

Pseudo Noun Incorporation in Mandinka

Ari Goertzel

1. Introduction

Mandinka is a Mande language spoken in several countries in West Africa. As in other Mande languages, 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. This basic word order is shown in (1)¹: (1a) demonstrates a simple transitive verb and (1b) a ditransitive, with the oblique goal following the verb.

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

The paper will be concerned with the syntax of nominalized verb constructions in Mandinka, such as the event nominal in (2). These constructions are exemplified by the suffix *-ri* after the verb, as well as the lack of the determiner *-o* on the object. Note also that the subject is followed by the case-marking *la* particle.

- (2) *armee-o la saatee tiñaa-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 *tiñaa-ri-o* 'destruction.' In particular, I will claim that this construction is a type of pseudo noun incorporation (PNI), involving the incorporation of a phrasal element into the nominalized verb. Further examination of these constructions will reveal other conclusions about the internal structure of Mandinka DPs and is shown to have ramifications for the analysis of similar (pseudo) incorporation phenomena cross-linguistically.

2. Overview of the Phenomenon

2.1. General structure of Mandinka DPs

Nearly every DP in Mandinka is followed by an obligatory *-o* morpheme², as shown in (3). In such cases, this morpheme does not contribute anything semantically, and is required in both singulars and plurals, such as in (4), where *-o* appears between the noun and plural morpheme.

* Ari Goertzel, University of Connecticut, ari.goertzel@uconn.edu. Special thanks to Željko Bošković, Vicki Carstens, Mamoru Saito, the WCCFL audience, and the members of the Fall 2020 UConn Field Methods course.

¹ Unless otherwise indicated, all Mandinka data in this paper is new data that I have elicited from native speakers between Fall 2020 and Spring 2022. A few notes about the transcriptions: All transcriptions are lacking tone markers because my consultants used tone inconsistently in their speech. However, the presence or absence of tone has no effect on the syntax of the relevant constructions. Additionally, the morpheme *-o* triggers regular phonological processes that can affect the realization of the final vowel (see Creissels & Sambou 2013), sometimes obscuring the presence of *-o*. For readability, these words have been transcribed in their underlying forms.

² I have glossed *-o* as D, standing for determiner.

- (3) kambaani*(-o) boyi-ta
 boy-D fall-PRF
 ‘A/The boy fell.’
- (4) kambaani-o-lu boyi-ta
 boy-D-PL fall-PRF
 ‘(The) boys fell.’

Additionally, as shown in (5), *-o* is always the last morpheme within a DP, following post-nominal modifiers like adjectives, with the plural marker being the only element to the right of it.

- (5) kambaani jaŋ-o-lu boyi-ta
 boy tall-D-PL fall-PRF
 ‘(The) tall boys fell.’

However, *-o* is not always semantically vacuous. The data in (6) and (7) demonstrate that, when a numeral is present, *-o* contributes a meaning of definiteness or specificity. In addition, the ungrammaticality of *-lu* in (6) demonstrates that the plural is only marked where *-o* appears.

- (6) kambaani fula(*-lu) boyi-ta
 boy two fall-PRF
 ‘Two boys fell.’
- (7) kambaani fula-o-lu boyi-ta
 boy two-D-PL fall-PRF
 ‘The two boys fell.’

Because of this dependence, I suggest that *-o* and *-olu* are singular- and plural-inflected forms of the same element. I will treat this element as a sort of determiner.³ (I discuss its properties in more detail in work in prep.) In addition, it is relevant to establish the basic order of nominal modifiers in Mandinka, shown in (8). (9) is an example DP with all possible modifiers:

- (8) (Poss) (Dem) Noun (Adj) (Num) -o
- (9) n-na ñiŋ dindiŋ ñiiñaa fula-olu
 1SG-POSS this child beautiful two-D.PL
 ‘These two beautiful children of mine’

2.2. *-ri nominalization structures*

The focus of this paper is on nominalized verb constructions like (2).⁴ These constructions do not allow the object to have the *-o(lu)* morpheme. They manifest in several forms, such as gerunds, in (10a), event-nominals, in (10b)(=2)), and light-verb constructions, in (10c).

