Definite and indefinite numeral phrases in Shupamem

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Abstract

Word-order variations within the noun phrase usually correspond to semantic or pragmatic contrasts. In this paper, I present new data from Shupamem, a Grassfields Bantu language, in which the relative order of elements in the noun phrase has been shown to be free (Nchare 2011). I will demonstrate, based on truth-value tests and distributional contrasts, that the orders Numeral > Noun vs. Noun > Numeral actually correspond to different interpretations of the corresponding noun phrases. Pre-nominal numerals give rise to indefinite interpretations, while post-nominal numerals are associated with a definite reading of the noun phrase in which they occur.

1 Introduction

In Shupamem (Grassfields Bantu), the relative word order between numeral and noun is flexible: a numeral can precede as well as follow the head noun. In this paper I present some of the distributional and interpretational differences between these two word-order configurations.

Based on semantic and syntactic evidence, I show that the noun phrases where the numeral precedes the noun (Num > N) have an indefinite interpretation. The opposite arrangement (N > Num) involves the presence of a null definite determiner, since it occurs in contexts where only definite phrases are felicitous.

According to WALS (Dryer 2008), in Sub-Saharan languages the dominant word order between numeral and noun is N > Num. Languages that allow both N > Num and Num > N, but that do not show a preference of one order over the other, are rare. There appears to be no dominant order between numeral and noun in only 55 of the 1002 languages registered. And in the 55 languages where both word orders are attested, it has not been proved whether each word order configuration corresponds to a difference in meaning. This paper aims to make a minimal contribution to filling in that gap. I present a description of Shupamem numeral noun phrases relative to the position of the numeral with respect to the head noun. By making explicit a methodology for testing indefinite and definite readings, I will show that the two different configurations N > Num and Num > N correlate with different truth and felicity conditions.2

1 Shupamem (also known as Bamun, ISO 639-3: bax) is a Grassfields Bantu language spoken in South Western Cameroon. The unmarked word order in the sentence is SVO; it has prepositions and no postpositions, but within the noun phrase several relative orders are possible: Dem > N and N > Dem; Noun > Adjective and Adjective > Noun (Nchare 2010 in SSWL).

2 Unless otherwise noted, all data presented in this paper come from my own research with two Shupamem
2 The data

In a simple counting context, the unmarked word order in Shupamem is one where the numeral precedes the noun:

\[(1)\]
\[
a. \text{ndì mòn} \quad \text{‘one child’} \\
b. \text{pè? pón} \quad \text{‘two children’} \\
c. \text{tè? pón} \quad \text{‘three children’} \\
d. \text{kpà pón} \quad \text{‘four children’} \\
e. \text{tèn pón} \quad \text{‘five children’} \\
f. \text{ntù: pón} \quad \text{‘six children’}
\]

The numeral can also be preceded by the noun, but this configuration brings about a perceptible change in meaning as well as in form. The word order N > Num triggers the obligatory presence of an agreement marker \(i\) or \(pi\): ³

\[(2)\]
\[
a. \text{mòn í mò} \quad \text{‘one child’} \\
b. \text{pón pí pà} \quad \text{‘two children’} \\
c. \text{pón pí tè} \quad \text{‘three children’} \\
d. \text{pón pí kpà} \quad \text{‘four children’}
\]

If we compare the first three examples in (1) and (2), we notice that the form of the numeral changes from the Num > N to the N > Num configuration. The N > Num form of the numeral word is similar to the ‘list’ form, the one used in the enumeration of a sequence of numbers, as shown in (3). Numerals from ‘four’ on preserve the same form whether they occur before or after the noun:

\[(3)\]
\[
a. \text{mò?} \quad \text{‘one’} \\
b. \text{mbà} \quad \text{‘two’} \\
c. \text{tè} \quad \text{‘three’} \\
d. \text{kpà} \quad \text{‘four’} \\
e. \text{tèn} \quad \text{‘five’}
\]

I will leave the explanation of this morpho-phonological alternation for further research. For the time being, I will only focus on the semantic differences between the configurations Num > N and N > Num.

