Argument structure and operations on verb valency

1. Transitivity alternations

Verbs used in transitive constructions may be strictly transitive, if their use in intransitive constructions is restricted to elliptical constructions in which a null argument is interpreted anaphorically, but they may also have non-elliptical intransitive uses, with two possibilities: the subject of an verb used in an intransitive construction may receive the same semantic role as the subject of the same verb in a transitive construction (as in English *eat*: *We ate fish* vs. *We ate slowly*), or it may receive a role identical or similar to that of the object of the transitive construction (as in English *break*: *He broke the plate* vs. *The plate broke*).

Both types of transitivity alternations are widely attested in African languages, and some language families may have marked preferences for one type or the other, but none can be said to be predominant for Africa as a whole. For example, in Bambara (Mande) – see Appendix 1, all typical transitive verb have the behaviour illustrated above by *break*, whereas the type of behavior illustrated by *eat* is limited to verbs whose transitive uses do not refer to prototypical actions in which a patient undergoes a change of state triggered by a manipulation exerted by an agent. By contrast, in Tswana, the type of behavior illustrated by *break* is almost inexistent, but verbs that have transitive uses also accept intransitive uses of the type illustrated by *eat* without any particular restriction.

2. Morphologically marked operations on verb valency

Many Niger-Congo languages have rich systems of verb affixes encoding operations on verb valency, i.e. operations that modify the correspondence between semantic roles and grammatical relations. A particularly rich system is found in Wolof – see Appendix 2.

A typical Niger-Congo system of morphologically marked valency changes includes *passive*, *reciprocal*, *decausative* (alias *anticausative*), *causative*, and *applicative* derivations. In addition to that, reflexive object markers commonly tend to acquire a variety of uses that cannot be reduced to the notion of coreference, which may justify their reanalysis as markers of operations on verb valency belonging to the middle functional domain.

In the other phyla, morphological coding of changes in the valency of the verb is also quite common.

Antipassive is rarely mentioned in description of African languages, but derived forms of transitive verbs blocking the expression of the object of transitive verbs (or of one of the two objects of ditransitive verbs) are sporadically attested.

Applicatives are widespread all over Africa – see Appendix 3. Their identification is most of the time straightforward, but in some cases their status from the point of view of a general typology of valency changing devices is problematic, because they depart more or less from the prototype. For example, in Ik, the term licensed by the applicative derivation is treated as an oblique rather than a direct object; similarly, in North Khoisan languages, the presence of valency-external noun phrases may

trigger a morphological marking on the verb, as in typical Niger-Congo obligatory applicatives, but this morphological marking may be triggered by the presence of terms that do not show the characteristics of objects.

In a broad functional perspective, applicatives can be viewed as one of the possible strategies for dealing with NPs representing valency-external participants, in competition with the adpositional strategy. Interestingly, African languages attest the possibility of a third strategy, with a particular type of serial verb construction whose function can be described in the following way: one of the two verbs involved in the construction encodes the event to which the whole construction refers and assigns the same specific semantic roles as in its use in a monoverbal construction, whereas the other verb licenses an NP with a semantic role that can be viewed as an abstraction from the meaning expressed by the same verb in monoverbal constructions (e.g. 'take' → instrument or patient, 'give' → recipient or beneficiary, 'follow' → comitative). For example, in Yoruba – ex. (1), the mention of a beneficiary in the construction of *rà* 'buy' necessitates the use of an applicative periphrasis in which the beneficiary is constructed as the complement of *fún* 'give'.

(1) a. *Òjó rà ìwé fún ìyá.*
       Ojo buy book give mother
       'Ojo bought a book for mother.'

    b. *Òjó rà-á fún-ūn.*
       Ojo buy-3SG give-3SG[1]
       'Ojo bought it for her.'

Appendix 1. Transitivity alternations and unmarked passives: the case of Bambara

A1.1. Introduction

The possibility to use the same verbs in transitive and intransitive constructions is variously regulated in the languages of the world. Among African languages, a striking feature of Mande languages is that they have predicative constructions that make particularly apparent the transitive vs. intransitive distinction, and at the same time they have very productive transitivity alternations of various functional types. In particular, Bambara and other Mande languages attest the typologically exceptional possibility to use transitive verbs in passive constructions devoid of any overt marking.

