Grammatical Relations in Temne

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Abstract
In this paper, I address the question of how grammatical relation (a term used here in the sense of Bickel (2011) to refer to the morphosyntactic properties that relate an argument to a clause, as example, its subject or its object) is defined in Temne. I show that syntactic processes, such as focalization and relativization do not distinguish arguments in Temne. Also, case marking and subject-verb agreement, which are often used to define grammatical relations, are not attested in Temne. In addition, thematic hierarchy does not pose an absolute constraint on the mapping and realization of post-verbal arguments in a clause in the language. Using data drawn from Temne spoken discourse, I show that word order defines grammatical relations in Temne. Moreover, building on Kanu (2012), I demonstrate that the order and realization of post-verbal arguments is determined by the participant hierarchy, precedence hierarchy, and prominence hierarchy.

Keywords: Grammatical Relations, Temne, Atlantic languages

Introduction

Syntactic processes such as focalization and relativization do not distinguish arguments in a construction in Temne. Case marking and subject-verb agreement, which are often used to define grammatical relations are not attested in Temne. Also, thematic hierarchy does not pose an absolute constraint on the mapping and realization of post-verbal arguments in a clause in the language. This typological configuration raises the question of how grammatical relations are defined in Temne. Using data drawn from Temne spoken discourse representing contemporary use of the language, I show that word order defines grammatical relations in Temne. In addition, building on Kanu (2012), I demonstrate that the order of post-verbal arguments is determined by the participant hierarchy, precedence hierarchy, and prominence hierarchy.

Focalization

In Temne, any argument, whether it is expressed as a nominal or as an object marker, can be focused. A focused item is moved to the front of the sentence, and followed by an emphatic pronoun. The emphatic pronoun agrees in number and animacy with the focused argument. The rest of the sentence then follows. The following examples illustrate focalization in Temne.

1. ɔ-them   ɔ   yer   ɔ-wath   ʌŋ-bana[1]
   NC1:DEF-old man   NC1.SUBJ:DEF give NC1:DEF-child NC3:DEF-banana
   'The old man gives/is giving/gave the banana to the child.'
2. ɔ-them   kɔnɔ   yer   ɔ-wath   ʌŋ-bana
   NC1:DEF-old man   3SG:ANI:EMPH give NC1:DEF-child NC3:DEF-banana
   'It was the old man that gave the banana to the child.'
3. ɔ-wath   kɔnɔ   ɔ-them   ɔ
   NC1:DEF-child   3SG:ANI:EMPH   NC1:DEF-oldman NC1.SUBJ:DEF
         yer   ʌŋ-bana
         give   NC3:DEF-banana
   'It was the child that the old man gave the banana.'
4. ʌŋ-bana   ŋʌ   ɔ-them   ɔ
   NC3:DEF-banana   3SG:INANM:EMPH NC1:DEF-old   man
   NC1.SUBJ:DEF
         yer   ɔ-wath
         give   NC2:DEF-child
   'It was the banana that the old man gave to the child.'

Example (1) is the basic sentence; it bears three arguments: the subject, *ɔthem* 'the old man', and the objects, *ɔwath* 'the child' and *ʌŋbana* 'the banana', of the ditransitive

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[1] 1. first person; 2. second person; 3. third person; A. causer argument; AGT. agent; ANIM. animate; BEN. benefactive suffix; CAUS. causative suffix; COM. comitative; DEF. definite article; GR. grammatical relations; EMPH. emphatic pronoun; I. applied object of the instrumental suffix; INANIM. inanimate; INDEF. indefinite article; INST. instrumental suffix; L. applied object of the locative suffix; LOC. locative suffix; NC. noun class; PO. primary object; QO. quaternary object; R. object of a ditransitive verb; REF. reflexive suffix; REL. relative pronoun; SG. singular; SO. secondary object; SUBJ. subject; TO. tertiary object; W. applied object of the benefactive suffix; Y. object of a transitive verb; X. subject of a basic sentence.

