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Deverbal adjectives are different from regular participles: The case of Natioro (Gur)

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Abstract. The paper deals with the syntax and semantics of deverbal adjectives in Natioro, an underdescribed Gur (<Niger-Congo) language. In Natioro, adjectives and participles (as well as forms with the distribution of Past Perfect) are derived using the same suffix, thus raising the question of whether the two represent the same syntactic category. In this paper, I argue against a uniform analysis of adjectives and participles. I show that the two classes exhibit different properties — namely, the adjectives denote states, whereas regular non-adjectival participles denote dynamic events. I argue that the theories claiming that Perfect-like forms refer to states do not account for the full range of the Natioro data. Many deverbal participles do not refer to states at all, but the state interpretations of deverbal adjectives arise due to the range of aktionsart properties of the initial verbal stem rather than to the semantics of the derivational affix. In particular, state interpretations of the adjectives are determined by the aktionsart of the initial verbal stem. Namely, these verbs have stative readings ('be A') which are inherited by their adjectival counterparts. I also show that, nevertheless, deverbal adjectives can be regarded as reduced clauses which do not extend beyond the vP node. However, those do not pattern with predicative uses which are presumably non-grammaticalized aspect markers. Finally, I propose a hypothesis on the diachronic source of both deverbal adjectives and other participles. Namely, I discuss the possible relations of the suffix deriving adjectives and participles with the dummy noun 'thing' and with the suffix deriving deverbal nouns. Theoretically, the paper contributes to the discussion of variation in the semantic properties of adjectives derived from verbs, providing a large-scale data from an understudied language.

Keywords: Natioro, Gur languages, syntax of adjectives, deverbal adjectives, participles, Perfect.

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Отличия отглагольных прилагательных от регулярных причастий: данные языка натиоро (семья гур)

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Аннотация. Статья посвящена описанию синтаксиса и семантики отглагольных прилагательных в языке натиоро (гур). В натиоро прилагательные, причастия и формы с дистрибуцией плюсквамперфекта образуются с использованием одного и того же суффикса, что поднимает вопрос о том, представляют ли они одну и ту же синтаксическую категорию. В статье приводятся аргументы против единообразного анализа трех классов форм и описываются параметры, отличающие их как друг от друга, так и от конкурирующих форм (простых прилагательных и перфективных глаголов).

Ключевые слова: натиоро, языки гур, синтаксис прилагательных, отглагольные прилагательные, причастия, перфект.

1. Introduction

Derivational and semantic relations between verbs and adjectives have been a topic of a large discussion so far. In theoretical literature, much attention has been given to European languages where adjectives are regularly derived from verbs but do not preserve some of their crucial properties. This phenomenon is referred to as adjectival passives, see [Levin, Rappaport-Hovav 1986; Kratzer 2000; Embick 2004; Maienborn 2009; Koontz-Garboden 2010; Alexiadou et al. 2014; Gehrke 2015], among many others. Adjectival passives are famous for their ambiguous nature — they are derived by using regular participial morphology but, unlike participles, denote simple states (‘be A’) rather than states invoked by a previous event (‘be V-ed’). The contrast between regular participles

and adjectival passives is illustrated below, where (1a) exemplifies the use of the regular participle *opened* that cannot combine with a predicate denoting a change-of-state event (unlike the adjective *open*), whereas (1b) is an example of the participle that behaves like regular adjectives and can be combined with the same predicate. However, outside of the Indo-European family, such derivational models have not been systematically explored so far.

(1) a. *This door was built open/*opened.*

b. *This door was built closed.*

This paper brings to light data from Natioro, an underdescribed Gur language (< Niger-Kongo microfamily). In Natioro, the same marker *-ka* (*-ga* in its voiced form) is used to derive predicative adjectives (2), passive participles (3), and in predications referring to past (4). A question arises whether the three uses can be reduced to each other and, specifically, whether adjectives can be analyzed as simple deverbal participles.

(2) *ŋ̀gw-ā nī kɔ́:māŋ-gā*
wood-SG DEM bend-KA
'This stick is bent'.

(3) *ká ní sàmú-n-ā ↓sùmà-kà*
thing DEM person-man-SG know-KA
'This is a known person'.

(4) *nā-mí nà wāsà^{n} ↓myàsì-kà*
1SG-OBL 1SG.POSS money hide-KA
'I have hidden my money'.

The aim of the present paper is twofold. First, it provides a detailed description of the derivational model and brings to light data from an underdescribed language. Second, it addresses the problem of an adequate analysis of the model, exploring the differences between adjectival and non-adjectival forms containing the suffix *-ka*. I argue against the uniform analysis of the phenomenon and show that there are significant syntactic and semantic differences between the two classes of forms. The paper is structured

as follows. In *Section 2*, I will give a brief overview of the Natioro language. In *Section 3*, I will describe the uses of forms with the *ka*-suffix which can occur in predicative as well as in attributive contexts. In *Section 4*, I will address these types of contexts separately and describe the factors determining the choice of *ka*-forms instead of other competing forms. Discussion of the data is provided in *Section 5*. *Section 6* concludes the paper.