³As Marc Mafei (p.c) pointed out, this marker only varies in number with the head noun: \(i\) for singular, \(pi\) for plural. Although Shupamem has noun classes, agreement with noun class is not relevant for numerals. The relevant contrasts are not shown here, but can be found in Nchare 2011.
3 Distributional contrasts

3.1 Measure phrases

Only the Num > N word order is grammatical in measure phrases, like the ones shown below:

(4) a. mó nà n-zèt tèn kílu
   child IMPFVE PPLE-weigh five kilogram
   ‘The child weighs five kilograms.’

   b. * mó nà n-zèt kílu pí tèn
      child IMPFVE PPLE-weigh kilogram AGR five
      INTENDED: ‘The child weighs five kilograms.’

   (5) a. léwà pà tèn ndólà
        book be five dollar
        ‘The book costs five dollars.’

   b. * léwà pà ndólà pí tèn
      book be dollar AGR five
      INTENDED: ‘The book costs five dollars.’

This strong distributional restriction against N > Num in measure phrases discards from the start the possibility that this configuration could be semantically similar to the approximative inversion found in East Slavic languages (Pereltsvaig 2006, Zaroukian 2010), in which a post-nominal numeral \( n \) is interpreted as ‘approximately \( n \)’.

If the N > Num order yielded an approximative interpretation, there should be no reason to disallow it from contexts like (4) or (5), where approximative interpretations should occur naturally. A way to obtain the approximative interpretation of a numeral in Shupamem is by resorting to a modal modifier, as in (6):

(6) léwà pà tèn ndólà mòtmbò
    book be five dollar maybe
    ‘The book costs approximately five dollars.’

3.2 Predicative position

The numeral can be used predicatively without an overt noun in the numeral phrase. In that case, the only grammatical option is the N > Num configuration.

(7) a. pò pà: pí tèt
    they be AGR three
    ‘They are three.’

 b. * pò pà: tèt
    they be three
    INTENDED: ‘They are three.’
The agreement marker is thus obligatory when a numeral occurs in predicative position. A similar thing happens with other cardinality predicates, like ‘few’ and ‘many’. When in predicative position, they require the presence of an agreement marker -i (8). Without this agreement particle, the result is ungrammatical (9).

(8) a. pó pâ: mèkjér-í
    they be few-AGR
    ‘They are few.’ (There is a small number of them)

  b. pó pâ: rén-í
    they be many-AGR
    ‘They are many.’ (There is a large number of them)

(9) a. * pó pâ: mèkjét
    they be few

  b. * pó pâ: rén
    they be many

If the cardinality expression is not used as a predicate, the particle -i only occurs if the noun precedes the cardinality expression (10a), but not when the cardinality expression precedes the noun (10b):

(10) a. pón rén-í t^w^ó
    child.PL many-AGR came
    ‘Many children came.’

  b. rén pón t^w^ó
    many child.PL came
    ‘Many children came.’

In its non-predicative use, mèkjét ‘few’ has only been attested pre-nominally, and without the agreement marker. Compare (8a) and (11a):

(11) a. * pón mèkjét-ri t^w^ó
    child.PL few-AGR came

  b. mèkjét pón t^w^ó
    few child.PL came
    ‘Few children came.’

So far I have not tested the semantic distinctions between the pre-nominal and the postnominal forms of non-numeral quantifiers like ‘few’ and ‘many’. But if the description of the numeral expressions presented in this paper is accurate, one would expect that a similar semantic contrast holds for non-numeral quantifiers.

For now, I just want to point out that numeral expressions in predicative position trigger the obligatory presence of the agreement marker pó / í. A similar phenomenon arises when a non-numeral quantifier occurs in predicative position. A striking difference between numerals
and other cardinality expressions is that numerals trigger agreement in person and number with the subject (taking pí for plurals and í for singular nouns), but the same is not the case with the correlates of ‘few’ and ‘many’. These expressions demand the presence of a particle i, which marks third person but does not distinguish between plural and singular. Also, the agreement marker in this case is post-posed to the cardinality expression, while it occurs pre-posed to the numeral. What one must bear in mind is that in predicative position cardinality predicates (numeral and non-numeral) have the same form as their post-nominal counterparts when they occur within the noun phrase.

