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22 B-applicatives and I-applicatives in Atlantic languages (Niger-Congo)

Abstract: This chapter provides an overview of applicative constructions in a sample of 27 languages belonging to the Atlantic branch of the Niger-Congo family. Most of the languages of the sample have two distinct applicative suffixes, and none of them has an applicative suffix that would be equally available to license applied phrases licensing the roles of beneficiary and instrument. After a relatively detailed description of the applicative constructions of Wolof (a language with two applicative suffixes) and Jóola Fóñi (a languages with just one applicative suffix, in which the applicative strategy is not used to encode beneficiaries), the chapter discusses possible generalizations concerning the Atlantic applicatives that have the ability to license applied phrases expressing the role of beneficiary (B-applicatives) and those that have the ability to license applied phrases expressing the role of instrument (I-applicatives).

1. Introduction

This chapter is devoted to a typological investigation of applicative constructions in Atlantic languages.[1] An interesting particularity of Atlantic languages is that they share the following limitation to the polysemy of applicative markers: none of the applicative markers attested in Atlantic languages is found both in benefactive and instrumental applicative constructions. At the same time, applicative markers exclusively found in functions other than benefactive or instrumental are rare. This suggests organizing the search for regularities in the properties of Atlantic applicatives with a focus on possible contrasts in the behavior of the applicative markers that have the ability to license applied phrases in benefactive role (B-applicative markers) and those having the ability to license applied phrases in instrumental role (I-applicative markers).

The chapter is organized as follows. Section 2 provides some basic information about clause structure in Atlantic languages and introduces the distinction between B-applicatives and I-applicatives. Section 3 consists of two sub-sections in which we describe the applicative constructions of two languages for which we have detailed first-hand data: Wolof and Jóola Fóóñi. Section 4 and Section 5 are devoted to the discussion of possible generalizations about B-applicatives and I-applicatives, respectively. Section 6 summarizes the main conclusions.

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[1] In this paper, we adopt the delimitation of the Atlantic language family put forward by Konstantin Pozdniakov and Guillaume Segerer (Pozdniakov and Segerer, forthcoming). Atlantic languages as delimited by Konstantin Pozdniakov and Guillaume Segerer are a proper subset of the Atlantic language family as delimited by Greenberg and Sapir. There is consensus that the languages classified as "Atlantic" by Greenberg and Sapir belong to the Niger-Congo macro-family, but Pozdniakov and Segerer argue that there is no convincing evidence that they constitute a genetic unit within Niger-Congo. The label *Atlantic* as they use it applies to a subset of Greenberg/Sapir's "Atlantic" that excludes Mel languages and a few other languages that, in the present state of our knowledge, are best considered as Niger-Congo isolates. As reflected in Table 1, two branches of (New) Atlantic are recognized: Northern and Bak.

2. Clause structure in Atlantic languages, and first observations on Atlantic applicatives

Atlantic languages are among the languages for which the recognition of a grammatical relation "subject" conflating A (the term of the transitive construction representing the agent of prototypical transitive verbs) and S (the sole core NP in clauses projected by monovalent verbs) is unproblematic. A grammatical relation "object" corresponding to the typological notion of P can also be recognized. The Atlantic languages do not have a grammatical relation "indirect object" comparable to that found in most European languages, but make extensive use of multiple-object constructions in which two or more NPs show coding characteristics identical to those of the object in monotransitive constructions.[2]

In all Atlantic languages, a distinctive property of the subject NP (as opposed to the other nominal terms of verbal clauses) is its fixed position immediately before the verb, contrasting with the default postverbal position of objects and obliques. In most Atlantic languages if not all, subjects have indexation properties which clearly distinguish them from objects and obliques, but there is important cross-linguistic variation in the details of subject and object indexation. In general, subjects and objects are unflagged, whereas obliques are standardly flagged by prepositions.

With very few exceptions, Atlantic languages have multiple-gender systems with the kind of relationship between noun morphology and the division of nouns into genders typically found in several branches of the Niger-Congo family, traditionally described in terms of "noun classes".

In the languages in which the recognition of a grammatical relation "subject" is unproblematic, applicatives can be defined as V>V derivations in which the derived verb occurs in constructions characterized by a change in the mapping of semantic roles onto syntactic roles meeting the following two conditions:

– the subject of the derived verb expresses the same semantic role as that of the base verb;
– the construction of the derived verb differs from that of the base verb in the expression of a semantic role that cannot be encoded as an object in the construction of the base verb;[3] the phrase expressing the semantic role in question in the construction of the derived verb can be designated as the applied phrase.

Two subtypes of constructions meeting this definition must be distinguished:

– in optional applicatives, the semantic role expressed by the applied phrase can also be expressed in monoclausal constructions whose nucleus is the base verb, but with a non-core coding distinct from its coding in the applicative construction;
– in obligatory applicatives, the semantic role expressed by the applied phrase cannot be expressed at all in monoclausal constructions whose nucleus is the base verb.

An important aspect of the broad definition of applicatives adopted in this volume is that it does not restrict the notion of applicative construction to constructions in which the applied phrase fulfills the syntactic role of object. The only condition is that, if the semantic role expressed by the applied phrase can be encoded in the construction of the base verb, it requires a non-core coding distinct from its coding in the applicative construction.

Another important aspect of the definition formulated above is that it leaves open the possibility that the derived verbs identifiable as fulfilling an applicative function in some of their uses also have other functions. It is indeed very common that the same derived verb forms are found both in

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[2] This definition does not imply the lack of hierarchy in the behavioral properties of the objects in multiple-object constructions. However, in this respect, we are not in a position to propose any generalization about the multiple-object constructions of Atlantic languages.

[3] This condition is essential to distinguish applicative constructions from antipassive constructions, since applicative and antipassive constructions share the lack of change in the semantic role assigned to the subject.

constructions meeting the definition of applicative constructions formulated above, and in constructions in which they fulfill other functions, either related to valency change or not.

The data we have gathered on Atlantic applicatives include no applicative marker having the ability to license both applied phrases expressing the role of beneficiary and applied phrases expressing the role of instrument, and very few applicative markers used exclusively for semantic roles other than beneficiary and instrument. Consequently, a general discussion of Atlantic applicatives can conveniently be based on the distinction between B-applicatives or I-applicatives, defined as follows:

- B-applicative markers may license applied phrases expressing the role of beneficiary (and possibly other semantic roles), but not the role of instrument;
- I-applicative markers may license applied phrases expressing the role of instrument (and possibly other semantic roles), but not the role of beneficiary.

As summarized in Table 1, B-applicative markers are found in all the languages of our sample, with the exception of those belonging to the Jóola group. I-applicative markers are attested in the vast majority of the languages of our sample (21 out of 27), but the languages whose description does not mention the existence of an I-applicative marker are scattered across various branches of the Atlantic family. Applicative constructions involving markers exclusively used to license applied phrases with roles other than beneficiary and instrument are attested in 6 languages.[4]

Table 1: B-applicatives and I-applicatives in Atlantic languages

				B-appl	I-appl	others
North	Wolof		Wolof	*-al*	*-e*	–
	Nyun-Buy	Nyun	Guñaamolo	*-Vr*	*-um*	–
			Gubëeher	*-ur*	*-um*	*-un*
			Gujaahar	*-d (-it, -in)*	–	–
		Buy	Kobiana	*-ar*	*-Vm*	*-al*
	Tenda-Jaad	Tenda	Bedik	*-ɍn*	*-ál*	–
			Basari	*-ʌn (-ə́n)*	–	–
			Konyagi	*-nə́ɭ*	*-xǽl*	*-ryǽry, -ryéry, -ǽry*[5]
		Jaad-Biafada	Jaad	*-ii, -rik*	*-een*	–
			Biafada	*-iig*	*-en*	–
	Fula-Seereer		Fula	*-an*	*-ir (-r, -d, -or)*	–
			Seereer	*-an*	*-it*	–
	Cangin		Noon	*-iɗ*	*-oh*	–
			Laalaa	*-eɗ (-iɗ)*	*-oh*	–
			Saafi	*-iɗ*	*-oh*	–
			Palor	*-ɪd*	*-aʔ*	–
			Ndut	*-iɗ*	*-aʔ*[6]	–