verb. In (2) the subject, *ɔthem* 'the old man' is focused, hence it is fronted and is immediately followed by the third person singular animate emphatic pronoun, *kɔnɔ*. In (3), it is the object, *ɔwath* 'the child' immediately after the verb that is focused, hence it is brought to the front of the sentence, and followed by the emphatic pronoun, *kɔnɔ*. In (4), the focused argument is *ʌŋbana* 'the banana'. It is immediately followed by the third person inanimate emphatic pronoun *ŋʌ*. In all these examples, the structure of the focused construction is the same: focused argument + emphatic pronoun + the rest of the sentence. Also, these examples reveal that focalization neither targets any specific argument nor distinguishes the arguments in a construction. Therefore, focalization is not a strategy for assigning grammatical relations in Temne.

Relativization

Following Hutchinson (1969), relative clauses in Temne contain a relative pronoun which agrees in number and noun class with its antecedent, and occurs in clause initial position. Like focalization, the subject and the objects of a clause can be relativized, as the following examples illustrate.

5. ɔ-them   ɔwe   yer   ɔ-wath   ʌŋ-bana
   NC1:DEF-old man   NC1:ANI:REL give   NC1:DEF-child   NC3:DEF-banana
        ɔ   po   kɔnɛ
        NC1.SUBJ:DEF   PAST   go
   'The old man who gave the banana to the child has gone.'
6. ɔ-wath   ɔwe   ɔ-them   ɔ
   NC1:DEF-child   NC1:ANI:REL NC1:DEF-old man   NC1.SUBJ:DEF
        yer   ʌŋ-bana   ɔ   po   dinɛ
        give   NC3:DEF-banana   NC1.SUBJ:DEF   PAST   disappear
   'The child that the old man gave the banana has disappeared.'
7. ʌŋ-bana   ʌŋʌ   ɔ-them   ɔ
   NC3:DEF-banana NC3:INANM:REL   NC1:DEF-old man   NC1.SUBJ:DEF
        yer   *ɔ-wath*   *ʌŋ*   *po*   *dinɛ*
        give   NC1:DEF-child   3SG:INIM.SUBJ   PAST   disappear
   'The banana which the old man gave to the child has disappeared.'

In (5), it is the subject, *ɔthem* 'the old man' that is relativized. Hence, the relative pronoun, *ɔwe*, which agrees in number and animacy with the relativized argument, occurs immediately after it. In (6), it is the argument, *ɔwath* 'the child', immediately after the verb that is relativized, hence it is followed by the relative pronoun, *ɔwe*. In (7), the relativized argument is *ʌŋbana* 'the banana'. Since it is inanimate, it takes the inanimate relative pronoun *ʌŋʌ*, which also agrees in number with it. In all these examples, the structure of the relative clause is the same: relativized argument + relative pronoun + the rest of the sentence. Also, like focalization, relativization targets all the arguments in the clause, and does not distinguish the arguments in a construction in Temne. Therefore, it is not a strategy for assigning grammatical relations in Temne. In the following section, I will discuss the properties of subjects and primary objects in the language.

The subject and primary object in Temne

Although word order generally defines grammatical relations in Temne, the subject and the primary object have certain properties that distinguish each of them from other arguments in a construction. In this section, I discuss these properties.

Properties of the subject

The subject in Temne is characterized by certain syntactic and semantic properties. In a simple declarative sentence, the subject precedes the verb, and is the leftmost occurring argument in the clause. This follows from the view that Temne is a Subject-Verb-Object language. Also, nominal subjects are directly followed by a subject marker, and the subject agrees with the subject marker in number, definiteness, animacy and noun class. Semantically, the subject is generally assigned the semantic role of AGENT. The following examples illustrate these characteristics.

8. ɔ-wath   ɔ   shel
   NC1:DEF-child   NC1.SUBJ:DEF laugh
   'The child laughs/is laughing/laughed.'

9. ɔ-wath   ɔ   shel   ɔ-them
   NC1:DEF-child   NC1.SUBJ:DEF laugh NC1:DEF-old man
   'The child laughs/is laughing/laughed at the old man.'

