaticality of (15) since the order of suffixes in (15) mirrors the order of suffixes in the template. The arguments of the benefactive and causative compete for the direct object position i.e. the

position immediately after the verb.[3] The direct object position is the only position that is accessible to both the benefactive and causative arguments. The demotion of the benefactive argument to the indirect object position renders example (15) ungrammatical. This explanation can be extended to the combination of CAUS-DIR. Consider the following examples.

(17) ɔ́-wàθ ɔ̀ lə́m ʌ́ŋ-sàr
DEF-child 3SG.AGR throw DEF-stone
'The child throws the stone.'

(18) ɔ́-wàθ ɔ̀ lə́m-ər ɔ́-θèm ʌ́ŋ-sàr
DEF-child 3SG.AGR throw-DIR DEF-man DEF-stone
'The child throws the stone at the man.'

(19) *ɔ́-wàθ ɔ̀ lə́m-əs-ər ɔ́-yà ɔ́-θèm ʌ́ŋ-sàr
DEF-child 3SG-AGR throw-CAUS-DIR DEF-woman DEF-man DEF-stone
Intended meaning: 'The child made the woman throw the stone at the man.'

(20) *ɔ́-wàθ ɔ̀ lə́m-ər-əs ɔ́-yà ɔ́-θèm ʌ́ŋ-sàr
DEF-child 3SG-AGR throw-DIR-CAUS DEF-woman DEF-man DEF-stone
Intended meaning: 'The child made the woman throw the stone at the man.'

In (17) the object *ʌŋsar* 'the stone' occupies the direct object position. In (18), the argument of the directional substitutes it in the direct object position. Thus, given a structure with at least two arguments, the directional argument occupies the direct object position. As we saw earlier, the direct object position is the only position accessible to the CAUSEE. The CAUSEE and the argument of the directional suffix therefore compete for the direct object position, hence the ungrammaticality of (19). In example (20), the directional suffix precedes the causative suffix. The template does not allow this order of suffixes, hence the ungrammaticality of (20). The analyses so far suggest that the template in Temne is not arbitrary, but motivated by other factors.

The ill-formedness of (19) and (20) raises the question why it is possible to combine DIR-BEN, as (21) below indicates, even though their arguments also compete for the direct object position.

(21) ɔ́-wàθ ɔ̀ lə́m-ər-ʌ̀ ɔ́-θèm ʌ́ŋ-yòkà
DEF-child 3SG.AGR throw-DIR-BEN DEF-old man DEF-cassava
'The child throws the cassava at (for) the man.'

In (21), the argument of the directional *ɔθem* 'the old man' is also the benefactive argument. In other words, the child threw the cassava in the direction of the old man. The old man is also the beneficiary of the throwing event. Thus, structures like (21) are grammatical because the benefactive and directional arguments surface as a single argument that occupies the same position in the sentence. In addition, unlike (20) which violates the order of suffixes *DIR-CAUS as stipulated by the template, (21) fully obeys it. Hence, the sequence DIR-BEN correlates with the linear order of suffixes in the template. The grammaticality of (21) therefore follows directly.

Further evidence for the explanation above comes from the combination of the directional and the instrumental suffix in (22).

(22) ǐ gbál-ər-ʌ́nɛ̀ Mèrɛ́ŋ ʌ́ŋ-rékà kə̀-θʌ́nkɛ̀ kə̀-yǐm
1SG write-DIR-INSTR Mary DEF-letter INDEF-pen CL-red
'I am writing the letter to Mary with a red pen.'

[3] In Temne, there is no case marking. Word order determines grammatical relations. In a ditransitive clause, the direct object occurs immediately after the verb. The indirect object follows the direct object. The oblique, in turn, follows the indirect object.

Unlike CAUS, BEN, and DIR/LOC, which introduce a new direct object that can only occupy the position immediately after the verb, the instrumental suffix introduces an oblique object that obligatorily occupies the position to the extreme right of the verb. There is no competition for the position of the oblique object. The argument of the instrumental is therefore different from that of the benefactive, locative/directional and causative, which must compete for the direct object position. Accordingly, an instrumental can be added to a verb that already supports a direct and indirect object.

3. Co-occurrence of suffixes

3.1. Co-occurrence of BEN à *and RECIP* áǹ

When the benefactive co-occurs with the reciprocal, the underlying combination is à-áǹ. However, the surface combination is -ǎnè, resulting from the tonal fusion of benefactive -à and the á part of the reciprocal -áǹ. In other words, the semantics of the benefactive is embedded in the morpheme ǎnè. This is borne out by the fact that (23) has both a benefactive and a reciprocal reading, while (24) has only a reciprocal reading.