- (10) a. ñee(*-olu) muta-ri-o koleyaa-ta
 fish catch-NMLZ-D difficult-PRF
 ‘Catching fish is difficult.’
- b. armee-o la satee(*-o) tiñaa-ri-o
 army-D POSS city destroy-NMLZ-D
 ‘The army’s destruction of the city’
- c. itolu ka ñee(*-o) muta-ri-o ke
 3.PL HAB fish catch-NMLZ-D do
 ‘They catch fish.’ (lit. They do fish-catching.)

Importantly, these constructions are similar in behavior to non-derived nominals that take complements. They also disallow *-o* as shown below for the non-derived nominal *sinsiŋ* ‘basket’.

- (11) ñee(*-o) sinsiŋ-o
 fish basket-D
 ‘A/The basket of fish’

³ The *-o* final order of DPs can be derived by raising the NP (and its modifiers) to spec-DP.

⁴ There is another nominalization strategy without an overt nominalization morpheme which I put aside here.

The nominalized verbs in (10a) through (10c) are suffixed with *-ri*. The usage of this morpheme is subject to speaker and dialectal variation, as well as allomorphy in some cases. For clarity, all of the examples in this paper use *-ri* whenever possible. I will be treating *-ri* as a nominalizing affix. Verbal roots modified by *-ri* behave like nouns with respect to every syntactic test.⁵ Thus, (12) shows that they can be modified by numerals and possessors, and (13) shows that they can be embedded as an argument of another nominalized verb.

- (12) 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 ye m maakoyi 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.’
- (13) *Musa ye ñee 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, I will argue that the relevant nominal is not a full DP, hence it cannot contain a determiner. Instead, I argue that these structures involve incorporation (more precisely pseudo-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 (see Baker 1988) where a bare noun head incorporates. Mandinka also allows incorporated elements to be modified by adjectives, as in (14) and (15). This indicates that these Mandinka structures should be more properly referred to as pseudo noun incorporation (PNI).

- (14) *armee-o la buŋ wulee(*-o) tiñaa-ri-o*
 army-D POSS house red destroy-NMLZ-D
 ‘The army’s destruction of the red house’
- (15) *kambaani-o ye poti jaŋ baa kati-ri-o ke*
 boy-D PRF pot tall very break-NMLZ-D do
 ‘The boy broke very large pots.’

PNI has been noted in several languages, although the precise properties seem to vary significantly between languages. Thus, Massam (2001), Aydemir (2004), Dayal (2011), and Bliss (2018) describe PNI in Niuean, Turkish, Hindi, and Blackfoot respectively. Since the construction has a good deal of variation, I have extracted several consistent properties/diagnostics for PNI. Here, I 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 also holds in Mandinka. Mandinka doesn’t actually mark case morphologically on nouns. However, many cases in Mandinka are

⁵ There is exactly one verb in Mandinka that can use *-ri* on verbal forms, *domo* ‘eat’. Creissels & Sambou (2013) and Creissels (2015) use this example to argue that *-ri* is primarily an antipassive morpheme. However, this usage is extremely non-productive, so I do not consider this one outlier to be a strong counter-example to the nominalizer analysis.

indicated by postpositional/case-marker elements, including *la* which is used in a number of contexts⁶. Example (16a) is the standard incorporation structure we have already seen, while (16b) has the same argument as a full DP, including *-o*, and, in contrast to (16a), requires the case-marker *la*.

- (16) a. kambaani-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. kambaani-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. This can be easily seen morphologically in Mandinka, since the only number marking is on the (absent) determiner. But it is also true semantically. Examples (17) and (18) show that these incorporation structures are ambiguous with respect to the number interpretation of the incorporated element.