[4]   The sources we consulted for languages other than Wolof and Jóola Fóoñi are as follows. Guñaamolo: Bao Diop (2017), Bodian (2017); Gubëeher: Cobbinah (2013); Gujaahar: Goudiaby (2017); Kobiana: Doneux (1991); Bedik: Ferry (1991); Basari: Ferry (1991), Perrin (2019); Konyagi: Ferry (1991), Santos (1996); Jaad: Ducos (1971), Meyer (2001); Biafada: Wilson (1993); Fula: Arnott (1970), McIntosh (1984); Seereer: Faye (1979), Renaudier (2012); Noon: Soukka (2008), Lopis-Sylla Jeanne (2010), Wane (2017); Laalaa: Dieye (2011); Saafi: Mbodj (1983), Stanton (2011), Pouye (2015); Palor: D'Alton (1987); Ndut: Morgan (1996); Nalu: Seidel (Forthcoming); Jóola Esuulaalur: Sambou (1979); Jóola Banjal: Bassène (2007); Jóola Kujireray: Watson (2015); Karon: Sambou (2007); Kuwaataay: Coly (2010); Bayot: Diagne (2009); Manjaku: Karlik (1972); Mankanya: Trifkovic (1969), Gaved (2020); Ganja: Creissels and Biaye (2016); Bijogo: Segerer (2002).
[5]   In Santos' (1996: 36) description of Konyagi, *ry* is the transcription of a single phoneme she describes as a particular trill phonemically distinct from plain *r*.

	Nalu		Nalu	*-er (-ir, -ar)*	–	–
Bak	Jóola	Central Jóola	Fóoñi	–	*-úm*	*-en*
			Esuulaalur	–	*-úm*	–
			Banjal	–	–	*-en*
			Kujireray	–	–	–
		Jóola outliers	Karon	–	*-anan*	–
			Kuwaataay	–	–	–
			Bayot	–	–	–
	Manjaku-Mankanya		Manjaku	*-ar*	*-na*	–
			Mankanya	*-ar*	*-na*	–
	Balant		Ganja	*-Vd*	–	–
	Bijogo		Bijogo	*-an*	*-at*	–

In this chapter, we present and analyze data showing that the operational definition of B-applicatives and I-applicatives formulated above helps capture interesting generalizations about Atlantic applicatives, since in Atlantic languages, B-applicatives and I-applicatives as we define them consistently differ in several important respects.

3. Two case studies

3.1. Wolof

3.1.1. Introductory remarks
   Wolof has two applicative suffixes, the B-applicative marker *-al* and the I-applicative marker *-e*. In its benefactive function, the B-applicative marker occurs in an obligatory applicative construction, whereas in its instrumental function, the I-applicative marker occurs in an optional applicative construction. In (1), there is no alternative way to mention a beneficiary in a clause projected by *jénd* 'buy',[7] whereas in (2), the instrument can be encoded either as an applied object (2b), or as an oblique introduced by the preposition *ak* (2c). In both cases, the applied phrase is syntactically an object, and applicativization does not affect the expression of the other participants, which is made possible by the high productivity of double-object constructions in Wolof.

(1)   Wolof (Diouf 2003)
   a.   *Woto*   *b-u*   *xonq*   *la*   *jénd.*
       car   clB-REL   be.red   FOC$_{O/X}$.sI:3SG   buy-APPL
       'He bought a red car.'
   b.   *Woto*   *b-u*   *xonq*   *la*   *jénd-al*   *jabar-am.*
       car   clB-REL   be.red   FOC$_{O/X}$.sI:3SG   buy-APPL   wife-POSS:3SG
       'He bought a red car for his wife.'
   c.   **Woto*   *b-u*   *xonq*   *la*   *jénd*   (PREP)   *jabar-am.*
       car   clB-REL   be.red   FOC$_{O/X}$.sI:3SG   buy   PREP   wife-POSS:3SG
       Intended: 'He bought a red car for his wife.'

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6   In Ndut, the applicative use of *-ʔa* can be characterized as vestigial (see § 5.6.2).
7   Church (1981) and Njie (1982) mention the possibility of expressing beneficiaries by means of a locative preposition in a non-applicative construction, but we never came across such a construction in texts spontaneously produced by Wolof speakers. The problem is that Wolof is so widely used as a lingua franca that it is sometimes difficult to draw a dividing line between traditional Wolof as spoken in rural areas and usages found in Urban Wolof but deemed incorrect by traditional speakers.

(2) Wolof (Diouf 2003)

  a. *Dafa   dem   c-a   kër   coro   l-i.*
      FOC_V.sI:3SG go LOC-PROX house girlfriend clL-D.PROX
      'He went to her girlfriend's place.'

  b. *Woto   la   dem-e.*
      car FOC_{O/X}.sI:3SG go-APPL
      'He went by car.'

  c. *Boo   fa-y   dem   ak   woto,*
      when.sI:2SG there-ICPL go with car
      dafa-y   mel   ni   l-u   jége.
      FOC_V.sI:3SG-ICPL resemble like clL-REL be.near
      'If you go there by car, it seems to be close.'

Both applicative markers can license applied phrases expressing other roles than those illustrated in (1) and (2). However, depending on the semantic role it expresses, the applied phrase does not always display the properties expected from a direct object. There is also variation in the obligatory or optional nature of the applicative construction.

3.1.2. Other uses of the B-applicative marker *-al*
3.1.2.1.*-al* and the expression of roles semantically close to the role of beneficiary

In addition to the role of beneficiary already illustrated above, the B-applicative marker licenses applied phrases expressing other roles that can be subsumed under the general notion of orientation of the action, such as goal (3), purpose (4), or concernee (5).[8] Applied phrases in constructions involving the B-applicative marker may also express roles that meet this general characterization but are difficult to classify in general terms because they are tightly bound to the lexical meaning of the verb, as in (6). In all cases, the applied phrase displays the same behavior as the object of underived transitive verb, and there is no other means but the applicative to introduce these roles.

(3) Wolof (Diouf 2003)
   Soo   def-al-ul   màngo   s-i   cëslaay, dina   daanu.
   if.sI:2SG put-APPL-NEG mango.tree clS-D.PROX stake FUT.sI:3SG fall
   'If you don't put a stake to the young mango tree, it will fall.'

(4) Wolof (Voisin-Nouguier 2002)
   Waa   dëkk   b-i   yépp dem-al-oon benn dëkkandoo santaane.
   people.of village clB-D.PROX all go-APPL-PST one neighbor collective.work
   'All the villagers had gone to a neighboring village for a collective work.'

(5) Wolof (Diouf 2003)
   Fomp-al   ko   lex   y-i.
   wipe-APPL oI:3SG cheek clY-D.PROX
   'Wipe his cheeks.' (Lit. 'Wipe him the cheeks.')

(6) Wolof (Diouf 2003)
   Sos-al   nga   ma.
   say.bad.things-APPL PRF.sI:2SG oI:1SG
   'You bad-mouthed me.'

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8 Following Van de Velde (2020), we designate as concernee a person concerned by the event by virtue of an inherent relationship (s)he has with a participant more directly involved in the event (the 'concern'). Concernees are commonly designated as 'external possessors'. As discussed in detail by Van de Velde (2020), concernee-concern constructions are prototypically motivated by a whole-part relationship between the concernee and the concern.

3.1.2.2. The comitative function of *-al*

The B-applicative marker *-al* also licenses applied phrases expressing the role of companion. However, in contrast to its other uses, the comitative use of the B-applicative marker *-al* is only possible if the applied phrase is focalized, questioned, or relativized, as in (7a), otherwise the role of companion can only be expressed by an oblique phrase introduced by the preposition *ak* 'with', without any verbal marking, as shown in (7b-c). As seen in (7d), the preposition *ak* 'with' may also be maintained in the presence of *-al*, in which case *-al* does not act as an applicative marker, but rather as a verbal marker highlighting the pragmatic saliency of an oblique without modifying its syntactic status. However, this construction is not accepted by all informants.