(23) áŋ-fɛ̀θ áŋ ʧím-ǎnè
DEF-child 3PL.AGR fight-BEN-RECIP
'The children fought for each other.'

(24) áŋ-fɛ̀θ áŋ ʧím-áǹè
DEF-child 3PL.AGR fight-RECIP
'The children fought each other.'

Examples (23) and (24) suggest that a reciprocal reading can be derived from the surface realization of the morphemes ǎnè and áǹè. However, the form ǎnè also has a benefactive reading.

3.2. Co-occurrence of BEN -à and *INSTR*-áǹè

The analysis for the co-occurrence of benefactive -à and reciprocal -áǹè is parallel to that of benefactive -à and instrumental -áǹè. As Figure 1 illustrates, benefactive -à and instrumental -áǹè are compatible. When BEN and INSTR co-occur, the underlying representation is -à + áǹè. However, the surface representation is always -ǎnè, which results from the tonal fusion of the benefactive -à and the -á part of the instrumental -áǹè. As (25) indicates, the surface form -ǎnè has a benefactive and an instrumental reading.

(25) ɔ́-kàrmɔ̀kɔ́ ɔ̀ gbál- ǎnè Mèréŋ áŋ-rékà kə̀-θánkè kə̀-yĭm.
DEF-teacher 3SG.AGR write-BEN-INSTR Mary DEF-letter INDEF-pen CL-red
'The teacher wrote the letter for Mary with a red pen.'

The linear order of BEN-INSTR in the template seems to have a morphosyntactic basis. Recall that the benefactive argument occupies the direct object position. On the other hand, the instrumental argument occupies the oblique position. Given this, the benefactive and instrumental can co-occur since their arguments do not have to compete for a single structural position.

4. The complementarity of suffixes

In section 2, we saw that the suffixes CAUS, ITER and REV are mutually exclusive. This is also the case with the suffixes INSTR, RECIP and REFL. In this section, I present accounts for the complementarity of these sets of suffixes.

4.1. Complementarity of ITER, CAUS and REV

Earlier, we saw that the iterative and causative are realized as -s and the reversive is marked as -ĭ. A possible reason for the complementarity of the causative -s and the iterative -s is that they are phonologically identical. However, this line of reasoning is belied by the fact that REV -ĭ is also mutually exclusive with CAUS and ITER even though it is not phonologically identical with the two. If the complementarity of CAUS and ITER is determined by phonological identity of morphemes, we would not expect the reversive to be mutually exclusive with ITER and CAUS, but as Figure 1 shows, this is not the case.

Furthermore, we saw earlier that the allomorph -θ also has iterative reading. Similarly, we saw that in addition to causative -s, there is causative -ʌ. Examples (26) and (27) illustrate the use of the iterative -θ and causative -ʌ respectively.

(26) a. ɔ́-bɔ́kɔ̀ ɔ̀ ʃék é-lòp
DEF-woman 3SG.AGR tie DEF-fish
'The woman ties the fish.'

b. ɔ́-bɔ́kɔ̀ ɔ̀ ʃék-əθ é-lòp
DEF-woman 3SG.AGR tie-ITER DEF-fish
'The woman ties the fish repeatedly.'

(27) a. ɔ́-wàθ ɔ̀ θə́kəs kʌ́-ləm
DEF-child 3SG.AGR learn GER-fishing
'The child learns fishing.'

b. ɔ́-lángbà ɔ̀ θə́kəs-ʌ̀ ɔ́-wàθ kʌ́-ləm
DEF-man 3SG.AGR learn-CAUS DEF-child DEF-fishing
'The man made the child learn fishing.'

In spite of the phonological difference between the iterative allomorph -θ and the causative allomorph -ʌ, the two suffixes do not co-occur. Hence, structures such as (28) are all ill-formed.

(28) a. Verb-CAUS-ITER
*verb-s-(ə)θ
*verb-ʌ-(ə)s

b. Verb-ITER-CAUS
*verb-θ-(ə)s

c. Root-CAUS-ITER
*verb-s-(ə)θ
*verb-ʌ-(ə)s

d. Root-ITER-CAUS
*verb-s-(ə)s

If the complementarity of CAUS and ITER is based on phonological identity of suffixes, we will not expect CAUS and ITER to be mutually exclusive since they are also realized by phonologically different morphemes. However, this is not the case. The failure of CAUS, ITER and REV to co-occur follows from the template, which requires the three suffixes to compete for the position immediately after the verb root.