2. Background

Natioro is an underdescribed Gur language spoken by some 4000–5000 speakers in several villages of Burkina Faso. The only sources containing some basic data on Natioro are [Prost 1968] and [Miehe, Winkelmann 2007]. The variety discussed here is the dialect of Timba village where most habitants were reported to know the Dioula language, local lingua franca, but only several people can speak French. The data presented here is based on my own fieldwork in 2018–2022 including elicitation with a French-speaking consultant and a small corpus of oral texts collected in Timba.

Like most African languages, Natioro is a tonal language, with three tone levels (high, mid and low) distinguished. Nominal inflection is characterized by the presence of several inflectional classes. Verbal inflection in Natioro is represented by a small set of affixes (causatives and TAM markers). Many TAM meanings are expressed analytically by particles which occupy the position after the clausal subject. This can be illustrated by (4) where the Future marker follows the subject and the nominalized verb follows the Future marker.

(5) *nzɛ̄ⁿ* *nā-mí* *lōⁿ* *swè=:* *kw-ā=:̀* *tɔ̄*
today 1SG-OBL FUT go.NMLZ market-SG DAT
'Today, I am going to go to the market'.

In Natioro, two basic word orders are distinguished with respect to the TAM form of the predicate. Perfective forms require the SVO order (6), whereas clauses containing Imperfective forms (7) require the SOV order. Case marking also differs in Perfective and Imperfective clauses.

In Perfective clauses, the subject does not require any special case marking. In Imperfective clauses, some items receive special case marking. With 1SG pronouns, the form expressing direct objects in SVO clauses is used to mark the clausal subject, cf. (7) and (8). Hereafter, I will refer to those forms as to oblique forms.

(6) *nāⁿ* *númá-sí* *↓sw-à=:*
1SG fill-CAUS.PFV calabash-SG=OBL
'I filled the calabash'.

(7) *nā-mí* *sw-à* *nùmàsù-w̄ⁿ*
1SG-OBL calabash-SG fill-IPFV
'I am filling the calabash'.

(8) *pōŋ́-wā* *tā* *ᴸnà-mì*
dog-SG bite.PFV 1SG-OBL
'A/the dog bit me'.

Clauses with *ka*-forms pattern with Imperfective clauses but not with Perfective ones. In other words, *ka*-forms require the SOV (but not the SVO) word order, and the 1SG subject of the clause is marked by the oblique. The rule holds true of both adjectival (9) and verbal (10) forms.

(9) *nā-mí* / **nā* *pìlā-kā*
1SG-OBL 1SG cook-KA
'I am tired (lit. cooked)'.

(10) *nā-mí* *wɔ̀lì-kā*
1SG-OBL eat-KA
'I have eaten'.

3. Uses of *ka*-forms

In this section, I will describe successively the basic properties of *ka*-forms, both predicative and attributive ones.

3.1. Predicative uses

When used predicatively, *ka*-forms require the SOV pattern. Subjects are marked by the oblique case (that is, 1SG pronouns are used in their oblique forms), and *ka*-forms can be derived potentially from any verbal stem. (11)–(13) are examples of different verbs that can derive *ka*-forms.

(11) *mádū* *àlànzī-kà*
M. run-KA
'Madou ran'.

(12) *mádū* *kɔ̄ːmà-kā*
M. cough-KA
'Madou coughed'.

(13) *mádū* *bàŋgòⁿ-wā* *mānī-kà*
M. drum-CL tap-KA
'Madou tapped the drum'.

ka-forms are subject to one constraint associated with the external argument. These structures should preserve the argument structure of the initial predicate. The external argument may be omitted in case it is allowed by some rules which apply to Perfective forms as well. (14) shows that the external argument can be omitted in middle voice forms — both in Perfective and participial clauses. In contrast, if a verb lacks one of its core arguments, the sentence is ungrammatical, cf. (15)–(16).

(14) *mádū* *díː̄* / *dī-kā*
M. kill=MED kill-KA
'Madou is killed'.

(15) **mádū* *mā-kā*
M. build-KA
'*Madou built'.

(16) **mádū* *sɛ̄ⁿ-kā*
M. cut-KA
Int.: 'Madou has cut himself'.

The following two examples show that *ka*-forms can be used both in active and middle voice contexts:

(17) *tā^{n}-wā* *cèrē-kā*
stone-SG throw-KA
'The stone is thrown'.

(18) *mádū* *tā^{n}-wā* *cèrē-kā*
M. stone-SG throw-KA
'Madou has thrown a stone'.

As was shown before, Natioro adjectives share the morphological makeup with deverbal *ka*-forms. For the sake of simplicity, I define adjectives as items belonging to certain semantic classes, see [Dixon 1984; Dixon, Aikhenvald 2004]. Those are SHAPE, COLOUR, PHYSICAL PROPERTY, SPEED, HUMAN PROPENSITY, EVALUATION and some others; in Natioro, lexical items denoting these properties are derived from verbs, with the exception of some irregular adjectives which are not discussed in this paper. [1] Most adjectives are formed by adding the suffix *-nā* when used attributively (19), and by adding the suffix *-ka* when used predicatively, cf. (2). The predicative forms can be used attributively as well, as is shown in (20). The syntax of such constructions will be discussed below in detail. In contrast to *ka*-forms, purely nominal predicates do not involve any affixes or copulas (21).

