

Alloying as an economy principle in morphology¹

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Current typologies of event structures usually involve a distinction between verb-framed, satellite-framed and equipollent systems (e.g. Bohnemeyer and Pederson 2010). This paper investigates directional marking on verbs in three unrelated language families, Afroasiatic, Niger-Congo and Nilo-Saharan, and shows that an additional sub-type occurs for so-called verb-framed languages. This sub-type, which is widespread in African languages, involves the combination of a verb root with a derivational affix expressing two causally unrelated sub-events. I refer to this symbolic unification and conceptual conflation or expression of macro-events in one grammatical and phonological word as “alloying”. Similarly, I will refer to a macro-event expressed by one word - i.e. the combination of two events, a basic element (here the verb with its core meaning) and an alloying element (expressed by way of a grammatical morpheme, here the Ventive marker) - as an alloy. The paper also explores the cognitive basis for this economy principle in terms of language production and processing.

Keywords: *economy principle, equipollently-framed languages, evidentiality, satellite-framed languages, symbolic conflation, verb-framed languages, Afroasiatic, Niger-Congo, Nilo-Saharan*

1. Introduction

A misconception in a number of influential modern linguistic theories is that there is exactly one syntactic argument per semantic referent in a clause, as Croft (2002: 228) argues with reference to the Theta Criterion in Generative Grammar and the Uniqueness Condition in Lexical-Functional Grammar. Croft (2002: 226-233) presents various phenomena that are problematic for such one-to-one mapping, as in the following sentence from the Australian language Warlpiri.

- (1) wawirr-Ø kapi-rna-Ø panti-rni yalumpu-Ø
kangaroo-ABS FUT-1SG.SU spear-NPST that-ABS
'I will spear that kangaroo'

Croft (202: 227) points out that there is no independent pronoun in this example, so “[h]ow can there be a syntactic relation between two elements if the other element (independent pronoun in this case) is not there?” He concludes that the person-marking affix expresses a symbolic relation, indexing the referent rather than the phrase denoting the referent.

This paper presents examples from various African languages in order to argue that similar symbolic relations may occur at the word level. More specifically, one widespread verbal derivational strategy, that of Ventive marking (attested in at least three African language

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phyla), is discussed in order to show that - contrary to what is sometimes claimed - a single verb may in fact designate two causally unrelated sub-events, here involving manner and change of location. Whereas the first event is expressed by means of a lexical root, the second is expressed by means of a derivational suffix, as I will show for the Afroasiatic Chadic language Hausa (Section 2.1), the Niger-Congo language Tima (Section 2.2), and a number of Nilo-Saharan Nilotic languages (Section 2.3).

A further aim of this study is to provide an explanation for this widespread morphosyntactic and lexical phenomenon. I will argue that the explanation is probably to be found in economy principles operating in languages. The symbolic conflation of different roles into one grammatical word, or “alloying“, provides advantages in terms of language production and processing for the hearer (Section 3).

2. Conflating the mapping of semantic roles

Talmy’s (1985, 2000) cross-linguistic typology of lexicalisation patterns makes a distinction between satellite-framed and verb-framed languages. In the former, manner of motion, for example, tends to be expressed on the verb, whereas path of motion is expressed separately, for example by particles. This pattern is common in Germanic languages, whereas Romance languages tend to be verb-framed.

Slobin’s (2004: 249) motion-event language typology lists different semantic and morphosyntactic properties of these three language types (Table 1).

Table 1 *Lexicalisation patterns (Slobin 2004)*

Language type	Preferred means of expression	Typical construction type	Examples
Verb-framed languages	Path is expressed by a verb, with subordinate expression of manner	Path verb + subordinate Manner verb	Romance, Semitic, Turkic, Basque, Japanese, Korean
Satellite-framed languages	Path is expressed by a non-verbal element associated with the verb	Manner verb + Path satellite	Germanic, Slavic, Finno-Ugric
Equipollently-framed languages	Path and manner are expressed by equivalent grammatical forms	Manner verb + Path verb (serial-verb languages)	Niger-Congo, Hmong-Mien, Sino-Tibetan, Tai-Kadai, Mon-Khmer, Austronesian
		[Manner + Path] _{verb} (bipartite-verb languages)	Algonquian, Athabaskan, Hokan, Klamath-Takelman
		Manner preverb + Path preverb + verb	Jaminjungan languages

Ameka and Essegbey (2013) have argued that serial verb constructions in Kwa (Niger-Congo) languages like Ewe indeed represent an additional type that Slobin (2004, 2010) refers to as “equipollent”. Languages of this type “... do not subordinate manner expressions as V-language do” (Ameka and Essegbey 2013: 36). The following example of Ewe serial verbs illustrate this third strategy.

- (2) kpe^ˈ-a^ˈ mli ye do-a me
 stone-DEF roll go hole-DEF containing region
 ‘the stone rolled into the hole’

Verb framing may involve preverbs, serial verbs or verbal compounding (Slobin 2010). But evidence from various African languages suggests that verb-framed languages may employ an additional strategy. A widespread verbal extension, that of “movement towards the deictic centre”, illustrates the relevance of this additional strategy. This derivational marker is commonly referred to as the Ventive in descriptions of African languages.

In an early source Tucker and Mpaayei (1955: 123) show that in Maasai, an Eastern Nilotic Nilo-Saharan language spoken in Kenya and Tanzania, this marker expresses action towards the speaker or the main person in the sentence (interlinear glossing added by the present author).