Bambara and Mandinka are two variants of the Manding language, and the organization of verbal predication in Bambara is similar to that described for Mandinka in Lesson 2. In particular, in Bambara, in the same way as in Mandinka, the distinction between transitive and intransitive clauses is made particularly

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[1] The abbreviations used in the glosses are as follows: ANTIP = antipassive, APPL = applicative, CAUS = causative, CL = noun class, DEF = definite, DEM = demonstrative, DIST = distal, EMPH = emphatic, FOC = focalization, H = head-marking, INDEF = indefinite, IPFV = imperfective, LNK = linker, LOC = locative, MID = middle, NEG = negation, NMLZ = nominalization, PASS = passive, PFV = perfective, PL = plural, POS = positive, POSS = possessive, POSTP = postposition, PRF = perfect, PROH = prohibitive, PROX = proximal, PRS = present, RECP = reciprocal, SG = singular, SOC = sociative.

obvious by the existence of two markers expressing the same TAM-polarity value 'perfective positive' with the following distribution: *-ra* ~ *-la* ~ *-na* suffixed to the verb in the intransitive construction, *yé* inserted between the subject and the verb in the transitive construction.

A1.2. Transitivity alternations that do not change the semantic role of the subject (A-lability)

A limited number of Bambara verbs among those representing naturally reciprocal events are involved in the *reciprocal alternation,* by which an intransitive construction whose subject represents a plurality of individuals has a reciprocal reading and alternates with a transitive construction describing the same event, but with a more or less marked asymmetry between the referents of the two core terms – ex. (1).

(1) a. *Wùlu   ní   jàkuma kɛ̀lɛ-la.*
      dog:DEF   with cat:DEF   fight-PFV.POS
      'The dog and the cat fighted.'

    b. *Wùlu   yé   jàkuma kɛ̀lɛ.*
      dog:DEF   PFV.POS   cat:DEF   fight
      'The dog attacked the cat.'

In other types of transitivity alternation preserving the semantic role of the subject, the object in the transitive construction is equivalent to an oblique in postverbal position in the intransitive construction. In accordance with the general properties of obliques in Bambara, the term in question can freely be omitted from the intransitive construction. Three semantic sub-types can be distinguished.

In the *delimitative alternation,* the transitive construction encodes the same one-participant event as the intransitive construction; the unique participant is encoded as the subject, and the object encodes the temporal or spatial delimitation of the event. This alternation is particularly common with movement verbs – ex. (2), but is not restricted to them.

(2) a. *À   yáala-la   súgu   lá.*
      3SG   wander-PFV.POS   market:DEF POSTP
      'He wandered through the market.'

    b. *À   yé   súgu   yáala.*
      3SG   PFV.POS market:DEF wander
      same meaning as (a)

    c. *À   yé   tìle   bɛ́ɛ   yáala súgu   lá.*
      3SG   PFV.POS day:DEF whole   wander market:DEF POSTP
      'He spent the whole day wandering through the market.'

The *resultative alternation* is found with verbs encoding events resulting in the creation of a new entity, encoded by the object of the transitive construction, or by an oblique in the intransitive construction – ex. (3).

(3)   a. *Mùso   wólo-la   dénkɛ   lá.*
       woman:DEF   give_birth-PFV.POS   son:DEF   POSTP
       'The woman gave birth to a son.'

    b. *Mùso   yé   dénkɛ   wólo.*
       woman:DEF   PFV.POS   son:DEF   give_birth
       same meaning as (a)

In other cases of transitivity alternations preserving the semantic role of the subject, the object represents a second participant treated as an oblique in the corresponding intransitive construction.

(4)   a. *Mùso   mànyuma-na   fàantan   ná.*
       woman:DEF   pity-PFV.POS   poor_man:DEF   POSTP
       'The woman pitied the poor man.'

    b. *Mùso   yé   fàantan   mànyuma.*
       woman:DEF   PFV.POS   poor_man:DEF   pity
       same meaning as (a)

Ex. (5) illustrates the possibility for the same verb to participate in transitivity alternations preserving the semantic role of the subject with two different readings of the object of the transitive construction.

(5)   a. *Npògotigi   kàsi-ra.*
       girl:DEF   cry-PFV.POS
       'The girl cried.'

    b. *Npògotigi   ye   cɛ̀   sù   kàsi.*
       girl:DEF   PFV.POS   man:DEF   corpse:DEF   cry
       'The girl cried on the corpse of the man.'

    c. *Npògotigi   yé   sú   bɛ́ɛ   kàsi.*
       girl:DEF   PFV.POS   night:DEF   whole   cry
       'The girl spent the whole night crying.'

Transitivity alternations preserving the semantic role of the subject are found with verbs assigning a wide range of semantic roles to their subject. An interesting semantic generalization is however possible: in Bambara, transitivity alternations preserving the semantic role of the subject are never found with verbs encoding prototypical events in which a patient undergoes a change of state triggered by a manipulation exerted by an agent.

