1   Introduction

Mandinka word order can be described as S-Aux-O-V-X. The X indicating that all material except the S(ubject), O(bject), and Aux(iliary) follows the verb.. Example (1a) shows a simple transitive, while (1b) shows a ditransitive, where the oblique goal follows the verb.

(1)   a.   armee-o je   saatee-o tiɲa
            army-D PRF city-D   destroy
            'The army destroyed the city.'
       b.   ŋ   ŋa   kitabu-o dii   Musa la
            1.SG PRF book-D   give Musa OBL
            'I gave the book to Musa.'

This talk will focus primarily on Mandinka event nominal constructions, such as (2), that have verbal roots nominalized with the suffix /-ri/.

(2)   armee-o la   satee tiɲa-ri-o
       army-D POSS city   destroy-NMLZ-D
       'The army's destruction of the city'

While the word order (2) looks superficially similar to (1a), I will analyze (2) as involving incorporation of the noun /saatee/ 'city/ into the nominalized verb /tiɲa-ri-o/ 'destruction.' Further examination of these constructions will reveal other conclusions about the internal structure of Mandinka DPs.

The talk will proceed as follows:

Section 2: Overview of Mandinka DPs and nominalized /-ri/ structures.
Section 3: Pseudo-Incorporation Diagnostics
Section 4: The syntax of pseudo-incorporation structures.
Section 5: Why can only nouns/nominalized verbs incorporate?
Section 6: Conclusion

2   Overview of the phenomenon

2.1   General structure of Mandinka DPs

Nearly every DP in Mandinka is followed by an obligatory enclitic /-o/ morpheme. In basic sentences like (3), /-o/ doesn't contribute any obvious meaning to the sentence. However, the plural suffix /-lu/ must attach itself to /-o/, as in (4). Note that I am glossing /-o/ with D for Determiner.

(3)   kambani*(-o) boj-ta   (4)   kambani-o-lu boj-ta
       boy-D   fall-PRF   boy-D-PL   fall-PRF
       'A/The boy fell.'   '(The) boys fell.'

The data in (5) and (6) demonstrate that, when a numeral is present, /-o/ contributes a meaning of definiteness or specificity. In addition, /-lu/ can only appear where /-o/ appears.

(5)   kambani fula(*-lu) boj-ta   (6)   kambani fula-o-lu boj-ta
       boy   two   fall-PRF   boy   two-D-PL fall-PRF
       'Two boys fell.'   'The two boys fell.'

Based on this data, I argue that /-o/ and /-olu/ are singular- and plural-inflected forms of the same element. Specifically, I argue that this element is best analyzed as a determiner that heads a DP.

In addition, it is relevant to establish the basic order of nominal modifiers in Mandinka, shown in (7). (8) is an example DP with all possible modifiers:

(7)   (Poss) (Dem) Noun (Adj) (Num) -o

(8)   n-na   ɲiŋ dindiŋ ɲiiɲaa   fula-olu
       1SG-POSS this child   beautiful two-D.PL
       'These two beautiful children of mine'

2.2   /-ri/ nominalization structures

In Mandinka, nominalized verb constructions allow/require the object to not have an /-o(lu)/ marker. These manifest in several forms, including gerunds, in (9a), event-nominals, in (9b)(=(2)), and light-verb constructions, in (9c), although each form has /-ri/ suffixed to the verb.

(9)   a.   ɲee(*-olu) muta-ri-o   kolejaa-ta
            fish   catch-NMLZ-D difficult-PRF
            'Catching fish is difficult.'
       b.   armee-o la   satee(*-o) tiɲa-ri-o
            army-D POSS city   destroy-NMLZ-D
            'The army's destruction of the city'
       c.   itolu ka   ɲee(*-o) muta-ri-o   ke
            3.PL HAB fish   catch-NMLZ-D do
            'They catch fish.' (lit. They do fish-catching.)

Similar structures also occur with complements of non-derived nominals, such as nouns like 'basket' in (10)

(10)   ɲee(*-o) sinsiŋ-o
        fish   basket-D
        'A/The basket of fish'

The nominalized verbs in (9a) through (9c) are suffixed with /-ri/. This morpheme has several allomorphs, /-ri/, /-di/, /-li/, and /∅/, which not appear to be completely predictable. All of the examples in this handout use /-ri/ whenever possible.

I will be treating /-ri/ as a nominalizing affxix. Verbal roots modified by /-ri/ behave like nouns with respect to every syntactic test. [1] Example (11) shows that they can be modified by numeral and possessors, and (12) shows that they can be embedded as an argument of another nominalized verb.