(7)   Wolof (Voisin-Nouguier 2002)
  a.   *Sama   rakk   laa   génn-al.*
       POSS:1SG   younger.sibling   FOC_{O/X}.sI:1SG   go.out-APPL
       'It's with my sister that I went out.'
  b.   **Génn-al*   *naa*   *sama*   *rakk.*
       go.out-APPL   PRF.sI:1SG   POSS:1SG   younger.sibling
       Intended: 'I went out with my sister.'
  c.   *Génn   naa*   *ak*   *sama*   *rakk.*
       go.out   PRF.sI:1SG   with   POSS:1SG   younger.sibling
       'I went out (with) my sister.'
  d.   ^?*Ak*   *yow*   *la*   *soxna*   *s-i*   *di*   *wax-al.*
       with   2SG   FOC_{O/X}.sI:3SG   woman   clS-D.PROX   ICPL   speak-APPL
       'It's with you that the woman is speaking.'

3.1.3. Other uses of the I-applicative marker *-e*
3.1.3.1. *-e* and the expression of roles semantically close to the role of instrument

In applicative constructions with the suffix *-e*, the applied phrases referring to roles semantically close to the role of instrument (such as means [8–9], material [10], or price [11]) behave syntactically as objects, and there are no other ways to express these roles.

(8)   Wolof (Voisin-Nouguier 2002)
      Alal-am   j-i,   amin   w-u   sell   la   ko   am-e.
      wealth-POSS:3SG   clJ-D.PROX   way   clW-REL   be.pure   FOC_{O/X}.sI:3SG   oI:3SG   get-APPL
      'His fortune, he got it in an irreproachable way.'

(9)   Wolof (Voisin-Nouguier 2002)
      Gaal   g-i,   wiir   la   dem-e.
      pirogue   clG-D.PROX   sail   FOC_{O/X}.sI:3SG   go-APPL
      'It is under sail that the pirogue moves forward.'

(10) Wolof (Diouf 2003)
      Ndaa   l-i,   ban   lañu   ko   tabax-e.
      pot   clL-D.PROX   clay   FOC_{O/X}.sI:3PL   oI:3SG   build-APPL
      'The pot was made from clay.'

(11) Wolof (Church 1981)
      Ñaata   nga   leen   jënd-e?
      how.much   sI:2SG   oI:3PL   buy-APPL
      'How much did you pay for them?'

3.1.3.2. *-e* and the expression of source

The suffix *-e* also marks applicative constructions in which the applied phrase expresses the role of source (12). Contrary to the instrumental use of *-e*, the applied phrase is a prepositional phrase or

an adverb displaying no object-like property, and there is no alternative way of expressing the role of source.

(12)   Wolof (Diouf 2003)
   War   nañu   fi   jél-e   jal-u   mbalit   b-i.
   have.to   PRF.sI:3PL   here   remove-APPL   heap-CSTR   garbage   clB-D.PROX
   'They should remove the garbage heap from here.'

3.1.3.3. *-e* and the expression of path
   With verbs of motion, the adjunction of *-e* licenses applied phrases expressing the role of path (perlative). In this construction, illustrated in (13b), the applied phrase is a prepositional phrase introduced by a locative preposition or an adverb displaying no object-like properties, and there is no alternative way of expressing the role of path.

(13)   Wolof (Diouf 2003)
   a.   *Dugg*   *na*   *ci*   *nég*   *b-i.*
      enter   PRF.sI:3SG   LOC.PROX   room   clB-D.PROX
      'He entered the room.'
   b.   *Dugg-e*   *na*   *ci*   *bunt*   *b-i.*
      enter-APPL   PRF.sI:3SG   LOC.PROX   door   clB-D.PROX
      'He entered through the door.'

3.1.3.4. *-e* and the expression of circumstantial roles (manner or location of the event)
   The use of the I-applicative marker *-e* may also be conditioned by the presence of phrases that do not refer to participants, but to circumstances of the event: manner, as in (14–15), or location of the event, as in (16). There is, however, an interesting contrast with the uses of -e described in § 3.1.3.2–3.
   As in the ablative and perlative uses of *-e* (see § 3.1.3.2–3), the phrases referring to circumstances of the event are prepositional phrases or adverbs that do not show object-like properties.

(14)   Wolof (Voisin-Nouguier 2002)
   Na   *def-e*   *nan?*
   OBLG.sI:3SG   do-APPL   how
   'How should he do?'

(15)   Wolof (Diouf 2003)
   Naka   *lañu*   *tëral-e*   *eksame*   *y-i*
   how   FOC$_{O/X}$.sI:3PL   organize-APPL   exam   clY-D.PROX
   'How did they organize the exams?'

(16)   Wolof (Voisin-Nouguier 2002)
   C-i   *teraas*   *b-i*   *lañu-y*   *lekk-e.*
   LOC-PROX   terrace   clB-D.PROX   FOC$_{O/X}$.sI:3PL-ICPL   eat-APPL
   'It's on the terrace that they eat.'

Such examples could suggest that, in Wolof, manner phrases and location phrases are treated as applied obliques in an applicative construction. However, the same phrases in similar functions also occur in constructions in which the I-applicative marker is not present. The problem is that the available data are not sufficient to draw a general conclusion about the exact role of *-e* in such cases.
   In the case of phrases expressing location, there is some evidence that the use of the applicative marker might reflect nuances within the semantic role of location.

On the one hand, pairs of sentences such as (17a–b) suggest that, with the same verb *dëkk* 'live somewhere', the absence of *-e* marks reference to a type of environment defined in general terms (a), whereas the presence of *-e* marks reference to a specific place (b).

(17) Wolof (Diouf 2003, Voisin-Nouguier 2002)

a. *Saafàndu*   *c-i*   *àll*   *rekk*   *la-y*   *dëkk.*
   wild.dog   LOC-PROX   bush   only   FOC$_{O/X}$.sI:3SG-ICPL   live
   'Wild dogs live only in the bush.'

b. *Ñu*   *ngi*   *dëkk-e*   *c-i*   *jéeri*   *j-i,*
   sI:3PL   PROG   live-APPL   LOC-PROX   inland   clJ-D.PROX
   dex   *g-i*   *sore*   *na*   *leen.*
   river   clG-C.PROX   be.far   PRF.sI:3SG   oI:3PL
   'They live inland, the river is far from them.'

On the other hand, (18a–b) suggests that, with a verb like 'pound', the absence of *-e* may mark participant location (a) as opposed to event location (b).[9]

(18) Wolof (Church 1981)

a. *Gis*   *naa*   *fu*   *mu-y*   *dëbb.*
   see   PRF.sI:1SG   where   sI:3SG-ICPL   pound
   'I saw the thing in which she pounds.'

b. *Gis*   *naa*   *fu*   *mu-y*   *dëbb-e.*
   see   PRF.sI:1SG   where   sI:3SG-ICPL   pound-APPL
   'I saw the place where she pounds.'

However, much more data than we have at our disposal would be necessary to confirm the contrasts suggested by such examples. In the absence of more precise and systematic information about the interaction between the lexical meanings of individual verbs, the semantic nuances that circumstantial phrases may express, and the constraints on the presence of the verbal suffix *-e*, we leave open the question of the extent to which the use of *-e* related to the presence of a manner or location phrase can be analyzed as an instance of applicativization or of optional highlighting of circumstantial phrases.

3.1.4. Lexicalized applicatives

Wolof has quite a few verbs that look like applicative verbs but are best analyzed as lexicalized applicatives. For example, the last vowel of *jóge* 'come from' could be the I-applicative marker *-e*, especially as the role of source is among those that can be expressed by the applied phrase in the applicative constructions marked by *-e*. However, synchronically, *jóg* can only mean 'stand up', whereas *jóge* has the general meaning 'come from', without any reference to the change of posture expressed by *jóg*.

3.1.5. *-al* as a polysemous causative-applicative marker

The verbal suffix *-al* is used productively, not only as a B-applicative marker, but also as a causative marker, as in (19).

(19) Wolof (Diouf 2003)

a. *Paan*   *b-i*   *fees*   *na.*
   basin   clB-D.PROX   be.full   PRF.sI:3SG
   'The basin is full.'

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9   See Pacchiarotti (this volume) for a discussion of possible relationships between applicativization and the participant vs. event location contrast in Bantu.

b.   *Bul*   *fees-al*   *paan*   *b-i.*
           PROH.sI:2SG   be.full-CAUS   basin   clB-D.PROX
           'Don't'fill the basin.'

With *toog* 'sit', the *al*-form *toog-al* can be interpreted as 'seat' (causation) or 'represent' (deputative benefaction, lit. 'sit on behalf of s.o.').

