Space and Reference in Datooga Verbal Morphosyntax[1]

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1. Introduction

Verbal derivation is one of the salient features of the Nilotic languages and has been reconstructed for the common predecessor, Proto-Nilotic. On the basis of those affixes which seem to be attested in modern languages from all three branches of Nilotic, Western, Eastern and Southern, Dimmendaal (1981: 69) proposes a set of verbal extensions, *-U[2] "ventive", *-*t* "itive", *-*kI* "dative" and *-*E* "instrumental", as common Nilotic heritage. From a Western Nilotic perspective, Reh (1996: 261) confirms the Proto-Nilotic status of ventive (monovalent: *-$\grave{V}(V)_{[-BRV]}n$ or *-$n\grave{V}(V)_{[-BRV]}$) and ititve (monovalent: *-$\grave{V}t$ or *-$t\grave{V}$) and suggests that benefactive, inchoative (process derivation), and a patient deleting extension would also reconstruct as far back as the Proto-Nilotic stage. She had already added the frequentative *-*cVn* to the list of Proto-Nilotic reconstructions (Reh 1991).

In spite of this advance in Nilotic verbal reconstruction, many Nilotic languages still lack adequate treatments of the semantic and morphosyntactic properties of their verbal extensions. Southern Nilotic Datooga[3] is one of them. Some basic characteristics of its verbal derivational system have been outlined in Rottland's 1982 descriptive survey, but the synchronic analysis is far from completed, since neither the morphosyntactic properties nor the semantic concepts of these extensions have been explored adequately or understood well.

The aim of this paper is to have a closer look at those verbal extensions in Datooga that relate to spatial experience in the broadest sense. In brief, it will be shown that a basic opposition of centripetal (ventive) vs. centrifugal (itive, andative) is augmented by a mobilitive extension that adds the idea of spatial movement on the side of one of the central participants. Both centrifugal and centripetal extensions acquire specialisations in the assignment of semantic roles and the indication of personal reference. In this they come to stand in an opposition to another extension, which I call the terminal (applicative, goal indication).

On the one hand, these synchronic observations demonstrate how deeply rooted the experience of space and movement is in Datooga grammar, since morphemes from the spatial domain are used as a conceptual source for encoding meanings from another do-

main which is also regarded as very basic to human experience, i.e. personal reference. The situation in Datooga is instructive from a diachronic perspective as well, since the inflectional specialisations of these spatial extensions establish a tight network of semantic oppositions that might help to explain their remarkable time-stability in the wider Nilotic perspective.

Most of these Datooga extensions are clearly reflexes of Proto-Nilotic morphemes, with the exception of the mobilitive which is also found in Kalenjin, but seems to lack parallels in Eastern and Western Nilotic and might well turn out to be a Southern Nilotic innovation or retention.

2. Verbal derivation in Datooga

Verbal derivational extensions in Datooga serve several functions such as (1) adding argument slots of different value to the predicate frame, (2) giving a spatial orientation to the action or process in relation to a deictic centre, (3) adding the notion of locomotion to one of the arguments of the predicate frame, or (4) indicating the plurality of the event. Morphologically, verbs are extended by a series of suffixes.[4] They combine in a largely fixed order which is given in a tagmemic approximation in table (1); the ones relating to spatial reference which will be discussed below are highlighted by bold in the display.

Table 1: Suffix slots in Datooga verbal derivation[5]

Root	1	2	3	4	5
Verb	*-j* causative	**-aa mobilitive**	**-s terminal (applicative)**	*-aw* purposive	*-an* multipurpose oblique
	-ʃ antipassive (essive)	[*-ay* pluractional]	**-un centripetal (ventive)**	[*-ay* pluractional]	
			-d centrifugal (andative)		

Three caveats must be kept in mind, however. First, not every single suffix is compatible with all the others. Thus, the antipassive in slot 1 does not combine with any of the suffixes in slot 3. Second, the position of the causative suffix *-j* and the antipassive must be regarded as preliminary, since their combinatory capacity is not assessable on the basis of the data available so far. Third, the pluractional suffix *-ay* does not fit easily in this slotwise arrangement (indicated by square brackets), since its exact position depends on the presence of other suffixes.

2.1. Spatial orientation in relation to a deictic centre (centrifugal vs. centripetal)

The opposition of centripetal vs. centrifugal extensions belongs to the core of the verbal derivational system of Datooga. Previously, they have been labelled ventive and andative (Rottland 1982: 184ff.). I prefer to follow the use of Andersen 1999 who discusses comparable categories in Western Nilotic languages, because the terms centrifugal vs. centripetal bring out more clearly their semantic antagonism, while at the same time indicating a common semantic core, i.e. their orientation in relation to a deictic centre.

With monovalent verbs of locomotion, the centripetal derivation *-un*[6] indicates that the action or the event has an orientation towards the speaker or towards a deictic centre that has been established before in the discourse; whereas the centrifugal in *-d*[7] marks the opposite: an orientation away from the deictic centre. Thus, the centripetal stems *bııgun* 'return hither' (2a), *tkwaalun* 'jump up hither' (3a), *ŋeedun* 'rise to face hither' (4a), *rjaanun* 'drive from the pasture and bring home cattle' (5a), and *gaanun* 'take away and bring hither' (6a) imply movement towards the deictic centre, whereas the corresponding centrifugal stems *bııkt* (< *bııg-d*) 'return thither' (2b) and *tkwaald* 'jump up thither' (3b), *ŋeet* (< *ŋeed-d*) 'rise to face thither, rise to attack' (4b), *rjaand* 'drive from the pasture and take thither cattle' (5b), and *gaand* 'take away and carry off thither' (6b) imply movement away from the deictic centre.

(2) a. *gée-bììgú   hììjį̀*
      S1pl-return.CP here

      'We return here.'

    b. *gée-bììkt-á   hóowà*
      S1pl-return.CF-IS there

      'We return there.'

(3) a. *góo-tkwáalú   qáambágájæ̀æmú*
      S3-jump.up.CP frog.NOM

      'The frog jumped up hither.'

    b. *gòo-tkwáald-à   ʃéedá   gá-wá hímŋéedà*
      S3-jump.up.CF-IS moon.NOM S3-go sky

      'The moon jumped up into the sky.'