10. ɔ-ya   ɔ   nut   ɔ-wath   ʌŋ-nak
    NC1:DEF-old woman NC1.SUBJ:DEF feed   NC1:DEF-child NC3-DEF-rice
    'The old woman feeds/is feeding/fed the rice to the child.'

In examples (8) and (9) above, the argument *ɔwath* 'the child' is the subject, and is also the agent of the action described by the verb, *shel* 'laugh'. In example (10), the subject of the verb *nut* 'feed' is the argument, *ɔya* 'old woman', and it is the agent of the feeding activity described by the verb, *nut* 'feed'. As the examples illustrate, the subject agrees with the subject marker *ɔ* in number (singular/plural), definiteness, animacy and noun class. In all these examples, the subject precedes the verb and is the leftmost argument in the clause.

In anaphoric constructions (reciprocal and reflexive constructions) like the reflexive construction in (11) below, the subject is the antecedent of the reflexive verb.

11. ɔ-wath[i]   ɔ   nut-nɛ[i]   k-ə-lop
    NC1:DEF-child   NC1.SUBJ:DEF feed-REF   NC2-INDEF-fish
    'The child feeds/is feeding/fed herself/himself a fish.'

In (11) above, the verb is *nutnɛ* 'feed-REF', and the subject is the argument *ɔwath* 'the child'. The subject is the antecedent of the reflexive verb, *nutnɛ* 'feed-REF'.

Furthermore, in a morphological causative construction, it is the subject of the basic verb that is demoted to the primary object, while the added argument becomes the subject of the causativized verb, as the examples in (12) illustrate.

12a. aŋ-fəm   aŋ   mun   m-ʌ-ber
      NC5:DEF-people   NC5.SUBJ:DEF drink   NC10-DEF-alcohol
      'The people drink/are drinking/drank alcohol.'
12b. ɔ-murthɛ   ɔ   mun-əs   aŋ-fəm   m-ʌ-ber
      NC1:DEF-rebel NC1.SUBJ:DEF drink-CAUS   NC5:DEF-people NC10-DEF-alchol
      'The rebel made the people drink alcohol.'

In (12a), the subject of the basic verb is *aŋfəm* 'the people', and the primary object is *mʌber* 'alcohol'. In the causative construction in (12b), a new argument, *ɔmurthɛ* 'the rebel', is added to the clause. This argument is the syntactic subject of the causativized verb, and it is frequently referred to in the literature as the "causer" argument (e.g., Kemmer, 1994; Dixon & Aikhenvald 2000; Shibatani & Pardeshi 2002.). As (12b) illustrates, combining the causative suffix *-s* with a verb has the syntactic effect of demoting the subject, *aŋfəm* 'the people', of the basic verb to the primary object.

Thus, the subject in Temne precedes the verb, and is the leftmost occurring argument in the clause. Nominal subjects are immediately followed by a subject marker, which agrees with the subject in number, animacy, definiteness and noun class. The subject is also normally assigned the semantic/participant role of AGENT. In addition, the subject is the antecedent of the reflexive or reciprocal verb. Also, in morphological causative constructions, it is the subject of the basic verb that is demoted to the primary object, while the added argument becomes the subject of the causativized verb. These characteristics are unique to subjects and distinguish them from post-verbal arguments in Temne.

Properties of the primary object
As mentioned earlier, Temne is a Subject-Verb-Object (SVO) language. Thus, in a simple declarative sentence, the objects of the verb occur in post-verbal position. Also, since word order defines grammatical relations in Temne, the argument immediately after the verb is the primary object, and it is followed by the secondary object. This is illustrated in the transitive and ditransitive sentences below.

13.   ɔ-wath   ɔ   di   k-ʌ-lop
      NC1:DEF-child   NC1.SUBJ:DEF eat   NC2:DEF-fish
      'The child eats/is eating/ate the fish.'
14.   ɔ-wath   ɔ   nut   ʌŋ-yari   k-ʌ-lop
      NC1:DEF-child   NC1.SUBJ:DEF feed   NC3:DEF-cat   NC2-DEF-fish
      'The child feeds/is feeding/fed the fish to the cat.'