3.1.6. Co-expression patterns involving the I-applicative marker *-e*

A verbal suffix *-e* showing the same morphophonological behavior as the I-applicative marker is also found with some verbs as a marker of reciprocalization (20), antipassivization (21), causativization (22), or state-passivization (23). It is unclear to what extent these uses of valency-changing suffixes identical to the I-applicative marker *-e* can be analyzed as reflecting grammaticalization from a common source, or are just cases of accidental homonymy.

(20)   Wolof (Diouf 2003)

    a.   *Dafa-y*   *nuyu*   *boroom*   *kër*   *g-i.*
        FOC$_V$.sI:3SG-ICPL   greet   owner   house   clG-D.PROX
        'He is greeting the householder.'

    b.   *Ñaar-i*   *sefdetaa*   *yaa*   *ngiy*   *nuyoo.*
        two-CSTR   head.of.state   sI:3PL   PROG   greet.RECP
        'The two heads of state are greeting each other.' (*nuyu-e > nuyoo*)

(21)   Wolof (Diouf 2003)

    a.   *Xaj*   *b-i*   *dafa*   *ko*   *màtt.*
        dog   clB-D.PROX   FOC$_V$.sI:3SG   oI:3SG   bite
        'The dog bit him.'

    b.   *Xaj*   *b-i*   *dafa-y*   *màtt-e.*
        dog   clB-D.PROX   FOC$_V$.sI:3SG-ICPL   bite-ANTIP
        'The dog bites.'

(22)   Wolof (Diouf 2003)

    a.   *Saxaar*   *s-ee*   *tax*   *mu*   *génn.*
        smoke   clS-D.PROX.FOC$_S$ cause   sI:3SG   go.out
        'He went out because of the smoke.'

    b.   *Dama-y*   *génn-e*   *woto*   *b-i.*
        FOC$_V$.sI:1SG-ICPL   go.out-CAUS   car   clB-D.PROX
        'I'm taking the car out.'

(23)   Wolof (Diouf 2003)

    a.   *Ub*   *naa*   *néeg*   *b-i.*
        close   PRF.sI:1SG   room   clB-D.PROX
        'I closed the room.'

    b.   *Néeg*   *b-i*   *dafa*   *ub-e*   *bëccëg*   *b-i*   *yépp.*
        room   clB-D.PROX   FOC$_V$.sI:3SG   close-STAT   day   clB-D.PROX   all
        'The room remained closed all day long.'

3.1.7. Lexicalized uses of *-e*

There are also isolated verb pairs involving a suffix *-e* that are best analyzed in terms of lexicalization. For example, in the case of *des* (intransitive) 'remain somewhere' / *des-e* (transitive) 'still have', the subject of *des* is the figure in a figure-ground relationship, whereas the subject of *des-e* is a possessor. This precludes an applicative analysis, since by definition, applicativization does not affect the semantic role of the subject, and at the same time, the relationship between the

argument structures and coding frames of *des* and *des-e* cannot be analyzed as an instance of any other general type of voice alternation.

3.1.8. Summary

Leaving apart some isolated cases of verbs that are formed by means of suffixes identical to an applicative marker but occur in constructions lending themselves to no generalization, it is possible to analyze as productive the following uses of the B-applicative and I-applicative markers of Wolof:

– The semantic role of beneficiary can only be encoded by means of the B-applicative marker in an obligatory applicative construction with the beneficiary encoded as an applied object. The B-applicative marker is used in the same way for the expression of roles semantically close to the role of beneficiary.
– The semantic role of comitative can be encoded in the construction of the underived verb by means of the preposition *ak*; it can also be encoded in a construction involving the B-applicative marker, with the comitative phrase in the role of applied object, but only if the comitative phrase is focalized, questioned, or relativized; moreover, for some speakers, it is possible to maintain the preposition in the presence of the B-applicative marker, which brings into question the analysis of the construction as an applicative construction.
– The semantic role of instrument can be encoded in the construction of the underived verb by means of the preposition *ak*, but also by means of the I-applicative marker in an optional applicative construction with the instrument phrase in the role of applied object. The I-applicative marker is used in the same way for the expression of semantic roles close to the role of instrument, such as means or material.
– The expression of the roles of ablative and perlative requires the I-applicative marker in an obligatory applicative construction in which the applied phrase does not display object-like properties.
– The use of the I-applicative marker may also be related to the presence of an oblique expressing manner or location of the event, but further investigation would be necessary to establish to what extent such constructions qualify as applicative constructions or not.
– A verbal suffix identical to the B-applicative marker is found in causative function, whereas a verbal suffix identical to the I-applicative marker is found in reciprocal, antipassive, causative, and state-passive function.

3.2. Applicative constructions in Jóola Fóoñi

3.2.1. Introductory remarks

Jóola Fóoñi does not have applicative constructions with the applied phrase expressing the semantic role of beneficiary. In Jóola Fóoñi, beneficiaries are encoded as objects indistinguishable from the objects representing the patientive argument of transitive verbs. For example, in (24), nothing indicates whether the object index suffixed to the verb must be interpreted as referring to the patient or to a beneficiary.[10]

(24)   Jóola Fóoñi
       Pan   i-pos-ool.
       FUT   sI:1SG-wash-I:clA
       'I'll wash him/her.' OR 'I'll do the washing for him/her.'

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[10] If not otherwise indicated, the Jóola Fóoñi examples quoted in this chapter are from Denis Creissels and Alain Christian Bassène's work on a corpus of oral texts they transcribed and analyzed with the help of Boubacar Sambou as part of a project of a reference grammar of Jóola Fóoñi.

Jóola Fóoñi has two verbal suffixes that can mark applicative constructions: *-úm* and *-en*.[11] However, they differ considerably in terms of productivity.

The suffix *-en* is productive as a causative marker, but we are aware of only four verbs, all denoting bodily excretions, with which it may have an applicative function. With these verbs, *-en* yields derived transitive verbs whose object denotes the place towards which the excretion is directed.[12]

Table 2: Applicative use of the Jóola Fóoñi causative suffix *-en*

base verb		*en*-derivation	
-lac	'vomit'	> *-lac-en*	'vomit on'
-púus	'spit'	> *-púus-én*	'spit on'
-sur	'urinate'	> *-sur-en*	'urinate on'
-wooy	'fart'	> *-wooy-en*	'fart in the direction of'

The suffix *-úm* is a productive I-applicative marker whose use is described in detail in the remainder of this section.

3.2.2. Optional applicative constructions with the applied phrase in object role

In Jóola Fóoñi, instruments can be encoded as obliques introduced by the multifunctional preposition *di* without any modification of the verb form (25a), but they can alternatively be encoded in an applicative construction (25b) in which the applied phrase fulfills the syntactic role of object, as evidenced by the fact that it has the form of a canonical NP or pronoun bearing no mark of its function, and can be indexed on the verb in the same way as the patients of prototypical transitive verbs. The presence of the applied object has no incidence on the coding of the other participants.

(25) Jóola Fóoñi
    a. *E-jala-a-y*   *u-y-e,*   *di-yo*   *ni-sof-e-m*   *si-wol-a-s*
       SG-net-D-clE   DEM-clE-PROX   with-I:clE   sI:1SG-catch-ICPL-R/F   PL-fish-D-clS
       'This net, it's with it that I catch fish.'
    b. *E-jala-a-y*   *u-y-e,*   *y-oo*   *ní-sóf-úm-é-m*   *si-wol-a-s*
       SG-net-D-clE   DEM-clE-PROX   clE-PRO   sI:1SG-catch-APPL-ICPL-R/F   PL-fish-D-clS
       same meaning as (a)

As illustrated by example (25), in the instrumental use of the applicative marker, the applicative construction is particularly frequent if the instrument is focalized, although this is by no means a strict constraint.

The semantic role of material from which something is made can also be expressed, either as an oblique phrase introduced by the preposition *di* without any modification of the verb form, or as the applied object in an applicative construction, as in (26).

(26) Jóola Fóoñi

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[11] In the Jóola orthography, the acute accent marks +ATR vowels. Jóola languages have a system of vowel harmony that can be described by positing that every formative is either underlyingly specified as +ATR, or underlyingly unspecified for the ATR feature. The formatives underlyingly specified as +ATR (for example, the verbal suffix *-úm*) are consistently realized with +ATR vowels, and tend to spread the +ATR feature to neighboring formatives, whereas the vowels of the formatives underlyingly unspecified for the +ATR feature are -ATR by default, but may acquire the +ATR feature in contact with underlyingly +ATR formatives.