- (17) kambaani-o la poti(*-olu) kati-ri-o
 boy-D POSS pot break-NMLZ-D
 ‘The boy’s breaking of the pot(s)’

- (18) ñee(*-olu) muta-ri-o koleyaa-ta
 fish catch-NMLZ-D difficult-PRF
 ‘Catching fish is difficult.’

4. Syntax of PNI

Incorporated elements in Mandinka do show some amount of internal syntactic structure. They can be modified by adjectives, ((19)=(14)), and some speakers allow the use of other modifiers like numerals, as in (20).

- (19) armee-o la buŋ wulee(*-o) tiñaa-ri-o
 army-D POSS house red destroy-NMLZ-D
 ‘The army’s destruction of the red house’
- (20) Musa ye buku saba ñoŋ karaŋ-Ø-o ke
 Musa PRF book three approximately read-NMLZ-D do
 ‘Musa read approximately 3 books. (lit. Musa did 3-book-reading)’

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

- (21) kambaani-o la siranŋ-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*. (I discuss this *-o* further in work in prep.)

⁶ *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/recipient in ditransitives and the ‘objects’ of syntactically intransitive verbs. In this context, I gloss it as *OBL*.

- (22) *kambaani-o la siraj-olu nij 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)’

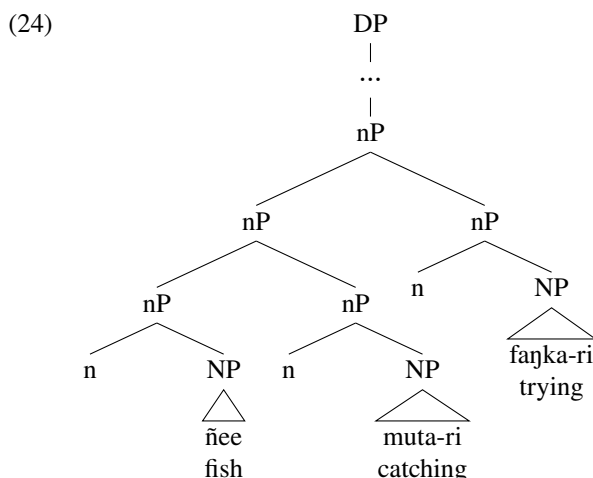
This combination of facts leads to the conclusion that incorporated elements represent a low functional projection within the DP, which I will call nP for sake of exposition. Importantly, this projection, whatever the label, is smaller than DP but larger than an N-head.

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 PNI.

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)(=(13)), where one nominalized verb is embedded within another, tell us that the position is low enough to be included within a nP.

- (23) Musa ye [ñee 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).



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, when asked to translate English nouns with PP modifiers, speakers converted the constructions 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 koyi-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 rest of the sentence, clearly extraposed outside of the DP.

(26) Musa ye Fatu ñiniŋka fo buku-o wulee-ta
 Musa PRF Fatu ask whether book-D red-PRF
 ‘Musa asked Fatu whether the book was red.’

(27) Musa ye [_{DP} ñiniŋka-ri-o] ke [_{CP} fo buku-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 ...)

We can also 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} buku dii-Ø-o] ke [_{PP} Musa la]
 1.SG PRF book give-NMLZ-D do Musa OBL
 ‘I gave books to Musa.’ (lit. I did book-giving to Musa)

Lastly, verbs like *taa* ‘go’ which have a single PP argument, are especially interesting. There are two possible ways to nominalize a sentence like (29a). Either the PP is pronounced at the right edge of the clause, as in (29b), or the noun within the PP can be incorporated (dropping the postposition entirely), as in (29c), with (29c) being preferred.