In (13), the object of the transitive verb is *kʌlop* 'the fish', and it occurs after the verb, *di* 'eat'. In (14), the primary object is *ʌŋyari* 'the cat' and the secondary object is *kʌlop* 'the fish', and they occur after the verb, *nut* 'feed'.

As discussed in Kanu (2012, 2009, 2004), Temne has a complex system of valence-increasing morphology, including the causative *-s* and applicatives: locative/directional *-r*, benefactive *-ʌ* and instrumental *-ʌnɛ*. When these verb suffixes co-occur, up to three objects may be added to the clause, as the following examples illustrate.

15a   ɔ-langba   ɔ   fəshi   k-ʌ-bath
       NC1:DEF-man NC1.SUBJ:DEF cross   NC2-DEF-river
       'The man ferries/is ferrying/ferried across the river.'

15b. ɔ-langba   ɔ   fəshi-ʌ   mi   k-ʌ-bath
       NC1:DEF-man NC1.SUBJ:DEF cross-BEN   1SG:OBJ NC2:DEF-river
       'The man ferries/is ferrying/ferried me across the river.
       'The man ferries/is ferrying/ferried for me across the river.'

15c. ɔ-langba   ɔ   fəshi-ʌ   mi   ɔ-bɔkɔ
       NC1:DEF-man NC1.SUBJ:DEF cross-BEN   1SG:OBJ NC1:DEF-woman
           k-ʌ-bath
           NC2-DEF-river
       'The man ferries/is ferrying/ferried the woman across the river for me.

15d.   ɔ-langba   ɔ   fəshi-ʌ-ʌnɛ   mi   ɔ-bɔkɔ
       NC1:DEF-man NC1.SUBJ:DEF cross-BEN-INST 1SG:OBJ NC1:DEF-woman
           k-ʌ-bath   ʌ-bil   ʌ-kur
           NC2-DEF-river NC3-INDEF-boat   NC3-INDEF-old
       'The man ferries/is ferrying/ferried the woman across the river for me in
       (using) an old boat.'

In (15a), the primary object is *kʌbath* 'the river', and it appears immediately after the verb, *fəshi* 'cross/ferry'. In (15b), where the verb, *fəshi* 'cross/ferry' combines with the benefactive suffix -ʌ, the primary object is the first person singular object marker *mi* 'me', and the secondary object is the nominal, *kʌbath* 'river'. In (15c), a comitative participant, *ɔbɔkɔ* 'woman', is added to the clause, and it is the secondary object. The primary object is the first person singular object marker *mi* 'me', and the tertiary object is the nominal, *kʌbath* 'river'. In (15d) where the verb *fəshi* 'cross/ferry' is combined with the benefactive suffix and the instrumental suffix, the primary object is the first person singular object pronoun *mi* 'me', the secondary object is *ɔbɔkɔ* 'the woman', the tertiary object is *kʌbath* 'river' and the quaternary object is *ʌbil ʌkur* 'an old boat. In all these examples, the objects in a declarative sentence occur after the verb in Temne.

In addition to word order, the primary object is the only target of reflexivization, as the following examples indicate.

16a. ɔ-wath   ɔ   nut   ʌŋ-yari   k-ʌ-lop
       NC1:DEF-child   NC1.SUBJ:DEF feed   NC3:DEF-cat NC2:DEF-fish
       'The child feeds/is feeding/fed the fish to the cat.'

16b. ɔ-wath   ɔ   nut-nɛ   k-ʌ-lop
       NC1:DEF-child   NC1.SUBJ:DEF feed-REF   NC2:DEF-fish
       'The child feeds/is feeding/fed herself/himself the fish.'