4.2. Complementarity of RECIP -ʌ́nɛ̀ and INSTR -ʌ́nɛ̀

The complementary of RECIP and INSTR is determined by the morphotactics made available to us by the fact that RECIP -ʌ́nɛ̀ and INSTR -ʌ́nɛ̀ occupy the same position in the template. However, as stated earlier, the Temne template is not completely arbitrary. Regarding RECIP and INSTR, we might assume that the morpheme -ʌ́nɛ̀ is neutral with regard to a reciprocal and an instrumental reading. In an intransitive sentence, the suffix receives a reciprocal reading, whereas in a transitive or ditransitive

sentence, it receives an instrumental reading. The complementarity of the two therefore follows from the view that a given sentence is intransitive, transitive or ditransitive. It is never transitive and intransitive.

4.3. Complementarity of REFL and RECIP

We saw in section 2 that reflexive-nɛ̀ and reciprocal -ʌ́nɛ̀ are mutually exclusive. The failure of REFL and RECIP to co-occur follows from the template, which prohibits the co-occurrence of RECIP, REFL and INSTR. However, the inability of REFL and RECIP to co-occur is not entirely arbitrary. The reflexive morpheme -nɛ̀ is multi-functional, capable of yielding both a reflexive and a reciprocal reading. However, as (29) illustrates, the reflexive -nɛ̀ is able to yield a reciprocal reading only when it co-occurs with the benefacive -ʌ̀.

(29) áŋ-fɛ̂θ áŋ ʧ͡ʃ̂im-ʌ̀-nɛ̀
DEF-child 3PL.AGR fight-BEN-REFL
a. 'The children fought for themselves.'
b. 'The children fought for each other.'

Thus, as Heim et al. (1991:67) point out, "reciprocal expressions have no semantic properties peculiarly their own and that their meaning instead arises from the compositional interactions of the meaning that their constituent parts have in isolation". This phenomenon is attested in many Atlantic languages, hence Becher and Drolc (2007:8) state: "In many Atlantic languages the reciprocal is not an independent category but a combination of several suffixes and the reciprocal meaning is deducible from the added meanings of the various suffixes". Using a reflexive to obtain a reciprocal reading is not in fact surprising. For example, the reflexive morpheme is commonly used as a reciprocal in German, Spanish, French and some Slavic languages.

5. Semantic Scope

Bybee (1985) argues that affix order is defined by the Relevance Hierarchy, which states that the more semantically relevant a morpheme is to the verb, the closer it is to the verb. This position has been taken by Rice (2000) who argues that morpheme order is largely a consequence of universal principles of semantic scope. In this section, I present evidence showing that semantic scope cannot fully account for the order of suffixes in Temne. The first piece of evidence comes from the combination of the causative and reciprocal in (30) and (31) below.

(30) ʌ́ŋ-tən yĭ kʌ́-yèk áŋ ŋáŋ-s-ʌ́nɛ̀ kʌ́-wòθò
DEF-dog and DEF-monkey 3PL.AGR bite-CAUS-RECIP DEF-baboon
'The dog and the monkey caused each other to bite the baboon.'

(31) ʌ́ŋ-tən ɔ̀ ŋés-ɔs-ʌ́nɛ̀ kʌ́-yèk yĭ kʌ́-wòθò
DEF-dog 3SG.AGR fear-CAUS-RECIP DEF-monkey and DEF-baboon
'The dog caused the monkey and the baboon to fear each other.'

The combination of the reciprocal and causative yields only the suffix order CAUS-RECIP. If the order of suffixes mirrors semantic scope, both (30) and (31) are bound to yield only a reciprocalized-causative reading. While this reading is borne out in (30), an opposite reading, i.e. causativized-reciprocal reading, is realized in (31). The reading in (31) is expected only when RECIP precedes CAUS. As we saw earlier, the template does not allow an opposite order of morphemes in the language. The obvious conclusion from this is that suffix order does not always correlate with semantic scope in Temne.

Further evidence against semantic scope comes from the combination of the causative and instrumental, as (32) illustrates.

(32) ɔ́-yà ɔ̀ dî-s-ʌ́nɛ̀ ɔ́-wàθ ʌ́ŋ-nák kà-shéθɛ̀
DEF-woman 3SG.AGR eat-CAUS-INSTR DEF-child DEF-rice DEF-whip
a. 'The woman used a whip to make the child eat the rice.'
b. 'The woman made the child use the whip (like a spoon) to eat the rice.'

Example (32) has both the applicativized-causative (32a) and a causativised-applicative reading (32b). Thus, in (32a) the surface order of the suffixes mirrors semantic scope since the applicative instrument acts on the higher verb, CAUSE. In contrast, in (32b) the surface order of suffixes does not correlate with semantic scope, since the applicative instrument acts on the lower verb, *dî* 'eat'. This implies therefore that the order of CAUS-INSTR does not always correspond to semantic scope. As I pointed out earlier, the order of suffixes is largely stipulated by morphotactic constraints.