With verbs used in the transitive construction with an object that cannot be converted into an oblique in an intransitive construction, a construction in which the verb is nominalized constitutes the only possible way to leave the object unexpressed – ex. (6).

(6) a. *Séku   má   sògo   dún.*
Sékou   PFV.NEG   meat:DEF eat
'Sékou did not eat the meat.'

b. **Séku   má   dún.*
Sékou   PFV.NEG   eat
impossible with the reading 'Sékou did not eat' (the only possible meaning of this sentence would be 'Sékou was not eaten' – see Section A1.3)

c. *Séku   má   dúmuni   kέ.*
Sékou   PFV.NEG   eat:NMLZ:DEF   do
'Sékou did not eat.' (lit. 'Sékou did not do the eating')

This observation about the semantic limitations to transitivity alternations preserving the semantic role of the subject has an interesting consequence for terminology. Licensing the presence of an object NP representing a participant that otherwise would not be encoded as a core term of the transitive construction is a typical function of applicative derivation, and consequently, it is consistent to designate as *applicative alternation* a transitivity alternation that does not affect the semantic role of the subject and in which the object of the transitive construction is never a prototypical patient.

A1.3. Transitivity alternations changing the semantic role of the subject (P-lability)

A1.3.1. Two types of P-lability

In the type of transitivity alternation examined in this section, the subject of the intransitive construction has a semantic role similar or identical to that of the object of the transitive construction. Two cases must be distinguished.

In the *causative/anticausative* alternation, the argument structure is affected, since the intransitive construction does not imply the involvement of a participant with the semantic role assigned to the subject of the transitive construction, and the referent of the subject of the intransitive construction is presented as undergoing a process without any hint at a possible external cause – ex. (7).

(7) a. *Jέgɛ   tòli-la.*
fish:DEF   rot-PFV.POS
'The fish rotted.'

b. *Fùnteni yé   jέgɛ   tòli.*
heat:DEF PFV.POS   fish:DEF   rot
'The heat rotted the fish.'

In the *active/passive* alternation, the intransitive construction is interpreted as implying the same participants as the transitive construction, but the participant encoded as the subject of the transitive construction is either left unexpressed, or encoded as an oblique – ex. (8) & (9).

(8)   a. *Séku   má   tìga   sɛnɛ.*
         Sékou   PFV.NEG groundnut   cultivate
         'Sékou did not cultivate groundnuts.'

    b. *Tìga   má   sɛnɛ   (Séku fɛ̀).*
         groundnut:DEF PFV.NEG cultivate Sékou   POSTP
         'The groundnuts have not been cultivated (by Sékou).'

(9)   a. *Wùlu   má   sògo   dún.*
         dog:DEF PFV.NEG meat:DEF eat
         'The dog did not eat the meat.'

    b. *Sògo   má   dún   (wùlu fɛ̀).*
         meat:DEF PFV.NEG eat   dog:DEF POSTP
         'The meat has not been eaten (by the dog).'

A1.3.2. The active/passive alternation

The existence of an active/passive alternation giving rise to morphologically unmarked passive constructions, as illustrated by ex. (8) & (9) above, constitutes the most original aspect of Bambara argument structure. In spite of the absence of anything that could be analyzed as passive morphology, the construction illustrated by sentences (8b) and (0b) is a passive construction in the sense that it syntactically demotes the agent without deleting it from argument structure, as proven by the fact that an oblique marked by the postposition *fɛ̀* (whose basic meaning is proximity) can optionally represent the participant encoded as the subject of the corresponding transitive construction.

This alternation is particularly productive with transitive constructions whose object represents a prototypical patient, i.e., with transitive constructions that cannot be involved in the kind of transitivity alternation presented in section A1.2. It is however not limited to such verbs, as will be illustrated in section A1.4. on multiple alternations.

A1.3.3. The causative/anticausative alternation

In the causative/anticausative alternation, the relationship between the two constructions is of type expressed in other languages, either by a transitivizing derivation of the causative type, or by a de-transitivizing derivation of the anticausative type. Its productivity is limited not only by the possibility to conceive events as more or less spontaneous processes affecting a single participant, but also by the existence of a causative derivation making explicit the involvement of an agent.

Fá 'fill up' illustrates the case of a verb lending itself to the causative/anticausative alternation, with two possible organizations of the transitive construction – ex. (10a-c). But in addition to that, a construction with the causative marker *lá-* is also possible – ex. (10d).