(4) a. *gá-ŋèedù   ŋádììdá …*
      S3-rise.CP   lion.NOM …

      'The lion rises against me (is about to attack me) …'

    b. *nì-ŋéet   dábàaqèegà*
      S3.PF-rise.CF Maasai.NOM

      'The Maasai have risen.'

(5) a. *góo-rjáanú*   *qàarèemáŋgá hêeydą*
     3pl-drive.home.CP   youths.NOM   bull

     'The youths drove the bull home from the pasture.'

   b. *qòo-rjáand-à*   *gɪ́dámànóosá   héeydáa-ɲí*
     S3-drive.home.CF-IS Gidamanosa.NOM bull-3SG.POSS

     'Gidamanosa drove away his bull home.'

(6) a. *gà-gáanú*   *màsùujá   bèeyóonèedà*
     S3-take.and.bring.CP Masuja.NOM   fire.twirl

     'Masuja took a ceremonial fire-twirl and brought it here.'

   b. *gá-gáandá*   *ŋútkákáa-scí ...*
     S3-take.and.carry.off.CF spears-3SG.POSS

     'He took his spears and carried them off ...'

On the text level, the opposition of centrifugal vs. centripetal extensions serves to tie events to conceptual reference points and thus functions as a device for establishing cohesion in discourse and keeping track of events and how they are connected. How this operates is illustrated briefly in the following excerpt from a narrative:

(7) *qwà-hìt-á   dàláandá   áa qà-bàr jêeptą, à-kà-bɪ́ɪgú   qòh,*
     S3-arrive.CF-IS Dalaanda.NOM and S3-kill child   SEQ-S3-return.CP home

     íimùcú qwà-hídú   wáybùuɲàandá bàrbàyɪ̂ɪga. qwá-hídú
     next.day S3-arrive.CP   negotiator.NOM Barabaiga   S3-arrive.CP

     qóobâard-a sìidá   héetà   bàr jêeptą.
     inquire.CF-IS person.AG day.before kill   child

     'Dalanda arrived there and killed a child, then he returned home. The next morning the negotiator of the Barabaiga arrived here. As he arrived, he inquired about the person who had killed the child the day before.'

This string of events is told from a Gisamjanga perspective, as could be seen from the conceptualisation of the Gisamjanga home of the warrior Dalanda as the deictic centre. This is obvious in the use of the centrifugal stem *hit* 'arrive thither' for his arrival at the Barabaiga's place and the centripetal stem *bɪɪgun* 'return hither' for his return back home. The centripetal stem *hidun* 'arrive hither' is used to refer to the coming of the Barabaiga negotiator which makes it clear that he came to the Gisamjanga place.

The notions of centrifugality and centripetality do not exclude the possibility to indicate specifications of direction and path, e.g.

(8) a. *gà-bɪ̀ɪkt-á*   *qáamátá   ŋæ̀æɲì*
     S3-return.CF-IS mother.NOM down

     'His mother went back down.'[8]

b. *á-kòo-tkwáald-à   bàdàw*
SEQ-S3-jump.up.CF-IS back

'and he jumped up backwards'[9]

Terminal endpoints of the event or action, however, cannot be indicated directly within the core predication. This function is taken over by the terminal derivation, which Rottland (1982: 186) called the "applicative", to be discussed below. With centrifugal or centripetal stems, the terminal endpoint may be encoded instead either in a non-core prepositional phrase outside the predicate frame as in (9), or in a subsequent clause introduced by *way* 'go' as in (10):

(9) *á-kà-bɪ̀ɪkt-á   mòondéeyá   héedá lùgòodḁ.*
SEQ-3sg-return.CF-IS Mondeya.NOM to   warriors

'So Mondeya went back to the army of [enemy] warriors.'

(10) *gà-bìiktá   nɪ́ɲ gá-wá ùhúu-tìlgwàjâandḁ.*
S3-return.CF-IS he S3-go top-termite.mound

'He returned to go on top of the termite mound.'

With non-locomotion-verbs the centripetal extension may imply that the action is carried out on behalf of or to the benefit of the speaker or the subject, respectively. Thus in (11) the centripetal stem *raaŋun* highlights this autobenefactive idea in its meaning 'acquire glory for oneself as a hero by killing an enemy or a ferocious beast'.[10] Actually one could argue here, that the deictic centre is the self for whose benefit the action of killing is carried out. The orientation is not a spatial, but a beneficiary one, as the locomotion to be done for accomplishing the deed is neither directed towards nor away from the deictic centre. Instead it is the deictic centre itself that moves.

(11) *ám-ɪ́-ràaŋú   gì-hìdú   dáa-màar-ɲì.*
COND-2sg.SJN-acquire.glory.CP S2sg-come.CP   1sg.SJN-donate-O2sg

'If you kill to acquire heroic glory, then you may come and I'll give you a hero's present.'

The centripetal stem *jagun* 'throw back' in (12) does not convey spatial connotation of movement towards the deictic centre which is established by the subject here, i.e. the Gisamjanga youths. Actually the deictic centre itself moves, and the Gisamjanga youths throw back the Barabaiga away from themselves. In purely spatial terms, one should have rather expected the centrifugal extension here. So what justifies the centripetal extension is again the autobenefactive notion: they throw back the enemies successfully to profit from this exploit.

(12) *íi-sì-jágú*   *qàarèemáŋgá sèen, gà-bìɩkɩ́ɩdàw-à*
     TEMP-S3pl.PF-throw.back.CP   youths   all   S3-retreat-IS

     bárbáan-jì   *ùhùudá dìlgwàjâandạ.*
     Barabaiga.person.NOM-REF   top.AG termite.mound

     'Whenever they [i.e. the Gisamjanga youths] threw back all the [Barabaiga] youths, one Barabaiga warrior always retreated on top of a termite mound.'