(19) *nā^{n}* *wɔ́lí* *bàràndá* *pènèmà-nā=:̀*
1SG eat.PFV banana-SG sweet-ATTR=OBL
'Madou ate a sweet banana'.

(20) *nā^{n}* *wɔ́lí* *bàrànd-â=:* *↓pènèmàn-gà=:*
1SG eat.PFV banana-SG=OBL sweet-KA=OBL
'I ate a banana which was very sweet'.

(21) *nā-mí* *cɛ̄:nānā*
1SG-OBL hunt-man
'I am a hunter'.

[1] Irregular adjectives are noun-like elements that do not attach any derivational suffixes. Their morphology and syntax is described in [Dyachkov 2021].

In Natioro, predicative adjectives ending in *-ka* are combinations of a verbal stem and a suffix; tones of the latter may vary from one item to another. Most adjectives have verbal counterparts, which is exemplified in (22), and quite a few adjectives do not have any. Some examples known to me are *fā-kà* 'in good physical form' and *kò:rī-kā* 'round'.

(22) *bātārā-kā* 'solid' *bātārā=:̀* 'get solid'
pɛ̄nɛ̄mā̄ŋ-gā 'sweet' *pɛ̄nɛ̄mā=:̀* 'sweeten'
dīmī-kà 'furious' *dīmī=:̀* 'get furious'

There is evidence that many of the inchoative verbs deriving *ka*-forms are ambiguous between stative ('be A') and inchoative ('become A'). This fact will be discussed later in *Section 4.1.3*.

Since *ka*-adjectives are verbs with a sole argument, one can say that, syntactically, they follow the regular pattern and are not formally distinct from monoargumental verbs like 'come' or 'cough'. However, the crucial argument contra this suggestion is the fact that the *ka*-suffix is obligatory with adjectives used predicatively (= *ka*-forms) and optional with other verbs. I will discuss these properties of different classes of verbs below in *Section* 6.

3.2. Attributive uses

Although *ka*-forms are used mostly in predicative contexts, they may occur in attributive ones as well. Taken as such, they compete with regular adjectives derived from the same bases. The regular Natioro adjectivizer is *-nā* (plural *-nɛ̄*), and it can derive adjectives from most verbs. The examples (19) and (20), repeated here as (23) and (24), show that *nā*-adjectives and *ka*-forms corresponding to the same base can be used in the same attributive contexts.

(23) *nāⁿ* *wɔ́lí* *bàrànd-á* *pènèmà-nā=:̀*
1SG eat.PFV banana-SG sweet-ATTR=OBL
'Madou ate a sweet banana'.

(24)	*nā*^{n}	*wɔ́lí*	*bàrànd-â=:*	*↓pɛ̀nɛ̀màn-gà=:*
	1SG	eat.PFV	banana-SG=OBL	sweet-KA=OBL

‘I ate a banana which was very sweet’.

When used attributively, *ka*-forms are subject to one restriction. Namely, when derived from transitive verbs, they function as passive rather than active participles. The contrast between (25) and (26) illustrates this. Let us also recall that this is not the case with predicative uses which may exhibit both active and passive properties, as shown in *Section 3.1*.

(25)	*nɛ́*^{n}*¯*	*ní*$^{\uparrow}$	*nɛ́*^{n}*¯*	*làŋgā-cɛ¯*
	COW.PL	DEM	COW.PL	steal-KA.PL

‘These cows are stolen ones’.

(26)	**nà*	*ɲá*	*ɲīnāmpī-sī*	*bā:b-ā*	*làŋgā-cɛ¯*
	1SG	see.PFV	person-PL	sheep-SG	steal-KA.PL

Int.: ‘I saw people stealing sheep’.

4. Structural differences between *ka*-participles and other forms

In this Section, I will describe the properties of *ka*-forms that allow us to distinguish them from other verbal forms with which they compete in different contexts. In *Section 4.1.1*, I will describe the contexts where *ka*-forms are obligatory and cannot be replaced by Perfective forms. I will also describe the uses involving the semantic operators ‘yet’ and ‘already’. In *Section 4.1.2*, I will address the question of whether *ka*-forms can have stative or dynamic readings. I will show that adjectival and non-adjectival lexemes behave differently with respect to this property. In *Section 4.2*, I will describe the properties distinguishing *ka*-forms and the regular attributive *nā*-adjectives.

4.1. Obligatory uses of predicative *ka*-participles

4.1.1. Past contexts

The *ka*-suffix can be used in many contexts which are claimed to be typical of the markers belonging to the cross-linguistic category type Past Perfect [Dahl 1985]. The uses of *ka*-participles are quite natural in contexts where events preceding the reference time are described. In such cases, the *ka*-form is combined with the Past auxiliary *tɔ́*. Several examples illustrating typical Past Perfect contexts, as defined in [Dahl 1985], are given below.

(27) {Question: It is cold in the room. The window is closed. You OPEN the window (and closed it again)?}
= Q61 in [Dahl 1985: 200–201]
mā tɔ́ fɛ̄nɛ̄fīr-ā ɲɛ̄ː-kā yā?
2SG PST window-SG open-KA Q
'Had you opened the window?'

(28) {Q: What did you find out when you came to town yesterday?}
= Q67 in [Dahl 1985: 201]
yīsīːⁿ dɔ́ kō-kā
chief PST die-KA
'The king was dead'.