(10) a. *Dàga   fá-ra.*
          pot:DEF   fill-PFV.POS
          'The pot filled up.'

b. *Jí   yé   dàga   fá.*
water:DEF   PFV.POS   pot:DEF   fill
'The water filled the pot.'

c. *Mùso   yé   dàga   fá   (jí   lá).*
woman:DEF   PFV.POS   pot:DEF   fill   water:DEF   POSTP
'The woman filled the pot (with water).'

d. *Mùso   yé   dàga   lá-fa   (jí   lá).*
woman:DEF   PFV.POS   pot:DEF   CAUS-fill   water:DEF   POSTP
same meaning as (c)

The competition between the causative/anticausative alternation and the causative derivation is one of the trickiest aspects of Bambara grammar, and important variations are observed in the judgments of Bambara speakers about their respective productivity. An unquestionable regularity is however that, as illustrated by ex. (11) & (12), the use of *lá-* tends to correlates with indirect causation, a relatively high degree of agentivity of the causer, and the ability of the causee to oppose the manipulation exerted by the agent.

(11) a. *Sò   bɛ́   bòli.*
horse:DEF   IPFV.POS   run
'The horse is running.'

b. *Cɛ̀   bɛ́   sò   bòli.*
man:DEF   IPFV.POS   horse:DEF   run
'The man is riding the horse.'

c. *Cɛ̀   bɛ́   móbili   bòli.*
man:DEF   IPFV.POS   car:DEF   run
'The man is driving the car.'

d. *Cɛ̀   bɛ́   sò   lá-boli.*
man:DEF   IPFV.POS   horse:DEF   CAUS-run
'The man is making the horse run.'

(12) a. *Dímɔgɔ sìgi-ra   à   bólo   lá.*
fly:DEF   settle-PFV.POS   3SG   arm:DEF   POSTP
'The fly settled on his arm.'

b. *Mùso   yé   bárama   sìgi   tá   kàn.*
woman:DEF   PFV.POS   cooking-pot:DEF   settle   fire:DEF   POSTP
'The woman put the cooking-pot on the fire.'

c. *Cɛ̀   yé   dén   lá-sigi   sò   kàn.*
man.DEF   PFV.POS   child.DEF   CAUS-settle   horse:DEF   POSTP
'The man made the child sit on the horse.'

Note that the active-passive alternation is totally productive with causative verbs, giving rise to intransitive constructions in which the presence of the causative marker unambiguously triggers a passive-like reading, as in ex. (13).

(13) a. *Cɛ̀   sábali-la.*
　　　 man:DEF calm-PFV.POS
　　　 'The man calmed down.'

　　 b. *Mùso   yé   cɛ̀   lá-sabali.*
　　　　 woman:DEF PFV.POS man:DEF CAUS-calm
　　　　 'The woman calmed the man.'

　　 c. *Cɛ̀   lá-sabali-la   (mùso   fɛ̀).*
　　　　 man:DEF CAUS-calm-PFV.POS woman:DEF POSTP
　　　　 'The man was calmed (by the woman).'

A1.4. Multiple alternations

With some of the verbs having transitive uses, the active-passive alternation is the only possible transitivity alternation. The intransitive use of such verbs always implies a participant that can be encoded in the same construction as an oblique with the postposition *fɛ̀*, and would be treated as the subject of the corresponding transitive construction. This kind of behavior is typical of verbs referring to prototypical actions resulting in a change of state of a patient and for which an intransitive use referring to a more or less spontaneous process is difficult to conceive.

But there are also many cases of intransitive constructions whose correspondence with the transitive construction(s) of the same verb lends itself to several interpretations.

Ex. (14) shows that a verb participating in the delimitative alternation (sentence (b)) can also participate in the causative/anticausative alternation (sentences (d-e)).

(14) a. *Kɔ̀nɔ   pán-na.*　　　 / *Cɛ̀   pán-na.*
　　　 bird:DEF jump-PFV.POS　　　 man:DEF jump-PFV.POS
　　　 'The bird flew away.'　　 'The man jumped.'

　　 b. *Cɛ̀   yé   dúkɛnɛ   pán.*
　　　　 man:DEF PFV.POS yard:DEF jump
　　　　 'The man flew/jumped through the yard.'

　　 d. *Í   kàna   kɔ̀nɔ   pán!*
　　　　 2SG PROH   bird:DEF jump
　　　　 'Don't make the bird fly away!'

　　 e. *Síran   yé   cɛ̀   pán.*
　　　　 fear:DEF PFV.POS man:DEF jump
　　　　 'Fear made the man jump.'

Note also that transitive constructions in which the object expresses the spatial or temporal delimitation of the event can participate in the active-passive alternation in the same way as transitive constructions encoding two-participant events – ex (14).