Similarly, the centrifugal extension used with verbs other than locomotion does not imply movement necessarily. Instead it indicates that the event or action takes place somewhere else, but not at the deictic centre. It acquires an altrilocative reading in these cases. Thus in (13) with a bivalent verb of consumption such as *leeh* 'drink', the centrifugal *leeyd* conveys the meaning of 'drink at another place':

(13) *héew-àa*   *ʔàgị, íi-wàa   qwá-léeyd-á   náa   gòo-ráarú*
     bull-dem.near.COP one   TEMP-go   S3-drink.CP-IS and   S3-come.out.CP

     ạséetá   gwà-lèhɩɩd-à   ʔàa   gá-mìkt-ạ.
     sun.NOM   S3-drink.PLUR.CF-IS   until S3-sink.(sun).CF-IS

     'There was this bull, only one, and whenever he went to drink water there, he usually started drinking there in the morning when the sun came out, until the evening when the sun set again.'

Another function of the centrifugal extension is to indicate extroversion of qualities or properties by communication. Thus, in *raaŋun* 'acquire glory for oneself as a hero by killing an enemy or a ferocious beast' in (11), the centripetal extension highlights the autobenefactive idea of the act, the acquisition of a quality by a certain act. In *raaŋd* (or rather the pluractional *raaŋiid*) in (14), the centripetal extension is replaced by the centrifugal one which changes the meaning to 'sing about one's heroic deeds in order to show off glory', with the centrifugal marker highlighting the idea of communicating about the glory, showing off the glory. It is also possible that an altrilocative element is associated with it, since the communication about the glory usually takes place at a different place than the acquisition of it.

(14) *íimùcú gà-wà gwá-ráŋɩíd-à*   *náa   gà-wà*
     next.day S3.go S3-sing.about.heroic.deeds.PLUR.CF-IS and   S3-go

     qwâan   jɩróneèdà góo-bìdæ̀æd-ạ.
     father.NOM   shadow   S3-sit.MOB.CF-IS

     'The next day he went to sing about his heroic deeds to acquire glory, and his father went into the shadow to rest.'

This derivational system of spatial orientation of events in relation to a deictic centre is highly significant culturally, as can be seen from the fact that it gives an internal orientation to the quarters of the heavens. Thus the centripetal form *wiilun* 'walk hither' implies walking southwards, whereas walking in a northern direction is encoded as centrifugal, *wiild*, which indicates that the south is conceptualised as the deictic centre.

(15) àṃá-wìild-á   gwà-jòon ʃáaróodá ŋàd̪ìidᶒ, àmá-wíílú   gwà-
      joon
      TEMP-walk.CF-IS S3-smell odour.AG lion   TEMP-walk.CP S3-smell

      ʃáaróodá   ŋàd̪ìidᶒ.
      odour.AG   lion

      'When they turned to escape northwards, they perceived the lion's smell, and
      when they turned to escape southwards, they perceived its smell all the same.'

The derivational system of spatial orientation of events in relation to a deictic centre also structures temporal concepts and gives the day an internal orientation. Thus, day-break is conceptualised as an event with an inherent direction towards the deictic centre, as could be gleaned from the lexicalised centripetal suffix in *mucun* 'to dawn' and *íímùcú* 'morning, daybreak, next day' (literally: 'when it has dawned'); whereas the evening is conceptualised as an event with a direction away from the deictic centre, shown by *ʃíŋádà* 'evening' which is derived from the verb *ʃiŋd* 'become late' with a lexicalised centrifugal suffix; and *mikt* 'set (sun)' also contains a lexicalised centrifugal suffix. All these examples show that the point of orientation is the time of full daylight.

2.2. Mobilitive extension

In contrast to the simple directional extensions of the centrifugal and the centripetal, there are two related extensions that add the idea of movement, typically to manipulative and perceptive verbs that do not have inherent directional movement. This semantic category is called mobile / mobilitive here; comparable extensions in Kalenjin have been referred to as "ambulatory" (Toweett 1979: 138f.). The mobile centripetal in *-aan*, called ventive 2 in Rottland (1982: 184ff.), indicates that action or event are directed towards a deictic centre, while at the same time the subject is moving; whereas the mobile centrifugal in *-aad*, called andative 2 in Rottland (op. cit.), indicates just the opposite: that action or event are directed away from a deictic centre, while at the same time the subject is moving. This could be seen in the pairs in (18-20).

(18) Mobile centrifugal and centripetal extensions with *hiiɲ* 'bend down, stoop':

      hiiɲaan 'move hither in a bent position / stooping fashion'
      hiiɲaad 'move thither in a bent position / stooping fashion'

(19) Mobile centrifugal and centripetal extensions with *hirjaw* 'pick for special
      purpose':

      a. *gày-gwá-híɾjàwàan   séeŋgá   ʃábáadì*
         FUT-S3-pick.PURP.MOB.CP leaves.AG fresh.PL

         'He will pick green leaves (for a special purpose) while
         moving hither.'

      b. *gày-gwá-híɾjàwáad-á   séeŋgá   ʃábáadì*
         FUT-S3-pick.PURP.MOB.CF-IS leaves.AG fresh.PL

'He will pick green leaves (for a special purpose) while
moving thither.'

(20)   Mobile centrifugal and centripetal extensions in lexicalised forms with *hiiŋ:
       hiiŋaan 'descend hither' vs. hiiŋaad 'descend thither':

       qwá-hìiŋáad-á   nìirjá   gwà-éeʃ-à   nìirjá
       S3-descend.MOB.CF-IS   other.NOM   S3-say-IS   other.NOM

       hiŋàan-à   nì-mì.
       descend.CP-IMP.CP.SG   S3SG.PF-die

       'One of them descended, and [when he reached the ground] he said to the other
       one [who was still up in the tree]: "Come down! It (the beast) is dead!" '

With verbs of perception, the implication of movement usually refers to the per-
ceived object, not to the subject. This comes clearly out in example (21) where mobile
centrifugal, *daahaad* 'see something moving away', and mobile centripetal, *daahaan*
'see something approaching', are in contrast in the verb *daah* 'see'.