(29) = Q138 in [Dahl 1985: 201]
nàm pá nà fɛ́yā ā tɔ́
1SG come.PFV 1SG at 3SG PST
lɛ̄tɛ̄rɛ̄-sī ː̀ ɲīndí sɛ̄bɛ̄-kā
letter-PL two write-KA
'When I came home yesterday, he had just written two letters'.

However, the morpheme is not used in contexts which are regarded by Dahl as the most typical contexts for Perfect and which are presented below in (30)–(31). In these contexts, the unmarked Perfective verbs are used instead of Perfect forms.

(30) {Q: I want to give your brother a book to read, but I don't know which. Is there any of these books that he READ already?}
= Q53 in [Dahl 1985: 200]
ā̄ kàrā̄ sɛ́bɛ̄ⁿ nī̄
3SG read.PFV paper DEM
'He has read this book'.

(31) {Q: Is the king still alive?}
= Q56 in [Dahl 1985: 200]
ɔ́ʔɔ́ à kṑ
no 3SG die
'No, he is dead'.

In contexts involving the Past auxiliary, *ka*-forms cannot be replaced by simple Perfectives:

(32) *ʔɲī:̀ nā̄ⁿ́ yìlā̄-kā̄ nā̄ nà*
yesterday 1SG.OBL enter-KA FOC 1SG
cw-á tɔ́ ṕm-è: kpɛ̄sɛ̄-kā̄
woman-SG PST clothes-PL wash-KA
(**kpɛ́sɛ́*) *á=bù*
wash.PFV 3SG=finish
'When I came home yesterday, my wife has already washed clothes'.

ka-forms have not been attested in some other contexts regarded as typical Perfect contexts. For instance, I have not found any examples of experientive uses involving *ka*-forms ('Have you ever been to Ouagadougou?').

Other typical contexts, where *ka*-participles (but not Perfectives) are used, are contexts including the semantic operators 'yet' and 'already'. These operators can be both overt (33) and covert, cf. (34) and (35). Simple examples are given below.

(33) *nā̄-mí wɔ̀lì-kā̄ bā̄ lɛ̄*
1SG-OBL eat-KA yet NEG
'I have not eaten yet'.

(34) {Q: Have you began working?}
té *wā* *sɔ̀rɔ̀-kā* *lē*
1PL DEM begin-KA NEG
'No, we haven't begun [yet]'.

(35) {Come eat!}
nā-mí *wɔ̀lì-kā*
1SG-OBL eat-KA
'[No], I have [already] eaten'.

In such contexts, *ka*-forms seem to be preferred to regular Perfective forms. However, the latter were also accepted by my consultant, cf. (36).

(36) *nàⁿ* *sɔ́rɔ́* *nà* *ɲā:-kā* *bā* *lē*
1SG begin.PFV 1SG.POSS work-KA yet NEG
'I have not begun working yet'.

Besides the contexts described in this chapter, I could not find other contexts where *ka*-forms would be obligatory. A detailed investigation of the text collection could not reveal any other regular trends in the use of *ka*-forms with the exception of the cases where they are complements to the Past auxiliary and the adjectival contexts.

4.1.2. Stativity vs. dynamicity

In this Section, I will explore the problem of stative vs. dynamic interpretations of *ka*-forms. First, I will discuss the problem of state interpretations. Second, I will address specifically the problem of inchoative verbs that gave rise to adjectives and explore their aspectual properties.

In *Section 4.1.1*, I showed that some uses of *ka*-participles can be classified as Past Perfect uses. Cross-linguistically, the category of Perfect is often associated with the notion of the result state, cf. [Parsons 1990; Kamp, Rayle 1993] who argue that perfects are stativizing morphemes converting telic predicates into states. Thus, one may hypothesize that *ka*-forms may denote states, with these states somehow "relevant" to the moment of speech.

However, a detailed investigation reveals that *ka*-forms are at least not obligatory in contexts denoting relevant (in any sense) states. In such

contexts, regular Perfective forms are used. The following examples show this.

(37) {I am coming into the yard.}
nàm *pâ*
1SG come.PFV
'I have come'.

(38) {Somebody is coming into the yard and reporting what is happening outside right now.}
mádū *pâ* *á=lɛ́* *sūmbw-à=:* *kùŋ*
M. come.PFV 3SG=be.present tree-SG inside
'Madou has come and is sitting under the tree'.

(39) {I found an animal bleeding.}
sàmú-n-ā *↑tóló* *nā* *wɛ́:sɛ́* *ndū*
human-man-SG some FOC break.PFV 3SG.OBL
'Somebody shot it!'

A question arises whether the state interpretations are available to *ka*-forms at all. The right answer to this question is yes, if one considers the adjectives which are derived mostly from inchoative (change-of-state) verbs. Change-of-state verbs deriving adjectives can have at least two possible interpretations. They always have an inchoative interpretation ('become A'), cf. (40), but most verbs also have a state reading in Perfective contexts (41).

(40) *té* *sw-ā* *sō* *pɛ̄:ⁿ=̀*
3PL house-SG old destroy.PFV=MED
'Our old house collapsed'.

(41) *sàbàr-á* *nī* *pɛ̄:ⁿ̀*
shoe-SG DEM destroy.PFV=MED
'This shoe is old'.