(15) a. *Cɛ̀   bòli-la.*
  man:DEF run-PFV.POS
  'The man ran.'

  b. *Cɛ̀   yé   métɛrɛ tán   dɔ́rɔn   bòli.*
  man:DEF PFV.POS meter   ten   only   run
  'The man ran only ten meters.'

  c. *Métɛrɛ tán   dɔ́rɔn bòli-la   cɛ̀   fɛ̀.*
  meter   ten   only   run-PFV.POS man:DEF POSTP
  lit. 'Ten meters only were run by the man.'

In ex. (16), sentence (c) shows that transitive constructions participating in the resultative alternation can be passivized in the same way as transitive constructions encoding two-participant events.

(16) a. *Mùsokɔrɔnin bɛ́   ŋúnuŋunu.*
  old woman.DEF IPFV.POS   mumble
  'The old woman is mumbling.'

  b. *Mùsokɔrɔnin bɛ́   kílisi-w   ŋúnuŋunu.*
  old woman:DEF IPFV.POS   incantation-PL mumble
  'The old woman is mumbling incantations.'

  c. *Kílisi-w   bɛ́   ŋúnuŋunu mùsokɔrɔnin fɛ̀.*
  incantation-PL IPFV.POS   mumble   old_woman:DEF POSTP
  'Incantations are being mumbled by the old woman.'

Ex. (17) illustrates the case of a verb participating both in the applicative alternation and in the causative/anticausative alternation.

(17) a. *Án tìgɛ-ra   kúrun ná.*
  1PL cross-PFV.POS boat:DEF POSTP
  'We crossed by boat.'

  b. *Án yé   bá   tìgɛ kúrun ná.*
  1PL PFV.POS river:DEF cross boat:DEF POSTP
  'We crossed the river by boat.'

  c. *Ù y'   án   tìgɛ kúrun ná.*
  3PL PFV.POS 1PL   cross boat:DEF POSTP
  'They made us cross by boat.'

Concerning the possibility to find verbs participating both in the causative/anticausative and active/passive alternations, it seems that speakers tend to avoid using passive constructions involving verbs that participate in the

causative/anticausative construction. This however cannot be considered as an absolute constraint, and examples of the passive use of such verbs are mentioned by Vydrin (1994), who more generally shows with abundant illustrations that Bambara has very few restrictions on the use of the passive construction of verbs that have transitive uses, whatever behavior they may have with respect to other types of transitivity alternations.

A2. Morphologically encoded operations on verb valency in Wolof

A2.1. Introduction

Wolof (the most important language of Senegal, also spoken in The Gambia and Mauritania) belongs to the Northern branch of the Atlantic family included in the Niger-Congo phylum. It shares with most other Atlantic languages the following typological features:

– a relatively rigid *SVOX* constituent order,
– head-initial noun phrases,
– a distinction between subjects and objects (without any distinction between transitive and intransitive subjects) involving contrasts in both constituent order and indexation, but no case contrast,
– double object constructions,
– focus marking by means of verbal inflection,
– a noun class system,[2]
– a system of verb suffixes coding valency changes.

In comparison with other Atlantic languages, the noun class system of Wolof is somewhat reduced.[3] By contrast, Wolof has a particularly rich inventory of verbal suffixes encoding not only valency operations, but also other types of meanings.

In Wolof, the valency changes systematically coded by means of verb suffixes can be classified into six types: middle, causative, applicative, co-participation (including reciprocal), antipassive, and possessive. A puzzling feature of this system is that, as shown by the following chart, similar valency changes may be coded by different suffixes, and the same suffix may code different valency changes.

type of valency change	possible markers
middle	*-u*
causative	*-e, -al, -le, -lu, -loo*
applicative	*-e, -al*
co-participation	*-e, -oo, -ante, -andoo*
antipassive	*-e*
possessive	*-le*

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[2] The class markers of Wolof are affixes (prefixes or suffixes, depending on the constructions) consisting of a single consonant, and classes are labeled by means of the consonant that constitutes their marker. There are 8 singular classes (*b, j, g, l, k, m, s, w*) and 2 plural classes (*y, ñ*).
[3] In Wolof, class agreement between head nouns and their modifiers is well maintained, but class agreement of verbs with their subject has been lost, and most nouns cannot be segmented into a class prefix and a stem anymore.

A2.2. Middle -*u*

(1) a. *Jigéen j-i   sang na   xale b-i.*
      woman CL$_j$-DEF$_1$ wash PRF.3SG child CL$_b$-DEF$_1$
      'The woman washed the child.'

   b. *Xale b-i   sang-u   na.*
      child CL$_b$-DEF$_1$ wash-MID   PRF.3SG
      'The child washed.'

   c. *Xale b-i   sang na   bopp-am.*
      child CL$_b$-DEF$_1$ wash PRF.3SG head-3SG
      'The child washed himself.'