[12] The same pattern is described by Cobbinah (2013: 256) in the Nyun language Gubëeher, where *-un* is a productive causative marker also found in applicative function with the following verbs: *sel* 'urinate' > *sel-un* 'urinate on', *reej* 'defecate' > *reej-un* 'defecate on', and *loot* 'spit/vomit' > *loot-un* 'spit/vomit on'.

Bu-sees-a-b,   ká-búmp-á-k   k-ati   bu-saana-a-b
SG-potash-D-clB   SG-ash-D-clK   clK-GEN   SG-ceiba.tree-D-clB
kú-rók-úm-é-bo-m.
sI:clBK-produce-APPL-ICPL-I:clB-R/F
'Potash is produced from the ashes of the ceiba tree.'

The semantic role of cause can also be expressed, either as a prepositional oblique, or as the applied object in an applicative construction, but the preposition used in the non-applicative construction (*mati*) is distinct from that used for the roles of instrument or material.

(27) Jóola Fóoñi
    a. *Mati*   *u-y-e*   *ku-tey-e.*
        because.of   DEM-clE-PROX   sI:clBK-run-CPL
        'They ran away because of that.'
    b. *U-y-e*   *kú-téy-úm-é.*
        DEM-clE-PROX   sI:clBK-run-APPL-CPL
        same meaning as (a)

3.2.3. Obligatory applicatives with the applied phrase in object role
    This configuration is only found with two verbs, and no generalization seems to be possible.
    In the obligatory applicative construction of *-roŋ* 'live', the applied object refers to the way the referent of the subject earns his/her livelihood. This can just be viewed as an exception to the rule according to which the role of means is expressed by means of applicative constructions with the applied phrase in oblique role (see § 3.2.4).

(28) Jóola Fóoñi[13]
    Pan ú-róŋ-úm   *e-jeena-a-y*   *y-ool-i.*
    FUT   sI:2SG-live-APPL SG-sweat-D-clE   clE-POSS-I:2SG
    'You will leave by your sweat.'

The verb *-lako* 'settle, sit, remain' has an obligatory applicative construction with the applied phrase in object role expressing the meaning 'maintain (something which is already in place), live with something'. The semantic role expressed by the applied phrase in this construction does not seem to be analyzable as a particular case of a more general type of semantic role regularly expressed by means of applicative constructions in Jóola Fóoñi.

(29) Jóola Fóoñi
    E-cil-e-y   *y-ati*   *fucen,*   *let*   *u-ŋoolen-aa*
    INF-possess-D-clE   CLe-GEN   yesterday   FUT.NEG   sI:1PL-be.able-INCL
    ú-lákó-úm-aa-yo   *jaat.*
    sI:1PL-stay-APPL-INCL-I:clE   today
    'Yesterday's ownership rules, we cannot maintain them today.'

3.2.4. Obligatory applicatives with the applied phrase in oblique role
    In this configuration, the applied phrase is a prepositional oblique expressing a role that cannot be expressed within the limits of a clause projected by the base form of the same verb. Two productive uses can be distinguished, perlative and mediative.
    As illustrated in (30), prepositional obliques referring to a place through/along which something or someone moves must be licensed by the applicative form of the verb denoting motion.

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[13] Example taken from the Jóola Fóoñi version of Genesis.

(30) Jóola Fóoñi
N-an   *i-nag-u-m*   *e-jangoon-e-y,*   *n-é-báal-úm*   *di*
clN-REL   sI:1SG-hit-EP-R/F   SG-cat-D-clE   SEQ-sI:clE-jump-APPL   PREP
e-palanteer-e-y   *e-jaw*   *e-maal.*
SG-window-D-clE   Is:clE-go   Is:clE-go.away
'When I hit the cat, it escaped by jumping through the window.'

As illustrated in (31), the same construction is also fully productive in mediative function, 'mediative' referring to anything that may contribute to the realization of an event involving the will of the participant encoded as the subject.

(31) Jóola Fóoñi
Di   *ma-lilla-a-m*   *m-ool-a*   *ná-pák-úm-é.*
PREP   NN-intelligence-D-clM   clM-POSS-I:clA   sI:clA-escape-APPL-CPL
'It is through his intelligence that he escaped.'

Semantically, the mediative use of *-úm* has obvious affinities with both the perlative use and the instrumental use of the same marker. However, syntactically, the properties of the mediative applicative are identical to those of the perlative applicative, and very different from those of the instrumental applicative: the instrumental applicative is optional, whereas the mediative applicative is obligatory, and the applied phrase is syntactically an object in the instrumental applicative, whereas it is a prepositional oblique in the mediative applicative.

In addition to the two productive cases of obligatory applicative constructions with the applied phrase in oblique role, an isolated case of a similar construction is found with the verb 'come', in which the applied phrase, introduced by the allative preposition *bee*, expresses purpose, as in (32).

(32) Jóola Fóoñi
Sanka-a-y   *é-jáw-úm-úló-ót*   *bee*   *fu-jamara-a-f*   *ceb.*
mosquito.net-D-clE   sI:clE-go-APPL-VEN-NEG   ALL   SG-rainy.season-D-clF   only
'The mosquito net is not only for the rainy season.'
(Lit. 'The mosquito net did not come for the rainy season only.')

3.2.5. Lexicalized applicatives

As already signaled in the previous sections, the applicative form of some Jóola Fóoñi verbs can be analyzed as lexicalized in the sense that, in a construction whose analysis as an applicative construction is uncontroversial, the semantic role expressed by the applied phrase does not lend itself to any generalization. The verb pair *kaan* 'do, make' / *káan-úm* 'be careful with' illustrates a more opaque case of lexicalization, in which it is even difficult to imagine semantic shifts that might account for the relationship between the meanings expressed synchronically by *kaan* and *káan-úm*.

3.2.6. Non-applicative use of the applicative marker *-úm*

In the presence of manner adverbs such as *buu* 'how?' or *moomu* 'thus', *-úm* can optionally be added to the verb without triggering any formal change in the construction, and without any change in the denotative meaning. In this particular case, *-úm* does not meet the definition of an applicative marker, since its presence does not correlate with a change in the expression of semantic roles, and seems to just add some emphasis.

Moreover, in this use (and only in this use), *-úm* has an optional variant *-óorúm*. Formally, it is tempting to decompose this variant as *-oor + -úm*, but semantically, this decomposition is not very plausible, since otherwise, a formative *-oor* is only attested, either as a middle marker mainly used in reciprocal function, or as the first formative of the complex negative marker *-oor-ut* 'not yet', i.e., with meanings which can hardly be related with the expression of emphasis on manner.

(33) Jóola Fóoñi

Ni-mam-maŋ   bee e-manj   buu   ∅-káan-(óor)úm-é.
sI:1SG-want-ASRT ALL INF-know how   sI:clD-happen-EMPH-CPL
'I want to know how this happened.'

3.2.7. Summary

Jóola Fóoñi has a productive I-applicative marker, and a very marginal applicative use of the causative marker *-en*, but no B-applicative marker. Leaving apart some isolated cases of verbs whose applicative form occurs in a construction lending itself to no generalization, four productive uses of the I-applicative marker *-úm* can be recognized in Jóola Fóoñi:

– the semantic role of instrument can be encoded, without any verbal marking, by means of the multifunctional preposition *di*, but also in an applicative construction with the instrument phrase in the role of applied object;
– the semantic role of cause can be encoded, without any verbal marking, as a causal adjunct introduced by the preposition *mati* 'because of', but also in an applicative construction with the cause phrase in the role of applied object ;
– the expression of the semantic role of perlative requires an applicative construction in which the applied phrase is an oblique introduced by the multifunctional preposition *di*;
– the expression of the semantic role of mediative also requires an applicative construction in which the applied phrase is an oblique introduced by the multifunctional preposition *di*.

4. Commonalities and differences among Atlantic B-applicatives

4.1. The range of semantic roles expressed by the applied phrase in applicative constructions involving a B-applicative marker

Unsurprisingly, given the cross-linguistic tendencies in the coding of benefactive and closely related semantic roles, the Atlantic applicative markers licensing applied phrases expressing the role of beneficiary *stricto sensu* are also commonly found in applicative constructions in which the applied phrase refers to a variety of roles that can be subsumed under the general notion of orientation of the action, such as addressee, purpose, destination.