In (16a), the primary object is *ʌŋyari* 'the cat' and the secondary object is *kʌlop* 'the fish'. When the reflexive suffix -*nɛ* is combined with the verb, *nut* 'feed', it is the primary object, *ʌŋyari* 'the cat', rather than the secondary object, *kʌlop* 'the fish' that is eliminated from the clause, as (16b) illustrates.

The primary object is the only target of reflexivization even when all the post-verbal arguments are expressed as object markers, as the examples in (17) illustrate.

17a. ɔ-wath   ɔ   nut   kɔ   ki
      NC1:DEF-child   NC1.SUBJ:DEF feed NC1:OBJ   NC2:OBJ
      'The child feeds/is feeding/fed it (the fish) to him/her (the cat).'
17b. ɔ-wath   ɔ   nut-nɛ   ki
      NC1:DEF-child   NC1.SUBJ:DEF feed-REF   NC2:OBJ
      'The child feeds/is feeding/fed it to herself/himself.'

In (17a), the primary object is expressed by the object marker *kɔ 'him/her'*, while the secondary object is expressed by the object marker *ki*. When the reflexive suffix *-nɛ* is combined with the verb, *nut* 'feed', it is the primary object, *kɔ 'him/her'* that is targeted. Thus, examples like (16) and (17) where the object that is closer to the verb is the only target of reflexivization provide evidence that Temne is an asymmetrical object type language in the sense of Bresnan and Moshi (1990). In what follows, I discuss thematic hierarchy in Temne and argue that it does not pose an absolute constraint on the mapping and realization of post-verbal arguments in the language.

Thematic hierarchy
The view that thematic hierarchy is a constraint on the mapping and realization of post-verbal arguments is well known in the literature (Jackendoff (1990), Grimshaw (1990), Dowty (1991). Mapping assigns unique grammatical relations to arguments in a clause, hence 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)

Jackendoff (1990), Grimshaw (1990), Dowty (1991), among others, have proposed that semantic roles map onto grammatical relations by means of a universal thematic hierarchy. For Bresnan & Zaenen (1990), this thematic hierarchy is: *Agent » beneficiary » experiencer/goal » instrument » patient/theme » locative.* Following Butt (2006), semantic roles map onto grammatical relations by means of "hierarchical linking", whereby the highest ranked participant role maps onto the highest ranked grammatical relation, and the lowest ranked participant role maps onto the lowest ranked grammatical relation in a construction.

As discussed in Kanu (2012), the thematic hierarchy, referred to here as the participant hierarchy, A » X » S » W » {L, C} » R » Y » I, governs the mapping of participant roles to grammatical relations in homogenous object constructions, as (18a) illustrates. In heterogeneous object constructions, where post-verbal arguments are a combination of nominals and object markers, thematic/participant hierarchy is not a constraint for the mapping of semantic roles to grammatical relations, as examples (18b) and (18c) indicate.

18a. ɔ-langba   ɔ   dif-ʌnɛ   ʌŋ-bok   ʌ-sar
    NC1:DEF-man NC1.SUBJ:DEF kill-INST   NC3:DEF-snake NC3:INDEF-stone
    'The man kills/is killing/killed the snake with a stone.'
18b. ɔ-langba   ɔ   dif-ʌnɛ   ŋi   ʌŋ-bok
    NC1:DEF-man NC1.SUBJ:DEF kill-INST   NC3:OBJ NC3:DEF-snake
    'The man kills/is killing/killed the snake with it (a stone).'
18c. ɔ-langba   ɔ   dif-ʌ-ʌnɛ   ŋi   ɔ-wath
    NC1:DEF-man NC1.SUBJ:DEF kill-BEN-INST NC3:OBJ NC1:DEF-child
        ʌŋ-bok
        NC3:DEF-snake
    'The man kills/is killing/killed the snake with it (a stone) for the child.'