(2) a. *Tëj   naa   bunt b-i.*
      close PRF.1SG door CL$_b$-DEF$_1$
      'I closed the door.'

   b. *Bunt-u néeg b-i   du   téej-u   b-u   baax.*
      door-H room CL$_b$-DEF$_1$ NEG.EMPH.3SG   close-MID   CL$_b$-LNK be_good
      'The door of the room does not close well.'

(3) a. *Omar daan   na   Usmaan.*
      Omar   bring_down PRF-3SG Ousmane
      'Omar brought Ousmane down.', 'Omar defeated Ousmane.'

   b. *Garab g-i   daan-u   na.*
      tree   CL$_g$-DEF$_1$ bring_down-MID   PRF.3SG
      'The tree fell down.'

→ Wolof does not have passive proper. Some uses of the middle marker -*u* can be considered as quasi-passive, but constructions combining object topicalization and subject focalization are regularly used with a function similar to that fulfilled by passive constructions in other languages.

(4) a. *Waa   gox   b-i   fal nañu   Usmaan.*
      people neighborhood CL$_b$-DEF$_1$ elect PRF.3PL Ousmane
      'The people of the neighborhood elected Ousmane.'

   b. *Usmaan   fal-u   na.*
      Ousmane   elect-MID   PRF.3PL
      'Ousmane is elected.'

(5)   *Kër g-i,   Omar-a   jënd   ko.*
      house CL$_g$-DEF$_1$ Omar-FOC$_S$.3SG   buy   3SG
      'The house, it is Omar that bought it.' → 'The house was bought by Omar.'

A2.3. Causative

A2.3.1. Causative *-e*

(6) a. *Usmaan   genn   na.*
    Ousmane   go_out   PRF.3PL
    'Ousmane went out.'

   b. *Usmaan   genn-e   na   woto b-i.*
    Ousmane   go_out-CAUS   PRF.3PL   car CL_b-DEF_1
    'Ousmane got out the car.'

A2.3.2. Causative *-al*

(7) a. *Xale b-i   toog   na.*
    child CL_b-DEF_1 sit_down   PRF.3SG
    'The child sat down.'

   b. *Jigéen   j-i   toog-al   na   xale b-i.*
    woman CL_j-DEF_1 sit_down-CAUS   PRF.3SG   child CL_b-DEF_1
    'The woman sat the child down.'

A2.3.3. Causative *-lu*

(8) a. *Tëj   naa   bunt b-i.*
    close   PRF.1SG   door CL_b-DEF_1
    'I closed the door.'

   b. *Tëj-lu   naa   bunt b-i.*
    close-CAUS   PRF.1SG   door CL_b-DEF_1
    'I made (someone) close the door.'

A2.3.4. Causative *-loo*

(9) a. *Góor g-i   toog   na.*
    man CL_g-DEF_1 sit_down   PRF.3SG
    'The man sat down.'

   b. *Toog-loo   nañu   góor g-i.*
    sit_down-CAUS   PRF.3PL   man CL_g-DEF_1
    'They made the man sit down.'

A2.3.5. Sociative-causative *-le*

(10) a. *Xale b-i   lekk na.*
    child CL_b-DEF_1 eat   PRF.3SG
    'The child ate.'

b. *Jigéen j-i   lekk-le   na   xale b-i.*
woman   CL$_j$-DEF$_1$ eat-SOC.CAUS PRF.3SG child CL$_b$-DEF$_1$
'The woman helped the child eat.'

A2.4. Applicative

A2.4.1. Applicative *-al*

(11) a. *Rey nañu   a-m   xar.*
kill   PRF.3PL INDEF-CL$_m$ sheep
'They killed a sheep.'

b. *Rey-al   nañu gan g-i   a-m   xar.*
kill-APPL   PRF.3PL guest CL$_g$-DEF$_1$ INDEF-CL$_m$ sheep
'They killed a sheep for the guest.'

(12) a. *Usmaan   séy   na   ak   Faatu.*
Ousmane   marry   PRF.3SG with Fatou
'Ousmane married Fatou.'

b. *Faatu   la   Usmaan   séy-al.*
Faatu   FOC.3SG   Ousmane   marry-APPL
'It is Fatou that Ousmane married.'