(21)   qwà-dàahàan   dúgà   àa   qwá-sájáad-á   gá-gâl
       S3-see.MOB.CP   cattle until   S3-turn.MOB.CF-IS   S3-pass

       qéedà-scàyì   [...],   qwà-dàaháad-á   gwáargwéedá
       house-3SG.POSS.ALL   [...]   S3-see.MOB.CF-IS   old.man.NOM

       dúu-sú   àa   gá-wáy   qòh,
       cattle-DEM.NEAR.PL   until   S3-go   home

       'He [i.e. the old man] saw the cattle coming his way, until they changed their
       direction, moving away from him and passing his house... The old man was
       watching these cattle moving away, then he went home.'

Direction and movement of the syntactic object, *dúgà* 'cattle', is marked on the per-
ceptive verb *daah* 'see'. First the cattle seem to be moving towards the deictic centre,
which is the perceiving subject *gwáargwéedá* 'the old man'. That is why we get the
marking for centripetal mobility on the verb *daahaan*. Then all of a sudden, the cattle
change their direction. This is expressed by the mobile centrifugal verb *sajaad* 'swerve
off', derived from *saj* 'turn something around'. In this case the mobility marker refers to
the motion of the syntactic subject, *dúgà* 'cattle', and to the relation of this movement to
the deictic centre, established by the previous subject *gwáargwéedá* 'the old man'.
Finally, the old man watches the cattle moving away from him. This movement of the
syntactic object 'cattle' is expressed on the perceptive verb *daah* again, this time by the
marker for centrifugal mobility, which is why we have *daahaad*. The indication of
mobility once again refers to the object, not the perceiving subject (which is identical to
the deictic centre).

One could imagine a different setting as in (22) where events would be reversed.

(22) *qwà-dàaháad-á*   *dúgà àa qwá-sájàan*   *[...] qwà-dàahàan*
S3-see.MOB.CF-IS cattle until S3-turn.MOB.CF [...] S3-see.MOB.CP

gwáargwéedá dúu-sú   *àa   gwá-nàws-à*
old.man.NOM   cattle-DEM.NEAR.PL until S3-pass.along.TERM-IS

hílgwáandà.
enclosure

'The old man saw the cattle moving away, until they changed the direction moving towards him [...]. The old man was watching these cattle coming, until they entered the enclosure.'

With transitive verbs of manipulation that allow a patient as direct object, the notion of mobility extends preferably to this patient object, as shown with *nuŋwaad* 'let something go' from *nuŋw* 'let, leave' (23), *lajaad* 'cut off and move away' from *lag* 'cut off' (24), and *ŋoɲaad* 'catch on the run, seize something which is moving away' from *ŋooɲ* 'seize, catch, grasp' (25).

(23) *qwà-nùŋwáad-á*   *dáarèemŋàjàandą̀.*
S3-let.go.MOB.CF-IS Daremngajanda.NOM

'Daremngajanda let it go.'

(24) *á-jéɛɲ-à*   *á-lájàad-á*   *báɲéegà*
IMP.PL-skin-IMP.PL   IMP.PL-cut.off.MOB.CF-IMP.PL   meat

óo-mánàaŋ-à
IMP.PL.2-remove-IMP.PL

'Skin it, cut off the meat in small strips and move it away.'

(25) *íi-mùŋàw*   *gàj-ée-ŋòɲâad-ą̀.*
TEMP-run.away   FUT-S3PL-catch.MOB.CF-IS

'When they₁ run away, they₂ will catch them₁ on the run.'

The mobile extension may also add an intrusive idea. Thus a phrase like *qóohùudų̀* 's/he tore it out hither (as a whole)' with the simple centripetal *huudun* 'tear off' implying a separation from something else, but without breaking the patient or infringing otherwise upon its physical integrity, e.g. uprooting a plant. But a mobile centripetal such as *huudaan* in (26) would imply a dissociation of the patient in pieces, a rupture and a severe intrusion upon its integrity.

(26) *qóo-húudâan*   *máaŋée-cêepta,*   *á-kòo-ŋwêers-ą̀*
S3-tear.off.MOB.CP front.leg.AG-child   SEQ-S3-look.at.TERM-IS

'She tore off the child's arm, then she looked at it.'

This sentence occurs in a rather macabre context. The woman has – unknowingly – cooked her own child. In the end she wants to take some meat, picks the arm and pulls

at it so that the cooked meat comes off the bone. The mobile centripetal indicates the disintegration that the patient undergoes while being moved towards the deictic centre, i.e. the subject.

2.3. Goal orientation by the terminal extension

It is important to bear in mind that none of the extensions discussed so far, neither centrifugal nor centripetal, indicate a specific goal as an endpoint of the event or action. This is accomplished by another extension, the terminal (following the use in Creider 2002 for Nandi), previously called applicative (Rottland 1982: 184ff). Strictly speaking, the semantic core of the terminal – in contrast to the centrifugal and the centripetal extensions – could be viewed as indicating an orientation towards another, a competing deictic centre which could be either a recipient[11] or beneficiary as in (27), or a specific location as in (28).

(27)   Terminal suffix -*s* indicating a recipient or beneficiary:

a. *ruus* 'give out to' (< *ruud-s*)

góo-rúus-á   qàarèemánéedà   bìyáydàa-ɲị.[12]
S3-give.out.TERM-IS   youth   meat-3SG.POSS

'He gave out the meat to the youth.'

b. *ŋɔɔys* 'seize for' (< *ŋɔɔɲ-s*)

gòo-ŋɔ́ɔys-à   gídámànóosá   làgwéendáa-ɲí
S3-seize.TERM-IS   Gidamanosa   sheep-3SG.POSS

'He seized a sheep for Gidamanosa.'

c. *guums* 'bring back to, return to'

níi-gúums-à   dûgwạ.
S3SG.PF-return.TERM-IS   cattle

'He has brought the cattle back to him.'

d. *yaas* 'send to, bring' (< *yaad-s*)

á-kwà-rìt-á   gw-áas-á   bùunèedáa-
ɲí   bàɲêegạ.
SEQ-S3-come.out.CF-IS   S3-send.TERM-IS   people-3SG.POSS   meat

'He came out to bring his people the meat.'