In (18a) the order of participant is X » Y» I. This means that the participant X, which is the AGENT is the subject, the participant Y, which is the PATIENT is the primary object, while the participant I, (i.e. the INSTRUMENT) maps onto the secondary object. This participant hierarchy complies with the language specific thematic/participant hierarchy. However, in the heterogeneous object construction in (18b), the participant hierarchy is X » I » Y. In this case, the participant I (the INSTRUMENT) is the primary object and it outranks the participant Y, which is the PATIENT. This example contravenes the language specific participant hierarchy A » X » S » W » {L, C} » R » Y » I, which requires the participant Y to outrank the participant I. The mapping of participant roles to grammatical relations in example (18c) also violates the participant hierarchy in the sense that the INSTRUMENT (I), which is marked by the object marker *ŋi* maps onto the primary object, and it precedes the benefactive participant, *ɔwath* 'child', which maps onto the secondary object. This is in turn followed by the PATIENT, *ʌŋbok* 'snake', which maps onto the tertiary object. Thus, the participant hierarchy in this example is X » I » W » Y (i.e. AGENT » INSTRUMENT » BENEFACTIVE » PATIENT), which violates the thematic/participant hierarchy.

Equally, the order of participants in the above examples does not mirror Bresnan & Zaenen's (1990) Universal Thematic Hierarchy, which requires the PATIENT to precede the INSTRUMENT or the BENEFACTIVE to precede the INSTRUMENT. Thus, these examples provide evidence that thematic hierarchy does not pose an absolute constraint on the order of post-verbal arguments in Temne. The examples also indicate that there is no one-to-one mapping between semantic roles and grammatical relations in the language. Examples like (18) raise the question of what determines the mapping and realization of post-verbal arguments in a construction in Temne. This question is addressed in the following section.

The mapping and realization of post-verbal arguments
Following Kanu (2012), the mapping and realization of post-verbal arguments in Temne is determined by three interacting hierarchies: the participant hierarchy, the precedence hierarchy and the prominence hierarchy. In the following sub-sections, I will discuss each of these hierarchies.

The participant hierarchy
The participant hierarchy ranks event participants based on their participant roles. The arguments that express participant roles higher in the ranking precede arguments that express participant roles that are lower in the ranking. Thus, in a basic ditransitive construction, the arguments occur in the order of precedence X » R » Y. This means

that the participant role assigned to X, usually the AGENT, PATIENT or EXPERIENCER, is the highest ranked role, and it 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. The following examples illustrate the participant hierarchy in a ditransitive construction.

19a. ɔ-langba   ɔ   nut   k-ʌ-yek   ʌŋ-bana
       NC1:DEF-man NC1.SUBJ:DEF feed NC2-DEF-monkey NC3:DEF-banana
       'The man feeds/is feeding/fed the banana to the monkey.'
19b. ɔ-langba   ɔ   nut   kɔ   ŋi
       NC1:DEF-man NC1.SUBJ:DEF feed NC1:OBJ   NC3:OBJ
       'The man feeds/is feeding/fed it (the banana) to him/her (the monkey).'

Examples (19a) and (19b) 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. Ditransitive-based homogeneous object constructions like (19a) and (19b) 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).

The participant hierarchy is more complex in constructions with a derived verb. Consider the following examples.

20a. ɔ-langba   ɔ   dif-ʌnɛ ʌŋ-bok   ʌ-sar
       NC1:DEF-man NC1.SUBJ:DEF kill-INST NC3:DEF-snake NC3:INDEF-stone
       'The man kills/is killing/killed the snake with a stone.'
20b. ɔ-langba   ɔ   dif-ʌnɛ   kɔ   ŋi
       NC1:DEF-man NC1.SUBJ:DEF kill-INST   NC1:OBJ   NC3:OBJ
       'The man kills/is killing/killed it (the snake) with it (a stone).'
20c. ɔ-langba   ɔ   dif-ʌnɛ   mi   kɔ   ŋi
       NC1:DEF-man NC1.SUBJ:DEF kill-BEN-INST 1SG:OBJ   NC1:OBJ NC3:OBJ
       'The man kills/is killing/killed him/her for me with it.'