A2.4.2. Applicative *-e*

(13) a. *Añ   nañu   ak   ceeb-u jën.*
lunch PRF.3PL with rice-H   fish
'They had rice and fish for lunch.'

b. *Añ-e   nañu   ceeb-u jën.*
lunch-APPL PRF.3PL rice-H   fish
same meaning as (a)

(14) a. *Añ   nañu   c-i   teraas b-i.*
lunch PRF.3PL LOC-PROX   terrace   CL$_b$-DEF$_1$
'They had lunch on the terrace.'

b. *C-i   teraas b-i   lañu   añ-e.*
LOC-PROX   terrace   CL$_b$-DEF$_1$ FOC.3PL   lunch-APPL
'It is on the terrace that hey had lunch.'

A2.5. Co-participation

A2.5.1. Sociative *-andoo*

(15) a. *Xale b-i   toog   na   c-i   lal b-i.*
child CL$_b$-DEF$_1$ sit_down PRF.3SG LOC-PROX   bed   CL$_b$-DEF$_1$
'The child sat on the bed.'

b. *Xale y-i   toog-andoo   nañu c-i   lal b-i.*
child CL_y-DEF_1 sit_down-SOC PRF.3PL LOC-PROX bed CL_b-DEF_1
'The children sat on the bed together.'

A2.5.2. Sociative/reciprocal *-oo*

(16) a. *Sédd   naa   ko   c-i   xaalis b-i.*
share   PRF.1SG 3SG LOC-PROX money CL_b-DEF_1
'I gave him part of the money.'

b. *Sédd-oo nanu   xaalis b-i.*
share-SOC PRF.1PL money CL_b-DEF_1
'We shared the money.'

A2.5.3. Reciprocal *-e*

(17) a. *Omar gis na   Usmaan   c-a   marse b-a.*
Omar   see   PRF-3SG Ousmane   LOC-DIST   market CL_b-DEF_2
'Omar saw Ousmane at the market.'

b. *Omar   ak   Usmaan   gis-e   nañu   c-a   marse b-a.*
Omar   with Ousmane   see-RECP   PRF-3SG LOC-DIST   market CL_b-DEF_2
'Omar and Ousmane met (saw each other) at the market.'

A2.5.4. Reciprocal *-ante*

(18) a. *Rey nañu   a-m   xar.*
kill   PRF.3PL INDEF-CL_m sheep
'They killed a sheep.'

b. *Rey-ante   nañu.*
kill-RECP   PRF.3PL
'They killed one another.'

A2.6. Antipassive *-e*

(19) a. *Xaj-a   ko   màtt.*
dog-FOC_s.3SG 3SG   bite
'A dog bit him.'

b. *Xaj b-ii   du   màtt-e.*
dog CL_b-DEM_1 NEG.EMPH.3SG   bite-ANTIP
'This dog does not bite.'

(20) a. *Togg   naa   yàpp   w-i.*
cook   PRF.1SG meat CL_w-DEF_1
'I cooked the meat.'

  b. *Togg-al naa la yàpp w-i.*
    cook-APPL PRF.1SG 2SG meat CL$_W$-DEF$_1$
    'I cooked the meat for you.'

  c. *Togg-al-e   naa yàpp w-i.*
    cook-APPL-ANTIP PRF.1SG meat CL$_W$-DEF$_1$
    'I cooked the meat (for some people).'

A2.7. Possessive *-le*

(21) a. *Woto b-i   gaaw na.*
     car   CL$_b$-DEF be‿fast PRF.3SG
     'The car is fast.'

  b. *Gaaw-le naa   woto.*
    be‿fast-POSS PRF.1SG car
    'I have a fast car.'

Appendix 3. The canonical use of Tswana applicative verb forms[4]

In their canonical use, applicative derivations license the presence of an NP in object role representing a participant fulfilling a semantic role that the same verb devoid of the applicative marker cannot assign to an object.

Tswana canonical applicatives are obligatory applicatives in the sense that objects licensed by the applicative suffix cannot be analyzed as promoted obliques: they always represent participants that cannot be treated as preposition phrases in oblique role in the construction of the non-derived verb.

Tswana has multiple-object constructions in which the asymmetry between the objects is minimal, and consequently Tswana applicative constructions do not significantly modify the status of an object already present in the construction of the same verb in its non-applicative form.

Tswana has just one applicative suffix. This applicative suffix is semantically unspecified in the sense that, by itself, it gives only negative indications about the semantic role of the object it licenses: the object licensed by the applicative suffix may assume any semantic role that the verb in its non-applicative form cannot assign to an object, and that cannot be coded by means of a preposition either. This means that the interpretation of applicative constructions crucially depends on the lexical meanings of the verb and of the object NP whose presence is licensed by the applicative suffix, as can be seen from the following examples, which illustrate the variety of the semantic roles taken over by applicative derivation.[5]

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[4] In addition to its canonical use presented here, the applicative derivation of Tswana also has non-canonical uses. The applicative suffix may encode a change in the semantic role of locative complements of motion verbs, or the focalization of a locative adjunct.