At the same time, the difference between the inchoative verbs and their adjectival counterparts comprising the *ka*-suffix can be described in terms of stativity vs. dynamicity distinctions. The contrast is shown in (42) and

(43) where the Perfective verb is felicitous with the event-modifying *in*-adverbial but the corresponding participial form is not.

(42) *yɛ́ndō-wā* *kpā=ː̀* *lɛ́ːrɛ̄* *sùsū=ː̀* *sì*
corn-SG dry.PFV=MED hour six LOC
'The corn dried for six hours'.

(43) *ʔʔyɛ́ndō-wā* *kpāː-ká↑* *lɛ́ːrɛ̄* *sùsū=ː̀* *sì*
corn-SG dry-PTCP hour six LOC
'#The corn has been dry for six hours'.

I conclude that the state interpretation is available to adjectives and that this can be attributed to the fact that their verbal counterparts also have state readings. In other words, the stative properties of adjectives are inherited from their verbal counterparts.

A question arises whether the stative properties can be revealed in all the cases where *ka*-participles are felicitous. My data show that at least in some contexts, *ka*-forms may not exhibit the semantic properties associated with states (and more precisely, result states). (44) shows an example where the *ka*-form is used as a complement to the Past auxiliary *tɔ́*. Here, the *ka*-form does not necessarily have a result state reading, because the action denoted by the verb 'wash' may be accomplished as well as non-accomplished.

(44) *ʔɲīː̀* *nāⁿ́* *yìlā-kā* *nā* *nà* *cw-á* *tɔ́* *ṕm-ɛ̀ː*
yesterday 1SG.OBL enter-KA FOC 1SG woman-SG PST clothes-PL
kpɛ̄sɛ̄-kā *á=bù* / *á=bwá* *lé*
wash-KA 3SG=finish 3SG=finish.DEM NEG
'When I came home yesterday, my wife had finished washing clothes [*lit.* washed clothes and finished] / had not finished doing it'.

In this case, the result state 'be washed' is not reached, since the context entails that the action of washing clothes was not finished.

In cases other than adjectival verbs, *ka*-forms are compatible with event- (but not state-) oriented adverbials. In (45), the *ka*-form of the verb 'eat' is combined with the *in*-adverbial, ca. (42), suggesting that the clause describes a dynamic action rather than a state.

(45) *mádū̄ wɔ̀lì-kā̄ mīnīt̄ī̄ ɲīndî=: sī̄*
M. eat-KA minute two LOC
'Madou ate in two minutes'.

At the same time, some contexts where *ka*-forms are used obligatorily can refer to states rather than events. In the following example, the *ka*-form combines with the Past auxiliary. In such contexts, the *ka*-form should be analyzed as a simple passive form but not as a case parallel to (45).

(46) *būtīk-á tɔ́ ɲɛ̀:-kā̄ lɛ́:rɛ̄ ɲīndî=: sī̄*
shop-SG PST open-KA hour two LOC
'The shop was open for two hours'.

To sum up, I suggest that *ka*-forms may not refer to states. They can denote actions that do not result in a culminating point or dynamic events. The state readings of adjectives may be attributed to the fact that the verbs from which they are derived also have state interpretations.

4.2. Simple adjectives vs. *ka*-participles

In this Section, I will describe the syntactic properties of *ka*-forms and compare them to those of *nā̄*-forms. As was shown in *Section 3.1, ka*-forms can occur in attributive positions. I claim that both *ka*- and *nā̄*-forms have nominal distribution, and the difference between them boils down to the difference in the function of the derivational affixes.

The attributive *nā̄*-suffix cannot occur in predicate positions, cf. (47). From this I conclude that the suffix is an attributivizer whose only function is to mark the attributive status of the element. It is a well-known fact that attributive elements can occur in predicate positions; however, there is also evidence that in some languages, certain affixes deriving adjectives only allow them to be used in attributive but not in any other contexts [Grashchenkov 2018: 45–60]. Thus, I claim that the *nā̄*-suffix belongs to this type of derivational affixes — namely, it marks the very fact that the item is used in attributive function.

(47) *nà úsṕm-à: kɔ̀rɔ̀-nā̄
1SG clothes-SG old-ATTR
Int.: ‘My shirt is used’.

In contrast, *ka*-forms should be analyzed as forms with participial distribution. Their primary use is illustrated in (48), where the *ka*-form is unambiguously a passive participle.

(48) kání sàmú-n-ā̄ ↓sùmà-kà
this person-man-SG know-KA
‘This is a well-known person’.

Let us also recall that, when used in attributive positions, the participial forms were translated by my consultant as relative clauses (‘X which is A’), cf. (19) and (20). Nevertheless, there is no direct evidence that attributive participles can be regarded as relative clauses. In Natioro, relative clauses are internal-headed constructions formed by adding the relativizer *tùmà* which marks the relativized constituent staying in situ. An example is given in (49). (50) shows that the relativizer can be used even in the absence of the relativized constituent. Although an analogous construction can be composed using a *ka*-form (51), this cannot count as diagnostics — in this case, the *ka*-form heads the subordinate clause, because it is the only form that can occur in the predicate position.