In Fula (Arnott 1970: 353–4), the B-applicative marker may license applied phrases expressing not only the roles commonly encoded by means of a B-applicative marker, but also the role of cause, which is more unexpected. Example (34) illustrates the causal use of the Fula B-applicative marker *-an*.

(34) Gombe Fula (Arnott 1970: 354)

'O-maay-an-ii   weelo.
sI:clO-die-APPL-CPL   hunger
'He died from hunger.'

We came across no other unambiguous case of a causal use of a B-applicative marker, but example (35) illustrates a use of the B-applicative marker of Seereer which is in fact ambiguous between purpose and cause (in the event to which this example refers, the referent of the subject was in search for money, and this caused his death). One may hypothesize that this is the kind of context in which an applicative marker licensing applied phrases referring to the orientation of the action may acquire a causal use.

(35)   Seereer (Renaudier 2012: 177)
   A-xon-an-a   xaalis.
   sI:3SG-die-APPL-CPL   money
   'He died for money.'

Wolof attests the possibility of applicative constructions involving a B-applicative marker in which the applied phrase expresses the role of companion (comitative). However, this seems to be rather exceptional among Atlantic languages. Apart from Wolof, the only mention we have found of this possibility is in Cobbinah's description of Gubëeher, and according to Cobbinah (2013: 258), the B-applicative suffix of Gubëeher *-ur* is used in comitative function with just one verb: *dëëk* 'go' > *dëëk-ur* 'accompany'.

4.2. The syntactic role of the applied phrase in applicative constructions involving B-applicative markers

   The data we have gathered include no case of a B-applicative marker involved in an applicative construction with the applied phrase showing evidence of a syntactic role other than object.

4.3. B-applicative markers and the distinction between obligatory and optional applicative constructions

   In general, applicative constructions involving B-applicatives markers are obligatory applicatives.[14] Not all descriptions mention this property of B-applicatives explicitly, but the absence of any mention of an adposition having a benefactive use in most descriptions can be viewed as evidence that applicative constructions with an applied phrase in the role of beneficiary are obligatory applicatives. Note however that two sources mention the possible use of a locative preposition to encode beneficiaries in Wolof (see footnote 5), and a benefactive preposition *ure* is found in Jaad.
   Interestingly, the Jóola languages do not have B-applicatives and have an allative preposition, but they do not use this preposition productively in benefactive function, and they do not have a dedicated benefactive preposition either. As mentioned in Section 2.4 for Jóola Fóoñi, in Jóola languages, beneficiaries are standardly encoded as objects that nothing distinguishes from the objects representing the patientive argument of transitive verbs.

4.4. B-applicatives and the notion of valency increase

   In Atlantic languages, apart from isolated cases that are best analyzed in terms of lexicalization, B-applicative markers are unambiguously valency-increasing. Multiple-object constructions are very productive in Atlantic languages, and in their productive uses, B-applicative markers license applied objects whose introduction does not affect the expression of participants that may be encoded as objects in the coding frame of the base verb.

4.5. Other valency-related functions of B-applicatives

4.5.1. The applicative-causative co-expression pattern
   The suffixes that meet the definition of B-applicative markers are also used as causative markers in languages belonging to the following three groups of Atlantic languages: Wolof (see § 3.1.6), Tenda (Bedik, Bassari), and Cangin (Laalaa, Saafi, Paloor, Ndut). Example (36) illustrates this co-expression pattern in Ndut.

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[14]   As already mentioned in § 3.1.2.2, the B-applicative marker of Wolof behaves differently in comitative function, but we came across no other clear case of a comitative use of a B-applicative marker.

(36) Ndut (Morgan 1996: 111, 28)
    a.   *Lah*   *won-e*   *Biram*   *saam-iɗ*   *ɗo*   *gúm.*
        have   say-IMP   Biram   find-APPL   2SG   calabash
        'You must tell Biram to find you a calabash.'
    b.   *Fu*   *tëëk-iɗ*   *ɗi*   *laʔ-a,*   ...
        sI:2SG   sit-CAUS   3SG   rock-D
        'You sit him on the rock, ...'

In Gubëeher (Nyun), according to Cobbinah (2013: 258), the productive B-applicative suffix *-ur* is found in causative function with just one verb: *jir* 'run' > *jidd-ur* 'conduct a vehicle'.[15]

    There are also languages with a B-applicative marker formally similar to a causative marker, but not completely identical. Unfortunately, the available data are not sufficient to discuss the historical significance of such similarities.

    Jóola languages do not have productive B-applicatives, but their causative markers also have a very marginal applicative use restricted to verbs referring to bodily excretions (see § 3.2.1 on Jóola Fóoñi). One may wonder whether this might be the vestige of a formerly productive applicative use of the causative markers in question, since it is difficult to imagine a semantic shift from causative to this very particular type of applicative meaning.

4.5.2. The applicative-reciprocal co-expression pattern

    This co-expression pattern is attested in Mankanya and Bijogo, whose B-applicative and reciprocal markers are formally identical. Example (37) illustrates this situation in Mankanya.

(37) Mankanya (Gaved 2020: 72)
    a.   *Mankañ*   *a-fiŋ-ar*   *u-pi*   *Dama.*
        Mankanya   sI:clA-kill-APPL   SG-goat   Dama
        'Mankanya killed a goat for Dama.'
    b.   *Ba-ntohi*   *bik-i*   *Bula*   *ba-fiŋ-ar*
        PL-elder   clBA-GEN   Bula   sI:clB-kill-RECP
        'The elders of Bula were killing each other.'

In Balant Ganja, the B-applicative marker and the reciprocal marker are formally similar, but nevertheless distinct, at least from a synchronic point of view, and the historical significance of this similarity is unclear.

4.6. Uses of B-applicative markers not related to valency operations

    In Wolof, the B-applicative marker in comitative function (and only in comitative function) may depart from the behavior expected from an applicative marker, and behave as a verbal marker highlighting the saliency of an oblique phrase without changing anything in the syntax, at least for some speakers (see § 3.1.2.2). However, the data we have been able to gather include no other case of a construction in which a marker that otherwise meets the definition of a B-applicative marker would not act as a valency-changing operator.

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[15] In West-African languages, the verbs glossed 'run' commonly have the wider meaning 'go fast' (which means that, for example, a boat may 'run'), and the causative form of these verbs is commonly used as the equivalent of English 'ride' (a horse or a vehicle).

5. Commonalities and differences among Atlantic I-applicatives

5.1. The range of semantic roles expressed by the applied phrase in applicative constructions involving an I-applicative marker

As already illustrated by Wolof and Jóola Fóoñi, in Atlantic languages, the applicative markers licensing applied phrases in instrumental role are commonly also involved in the expression of the following roles: material, means (mediative), source of motion (ablative), or path (perlative). I-applicative markers licensing applied phrases expressing accompaniment are also attested.

Example (38) illustrates the involvement of the I-applicative marker of Fula in the expression of means, source of motion, and path.

(38)   Gombe Fula (Arnott 1970: 349)
    a.   *Mi   'anndaa   no   'o-wurt-or-ii.*
          1SG   know.NEG   how   sI:clO-go.out-APPL-CPL
          'I don't know how he got out.'
    b.   *Ndiyam   'yiw-r-ii   fuuna.*
          rain   come-APPL-CPL   east
          'The rain came from the east.'
    c.   *Naaŋge   fud-ir-ay   fuuna,   mut-ir-ay   hiirna.*
          sun   rise-APPL-CPL   east   set-APPL-CPL west
          'The sun rises in the east, sets in the west.'

According to Renaudier (2012: 190), the I-applicative marker of Seereer is productive in ablative and comitative roles.

In Gubëeher (Nyun), according to Cobbinah (2013: 257), the applied phrase in the construction of *yaax-um* 'eat with' < *yaax* 'eat' may refer not only to the instrument used by the eater (spoon, etc.), but also to the side dish. With *lód-um* < *lód* 'build', the applied phrase refers to the material used for the construction, whereas with *fur-um* < *fur* 'leave', the applied phrase refers to the source of motion.