[5] In Tswana, the possibility to assign specific semantic roles to objects is a lexical property of verbs that cannot be entirely predicted from their meaning. For example, *atlhola* 'condemn' in its non-applicative form can occur in a double-object construction in which the second object represents the amount of a fine, e. g. *atlhola motho kgomo* | condemn | person | cow | 'condemn somebody to be fined a cow', but in order to express 'condemn to death' or 'condemn to prison', the use of the applicative form is obligatory.

(1)   a. *Kgosi e atlholetse monna bogodu.*
      qʰósí   í-àtɬʰúlétsí   mʊ̀-ńná   bʊ́-χòdù
      CL9:king CL9-condemn:APPL:PRF CL1-man   CL14-theft
      'The king condemned the man for theft.'

     b. *Kgosi e atlholetse monna loso.*
      qʰósí   í-àtɬʰúlétsí   mʊ̀-ńná   lʊ̀-sʊ́
      CL9:king CL9-condemn:APPL:PRF CL1-man   CL11-death
      'The king condemned the man to death.'

(2)   *Kitso oberekela tiego.*
      kítsɔ́   ʊ́-bérékélà   tíɛ́χɔ̀.
      CL1:Kitso   CL1-work:APPL:PRS CL9:delay
      'Kitso is working in order to make up lost time.'

(3)   *Magodu abolaetse monna madi.*
      mà-χòdù á-búláétsí   mʊ̀-ńná   mà-dí.
      CL6-thief CL6-kill:APPL:PRF CL1-man   CL6-money
      'The thieves killed the man for money.'

(4)   *Mpho o jetse Kitso dinawa.*
      m̀pʰɔ́   ʊ́-dʒétsí   kítsɔ́   dí-nàwá
      CL1:Mpho CL1-eat:APPL:PRF CL1:Kitso CL8/10-bean
      'Mpho ate the beans that were intended for Kitso.'

(5)   *Ke lebogela Kitso madi.*
      kì-lèbʊ̀χèlà   kítsɔ́   mà-dí
      1SG-thank:APPL:PRS CL1:Kitso CL:6-money
      'I am thanking Kitso for the money.'

(6)   *Mosadi yo o akela ralebentlele.*
      mʊ̀-sádì jó   ʊ́-ákélà   rálìbíńtɬílì
      CL1-woman CL1:DEM CL1-lie:APPL:PRS CL1:shopkeeper
      'This woman is telling lies about the shopkeeper.'

(7)   *Mabele a alafelwa thsupa.*
      mà-bèlé   á-áláfèlwà   tsʰùpà
      CL6-sorghum CL6-treat:APPL:PASS:PRS CL9:tshupa
      'The sorghum is treated against *tshupa* (a kind of worm).'

(8)   a. *Mosadi o biletsa bana dijo.*
      mʊ̀-sádí ʊ́-bílétsá   b-àná   dì-dʒɔ́
      CL1-woman CL1-call:APPL:PRS CL2-child   CL8/10-food
      'The woman is calling the children to eat.'

     b. *Mosadi o biletsa bana ngaka.*
      mʊ̀-sádí ʊ́-bílétsá   b-àná   ŋákà
      CL1-woman CL1-call:APPL:PRS CL2-child CL9:doctor
      'The woman is calling the doctor for the children.'

(9)   a. *Ke fetse ngwanake baesekele madi.*
  kì-fétsí   ŋʷánàkɛ́ báìsíkìlí mà-dí
  1SG-give:APPL:PRF CL1:child:1SG CL9:bicycle CL6-money
  'I gave money to my son for a bicycle.'

  b. *Ke fetse malome dikgomo letswai.*
  kì-fétsí   màlúmɛ́ dí-qʰòmú lì-tsʷáì
  1SG-give:APPL:PRF CL1:uncle:1SG CL8/10:cow CL5-salt
  'I gave salt to the cows for my uncle.'

(10) *Mosetsana yo o fosetsa batsadi.*
  mù-sítsánà jó   ú-fúsétsà   bà-tsádì
  CL 1-girl CL1:DEM CL1-be_wrong:APPL:PRS 2-parent
  'This girl behaves badly towards her parents.'

(11) *Ke gakgamalela bopelokgale jwa ngwana yo.*
  kì-χáqʰámálèlà   bù-pìlúqʰálì dʒʷ-á-ŋʷ-àná jò
  1SG-be_impressed:APPL:PRS CL14-courage 14-GEN-1-child CL1:DEM
  'I am impressed by the courage of this child.'