In (20a) and (20b), the participant hierarchy is X » Y » I. This means that the participant Y and its participant role (PATIENT) map on to the primary object, while the participant I and its participant role (INSTRUMENT) map on to the secondary object. In (20c), the participant hierarchy is X » W » Y » I, which means that the participant W and its participant role (BENEFICIARY/MALEFICIARY) map onto the primary object, the participant Y and its participant role (PATIENT) map on to the secondary object, while the participant I and its participant role (INSTRUMENT) map on to the tertiary object. As mentioned earlier, the participant hierarchy, A » X » S » W » {L, C} » R » Y » I, governs the mapping of participant roles to grammatical relations in homogenous object constructions in Temne.

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, in heterogeneous object constructions, post-verbal arguments as well as their corresponding participant roles shift from one grammatical relation to the other, depending on the verb. The following examples illustrate this phenomenon.

> 21a. ɔ-bɔkɔ   ɔ   thila-r-ʌ   mi
>   NC1:DEF-woman   NC1.SUBJ:DEF sell-DIR-BEN   1SG:OBJ
>   ɔ-them   ɛ-lop
>   NC1:DEF-old man   NC7:DEF-fish
>   'The woman sells/is selling/sold the fish to the old man for me.'
> 21b. ɔ-bɔkɔ   ɔ   thila-r-ʌ   mi
>   NC1:DEF-woman   NC1.SUBJ:DEF sell-DIR-BEN   1SG:OBJ
>   kɔ   ɛ-lop
>   NC1:OBJ   NC7:DEF-fish
>   'The woman sells/is selling/sold the fish to him (the old man) for me.'

In (21a), there are three post-verbal arguments. The arguments *ɔthem* 'old man' and *ɛlop* 'the fish' are expressed as nominals. Therefore, they follow the argument *mi* 'me' which is expressed as an object marker. In (21b), there are also three post-verbal arguments; two of these arguments *mi* 'me' and *kɔ* 'him/her' are expressed as object makers, while the argument *ɛlop* 'the fish' is expressed as a nominal. Thus, as in (21a) and following the precedence hierarchy, the objects that are expressed as object markers are closer to the verb than the object that is expressed by a nominal. Examples like (21b) raise the question of what determines the order of post-verbal arguments when two or more arguments are realized as object markers. This question is addressed in the next section.

The prominence hierarchy

The prominence hierarchy states that "post-verbal arguments that are expressed by object markers must occur in the order of precedence: 1/2 » 3ANIM » 3INANIM" *Kanu (2012:72)*. Thus, in a construction where either the first person or second person object marker co-occurs with the third person animate and third person inanimate object marker, the first or second person object marker must occur immediately after the verb, followed by the third person animate object marker, which is followed by the third person inanimate object marker. The following examples illustrate the prominence hierarchy.

> 22a. ɔ-bɔkɔ   ɔ   ləmə-r   kɔ   ŋi
>   NC1:DEF-woman   NC1.SUBJ:DEF throw-DIR   NC1:OBJ   NC3:OBJ
>   'The woman threw it at him/her.'
> 22b. *ɔ-bɔkɔ   ɔ   ləmə-r   ŋi   kɔ
>   NC1:DEF-woman   NC1.SUBJ:DEF throw-DIR   NC3:OBJ   NC:OBJ
>   Intended meaning: 'The woman threw him/her at it.'

In (22a), the third person object marker *kɔ* occurs immediately after the verb, and it is followed by the third person inanimate object marker *ŋi*. Thus, example (22a)

complies with the prominence hierarchy which requires the third person animate object marker to precede the third person inanimate object marker. Therefore, (22a) is well-formed. On the other hand, (22b) is blocked by the prominence hierarchy. In this case, the third person inanimate object marker, *ŋi* outranks the third person animate object marker, *kɔ*. Thus, whereas the prominence hierarchy allows the sentence 'the woman threw it at him/her', it disallows the sentence, 'the woman threw him/her at it'.

Furthermore, the prominence hierarchy blocks semantically plausible constructions where the first person object marker *mi* outranks the second person object marker *mu*, as indicated by the ungrammaticality of (23a).