(28)   Terminal suffix -*s* indicating a location:

a. *bɪɪks* 'return to' (< *bɪɪg-s*)

náa gá-bɪɪks-á   gíɪjéegá   hêedạ.
and S3-return.TERM-IS   mountains.NOM   place

'and the mountains returned to their places'

b. *jaks* 'throw at, throw to' (< *jag-s*)

gwà-jàks-á   jée ɲêegạ.
S3-throw.TERM-IS into grass

'She threw it (snake) into the grass.'

c. *ras* 'tie to' (< *rad-s*)

á-mqùd-à   ʃìimɲáandá sòoræærdà à-kòo-ràs-í
IMP.PL-fold-IMP.PL   tail.AG   barren.cow   SEQ-S2PL-tie.TERM-IS

ʃìbǽæ̂ŋgạ.
sisal.string

'Fold the barren cow's tail and tie sisal strings to it.'

d. *tkwaals* 'jump up and leap at'

*qwà-dàahàan ɲáwúudá àmá-gàs-à   qwá-
lâc fúuáandá qùuáaŋdà*
S3-see.MOB.CP cat.NOM TEMP-want-IS S3-cut string.AG bow

gòo-tkwáals-à   á-ká-qàc   ùhùudạ.
S3-jump.TERM-IS   SEQ-S3-bite.off   head

'The cat observed it (the rat) coming, and when it was about to gnaw at the bowstring, she jumped at it and bit off its head.'

Adding the thematic role of the goal to the basic predicate frame of the verb, the terminal extension turns monovalent verbs of locomotion like *bɪɪg* 'return' into bivalent ones: *bɪɪks* 'return to some place'. With bivalent verbs that include a patient role in their predicate frame, the terminal also adds a goal orientation on top of that, so that it makes them trivalent, e.g. *jag* 'throw something' becomes *jaks* 'throw something at someone / someplace'. Some of these terminal stems are displayed in (29), in contrast to their centripetal and centrifugal counterparts.

(29) Terminal suffix -*s* in contrast to centripetal and centrifugal extensions[13]

Root	Centripetal	Centrifugal	Terminal
bɪɪg	*bɪɪgun* 'return hither'	*bɪɪkt* (< *bɪɪg-d*) 'return thither (away)'	*biiks* (< *bɪɪg-s*) 'return to'
weew	*weewun* 'turn around hither'	*weewd* 'turn around thither'	*weews* 'turn around towards'
jag	*jagun* 'throw back hither'	*jakt* (< *jag-d*) 'throw thither'	*jaks* (< *jag-s*) 'throw at, throw towards'
saj 'turn	*sajun* 'turn	-	*sacs* (< *saj-s*) 'turn

something around'	something around hither'		something around towards'
*sag	-	sakt (< *sag-d) 'sprinkle something thither'	saks (< *sag-s) 'sprinkle something at'
tkwaal 'jump up'	tkwaalun 'jump up and dash hither'	tkwaald 'jump up and rush away'	tkwaals 'jump up and leap at'
rjaan 'take (cattle) from pasture''	rjaanun 'drive (cattle) home from pasture'	rjaand 'drive (cattle) away from pasture'	rjaas (< *rjaan-s) 'drive (cattle) from pasture to someone'
*hid	hidun 'arrive here'	hit (< *hid-d) 'arrive there'	his (< *hid-s) 'arrive at, encounter'
rad 'tie, bind'	radun 'tie hither'	-	ras 'tie to'
*rid 'come out'	ridun 'come out hither'	rit 'come out thither'	-

Verbs that have a recipient role in their basic predicate frame structure already may also combine with the terminal extension. In this case the extension adds an idea of finality and introduces a cause or a purpose. Thus, *maar* 'give a present (cattle) to someone in acknowledgement of a heroic deed' in its simplex form already assigns the recipient to the object role. The terminal stem *maars* means 'give a present to someone in acknowledgement of a heroic deed for a special purpose', illustrated in the examples in (30).

(30) *gíí-màars-ínàa*?
      S2.SG-donate.TERM-what?

      'what do you give a hero's present to him for?'

2.4. Inflectional specialisations of the extensions

All three extensions examined here – the terminal, centripetal, and centrifugal – also have inflectional specialisations, depending on the personal feature of the patient or goal, respectively. Thus, with trivalent verbs such as *rug* 'mention, tell', *hiim* 'show' that allow for a patient and a goal in their predicate frame, the centrifugal highlights a patient orientation and has the function to suppress the goal role by removing it from the basic predicate frame, which is illustrated in (31b) and (32c). Goal orientation, on the other hand, is marked by an opposition of terminal vs. centripetal. Both morphemes acquire semantic extensions to serve the inflectional function of indicating personal reference, in that the centripetal is obligatory for 1st or 2nd person goals (i.e. participants), whereas the terminal marks a 3rd person goal. This makes perfect sense insofar as centripetality is identified conceptually with an orientation towards 1st or 2nd person, that is to say the deictic centre is identified with the participants of the discourse. Thus, the centripetal extension in the stems *hɪɪmun* 'show to someone (1/2)' (31a) and *rugun* 'tell

someone (1/2)' (32a) is necessary to indicate a 1ˢᵗ person goal which is encoded in the suffix *-aan* in (32a) and by zero[14] in (31a), whereas the terminal extension in *hɪɪms* 'show to someone (3)' (31a) and *ruks* 'tell someone (3)' (32b) is used to indicate a 3ʳᵈ person goal. This inflectional specialisation of derivational suffixes is why Datooga can dispense with specific 3ʳᵈ person object suffixes,[15] goal indication by terminal suffix is sufficient to indicate a 3ʳᵈ person goal here.

(31) a. *gwà-yéeʃ-à ɔ́ɔ-hɪɪmn-ɪ́ dáa òo-bàr-jì.*
   S3-say-IS IMP.PL-show.CP-IMP.CP ANA.SG S2.PL.REL-kill-S2.PL

   gèe-hɪ̂ɪms-ą̀.
   S3PL-show.TERM-IS

   'He said: "Show me the one that you killed." So they showed him.'

  b. *qóo-hɪɪmd-à báadɪ́ nùŋs-á ŋáaɲɪɪdà*
   S3-show.CF-IS that leave.TERM-IS world

   'He shows that he has left something to the world.'