(11)   a.   kunuŋ   ŋ   ŋa domo-ri fula ke
            yesterday 1.SG PRF eat-NMLZ two do
            'Yesterday, I ate twice.' (lit. I did two eatings)
       b.   a   je m   maakoj n   na   fita-ri-o   la
            3.SG PRF 1.SG help   1.SG POSS sweep-NMLZ-D OBL
            'He helped me with my sweeping.'

(12)   Musa je ɲee muta-ri   faŋka-ri-o ke
       Musa PRF fish catch-NMLZ try-NMLZ-D do
       'Musa tried catching fish.' (lit. Musa did fish-catching-trying)

With respect to the lack of /-o/ on the object, my analysis shows that the bare nominal is not a full DP, hence it cannot contain a determiner. Instead, I argue that these structures involve incorporation of the object into the verb.

3   Pseudo-Incorporation Diagnostics

While noun incorporation has been studied in many languages, the incorporation in Mandinka is different than the canonical examples where a bare noun head incorporates. Mandinka also allows incorporate elements to be modified by adjectives, as in (13) and (14). This indicates that these Mandinka structures should be more properly referred to pseudo-incorporation.

(13)   armee-o la   buŋ   wulee(*-o) tiɲa-ri-o
       army-D POSS house red   destroy-NMLZ-O
       'The army's destruction of the red house'

(14)   kambani-o je   poti d͡ʒaŋajaa baa kati-ri-o   ke
       boy-D   PRF pot tall   very break-NMLZ-D do
       'The boy broke very large pots.'

Pseudo-incorporation has been noted in several languages, although the precise properties seem to vary significantly between languages. Massam (2001), Aydemir (2004), and Dayal (2011) describe (pseudo-)incorporation in Niuean, Turkish, and Hindi respectively.

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1. There is exactly one verb in Mandinka that can use /-ri/ on verbal forms, /domo/ 'eat'. Creissels and Sambou (2013) and Creissels (2015) use this example to argue that /-ri/ is an antipassive morpheme. This usage is extremely non-productive, so I do not consider this one outlier to be a strong counter-example.

Comparing the consistent properties between all three languages provides several consistent properties/diagnostics for (pseudo-)incorporation. Here I will focus on two of the most salient properties, and demonstrate that the relevant Mandinka constructions share these properties.

3.1   Case Marking

The first diagnostic is that (pseudo-)incorporated nouns do not have case. This would appear to be true in Mandinka.

Mandinka doesn't mark case morphologically on nouns. However, many cases in Mandinka are indicated by postpositional/case-marker elements, including /la/ which is used in a number of contexts[2]. Example(15a) is the standard incorporation structure we have already seen, while (15b) has the same argument not incorporated, where it regains its /-o/ and requires the case-marker /la/.

(15)   a.   kambani-o la   poti kati-ri-o
              boy-D   POSS pot break-NMLZ-D
              'The boy's breaking of the pot' (lit. The boy's pot-breaking)
        b.   kambani-o la   poti-o la   kati-ri-o
              boy-D   POSS pot-D POSS break-NMLZ-D
              'The boy's breaking of the pot' (lit. The boy's the pot's breaking)

3.2   Number

Semantically, incorporated nouns are not specified for number. We can see this morphologically in Mandinka, since the only number marking is on the (absent) determiner. But it is also true semantically.

Examples (16) and (17) show how these incorporation structures are ambiguous with respect to the number of the incorporated element.

(16)   kambani-o la   poti(*-olu) kati-ri-o
        boy-D   POSS pot   break-NMLZ-D
        'The boy's breaking of the pot(s)'

(17)   ɲee(*-olu) muta-ri-o   kolejaa-ta
        fish   catch-NMLZ-D difficult-PRF
        'Catching fish is difficult.'

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2. /la/ appears as a genitive case-marker after possessors and arguments of event nominals, where I gloss it POSS. /la/ also appears after oblique arguments, such as the goal in ditransitives and the "objects" of syntactically intransitive verbs. In this context, I gloss it as OBL.

4   Syntax of Pseudo-Incorporation

Pseudo-Incorporated elements in Mandinka do show some amount of internal structure. They can be modified by adjectives, in (18)(=(13)), however higher modifiers like demonstratives and possessors are not allowed. As is shown in (19) and (20),nouns with these modifiers must have an /-o/ and also must be case-marked.