(49) [cw-á **tùmà** pâ] nà kálàm-ā̄ nā̄=:̀
person-SG REL come.PFV 1SG.POSS brother-SG FOC
‘The man who came is my brother’.

(50) [LH**tū̄má** tɔ́ lɛ́] má yílá=:
REL PST be.present 2SG appeal
kū̄nà=: kū̄ŋgw-á nā̄ nī̄
thing head-SG here DEM
‘What was there, the object you called for, here it is!’

(51) nà né [lú¯ tùmà mɛ̄mā̄ŋ-gā̄=:]
1SG drink.PFV water REL be.cold-KA
‘I drank water which is cold’.

Unlike in many languages where participles are used, Natioro *ka*-forms cannot combine with many modifiers. For the reduced properties of participial constructions (compared to regular finite clauses), see an extensive discussion in [Shagal 2017: 99–147]. There is evidence that constructions headed by *ka*-forms do not even have the TP node which is responsible for introducing temporal adverbials. (52) is an example of a simple relative clause headed by the past auxiliary *tɔ́*. In this case a temporal adverbial, which is placed either at the beginning or in the end of the clause, can be inserted. In contrast, (53) is infelicitous. In this example, the adverbial 'yesterday' is placed before the constituent, which does not violate any principles of the clausal architecture, since adverbials can be used clause-initially. However, the example was rejected by my consultant as unacceptable, while the same phrase without the adverbial is grammatical.

(52) [*n-á*^{n} ↑*kūmā* *tɔ́* *làŋgā-kā* ***ʔɲɪ̄:̀***]
cow-SG REL PST steal-KA yesterday
nā *ɲá* *ndū*
1SG see.PFV 3SG.OBL
'The cow which was stolen yesterday, I found it'.

(53) *nzɛ̄*^{n}̀ *nā* *ɲá* [(****ʔɲɪ̄:̀***) *n-á*^{n} *làŋgā-kā*]
today 1SG see.PFV yesterday cow-SG steal-KA
Int.: 'Today, I have found the cow which was stolen (*yesterday)'.

Other dependents of the verb are also incompatible with *ka*-forms. For instance, verbs can attach postpositional phrases expressing the benefactive (54). With *ka*-forms, these phrases are infelicitous.

(54) *nà* *ɲá:ná* *máŋgòr-ē:* *má* ↑*tɔ́*
1SG buy.PFV mango-PL 2SG DAT
'I bought mangos for you'.

(55) ??*nà* *wɔ́lí* *máŋgòr-ē:* *ɲà:nà-cɛ̄* *má* *tɔ́*
1SG eat.PFV mango-PL bought-KA 2SG DAT
Int.: 'I ate mangos bought for you'.

There is much debate in the literature as to how one should analyze the experiencer-denoting arguments of adjectival and participial forms,

cf. [Baker 2003; Meltzer-Asscher 2011], among many others. I remain agnostic of whether those should be regarded as high applicatives, in the spirit of [Pylkkänen 2002], as clause-level adjuncts, as suggested in [Nikitina 2009] for postpositional phrases in some West African languages, or as low-level adjectival arguments. However, the data show that none of the dependents that are typical of verbs (and their corresponding participial forms) are acceptable with *ka*-forms.

To sum up, I have shown that the difference between *ka*-forms used attributively and their purely attributive *nā*-counterparts can be accounted for by the fact that the *nā*-suffix should be analyzed as an attributivizing morpheme, whereas the *ka*-suffix is a suffix deriving participles. As a consequence, both forms can be used in attributive position — for *nā*-forms, it is their natural function, and *ka*-forms head constructions occupying the attributive position and (presumably) having some properties of reduced clauses.

In the following Section, I will discuss the question of whether all the uses of *ka*-forms can be reduced to each other.

5. Discussion

So far, I have shown that there are contexts in which *ka*-forms compete with other forms and determined the factors underlying the choice of the *ka*-forms. Based on the data discussed in the previous Sections, the three following empirical generalizations can be formulated.

(56) **Generalization 1**
Adjectives (which are derived from change-of-state verbs) are used exclusively with the ka-suffix in predicative position

(57) **Generalization 2**
ka-forms are obligatory in some non-adjectival contexts — namely, in those involving the past auxiliary. These contexts express the temporal precedence (to another event)

(58) **Generalization 3**
When used attributively, ka-forms function as reduced relative clauses

Now let us turn to the question of whether all the uses of the *ka*-suffix represent the same grammatical category. Taking into consideration several facts, I argue that the correct answer is no. The main reason for this is that whereas adjectives require the *ka*-suffix when used predicatively, other verbs do not. In other words, there are two types of contexts that cannot be reduced to each other. The first type is represented by the adjectival items that attach the *ka*-suffix and the second one, by other verbs with which the *ka*-suffix is an exponent of some other category (presumably, Perfect-like). Even if one assumes that both cases involve state-denoting participles, there is no plausible explanation of the fact that (at least, some) uses of non-adjectival items do not denote (result) states, as was shown in *Section 4.1.2*. Thus, I propose that, to put it simply, non-adjectival verbs are Perfect-like items and adjectival ones are not[2].