(32) a. *nì-rúkn-ææn*
   3SG.PF-tell.CP-O1.SG

   's/he has told me.'

  b. *àmá-hìt-á gwà-rùks-á qwàan àa qàamàt gìdææbá*
   TEMP-arrive.CF-IS S3-tell.TERM-IS father and mother that

   jéeptáa-ŋwà qá-bàr dàlæændą̀.
   child-2PL.POSS S3-kill Dalanda.NOM

   'When he arrived, he told father and mother: "Dalanda has killed your child."'

  c. *ɪ́ɪmùcú qà-bàr gɪdà mánàŋ qáyɪ́ rúkt-à ʃèedą̀.*
   finally S3-kill thing.AG small.NOM long.ago tell.CF-IS moon.NOM

   'Finally a small thing killed him, as had been foretold long ago by the moon.'

  d. *àd-ù-rúktàn-àan*!
   NEG.SJN-S2.SG-tell.CF.OBL-O1.SG

   'Don't sell me out!', 'Don't tell anything about me!'

   This kind of derivational means of distinguishing 3ʳᵈ person objects vs. non-3ʳᵈ person objects is not only restricted to the goal role, but also works for the patient. We can observe this in verbs like *rukt* 'tell something, foretell, give away some piece of information, give away a secret' in (32c), where the goal is suppressed by the centrifugal extension. But this simple centrifugal stem is used for 3ʳᵈ person patients only (32c); whereas for 1ˢᵗ and 2ⁿᵈ person patients the additional suffix *-an* has to be added in *ruktan* 'sell out someone (1/2), give away someone (1/2), tell about someone (1/2)' in

(32d). This suffix on its own takes over a variety of functions in other contexts, e.g. instrumental (33), locative (34) and ablative (35). For lack of a better term I call it oblique.

(33)   Instrumental use of oblique marker *-an*:

èe-bárán-à   bèɛʃtáa lálàctà
1pl.SJN-beat.INSTR-IS fire.and boiling

'Let's cook it by burning and boiling!'

(34)   Locative use of oblique marker *-an*:

ábɪɪdàná   ŋáaɲɪɪdà
IMP.SG-stay.LOC-IMP.SG   world

'Stay on earth!'

(35)   Ablative use of oblique marker *-an*:

gwáargwèedá   qwáɲàwà ŋèɛdà   jɪróonèedà
old.man.NOM   before   rise.ABL   shadow

'the old man who had risen from the shadow before'

Verbs that typically include a goal in their basic predicate frame, such as *maar* 'give a present (cattle) to someone in acknowledgement of a heroic deed', use this suffix to highlight a specific patient that is not explicitly mentioned, but otherwise culturally understood, as shown with *maaran* in (36):

(36)   rúkn-ɪ   qàwúŋgá déedá   jàa   ʔá-máaràn-àan!
       tell.CP-IMP.SG name.AG cow.AG FUT.REL S2.SG-donate.OBL-O1.SG

'Mention the name of the cow that you will give to me!'

Some further examples of this system are listed in the table in (37). Indicating the two-way personal reference contrast between 1st or 2nd person vs. 3rd person in the verbal stem itself is such a basic concept in Datooga that it permeates not only the verbal derivational grammar as sketched above, but is also lexicalised in occasional suppletive stems for 3rd person goals vs. non-3rd person goals, e.g. *goon* 'give' (probably a lexicalised centripetal form *goh-un*) which is used for 1st and 2nd person goals only, contrasting with the simplex *daw* which is used for 3rd person goals only, and with the centrifugal stem *dayd* for patient orientation and goal suppression.

(37)   Inflectional specialisations of the terminal, centripetal, and centrifugal extensions, in relation to the personal features of patient or goal[16]

Root	Non-terminal [-GOAL, +PATIENT 3]: centrifugal suffix	Non-terminal [-GOAL, +PATIENT 1/2]: centrifugal suffix+	Terminal [+GOAL 1/2]: centripetal suffix	Terminal [+GOAL 3]: terminal suffix

		suffix for participant orientation		
*rug	rukt (< rug-d) 'mention (3)'	ruktan (< rug-d-an) 'mention (1/2)'	rugun 'mention to 1/2, tell 1/2'	ruks (< rug-s) 'mention to 3, tell 3'
guur 'call, mention'	guurd 'call out (3); chant; ask to enter'	[guurdan]	guurun 'call out to 1/2, call out that 1/2 may come'	guurs 'call out to 3, call out that 3 may come'
*hɪɪm	hɪɪmd 'show (3)'	[hɪɪmdan]	hɪɪmun 'show to 1/2'	hɪɪms 'show to 3'
*yaad	yaat (< yaad-d) 'take away (3)'	[yaatan (< yaad-d-an)]	yaadun 'take to 1/2, bring'	yaas (< yaad-s) 'take to 3, send to'
*gaan	gaand 'take away (3) and carry off, remove'	[gaandan]	gaanun 'take away and bring to 1/2'	gaans 'take away and bring to 3'
*ruud	ruut 'take out (3)'	ruutan (< ruud-d-an) 'take out (1/2)'	ruudun 'take out to give to 1/2'	ruus (< rjaan-s) 'take out to give to 3'
*goh	dayd 'give (3)'	[daydan]	goon 'give to 1/2'	[daw 'give to 3']

3. Conclusion

The importance of semantic concepts of spatial directional orientation and locomotion in Datooga can be seen in the presence of a highly elaborate verbal derivational system that operates on the opposition of centripetal vs. centrifugal action or event that is further expanded by derivational marking of internal movement. (38) sums up the basic findings: With monovalent verbs of locomotion, centrifugal and centripetal extensions stand in opposition to each other. They also have some impact on the predicate frame, because together they enter into an opposition to the terminal extension which has the function of introducing into the predicate frame a specific goal or endpoint which is not identical to the deictic centre. In the case of bivalent verbs of manipulation which have a patient, the centripetal may acquire an autobenefactive reading.