23a. *ɔ-bɔkɔ ɔ ləmə-r mi mu
NC1:DEF-woman NC1.SUBJ:DEF throw-DIR 1SG:OB 2SG:OBJ
Intended meaning: 'The woman threw me at you.'

23b. ɔ-bɔkɔ ɔ ləm mi ro
NC1:DEF-woman NC1.SUBJ:DEF throw 1SG:OBJ to/in/at
mu ro
2SG:OBJ THERE
'The woman threw me at you.'

Example (23a) indicates that the sentence 'the woman threw me at you' is impossible with object markers. This is because this sentence requires the first and second person object markers to co-occur, which is forbidden by the prominence hierarchy. The intended meaning of (23a) is expressed by the periphrastic construction in (23b).

The ranking of object markers, as seen in the prominence hierarchy, suggests that animacy plays a crucial role in the order of post-verb arguments in a clause in Temne. As seen in the prominence hierarchy, the first and second person object markers, which mark humans, occur closer to the verb than the third person animate object marker which marks, among others, animate non-human arguments. Moreover, the third person inanimate object marker, which marks inanimate objects, occupies the rightmost position in the hierarchy. Thus, the prominence hierarchy mirrors the Animacy Hierarchy, which in Temne, as in other Atlantic languages, is: Human » Animate Non-human » Inanimate. The Animacy Hierarchy generally requires objects that are higher in the hierarchy to move closer to the verb than objects that are lower in the hierarchy. Thus, evidence from Temne subscribes to the view by Zeller (2011) that animacy plays a crucial role in determining the relative order of multiple objects in African languages. This view is closely connected with the observation by Kalinowski and Good (2014) that referential properties, such as animacy, are important for an understanding of the nature of grammatical relations.

Conclusion

In this paper, I showed that syntactic processes such as focalization and topicalization do not distinguish arguments in a clause. Grammatical relations, other than the subject, are generally determined by word order. In addition to word order, the subject in Temne can be easily identified. It precedes the verb, and is the leftmost occurring argument in a clause. Also, nominal subjects are directly followed by a subject marker, which agrees with the subject in number, animacy, definiteness and noun class. In reflexive constructions, it is the subject that controls the verb, and is co-indexed with it. In a causative construction, it is the subject that is the "causer" argument. These properties, which generally match with Keenan's (1976) properties of a subject across languages, distinguish subjects from other arguments in Temne.

On the other hand, the primary object, which occurs immediately after the verb, is distinct from other arguments in a clause in the sense that it is the only target of reflexivization. Also, in a causative construction, the primary object is the 'causee'. The remaining post-verbal arguments, namely secondary object, tertiary object and quaternary object, are distinguished by word order.

Concerning the constraints on the mapping and realization of post-verbal arguments, I argued that thematic hierarchy does not pose an absolute constraint. Alternatively, I showed that the order of post-verbal arguments is determined by three interacting hierarchies: the participant hierarchy, precedence hierarchy and prominence hierarchy. The participant hierarchy, A » X » S » W » {L, C} » R » Y » I, provides a ranked ordering of event participants based on their semantic roles, and it applies only to homogeneous object constructions (i.e. constructions where two or more post-verbal arguments are expressed as nominals).

The precedence hierarchy, OM » NOM, ranks objects expressed by object markers (OM) over those expressed by nominals (NOM), requiring that the former precedes the latter. The prominence hierarchy, on the other hand, requires post-verbal arguments that are expressed by object markers (OM) to occur in the order of precedence: 1/2 » 3ANIM » 3INANIM. Thus, as with the participant hierarchy and precedence hierarchy, post-verbal arguments as well as their corresponding participant roles shift from one grammatical relation to the other, depending on the verb. Therefore, there is no one-to-one mapping between grammatical relations and semantic roles. The argument immediately after the verb is always the primary object, followed by the secondary object, tertiary object and quaternary object. Thus, like other Atlantic languages, grammatical relations in Temne is generally marked by word order.

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