However, let us consider another scenario according to which adjectival and non-adjectival items can be reduced to each other. Suppose that both are participles that transform the argument structure of the initial verb. In this case, one may assume that the *ka*-suffix derives both passive participles (in case of non-adjectival transitive verbs) and participles from monoargumental verbs (in case of adjectives). Thus, these possible diatheses can be schematized as follows.

[2] A question arises why the *ka*-suffix is extensively used with quality-denoting items and not with other verbs. Although there seems to be no clear explanation of this fact, I informally hypothesize that this is due to the fact that the *ka*-suffix derives participles which can be used in different constructions (which are even not necessarily compositional). If this is so, then predicative constructions with adjectives involve simple state-denoting participles, whereas, for instance, Past Perfect forms involve the same participles but possibly with non-compositional meaning. An analogous case may be represented by English, where the passive participle forms are also used in non-passive Perfect contexts. I assume that the two uses are different in nature and cannot be reduced to each other (or can be related at some deeper level). See also the possible scenario of the Resultative-to-Perfect shift discussed below.

(59) <Agent, V, Patient> → <Patient> + *ka*

(60) <V, Patient> → <Patient> + *ka*

In general, such an approach predicts that the participles should preserve their original event structure, cf. the influential Monotonocity Hypothesis [Koontz-Garboden 2012]. In other words, if a verb has an agent in its semantic structure, then it cannot be eliminated from it. Additional Natioro data suggest that this prediction is in fact borne out. In particular, if the base verb is an agentive predicate, then it should combine with agent-oriented adverbials, and these adverbials should also attach to the *ka*-participle. Examples confirming this suggestion are given in (58) and (59), where both participles are felicitous with different agent-oriented adverbials ('with an instrument' and 'with force').

(61) *mádū* *ɗī:-kā* *à* *sōⁿ-wā*
M. kill-KA COM knife-SG
'Madou was killed with a knife'.

(62) *swâ-bònd-ā*↑ *dìbī-ká*↑ ↓[*à* *fàŋg-ā*]
house.POSS-door-SG shut-PTCP COM force-SG
'The door is shut with force'.

If this suggestion is on the right track, the fact that adjectives refer to states (and not to dynamic events) can be accounted for as follows. The initial inchoative verb that derives adjectives can have both inchoative and stative interpretations, as shown in *Section 4.1.2*. Thus, one can say that state-denoting adjectives are derived from verbs which are also stative in some of their interpretations — in other words, stative predicates derive stative predicates, which seems quite natural. If this is so, then one may conclude that the initial semantic properties are retained in *ka*-forms of all types, the possibility of state vs. dynamic interpretations depends entirely on the semantic properties of the base verb, and no additional stipulations are needed.

However, in some cases adjectival items are not derived from verbs at all. In (63), the adjective is derived from the noun 'round' that cannot be used predicatively without the suffix. The following examples show that

the derived adjective with the *ka*-suffix (63) is regularly replaced by the *nā*-form in attributive contexts (64), suggesting that we deal with the same derivational model as in the case of deverbal adjectives.

(63) *tàbàl-ā nī kò:rī-kā / *kò:rī*
table-SG DEM round-KA round
'This table is round'.

(64) *nà yá:ná tàbàl-ā kò:rī-nā=:̀*
1SG buy.PFV table-SG round-ATTR=OBL
'I bought a round table'.

From this follows the fact that, although *ka*-forms are participles (as was shown before), the suffix does not function as a morpheme simply converting verbs into items with adjectival distribution. At the same time, it is not an attributivizing suffix, because this function is fulfilled by the *nā*-suffix. I also reject the idea that *ka*-forms have verbal distribution, which might have been suggested by the fact that they occur in predicate position. Although they obviously retain many verbal properties, the 1SG subjects in clauses with *ka*-forms are marked by the oblique case. This morphosyntactic makeup is typical of nominal predications[3] (65) but not of those containing Perfective verbs.

(65) *nā-mí cɛ̄:nānā*
1SG-OBL hunt-man
'I am a hunter'.

[3] An anonymous reviewer points out that the subjects of Imperfective clauses are also marked by the oblique case (as was shown before), suggesting that the oblique marking is typical of both nominal and non-nominal predications. However, I assume that this is not the case, given the fact that among all the verbal forms requiring SOV order, only Imperfective forms do not have apparent nominal origin. Nevertheless, I hypothesize that the Imperfective form goes back to a nominalized verb and thus retains the syntax of nominal predications. If my hypothesis is on the right track, then the Imperfective construction can be analyzed as a combination of the auxiliary and the lexical verb, and no additional stipulations are needed. Let us recall that the construction contains the verb *tɔ́* 'be' (in past tense) or a zero copula (in present tense), so an analysis whereby the copula verb takes a full-fledged verb as its complement

Taking these facts in consideration, I propose that there is another possible scenario for the emergence of the *ka*-suffix. It is well-known that many of the class markers in Gur languages can be traced back to pronouns [Miehe, Winkelmann 2007], and Natioro is not an exception to this general rule. First, the plural marker *-cɛ* (*-jɛ* in its voiced form) is a regular plural marker (66). Second, there is a demonstrative noun-like element *ká* 'thing' (plural *cé*) in Natioro. Three, a segmentally identical marker is used to derive nouns from words of other parts of speech.