(18)   armee-o la   buŋ   wulee(*-o) tiɲa-ri-o
        army-D POSS house red   destroy-NMLZ-O
        'The army's destruction of the red house'

(19)   armee-o la   wo satee*(-o) la   tiɲa-ri-o
        army-D POSS that city-D   POSS destroy-NMLZ-D
        'The army's destruction of that city'

(20)   armee-o la   n-na   satee*(-o) la   tiɲa-ri-o
        army-D POSS 1S-POSS city-D   POSS destroy-NMLZ-D
        'The army's destruction of my city'

Incorporated elements can also be coordinated, as in (21)

(21)   kambani-o la   siraŋ-o niŋ taabulu(*-o) kati-ri-o
        boy-D   POSS chair-D and table   break-NMLZ-D
        'The boy's breaking of the chair(s) and table(s)'

Note that the first element in the coordination requires an /-o/. But this /-o/ is different than the usual /-o/ determiner. The interpretation of (21) is still ambiguous in number. And examples like (22) show that this /-o/ cannot be changed to the plural /-olu/.

(22)   *kambani-o la   siraŋ-olu niŋ taabulu(*-o) kati-ri-o
        boy-D   POSS chair-D.PL and table   break-NMLZ-D
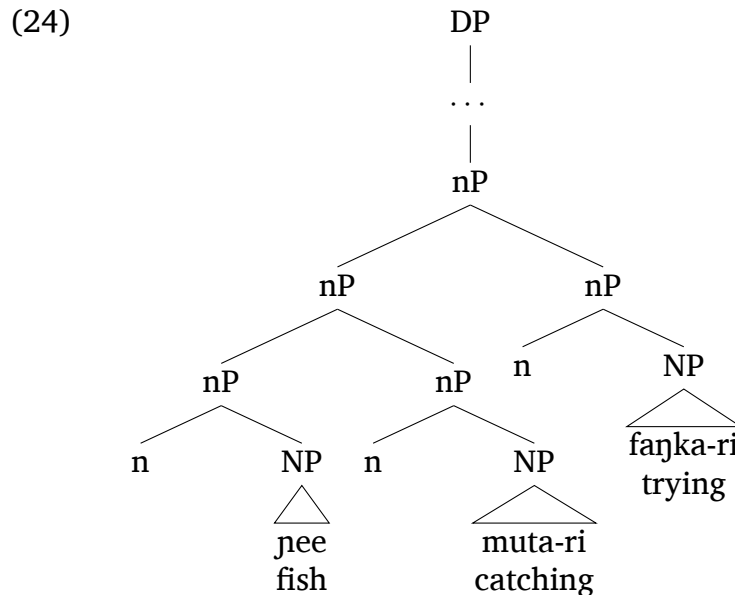   Intended: 'The boy's breaking of the chairs and table(s)'

This combination of facts leads to the conclusion that incorporated elements represent some low functional projection within the DP, which I will call nP for sake of exposition. Importantly this projection, whatever the label is smaller than DP but larger than an N-head.

The other component of the syntax of these constructions is where the incorporated element lies within the structure it is incorporated into. Massam (2001) and Dayal (2011) analyze pseudo-incorporated NPs as complements of the verb they incorporate into. This analysis is not satisfactory for Mandinka, for reasons that will be discussed in Section 5. So I will pursue a different structure for Mandinka pseudo-incorporation.

The first important clue is that the incorporated nP is always adjacent to its host, so it must be lower in the structure than other pre-nominal modifiers like demonstratives. In addition, the existence of embedded structures like (23)(=(12)) tell us that the position is low enough to be included within nP.

(23) Musa je [ɲee muta-ri   faŋka-ri-o] ke
      Musa PRF fish catch-NMLZ try-NMLZ-D do
      'Musa tried catching fish.' (lit. Musa did fish-catching-trying)

With this in mind, I propose that the incorporated elements are adjoined to nP. The resulting structure of the bracketed portion of (23) is below in (24).

(24)

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                              DP
                              │
                             ...
                              │
                              nP
                      _____|_____
                     nP               nP
                  ___|___          ___|___
                 nP     nP        n     NP
               __|__   __|__           /‾‾‾\
              n   NP  n    NP         faŋka-ri
                 /‾\    /‾‾‾\          trying
                ɲee    muta-ri
                fish   catching
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5   Why only nouns?

Most languages that have been studied with regards to Incorporation have constructions where an argument incorporates into a verb. In Mandinka, this is only possible with nominalized verbs. So whatever it is that licenses incorporation must be unique to nouns.