Datooga also exploits its derivational apparatus of directional markers for inflectional functions such as participant indication and personal reference. With trivalent verbs, the terminal extension in -s enters into an opposition to centripetal forms in -un with respect to marking personal properties of recipient / goal objects. The universal saliency of 1st and 2nd person (speech act participants) against 3rd person (non-participants), as noted frequently, e.g. in Dik (1997: 359) and Croft (1995: 118), is manifest in Datooga in the obligatory replacement of the terminal suffix -s (3rd person) by the centripetal suffix -un for marking 1st and 2nd person recipient / goal objects. In

this context, the centrifugal marker takes over the function of suppressing indication of a goal and of highlighting the patient. Again the morphosemantic opposition of 3rd person vs. non-3rd person is reflected in verbal derivation, since with non-3rd person patients the centrifugal suffix is not sufficient, and has to be supplemented by the multipurpose marker -*an* which, standing on its own, expresses instrumental, comitative and ablative functions.

(38)   Summary of functions of the centripetal, centrifugal, terminal and multipurpose
          markers:

   a. centripetal -*un*
      (i)   'hither' / ventive: movement towards deictic centre
      (ii)   autobenefactive: action on behalf of or to the benefit of the speaker or the
                 subject
      (iii)   1st / 2nd person recipient / goal

   b. centrifugal -*d*
      (i)   'thither' / itive: movement away from deictic centre
      (ii)   altrilocative: event or action happens at a place that is different from
                 deictic centre
      (iii)   goal suppression & patient orientation for 3rd person

   c. terminal -*s*
      (i)   3rd person recipient / goal
      (ii)   non-autobenefactive: action on behalf of or to the benefit of someone
                 who is not the speaker nor the subject
      (iii)   purpose / cause indication

   d. multipurpose oblique marker -*an*
      (i)   instrument / locative / source indication
      (ii)   goal suppression & patient orientation for non-3rd person participants
      (iii)   specific patient introduction for all persons for verbs
                 with original goal orientation, e.g. *maar*

These semanto-syntactic observations have some bearing on internal reconstruction. The complex form *ruktan* 'mention someone (1/2), sell out someone (1/2), give away someone (1/2), tell about someone (1/2)' in (32d) and (39), in which the centrifugal marker -*d* (assimilated as -*t*) is used to suppress goal indication and in which the suffix

-*an* indicates a non-3rd person patient, is functionally and phonotactically parallel to *rugun* 'tell someone (1/2)', which indicates goal orientation and further narrows down the goal to 1st or 2nd person, as shown in (39).

(39)   Inflectional specialisation of stems based on *rug* 'mention'

	3rd person complement	non-3rd person complement
goal orientation	*ruks* (< *rug-s*) 'mention to someone (3), tell someone (3)'	*rugun* (< *rug-u-an*?) 'mention to someone (1/2), tell someone (1/2)'
patient orientation	*rukt* (< *rug-d*) 'mention someone or something (3)'	*ruktan* (< *rug-d-an*) 'mention someone (1/2)'

Actually, *rugun* is an abstract form that never surfaces like this, it is either -*u* or -*n*, but never both of them. The systematic parallel to the suffix complex -*tan* suggests that originally also this suffix -*un* might have been complex, probably going back historically to an amalgamation and fusion of a suffix -*u* which was the original marker of centripetality and -*an* – again, probably to be identified with the multipurpose marker used for coindexing non-3rd person arguments. However, the semantics is blurred in this case. Synchronically, -*u* and -*n* could also be analysed as allomorphs of the centripetal morpheme. Their synchronic distribution does not anymore reflect a semantic distinction, but seems to be dependent on an impenetrable interaction of phonological and morphological factors. So the allomorphy of the centripetal in -*u* or -*n* may rather reflect its former composite origin in a suffix fusion.[17]

Endnote

[1] I thank the Max Planck Institute of Evolutionary Anthropology in Leipzig for enabling me to do the prefinal stages of revision of this article at their Linguistics Department.

[2] The asterisk is used in two different contexts. When referring to derivational affixes it indicates that their shape is the result of either internal or comparative reconstruction. When referring to verbal roots, it indicates its underlying shape which does not occur synchronically in its bare form, but which could be reconstructed internally by subtracting the derivational affixes.

[3] Datooga is a Southern Nilotic dialect cluster of Northern and Central Tanzania. For maps see Rottland (1982: 43; 1983: 211; 1994: 344) and Tomikawa (1970: 10; 1979: 17). Omotik and Datooga together constitute one of the two main branches of Southern Nilotic, with the Kalenjin languages constituting the other main branch (Rottland 1982: 255). The Datooga dialect under discussion here is the Gisamjanga variety. The bulk of the data was collected by Paul Berger in the Mbulu district of Northern Tanzania during the period May 1935 to February 1936, where he stayed after his separation from the German East Africa 1934-36 expedition under Ludwig Kohl-Larsen, whom he had accompanied as a linguistic adviser. For details regarding the Datooga part of the expedition see Berger 1938a and b. For details regarding Berger's life and linguistic achievements see Berger and Kiessling 1998. Berger's data consist of some 500 pages of texts, mostly of the narrative and procedural sorts, comprising roughly 50 texts of various lengths, plus additional fieldnotes, elicited paradigms and sentences, which have been systematised and analysed by me to some extent.

[4] Most of them have suprasegmental and morphophonological side-effects which are not in-

vestigated here. Beside these suffixes, traces of a former causative infix (Rottland 1982: 188, Kiessling 2000: 613f.) could be found.