We saw in § 3.2.2 that the I-applicative marker of Jóola Fóoñi is productively used in causal function. However, in the documentation we have gathered on Atlantic applicatives, the only other unambiguous example of an applicative marker fulfilling a causal function concerns the B-applicative marker of Fula (see example (34) above).

Dieye (2010: 245) mentions a particular use of the I-applicative marker of Laalaa (Cangin) in a special type of causative construction implying that the person acting as the causer is at the same time the beneficiary of the action performed by an unmentioned causee (autobenefaction).

The construction in question is marked by a verbal suffix *-elok* whose addition to transitive verbs does not change anything in the syntax, but carries the following implications: in the presence of *-elok*, the subject is not interpreted as the immediate agent, but rather as a causer, and at the same time as the beneficiary of the event denoted by the verb, whereas the causee must remain implicit (39b). However, as illustrated in (39c), the addition of the I-applicative marker *-oh* (surfacing as *-o* in (39c) for phonological reasons) licenses an additional object phrase interpreted as expressing the role of causee (or immediate agent). This particular use of an I-applicative marker can be analyzed as motivated by the fact that, in the causative construction of transitive verbs, the causee can be viewed as a kind of animate instrument.

(39)   Laalaa (Dieye 2010: 231, 245)
    a.   *Oomah-c-aa   soob-en   too-t-aa.*
          child-clC-D   pound-PRF   millet-clT-D
          'The children pounded the millet.'
    b.   *Clotilde   soob-elok-en   too-t-aa.*
          Clotilde   pound-CAUS.AUTOB-PRF   millet-clT-D
          'Clotilde$_i$ had the millet pounded for her$_i$.'

c. *Clotilde*   *soob-elok-o-en*   *oomah-c-aa*   *too-t-aa.*
  Clotilde   pound-CAUS.AUTOB-APPL-PRF   child-clC-D   millet-clT-D
  'Clotilde$_i$ made the children pound the millet for her$_i$.'

Several descriptions of Atlantic languages also mention manner and location of the event among the semantic roles that can be expressed by the applied phrase in applicative constructions involving an I-applicative marker. However, a closer look at the examples they provide casts some doubt on this analysis. The problem is that most descriptions do not distinguish manner from means, and the expression of location from other spatial notions such as source or path. As already discussed for Wolof and Jóola Fooñi, once these distinctions are taken into account, it turns out that means, source and path are unquestionably possible semantic roles for the applied phrase in applicative constructions involving an I-applicative marker, whereas one may have doubts about the exact nature of the constructions in which the presence of a verbal marker otherwise analyzable as an I-applicative marker is conditioned by the presence of a phrase expressing manner or location of the event.

5.2. The syntactic role of the applied phrase in applicative constructions involving I-applicative markers

Bijogo illustrates the case of an I-applicative marker whose syntactic behavior, at least with applied phrases in instrumental role, corresponds to what is commonly considered as the prototypical behavior of applicative markers: in Bijogo, instruments may be encoded as obliques introduced by the instrumental preposition *ta*, or as objects of an applicative verb form, but it is not possible to use the instrumental preposition and the I-applicative marker in the same clause (Segerer 2002: 219). Note incidentally that the formal resemblance between the I-applicative suffix and the instrumental preposition suggests that, historically, the I-applicative suffix may have resulted from encliticization of the instrumental preposition.

(40)   Bijogo (Segerer 2002: 219)
      a. *ni-mɛs*   *ni-dɛndɔk*   *ta*   *nɔ-ɔgɔ.*
          SG-knife   sI:clNV.ICPL-sharpen.MID   with   SG-stone
          'A knife can be sharpened with a stone.'
      b. *ni-mɛs*   *ni-dɛndɔk-at*   *nɔ-ɔgɔ.*
          SG-knife   sI:clNV.ICPL-sharpen.MID-APPL   SG-stone
          same meaning as (a)

The same synonymy between a non-applicative construction in which the instrument is encoded as a prepositional oblique and an applicative construction in which it is encoded as an object is also observed in Wolof, Jóola Fóoñi (see § 3) and Seereer (Renaudier 2012: 186–188).

However, the syntactic behavior of Atlantic I-applicatives does not always follow this pattern. As already illustrated by Wolof and Jóola Fóoñi, depending on the semantic role expressed by the applied phrase, the same I-applicative marker may occur both in applicative constructions in which the applied phrase can be analyzed as an object, and in applicative constructions in which the applied phrase has an oblique status.

The details of the relationship between the semantic role of the applied phrase and its status as an object or an oblique vary from one language to another, at least to some extent. Not all descriptions provide detailed data on this question, but the general tendency in Atlantic languages seems to be that applied phrases expressing the semantic role of instrument have a strong tendency to take the syntactic status of object, whereas in some other uses of the I-applicative markers, applied phrases encoded as prepositional obliques are more common. However, these are only tendencies, and variation can be observed even with the role of instrument.

For example, in Fula, the expression of the role of instrument requires an applicative construction, in which, however, the instrument may optionally be encoded as noun phrase in object role or as a prepositional oblique.

(41)   Gombe Fula (Arnott 1970: 348)
   'O-haɓɓ-ir-ii.   gujjo   ('e)   ɓoggol.
   sI:clO-tie-APPL-CPL   thief   with   rope
   'He tied the thief with a rope.'

Interestingly, in closely related Laalaa and Noon, the applicative constructions with an applied phrase in the role of instrument behave differently. In Laalaa (Dieye 2010: 245), in the same way as in Wolof, Jóola Fóoñi, Seereer, or Bijogo, the applicative construction with the instrument phrase encoded as a syntactic object is in competition with the coding of the instrument as a prepositional oblique without any specific verbal marking, whereas in Noon, according to Wane (2017: 133), the coding of instruments requires simultaneously the applicative marker *-oh* and the preposition *në* 'with'.

(42)   Noon (Wane 2017: 133)
   Zan   ñam-oh   haawë   në   kutu.
   Jean   eat-APPL couscous   with   spoon
   'Jean is eating couscous with a spoon.'

Constructions in which the coding of instruments involves both applicative marking and the use of a preposition are found in two other languages of the Cangin branch: Saafi (Stanton 2011: 49) and Palor (see below).

   Example (43b) illustrates the use of prepositional phrases as applied phrases in the ablative use of the Seereer I-applicative marker *-it*. The analysis of this construction as an applicative construction follows from the fact that the source of motion cannot be expressed in the construction of the base verb. However, the applied phrase is obligatorily flagged by a preposition, and its oblique nature is confirmed by the fact that it cannot be indexed on the verb (Renaudier 2012: 183). This is all the more remarkable given that, in the construction of the base verb, the same preposition is optional with phrases denoting destination of motion, as in (43a).

(43)   Seereer (Renaudier 2012: 183)
   a.   *A-ret-a   (na)   marse.*
        sI:3SG-go-CPL   PREP   market
        'S/he went to the market.'
   b.   *A-ret-it-a   na   marse.*
        sI:3SG-go-APPL-CPL PREP   market
        'S/he left the market.'

5.3. I-applicatives and the distinction between obligatory and optional applicatives

   As already illustrated by Wolof and Jóola Fóoñi, in Atlantic languages, there is important variation in the optional or obligatory nature of applicative constructions involving I-applicative markers, and this variation correlates with the semantic role expressed by the applied phrase.

   For example, in Seereer, the same I-applicative marker *-it* is obligatory to express the source of motion (43b) but optional to express instrument. By contrast, as already mentioned, there are also Atlantic languages in which the applicative constructions with an applied phrase expressing the role of instrument are obligatory applicatives.

   As regards the instrumental use of I-applicative markers, several descriptions mention that applicative constructions involving an I-applicative marker are in principle optional but tend to be preferred, and may even be required, when the instrument is focalized or relativized.

As regards the ablative use of I-applicative markers, it is noteworthy that Atlantic languages do not have ablative adpositions. This implies that phrases expressing the role of source of motion can only be licensed, either by motion verbs that have the ability to assign the role of source, or by applicative derivation, in constructions that, consequently, meet the definition of obligatory applicatives.

5.4. I-applicatives and the notion of valency increase

It follows from the variation observed in the syntactic status of the applied phrase that applicative constructions involving an I-applicative marker do not necessarily imply an increase in valency, in the sense that the number of core syntactic terms in the construction of the applicative verb is not necessarily greater than in the construction of the base verb.