(66) *bo̱mbo̱ⁿ-wa̱* 'knee' *bo̱mbo̱ⁿ-jɛ̱*

jàbaŋ̱-wà 'onion' *jàbaⁿ̱-jɛ̀*

(67) *kpɛ́sɛ́* 'wash, rub' *kpɛ̱sɛ̱-ka̱* 'type of brush'

wɛ̀ndi̱ 'vomit' *wɛ̱ndí-cɛ̀* 'vomitus'

I conclude that the *ka*-suffix, which is unambiguously nominal, may have given rise to the adjectival affix. The nominal properties of adjectival *ka*-forms account for the nominal syntax of adjectival predications — namely, for the oblique marking of the subject. Let us also recall that the *ka*-suffix is not an attributivizer. If some lexical properties of the initial noun 'thing' are indeed retained in predicative position, then the predicative uses of adjectives could be literally translated as 'small/high/hot thing'. Interestingly, *ka*-forms (but not *nā*-forms) can be used in cases where the head noun is omitted (68), which is quite natural if the lexical semantics of the noun 'thing' were preserved.

(68) {There are two pieces of mango, a big one and a small one.}

kɔ̄:ⁿ	*nā-mí*	*sā:ⁿ-kā=:*	/	**sā:ⁿ-nā*
give.IMP	1SG-OBL	small-KA=OBL		small-ATTR

'Give me the small one!'

Finally, I also note that the presumably nominal origin of the *ka*-suffix does not come into conflict with the participial status of deverbal

would be less plausible than an analysis whereby a copula verb heads a nominalized form. However, this may constitute the topic of a separate article.

ka-forms. The essential fact is that the suffix can derive adjectives from words of all parts of speech, that is, it converts both nouns and verbs into adjectives. Thus, the nominal origin hypothesis seems to propose a more uniform account for both the participial items (which, of course, have nominal distribution) and for those which are not derived from verbs. For some similar suggestions, see [Haspelmath 1994: 167]. Moreover, the fact that *ka*-forms are obligatory when used with the past copula *tɔ́* receives a purely syntactic account, since forms with nominal distribution can be taken as complements to a verb, but forms with verbal distribution cannot.

Another possible line of reasoning is that *-ka* is grammaticalized as a participial morpheme. Under these assumptions, the Natioro *ka*-adjectives can be regarded as resultative-like items — that is, they are derived from verbs denoting states and refer to states, which is a property of resultatives cross-linguistically, see [Nedyalkov et al. 1983]. Bybee, Dahl [1989] also suggest that in some languages resultatives gave rise to perfect constructions, and this scenario has to be taken into consideration. In particular, this scenario is well established for several European languages where perfect constructions have undergone development from resultative participles. Bybee, Dahl [1989] mention several Germanic languages (including German and Dutch), where constructions with the verb 'have' initially denoted the state of the object (*They have taken him*), and then the construction was extended to all transitive verbs and, finally, to intransitive ones. A similar construction was attested in my data. According to my consultant's indications, in some cases the predicative form can agree not with the subject but with the object:

(69) *nā-mí* *máŋgòr-ē:* *wɔ̀lì-kā* / *wɔ̀lì-cɛ̄*
1SG-OBL mango-PL eat-KA eat-KA.PL
'I ate mangos'.

In Natioro, extension from the transitive to intransitive does not seem plausible, since intransitive adjectival uses are more grammaticalized than non-adjectival ones. However, I suggest that the scenario whereby the adjectival and the passive participial uses denoting states could be extended to cases like (69) is nevertheless possible, since the *ka*-forms in such cases

can be regarded as those expressing the result state of the direct object (lit. 'to-me mangos are eaten'). Of course, this suggestion requires additional arguments and further research.

6. Conclusion

In this paper, I described the semantic and syntactic properties of the *ka*-suffix deriving adjectives, passive participles and transitive (as well as intransitive) predications in Natioro. I showed that only adjectives derived from verbs are obligatorily combined with this suffix when used predicatively, whereas the suffix is optional with other verbs. I described the contexts which are typical of *ka*-forms and showed in which contexts these forms are used instead of regular adjectives and Perfective forms. A detailed investigation revealed several crucial properties of *ka*-forms: 1) they convert nouns and verbs into items with nominal distribution; 2) they are reduced participial clauses, which distinguishes them from regular attributive adjectives; 3) they denote states in case of deverbal adjectives and dynamic events in case of many other verbs. Based on this evidence, I concluded that deverbal adjectives containing the *ka*-suffix constitute a class which is different from non-adjectival predicates. I also proposed a hypothesis concerning the origin of the *ka*-suffix and capturing all of its uses in a uniform way.

Abbreviations

↑ — upstep; ↓ — downstep; = — vowel lengthening; 1, 2, 3 — 1st, 2nd, 3rd person; ATTR — attributivizer; COM — comitative; DAT — dative; DEM — demonstrative pronoun; FOC — focus; FUT — future tense; IMP — imperative; INF — infinitive; IPFV — Imperfective; KA — *ka*-suffix; LH — raising tone overlay; LOC — locative; M — masculine; MED — middle voice; NEG — negation; NMLZ — nominalization; OBL — oblique; PASS — passive; PFV — Perfective; PL — plural; POSS — possessor; PREF — prefix; PST — past tense; Q — question particle; REL — relative pronoun; SG — singular.

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