3.3 Floating

Another difference between Num > N and the N > Num orders is that only the latter allows the numeral to ‘float’. This means that the nominal can move, leaving the numeral and the agreement head stranded. The fact that the numeral in Num > N order cannot be stranded suggests that there is a tighter syntactic relation between the noun and the numeral in the Num > N configuration.

To illustrate this point, imagine a scenario where there are two children, and the two of them like peanuts. In such a setting, any of the sentences in (12) is grammatical, felicitous and true. Sentence (12c) shows the floating numeral, left behind in post-verbal position:

(12) a. pè? pòn nà ẹ-ɡí pírèn
   two child.PL IMPFVE PPLE-like peanut.PL
   ‘Two children like peanuts.’

   b. pón pí pà: nà ẹ-ɡí pírèn
   child.PL AGR two IMPFVE PPLE-like peanutPL
   ‘(The) two children like peanuts.’

   c. pòn nà ẹ-ɡí pírèn pí pà:
   child.PL IMPFVE PPLE-like peanutPL AGR two
   ‘(The) two children like peanuts.’

In contrast, (13) is not grammatical, because the Num > N configuration does not allow the numeral to be detached from the noun:

(13) * pòn nà ẹ-ɡí pírèn pè?
    child.PL IMPFVE PPLE-like peanutPL two

3.4 Universal quantification and demonstratives

While the numeral in the N > Num order admits modification by ngù: ‘all’, the Num > N numeral does not:

(14) a. ngù: pón pí tét mê: nkùr
    all child.PL AGR three arrived yesterday
    ‘All three children arrived yesterday.’
b. * nga: têt pón mé: nkûr
   all three child.PL arrived yesterday

The post-nominal numeral can also co-occur with demonstratives:

(15) jirô pón pi têt mé: nkûr
    DEM.PL child.PL AGR three arrived yesterday

    ‘Those three children arrived yesterday.’

Summing up this section, there are four major syntactic differences between N > Num and Num > N numeral phrases:

(i) The N > Num numeral phrase requires the presence of an agreement particle í / pí. This particle agrees in number and person with the head noun.

(ii) Only numerals in Num > N order can occur in measure phrases.

(iii) N > Num (with the agreement particle) is the only order that can occur in predicative position in the absence of an overt noun. In this respect, numerals resemble other cardinality expressions that can only occur predicatively if they are followed by a (person) agreement particle.

(iv) The numeral in an N > Num configuration can float, and it can occur with a universal quantifier and with a demonstrative. The Num > N configuration is excluded from these syntactic contexts.

I will now turn to show that these distributional differences correlate with a semantic distinction: noun phrases with N > Num order are definite, while the ones with Num > N order have exclusively indefinite interpretations.

4 Semantic contrasts

4.1 Presentational contexts

Post-nominal numerals are infelicitous in presentational sentences. Presentational contexts, like ‘there-be’ sentences in English, are known to display ‘definiteness effects’ (Milsark 1977). Definite noun phrases, as well as ‘strong’ quantificational phrases (partitives, universals), are excluded from these contexts:

(16) a. There are two children on the road.

   b. * There are the two children on the road.

   c. * There are two of the children on the road.

   d. * There is every child on the road.
Informally, the non-occurrence of definite noun phrases, partitives and strong quantificational phrases in (16) is explained by the fact that this type of noun phrase carries presuppositions about the familiarity and maximality (or uniqueness) of the restriction (i.e. the set denoted by the noun). Since a presentational sentence is precisely used to introduce new discourse referents, this purpose clashes with the presuppositions born by definites, partitives and strong quantifiers.

Shupamem does not have a specialized existential construction, like the presentational ‘there-be’ sentences of English. Rather, it uses a locative construction similar to the English ‘Children are on the road’. This locative sentence can have a strictly locative interpretation or an existential one. To ensure that only the latter reading is obtained, we designed a scenario where a set of entities is introduced for the first time in the discourse. In this context, the use of a N > Num configuration is infelicitous:

(17) Context: We are driving on a road, and all of a sudden some children appear on the road. You haven’t seen them, and I warn you of their presence so you won’t hit them: ‘Watch out! . . .’
   a. pèʔ pón pā: mfi mànʒè!
      two child.PL be ADP road
      ‘There are two children on the road!’
   b. # pón pí pā: pā: mfi mànʒè!
      child.PL AGR two be ADP road
      INTENDED: ‘There are two children on the road!’