Further evidence supporting the claim that the order of suffixes in Temne is morphotactically conditioned comes from a comparison of suffix order in Temne and the Atlantic language, Bijogo. Consider Figure 2 below.

RES/MIDDLE	INSTR	REC/ASSOC/BEN	CAUS,VENTIVE, ITIVE
-ak	-at	-an-	-i
			-a
-ɔk			-am

(*-at-i not attested)

Figure 2: Suffix order in Bijogo, from Segerer (2002) cited in Hyman (2007:159)

As Figure 2 illustrates, in Bijogo, unlike Temne, CAUS appears late. It is preceded by the reciprocal or benefactive whereas in Temne, both the reciprocal and benefactive follow CAUS. Similarly, the instrumental in Bijogo occurs closer to the verb than CAUS, whereas in Temne the instrumental follows CAUS in the verb extension. The difference in the ordering of these similar extensions in the two languages suggests that the ordering in Temne is morphotactically determined.

The scopal ambiguity that is derived when CAUS-INSTR are combined provides evidence against the mirror principle which will otherwise require the fixed order of CAUS-INSTR to yield only a causativized-applicative reading. In addition, the scopal ambiguity that CAUS-INSTR manifest provides further evidence that the order of suffixes is fixed. If the order of suffixes was variable, we will not expect both the causativized-applicative reading and the applicativized-causative reading to emerge when CAUS precedes INSTR. The fact that the order CAUS-APPL, stipulated by the template, is robustly attested across languages also supports the claim that the order of suffixes in Temne is fixed.

6. Conclusion

In this paper, I have presented an analysis of suffix ordering in Temne. The results of the study show that neither phonology nor semantic scope can fully account for the order of suffixes in the language. Alternatively, I have showed that the template largely determines the way in which suffixes are ordered in the language. Regarding semantic scope, we saw instances in which certain combinations of suffixes yield a reading that does not mirror semantic scope. A case in point is the combination of CAUS-RECIP, which yields both the reciprocalized-causative reading and the causativized-reciprocal reading. There is also the combination of CAUS-INSTR, which yields both the applicativized-causative reading and the causativized-applicative reading. These examples suggest that suffix ordering does not obligatorily correspond to semantic scope.

When two or more suffixes are combined, the suffixes occur in a linear sequence as stipulated by the template. The template does not allow a repetition of the same suffix or the opposite order of suffixes. The order of suffixes is fixed and up to five suffixes can co-occur in the verb extension. Some of the restrictions on the combination of suffixes have functional basis, implying that the template is

not entirely arbitrary. The results of this paper, therefore, add to the growing body of evidence that in some languages the order of affixes is determined morphotacally.

References

Baker, Mark (1985). The mirror principle and morphosyntactic explanations. *Linguistic Inquiry* 16, 373 – 415.

Becher, Jutta and Drolc, Uschi (2007). Verbal extension in Atlantic: Overview and discussion. Presentation at the International Workshop on Atlantic Languages, February 17 – 18, 2007, University of Hamburg.

Becher, Jutta (2000). Verbalextensionen in den Atlantischen Sprachen. *Hamburger Afrikanistische Arbeitspapiere* 1, 1 – 36.

Bybee, Joan (1985). *Morphology: A study of the relation between meaning and form.* Amsterdam: John Benjamins Publishing Company.

Heim, Irene, Lasnik, Howard, and May, Robert (1991). Reciprocity and plurality. *Linguistic Inquiry* 22, 63 – 101.

Hyman, Larry (2003). Suffix ordering in Bantu: A morphocentric approach. In G. Booij and J. van Marie (Eds.) *Yearbook of Morphology*, pp. 245 – 281. Dordrecht: Kluwer.

Hyman, Larry (2007). Niger-Congo verb extensions: overview and discussion. In Doris L. Payne and Jaime Peña (Eds.) *The Selected Proceedings of the 37th Annual Conference on African Linguistics*, pp. 149 – 163. Somerville, Ma.: Cascadilla Proceedings Project. www.lingref.com, document #1603.

Kanu, Sullay Mohamed (2004). *Verbal morphology of Temne*. MA Thesis, University of Tromsø.

McCarthy, John and Prince, Alan (1993). Generalized alignment. Ms., UMass and Rutgers.

Rice, Keren (2000). *Morpheme order and semantic scope.* Cambridge: Cambridge University Press.

Wilson, William Andrea (1961). *An outline of the Temne language*. London: School of Oriental and African Studies.

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