[5] Abbreviations used throughout this paper: AG antigenitive, ANA anaphora, AP antipassive, BRV breathy voice, CAU causative, CF centrifugal, COND conditional, CP centripetal, DEM demonstrative, IMP imperative, IS inflectional suffix (of uncertain function), MOB mobilitive, NEG negative, NOM nominative, O object, OBL multipurpose oblique, PF perfect, PL plural, PLUR pluractional, PURP purposive, REF referential, S subject, SEQ sequential, SG singular, SJN subjunctive, TEMP temporal relative, TERM terminal.
A note on transcription of the Datooga data: the transcription adheres to the IPA-conventions with two exceptions: *j* stands for a voiced palatal plosive [ɟ], and *y* for the palatal approximant [j]. Devoiced vowels bear no tone. Verbs in their citation form are left without tone mark, since it has not been possible so far to disentangle the lexical tonal properties from the inflectional ones with certainty. The phonological status of ATR in Gisamjanga, the Datooga variety discussed here, is largely unclear. The official version (Rottland 1982) is that in Datooga [+ATR] and [–ATR] values of the highest vowels collapsed. Also the [+ATR] value of the low vowel was eliminated, however not by merging with its [–ATR] counterpart, but instead with the [–ATR] value of the mid front vowel, leading to a highly imbalanced system of vowel alternation which had lost its phonetic motivation, since the vowel /ɛ/ now belongs to both ATR-sets: on the one hand as the [-ATR] value of /e/, and on the other hand as the [+ATR] value of /a/. My own restricted data [and the more extensive data of Berger] give the impression that at least in some cases [-ATR] values of high vowels appear, but the conditions of their appearance are not clear. In some instances they seem to alternate freely with their [+ATR] counterparts. In other cases, as with the verbs *bɪɪg and *hɪɪm, they even show up in environments such as the centripetal that normally trigger conversion to [+ATR]. So with regard to these vowel qualities I still stick to phonetic notation, as long as the (morpho-) phonological analysis is still incomplete here. It may also well turn out that this contradiction to Rottland's analysis is due to a historical change that must have occurred between Berger's days (the 1930's) and the 1970's when Rottland conducted his fieldwork, since we deal with one Datooga variety here, namely Gisamjanga, which was considerably and progressively influenced by neighbouring Southern Cushitic languages such as Iraqw, possibly in the direction of convergence towards the Southern Cushitic 5 vowel system.

[6] This form of the suffix is an abstraction; it never surfaces in this form, but either as the allo-morph *-u* or as *-n*, the distribution being conditioned by morphosyntactic environment. The centripetal marker triggers the conversion of the verbal stem to the [+ATR] category, which – given the fact that former ATR contrasts in vowels have been largely transposed to consonantal oppositions (Kiessling 1999) – surfaces in the shift of *q > g* in the prefix for 3rd person subjects in the following examples:

Verbal base [-ATR]	Base [-ATR] with S3	Centripetal stem in -*un* [+ATR] with S3
rad 'tie'	*qwá-ràt*	*gwa-rádu̥*
yaad 'take away'	*qw-âat*	*gw-âadu̥*
laab 'pass, walk by'	*qwá-là*	*gwá-lææ̀bu̥*
raaŋ-d 'sing about own heroic deeds'	*qwá-ràaŋdạ*	*gwá-ràaŋu̥*
ram-d 'draw water'	*qwa-rámdạ*	*gwa-ramu̥*

There are notable exceptions though. Thus with *hidun* (< *hit* [-ATR] 'arrive') and *duubun* (< *duub* [-ATR] 'follow'), the centripetal remains [-ATR] and does not change to [+ATR].

[7] This suffix triggers a shift of root final *h* and *w* to *y* and may also change a back vowel *o* to *e*, as shown in the following examples.

Base	Centrifugal stem in -*d*
leeh 'drink'	*leey-d* [< *leehid]
ʃooh-un 'precede, go in front'	*ʃee-d* [< *ʃoohid]
daw 'give to'	*day-d* [< *dawid]

These changes hint at the underlying presence of a palatal element in the centrifugal suffix which could be reconstructed internally as **-id*.

[8] Here the adverb must not be taken as a goal, but as a specification of the direction / path.

[9] Here the adverb seems to indicate a goal, but is in fact only a specification of the centrifugal direction.

[10] It is in contrast with the centrifugal stem *raaŋd* 'sing about one's heroic deeds at another place in order to acquire glory' and the terminal stem *raaŋs* 'sing about one's heroic deeds to some specific audience in order to acquire glory', as discussed below.

[11] The theoretical frame is set by a model of semantic roles as elaborated in Fillmore 1977, with modifications inspired by the cognitive model which put even more emphasis on deriving semantic roles from a set of event or state-of-affair schemes which are characterised by prototypical constellations of participants as laid out by Langacker 1991, summarized in Dirven and Verspoor (1998: 82ff.). This approach differentiates a "moving schema" (characterised by a patient and a goal participant) from a "transferring schema" (characterised by an agent, a recipient, and a patient). Therefore I distinguish a goal role from a recipient role here. It may turn out, though, that this distinction is not necessary and boils down to a difference in animacy in the goal role.

[12] Note the use of the possessive suffix on the patient NP in (a) and (b). It is a common feature of Datooga trivalent verbs with a goal / recipient focus to additionally mark this recipient on the patient NP by coreferential possessive suffixes.

[13] The dashes indicate gaps in the data, not necessarily the non-existence of the form. For the use of the asterisk see endnote 2.

[14] In (31a) the personal object indicating suffix *-aan* is not needed, since the participant constellation along with the personal features only allow a 1st person goal interpretation. The presence of the centripetal extension implies a 1st or 2nd person goal, ruling out the possibility of a 3rd person goal. And a 2nd person goal interpretation is not possible, since the 2nd person would coincide with the 2nd person agent implied by the imperative mood. If a reflexive reading was intended though, this would entail the reflexive indicator *gɛɛwi* for the singular.

[15] The object indicators on the verb are *-aan*[*i*] 1sg, *-ɛɛy*[*i*] / *-iiɲ*[*i*] 2sg, *-ɛɛs*[*a*] 1pl, and *-ɛɛgw*[*a*] 2pl. There are no 3rd person indicating verbal suffixes (Rottland 1982:190f.). This is a feature not uncommon in Southern Nilotic, see Toweett (1979: 326) and Rottland (1982: 130) for Kalenjin.

[16] Square brackets indicate suspected but so far non-attested forms.

[17] Morphotactically, this distinction is reminiscent of the opposition of monovalent ventive $*-\grave{V}(V)_{[-BRV]}n$ or $*-n\grave{V}(V)_{[-BRV]}$ vs. bivalent ventive $-\acute{V}_{[+BRV]}$ markers as reconstructed for Proto-Nilotic (Reh 1996: 261). It remains to be investigated, however, to what extent this formal similarity on the Proto-Nilotic level could also be justified semantically.

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