4.2 “Indefiniteness” effects

Just as existential sentences rule out the occurrence of definite noun phrases and strong quantificational phrases, there are environments that reject indefinites. These are called “indefiniteness effects” contexts by Wang and McCready (2005, 2006). Conversational contexts like ‘What do you think about —? ’ reject indefinite noun phrases with ‘true indefinite meaning’ (that is, indefinite phrases that are not interpreted generically, for instance), and allow only strong or definite noun phrases.  

(18) a. What do you think about my children?
   b. What do you think about the child?
   c. * What do you think about a child?
   d. * What do you think about two children?
   e. # What do you think about two of the children?

4 According to Wang & McCready (2006), “indefiniteness effects arise from an interrogative’s failure to be a proper speech act for question asking when it contains a wide-scope taking indefinite, or quantifying into questions from indefinites.” Independently of how we account for the indefiniteness effects, these contexts seem to be cross-linguistically consistent in rejecting indefinite phrases, and even partitives like ‘two of the men’, despite their ‘strong’ character. It looks as if a requisite to enter in an ‘anti-indefinite’ construction is to supply complete identifiability of the referent that constitutes the topic of the question.
In Shupamem, only N > Num phrases are allowed in such environments, and Num > N phrases, just as English indefinites, are excluded from this type of construction:

(19) a. wù ngúpmà mì: pón pì pà: pô: nà:?
   2SG think COMP child.PL AGR two INT be WH
   ‘What do you think about the two children?’
   (lit: You think the two children are how?)

   b. # wù ngúpmà mì: p’re? pón pô: nà:?
   2SG think COMP two child.PL INT be WH

4.3 Anaphoric behavior

If, as we showed in 4.1, noun phrases with N > Num order are not good at introducing new discourse referents, they should be able to recover antecedents anaphorically. To test this prediction, we asked which of the two possible configurations could be used in a context like (20) if one wanted to refer back to the letters that Mapon wrote. Only the post-nominal numeral is felicitous with such a purpose:

(20) Context:
   Mápón tiyóto kpà l’èrwà
   Mapon wrote four letter.PL
   ‘Mapon wrote four letters.’

   Continuation:
   a. # kpà l’èrwà mé: nkùr
      four letters arrived yesterday
      ‘Four letters arrived yesterday.’
      (ok if it does not refer to the same letters that Mapon wrote)
   b. l’èrwà pì kpà mé: nkùr
      letters AGR four arrived yesterday
      ‘The four letters arrived yesterday.’

   This contrast is similar to English indefinite numeral phrases (e.g. three letters) as opposed to numeral phrases introduced by a definite article (e.g. the three letters).

4.4 Maximality vs. Partitivity

In a language that has no overt definite determiners, like Shupamem, the fact that a numeral expression is not allowed in a presentational sentence is not sufficient evidence to determine whether the noun phrase is headed by a definite determiner (like English ‘the two children’) or if it is a partitive construction (like English ‘two of the children’). Both types of noun phrase would be equally ruled out from presentational contexts, either because they are ‘presuppositional’ (Zucchi 1995) (i.e. they presuppose that their restriction is not empty), or because presentational contexts only allow intersective and symmetric determiners (Keenan
2002), and neither definite phrases with numeral modifiers nor partitive constructions are symmetric. In any case, what a noun phrase headed by a definite determiner and a partitive expression have in common is that they presuppose familiarity with the set of entities that constitute the domain restriction. Partitive expressions, just as definite noun phrases, are suitable for recovering discourse antecedents, although they do not do so exhaustively (cf: *Mapon wrote four letters. Two of the letters arrived yesterday*). So, the test of anaphoricity described in (4.3) is not enough to conclude that the N > Num numeral phrase does not correspond a partitive interpretation.