One such property is the tendency for Mandinka DPs to eschew any kind of complements or PP modifiers. This can be seen in (25a) and (25b) where English PP modifiers are converted into either possessives or relative clauses.

(25) a. Musa la   leetari-o
          Musa POSS letter-D
          'letter from Musa' (lit. Musa's letter)
      b. buŋ-o   meŋ be   saatee-o kono koj-ta
          house-D which LOC city-D   in   white-PRF
          'The house in the city is white' (lit. The house which is in the city …)

Complements, such as a CP complement of a nominalized verb, are similarly disallowed. (26) shows that CP complements generally follow the verb, but the pattern is not preserved for (27) where the CP instead follows the entire sentence, clearly outside of the DP.

(26)   Musa je   Fatu ɲiniŋka fo   kitabu-o wulee-ta
        Musa PRF Fatu ask   whether book-D   red-PRF
        'Musa asked Fatu whether the book was red.'

(27)   Musa je   [_DP ɲiniŋka-ri-o] ke fo   kitabu-o wulee-ta
        Musa PRF   ask-NMLZ-D do whether book-D   red-PRF
        'Musa asked whether the book was red.' (lit. Musa did asking whether …)

Lastly we can look at PP arguments of verbs. (28) is the nominalized version of (1b) and shows that goal arguments in nominalized ditransitives also must follow the entire sentence.

(28)   ŋ   ŋa [_DP kitabu dii-∅-o]   ke Musa la
        1.SG PRF   book   give-NMLZ-D do Musa OBL
        'I gave books to Musa.' (lit. I did book-giving to Musa)

For verbs like 'go' which have a single PP argument, it can be either postposed, as in (29b) or the noun within the PP can be incorporated, as in (29c), although (29c) is preferred.

(29)   a.   Musa taa-ta   bitiki-o to
              Musa go-PRF store   to
              'Musa went to the store.'
        b.   Musa je   [_DP taa-ri-o]   ke bitiki-o to
              Musa PRF   go-NMLZ-D do store-D to
              'Musa went to the store.' (lit. Musa did going to the store)
        c.   Musa je   bitiki taa-ri-o   ke
              Musa PRF store go-NMLZ-D do
              'Musa went to the store.' (lit. Musa did store-going)

The example in (29c) is key because it directly connects the incorporation structure with other methods to remove complements and PPs from within DPs. Essentially, (29c) shows us that pseudo-incorporation is one among many possible repair strategies for removing syntactic complements of NPs.

This is why I don't agree with the analysis that pseudo-incorporated elements are complements. The question of why can only nouns host incorporation is directly related to the question of why nouns can't contains complements or other PPs.

I don't yet have a complete solution as to why Mandinka nouns have this restriction on complements. However, I am continuing to research the argument structure of these constructions. I am also interested in further analyzing the postposing constructions above, as well as related issues such as the postposing of relative clauses.

One last note on the merits of a ban on complements. Bošković (2013) discusses the restrictions found in many languages on complements of adjectives. For example, English attributive adjectives cannot ever take a complement, as in (30).

(30)   *I met a proud of his son man.   (Bošković 2013:49)

In Serbo-Croatian, adjectives are allowed complements, but only if the complement moves away from its base position, as shown in (31).

(31)   Vidio sam [$_{PP}$ na mene] [$_{AP}$ ponosnog t_{PP}] Jovanovog oca
        seen am   of me   proud   Jovan's   father
        'I saw Jovan's father who is proud of me.'   (Bošković 2013:57b)

This condition is very similar to the postposed complements in Mandinka. Bošković's account for this is essentially that an adjectival complement acts as a sort of intervener for the agree relationship between the adjective and the noun it modifies. It is possible that this account could be extended to Mandinka DPs, but I don't have any details worked out yet.

6   Conclusion

Nominalized verbs in Mandinka create pseudo-incorporation structures with their arguments. These structures are exemplified by the lack of the determiner /-o/, lack of case-marking, and ambiguity of number.

I analyzed the pseudo-incorporated elements as nPs which can contain adjectival modifiers but not higher modifiers like demonstratives. I also argue that they are adjoined to the nP of their host noun.

In explaining why pseudo-incorporation is only possible with nominalized verbs, I argued for a larger generalization that Mandinka NPs cannot have complements. In this view, pseudo-incorporation is only possible as a sort of repair mechanism for removing an element that would otherwise be a complement.

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