(29) a. Musa taa-ta bitiki-o to
 Musa go-PRF store-D to
 ‘Musa went to the store.’
 b. Musa ye [_{DP} taa-ri-o] ke [_{PP} 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 ye [_{DP} 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 crucial because it directly connects the incorporation structure with other methods to remove complements and PPs from within DPs. In particular, PNI appears to function as a repair strategy in (29c), just like extraposition in (29b). This allows us to more firmly define the licensing condition for PNI that I discussed above. Essentially, PNI is only licensed as a repair mechanism when a noun would otherwise have a complement. Since nouns with complements violate a syntactic constraint, PNI is used to resolve the violation. And, since verbs don’t have a similar restriction, the process is therefore never licensed for verbs.

This restriction on nouns taking complements is why, in Section 4, I disagreed with the analysis that pseudo-incorporated elements are complements in Mandinka. The question of why only nouns can host incorporation is directly related to the question of why NPs can’t contain complements. So claiming that PNI in Mandinka involves a (surface) complement to a noun would simply be incorrect.

Regarding the 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 to take complements, but, crucially, 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 can be extended to Mandinka DPs, though this will be left for future research.

6. Conclusion

Nominalized verbs in Mandinka can create PNI 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 incorporated elements as nPs which can contain modifiers and be coordinated. I also argued that they are adjoined to the nP of their host noun.

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

In terms of cross-linguistic analyses of PNI, the data from Mandinka represent an important empirical contribution. Since Mandinka only allows PNI with nominalized verbs, and not active verbs, we can attribute the cause and/or licensing of the construction to a difference between these two constructions. This also means that a cross-linguistic analysis of PNI should not be focused on the properties of verbs alone. And finally, further research in this area ought to investigate nominalized verb constructions in other languages which allow PNI.

References

- Aydemir, Yasemin. 2004. Are Turkish preverbal bare nouns syntactic arguments? *Linguistic Inquiry* 35(3). 465–474.
- Baker, Mark. 1988. *Incorporation: a theory of grammatical function changing*. Chicago: University of Chicago Press.
- Bliss, Heather. 2018. Pseudo-Incorporation in Blackfoot. *International Journal of American Linguistics* 84(4). 441–470.
- Bošković, Željko. 2013. Adjectival escapades. In *Proceedings of Formal Approaches to Slavic Linguistics*, vol. 21, 1–25.
- Creissels, Denis. 2015. Valency properties of Mandinka verbs. In Andrej Malchukov & Bernard Comrie (eds.), *Valency classes in the world's languages*, vol. 1, 221–260. De Gruyter Mouton.
- Creissels, Denis & Pierre Sambou. 2013. *Le mandinka: phonologie, grammaire, textes*. Paris: Karthala Editions.
- Dayal, Veneeta. 2011. Hindi pseudo-incorporation. *Natural Language & Linguistic Theory* 29(1). 123–167.
- Massam, Diane. 2001. Pseudo noun incorporation in Niuean. *Natural Language & Linguistic Theory* 19(1). 153–197.
- Rowlands, Evan C. 1986. *A grammar of gambian mandinka*. London: SOAS.

Proceedings of the 40th West Coast Conference on Formal Linguistics

edited by Jiayi Lu, Erika Petersen,
Anissa Zaitso, and Boris Harizanov

Cascadilla Proceedings Project Somerville, MA 2024

Copyright information

Proceedings of the 40th West Coast Conference on Formal Linguistics
© 2024 Cascadilla Proceedings Project, Somerville, MA. All rights reserved

ISBN 978-1-57473-482-9 hardback

A copyright notice for each paper is located at the bottom of the first page of the paper.
Reprints for course packs can be authorized by Cascadilla Proceedings Project.

Ordering information

Orders for the printed edition are handled by Cascadilla Press.
To place an order, go to www.lingref.com or contact:

Cascadilla Press, P.O. Box 440355, Somerville, MA 02144, USA
phone: 1-617-776-2370, fax: 1-617-776-2271, sales@cascadilla.com

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Goertzel, Ari. 2024. Pseudo Noun Incorporation in Mandinka. In *Proceedings of the 40th West Coast Conference on Formal Linguistics*, ed. Jiayi Lu et al., 93-99. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #3701.