The “indefiniteness effects” context described in (4.2) require that the referent of the noun phrase is familiar and univocally identifiable, but according to Wang and McCready (2006), a partitive interpretation of an indefinite blurs the infelicity of the anti-indefinite context with a numeral expression (allegedly, *What do you think about two of the children?* is only mildly infelicitous compared to #*What do you think about two children?*).

Now that we have shown that N > Num numeral phrases are able to refer to discourse-old entities, it remains to be determined whether Shupamem N > Num phrases, just as English definite noun phrases, bear any entailments of maximality. That is to say, we want to know if *pón pi kpà ‘children AGR four’* refers to the maximal set of children in the discourse context, or if it can refer to any four elements of the maximal set of children, whose cardinality is left unspecified. According to the following test, it is clear that the latter interpretation is not obtained with a N > Num numeral phrase:

\[(21)\] Context:
A basket with eggs is shown. Several eggs are inside the basket, four of them are lying outside of the basket.

In this context, the following two sentences, with a Num > N order, are judged to be true:

\[(22)\] a. kpà tám mbùm ndi?i to nkijé
four round egg.PL NEG.be ADP basket
Four eggs are not in the basket.

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b. kpà tám mbùm pâ: mènkóp nkijé
   four round egg.PL be ADP basket
   ‘Four eggs are next to the basket.’

In contrast, the sentences with N > Num order are judged false:

(23) a. tám mbùm pí kpà ndi?i tâ nkijé
    round egg.PL AGR four NEG.be ADP basket
    ‘The four round eggs are not in the basket.’

b. tám mbùm pí kpà: mènkóp nkijé
    round egg.PL AGR four be ADP basket
    ‘The four round eggs are next to the basket.’

In this truth-value judgment task, the consultants were presented with three options. The sentence could be judged true, false, or neither true nor false. In both cases, with the negative copula (22a) and (23a), as well as in the affirmative version (22b) and (23b), the consultants chose the option ‘true’ for the sentences with Num > N, and ‘false’ for the sentences with N > Num order.

A caveat is in order here. Truth value-judgment tasks can potentially be used to test for presupposition failure if the consultant is presented with a third option that is neither true nor false. If the presuppositions of a sentence fail to obtain in a given context, the sentence is judged to be infelicitous, rather than true or false, and the choice of the third option is intended to reflect that intuition (see discussion in Krifka 2008). However, it is often the case that speakers have a wider notion of ‘falsity’ that covers both clearly false sentences as well as sentences whose presuppositions are not met.

With this task I wanted to test whether any of the numeral configurations entailed (or presupposed) that the maximal set of eggs in the context was a set of four entities. Clearly, the Num > N configuration does not carry such implications, since sentences (22a) and (22b) with pre-nominal numerals turned out to be true in the context depicted in (21).

In contrast, a N > Num phrase cannot be used to describe truthfully a situation where the set of entities that match the description has a greater cardinality than the one specified in the numeral. The N > Num numeral phrase entails (or presupposes) that the maximal set of entities in the context that satisfy the restriction has the cardinality specified by the numeral.5

Also note that the test above shows evidence against the hypothesis that a N > Num numeral phrase in Shupamem could correspond to a non-approximative interpretation of the numeral—something like ‘exactly n’. In the situation depicted in (22) the sentences

5 According to Matthewson 2004, who cites von Fintel (2001), a reliable way to tell apart presuppositions from entailments is by means of the ‘Wait a minute!’ test. If a sentence that presupposes p is uttered in a context where p is not part of the common ground shared by speaker and listener, the latter could object by saying ‘Wait a minute! I didn’t know that p!’ The same does not happen when p, instead of being presupposed, is entailed by the sentence in question. I have conducted this test in order to find out if the maximality implication (‘there are only n children in the relevant context’) is an entailment or a presupposition. The test seems to indicate that it is indeed a presupposition, but since I have seen that also some entailments pass felicitously the ‘Wait a minute!’ test, I can only judge the task inconclusive.
corresponding to ‘exactly four eggs are next to the basket’ and ‘exactly four eggs are not in
the basket’ should have been judged true if that were the case.