5.5. Other valency-related functions of I-applicatives

In Atlantic languages, markers identical to I-applicative markers may have valency-related functions other than applicative, most commonly (although not exclusively) reciprocal and/or antipassive.

Markers fulfilling a reciprocal function identical to I-applicative markers are attested in Wolof, Noon, Laalaa, and Palor.

Markers fulfilling an antipassive function identical to I-applicative markers are attested in Wolof, Seereer, Noon, Laalaa, and Palor.

A marker identical to the Wolof I-applicative marker *-e* is found not only with reciprocal and antipassive functions, but also with a causative function. However, its productivity as a causative marker is relatively limited in comparison with the causative marker identical to the Wolof B-applicative marker *-al* (see § 3).

5.6. Uses of I-applicative markers not related to valency operations

With I-applicatives (in contrast to B-applicatives), it is relatively common that the same verbal suffix has a valency-changing function in some of its uses, but also has uses involving no apparent change in the expression of semantic roles. Unfortunately, as already mentioned, the data provided by most descriptions are not sufficient to evaluate the exact extent of this phenomenon, even for a relatively well-documented language such as Wolof.

In such cases, it is not always clear whether this is an instance of more or less free variation, or the I-applicative marker fulfills a function not related to valency.

5.6.1. I-applicative markers and focalized location

In Noon, as in Wolof (see § 3.1.3.4), a marker identical to the I-applicative marker *-oh* may co-occur with phrases expressing location, and according to Wane (2017: 132), it then marks focalization of the phrase expressing location, without any change in its coding properties.

(44) Noon (Wane 2017: 132)

    a. *Më*   *en*   *ngë*   *kaan*   *Lamin.*
        1SG   be   PREP   house   Lamine
        'I am at Lamine's place.'

    b. *Më*   *en-oh*   *ngë*   *kaan*   *Lamin.*
        1SG   be-FOC   PREP   house   Lamine
        'I am AT LAMINE'S PLACE.'

5.6.2. I-applicative markers and habitual aspect

Closely related Palor and Ndut (which together constitute a sub-branch of the Cangin branch of Atlantic) share a verbal suffix -*aʔ* but show interesting contrasts in its possible functions.

In Palor, -*aʔ* is an I-applicative marker (possibly cognate with the preposition *ʔa* 'with') productively used in an obligatory applicative construction in which the applied phrase is a prepositional phrase expressing the role of instrument, as in (45).

(45)   Palor (D'Alton 1987: 144)
       Ɗi   ʔool-aʔ-te   xar   ʔa   paaka
       3SG   cut.the.throat-APPL-CPL   sheep   with   knife
       'He cut the sheep's throat with a knife.'

In Ndut, according to Morgan (1996: 92–95), -*aʔ* shows only vestiges of a formerly productive use as an I-applicative marker. Synchronically, the only uses of -*aʔ* that show some productivity are its use to mark the saliency of a place or time adjunct, and its use as a marker of habitual aspect, as in (46).

(46)   Ndut (Morgan 1987: 144)
       Ɗi   lom-aʔ   too.
       3SG   buy-HAB   millet
       'He buys (habitually) millet.'

5.6.3. I-applicative markers and the expression of manner

In the descriptions of Atlantic languages, the semantic role of manner is often mentioned among the semantic roles expressed by the applied phrase in constructions involving the same verbal suffix as instrumental applicative constructions. However, when detailed data on this use of I-applicative markers are available, they cast doubts about the validity of an applicative analysis of this particular use of verbal suffixes otherwise acting as applicative markers.

For example, in Seereer, according to Renaudier (2012: 183–184), the I-applicative marker -*it* must be present if a manner adjunct is relativized or focalized, but the mere presence of a manner adjunct does not require the use of the applicative form of the verb, which confirms our own observations on Jóola Fóoñi and Wolof.

In fact, the exact nature of the relationship between manner adjuncts and the I-applicative markers in Atlantic languages could only be clarified on the basis of corpus studies, and the only thing we can do here is to leave this question open.

5.7. I-applicative markers and nominalization

The use of the same suffixes, or of very similar suffixes, as applicative markers licensing applied phrases in the role of instrument and as instrument nominalization markers is found in Jóola languages, for example Jóola Fóoñi -*sonten* 'heal' > *bú-sóntén-úm* 'medical treatment'.

The same phenomenon is observed in Fula (Arnott 1970: 251). Moreover, in Fula, the same suffix is also used to derive nouns referring to places dedicated to a particular activity from verbs (as in *loot-ir-de* 'place for washing (clothes, etc.)' < *loot-a* 'wash).

5.8. A particularity in the expression of the semantic role of instrument in Laalaa

As already mentioned above, Laalaa (Cangin) has an I-applicative marker -*oh* licensing the expression of the semantic role of instrument as an applied object. Interestingly, Laalaa has another verbal suffix, -*ah*, licensing the expression of the semantic role of instrument, but in the syntactic role of SUBJECT, as in (47).

(47) Laalaa (Dieye 2010: 206)
      Fetal-aa   ap-ah-an   paloom.
      gun-D   kill-be.used.to-FUT   antelope
      'The gun will be used to kill antelopes.'

In the languages that have both instrumental-applicative and passive constructions (which is the case of Laalaa), such a construction can be expected to involve the combination of an applicative marker licensing an applied object with the semantic role of instrument and a passive marker converting the applied object into the subject of an applicative-passive construction. However, in Laalaa, *-ah* can hardly be decomposed as *-oh* (I-applicative marker) + *-uu* (passive marker). Unfortunately, nothing similar is evoked in the descriptions of the other Atlantic languages (even in the other languages of the Cangin group), and consequently, we have nothing to propose about a possible relationship between the two verbal suffixes of Laalaa involved in the expression of the semantic role of instrument.

6. Conclusion

An interesting particularity of Atlantic languages is that most of them have applicative constructions with applied phrases expressing the roles of beneficiary and instrument, but at the same time, none of the applicative markers attested in Atlantic languages has the ability to license applied phrases expressing the role of beneficiary and applied phrases expressing the role of instrument. In this chapter, we have shown that recurrent contrasts can be observed between the applicative markers of Atlantic languages that have the ability to license applied phrases in benefactive role and those having the ability to license applied phrases in instrumental role:

– Apart from the role of beneficiary, B-applicative markers license almost exclusively applied phrases expressing roles that can be subsumed under the general notion of orientation of the action, whereas I-applicative markers commonly license applied phrases expressing roles such as material, means, source, or path.
– Neither B-applicatives nor I-applicatives show a particular propensity to license applied phrases expressing the role of companion (comitative).
– Applied phrases expressing the role of cause are rarely mentioned in descriptions of Atlantic languages, but the examples we came across involve B-applicative as well as I-applicative markers, depending on the individual languages.
– B-applicative markers license almost exclusively applied phrases in the syntactic role of object, whereas oblique applied phrases are common with I-applicative markers.
– The co-expression pattern in which B-applicative markers are most commonly involved is the applicative-causative co-expression pattern, whereas I-applicative markers are mainly involved in the applicative-reciprocal and applicative-antipassive co-expression patterns.
– It is relatively common for I-applicative markers to be also found in constructions in which they cannot be analyzed as marking a valency-changing operation; this is much less common for B-applicative markers.

Abbreviations

ALL allative, ANTIP antipassive, APPL applicative, ASRT assertion, AUTOB autobenefactive, CAUS causative, clX class X,[16] CPL completive, CSTR construct form, D definite, DEM demonstrative, EMPH emphatic, EP epenthetic, FOC focalization, FOC$_{O/X}$ object or oblique focalization, FOC$_S$ subject focalization, FOC$_V$ verb focalization, FUT future, GEN genitive, HAB habitual, I index, ICPL

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[16] "Class" refers to gender-number agreement patterns, conventionally designated by capital letters that evoke the phonological forms of agreement markers in the language in question.

incompletive, IMP imperative, INCL inclusive, INF infinitive, LOC locative, MID middle voice, NEG negation, NN: number-neutral noun prefix, OBLG obligative, oI object index, PL plural, POSS possessive, PREP multifunctional preposition, PRF perfect, PROG progressive, PROH prohibitive, PROX proximal, PST past, RECP reciprocal, REL relativizer, R/F marker of verb forms used exclusively in relative clauses or focus constructions, SEQ sequential, SG singular, sI subject index, STAT stative, VEN venitive

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