Summarizing this section, noun phrases with Num > N order can introduce new discourse
referents, but they cannot be used to refer to previously mentioned antecedents. In this
respect, Num > N configurations in Shupamem resemble indefinite noun phrases in English.
In contrast, noun phrases with N > Num order are not good at introducing new discourse
referents, but they can recover familiar antecedents. Also, this kind of phrases are good
in contexts like ‘What do you think about —?’, which are known in English for rejecting
indefinite noun phrases. Moreover, according to the truth value judgment task in (21), Num
> N noun phrases are not associated with maximality entailments or presuppositions. Noun
phrases with N > Num order do introduce a requirement of maximality, although we are not
able to determine yet whether this requirement is an entailment or a presupposition.

5 Definite interpretation of bare nouns

In Shupamem, bare nouns can have a definite interpretation in the sense that they can (i) refer
to previously introduced antecedents and (ii) can occur in ?indefiniteness effects? contexts.
Bare nouns are not excluded from presentational contexts because they can have an indefinite
interpretation as well. The potential definite interpretation of a bare noun is evidenced in
(25a), where the bare noun refers to the letter that has been previously mentioned. In the same
context, an indefinite noun phrase mò? lèrwà ‘a letter’ can only introduce a new referent,
but it cannot refer back to the letter that Mapon wrote:

(24) Context:
Mápón tiŋọtọ mò? lèrwà
Mapon wrote a letter
‘Mapon wrote a letter.’

(25) Continuation:
 a. lèrwà mè: nkùr
   letter arrived yesterday
   ‘The letter arrived yesterday.’
 b. # mò? lèrwà mè: nkùr
   a letter arrived yesterday
   ‘A letter arrived yesterday.’ (ok if it is a different letter that arrived)

The examples in (26) show that the bare noun món ‘child’ and the demonstrative jirò
mòn ‘that child’ are equally felicitous in an indefiniteness effect context, in contrast to the
overt indefinite mò? món ‘a child’:

(26) a. wù ŋùpùmà mì: món pò: nà?
2SG think COMP child INT.be WH
   ‘What do you think about the child?’
b. wù ŋúpmà mì: jiró mòn pò: nà:?  
2SG think COMP DEM child INT.be WH  
‘What do you think about that child?’

c. # wù ŋúpmà mì: mò? mòn pò: nà:?  
2SG think COMP INDEF child INT.be WH  
‘#What do you think about a child?’

The interpretation and distribution of bare nouns in Shupamem is not the focus of this paper. What the above data aim to show is simply that bare nouns can get a definite interpretation without needing the presence of an overt definite article. This in turn justifies that the definite reading of N > Num noun phrases could be triggered by the presence of a null definite determiner, like the one that heads the (apparently) bare noun in (25a) and (26a). But a full syntactic analysis of Shupamem numeral phrases is beyond the scope of this paper.

6 Conclusion

In this paper I have argued that, although Shupamem allows a numeral to be placed before or after the noun, the two positions of the numeral correspond to different interpretations. The configuration N > Num is interpreted in a way that is akin to English indefinite phrases: it can introduce new discourse referents, it occurs in measure phrases and it cannot recover previously mentioned antecedents. The order N > Num has only a definite interpretation. These phrases are excluded from measure expressions, they recover discourse-old antecedents, they have maximality implications and they can occur in “indefiniteness effects” contexts (Wang & McCready) from which the Num > N configuration are excluded. According to Dryer (2008:352), a similar situation occurs in Nias (Austronesian; Sumatra, Indonesia), where “the noun phrase is interpreted as indefinite when the numeral precedes the noun, as in (27a) [his (4a)], but definite when it follows, as in (27b) [his 4b]”:

(27) a. öfa geu m-baβi s=afusi  
four CLF ABS-pig REL=white  
‘Four white pigs.’

b. baβi-ra s=afusi si=öfa geu  
pig-3PL.POSS REL=white REL=four CLF  
‘Their four white pigs.’ (Nias; Dryer 2008:352)

Although in this paper we do not present a syntactic analysis of the two word orders, we showed in detail how the two different configurations of noun and numeral in Shupamem correspond to different felicity conditions, thus revealing that word order within noun phrases in this language is not free of semantic restrictions.
References


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