- (3) ta-lak-*o* nkishu
 IMP-release-*VEN* cattle
 ‘untie the cattle (and bring them) here’

Tucker and Mpaayei (1955: 126-129) also show that in Maasai the Ventive marker is in paradigmatic contrast with a marker usually referred to as Itive or Andative in modern studies of derivational strategies in African languages.

- (4) a-rɛw-aa nkishu
 1SG-drive-*IT* cattle
 ‘I shall drive the cattle right away’

For reasons of space, I will concentrate on Ventive marking to illustrate the phenomenon of alloying, although it also exists elsewhere, with Itive marking for example. As is common with derivational processes in general, the semantic mapping of such derived (Ventive or Itive) verbs may also involve more or less unpredictable semantic elaborations through metaphorical extensions into more abstract meanings, as in the following example from Tucker and Mpaayei (1955: 125), who point out that ‘eat in this direction’ stands for ‘tell’.

- (5) mɔs-*o* lɔmɔn
 eat-*VEN* news
 ‘tell the news!’

This paper focuses on the concrete, spatial reference implied by the presence of the Ventive marker, since metaphorical extension as such is not pertinent to the issue.

In their pioneering study, Tucker and Mpaayei (1955: 124) give examples of alloying.

- (6) ε-tɛ-dɛk-ua yiook
 3-NARR-curse-VEN 1PL
 ‘1. (s)he came cursing us;
 2. (s)he cursed as we came’

As the following brief survey illustrates, similar alloying strategies are attested in three unrelated and geographically non-contiguous African language families, which suggests that there is a deeper cognitive principle hidden behind this phenomenon.

2.1 Hausa (*Afroasiatic*)

Ventive markers are among the most widespread verbal extensions in the Chadic branch of Afroasiatic (Frajzyngier 2012: 264). Newman (2000: 661-663) gives a detailed description of this derivational marker for one Chadic language, Hausa, a major lingua franca spoken primarily in Nigeria and Niger. The Ventive is part of a system involving three basic grades (consisting of non-derived verbs belonging to grades 1, 2 or 3), and four derived grades (4 Totality/Finality; 5 Efferential; 6 Ventive; 7 Sustentative). Grade 6 verbs all end in a long vowel -oo (commonly written with a macron, -ō, in Hausa reference grammars or pedagogical grammars), whereby the verb carries high tone throughout. “The ventive ending generally denotes action or movement in the direction of the speaker (or any other pragmatically established deictic center), sometimes emphasizing the distance of the occurrence from the speaker” (Newman 2000: 663). This is illustrated in example 7 (interlinear glossing by the present author).

- (7) kōgi-n Binuwài yā fār-ō dàga`
 river-GEN Benue 3SG:M begin-VEN from
 kasa-ĩ Kàmãru`
 land-GEN Cameroon
 ‘The River Benue begins (there) in Cameroon (and then comes this way)’²

But as Newman (2000: 663) points out, “gr[ade] 6 sometimes indicates ‘do some action and come’ ”, as in the following examples.

- (8) nā shāf-ō bangō
 1SG whitewash-VEN wall
 ‘I whitewashed the wall and came back’
- (9) yā say-ō nāmā`
 3SG:M buy-VEN meat
 ‘he bought some meat and brought it back here’

It is this latter type of construction, involving two sub-events whereby an Agent carries out one action followed by another action without the latter being expressed by a separate second verb,

² I have added morpheme boundaries to facilitate the interpretation of these forms. It should be noted, however, that Hausa is a fusional language that does not usually allow for the identification of morpheme boundaries.

which is central to the present study. Instead of using a separate verb ‘come’ (2) or ‘bring’ (3) to express motion or path for a Figure (as one would in a serializing language), a derivational extension is added to the verb to express one “macro-event” (Talmy 1991, Bohnemeyer et al. 2007), namely one sub-event expressing some action carried out by the subject followed by an event denoting location change (movement towards the deictic center) involving the same subject, with the latter event being expressed by the Ventive marker.

It should be emphasized that the Ventive marker is a grammatical rather than a lexical root in Hausa (as it is in the other languages discussed below), i.e. this is not a case of verbal compounding with two lexical roots. The complex event expressed by this verb would count as a macro-event in the typology of Bohnemeyer et al. (2007) since negation marking (expressed by double negation in Hausa) or adverbial modification would affect both events, these being expressed in one and the same word.

- (10) báy say-ō nāmā̃ ba
 NEG.3SG:M buy-VEN meat NEG
 ‘he did not buy and bring back (some) meat here’

2.2 *Tima (Niger-Congo)*

Ventive marking on verbs is also attested in Niger-Congo, for example in languages of the Nuba Mountains in Sudan. Alamin, Schneider-Blum and Dimmendaal (2012) give a description of the Ventive marker (and of directionality and location marking in general) in Tima.³ Source, location, and goal are marked periphrastically by way of proclitic prepositional elements. In this respect, Tima may be classified as a satellite-framed language. But there is one verbal suffix expressing motion or path towards the deictic center (usually the speaker), as example (11) illustrates.⁴

- (11) Kwákwàŋ àn-dówá-y-íŋ á-lí-ŋéè
 Kwákwàŋ PER-go.down-EP-VEN PREP-LOC-east
 ‘Kwakwaŋ went down / came from the east (towards the speaker)’

Tima appears to be unique among African languages with Ventive marking in that the position of the speaker (EGO) is also expressed in the prepositional phrase, if there is one, and expresses information on the position of the speaker:

- (12) diĩ-y-ΛÃŋ nÃŋtəÃ-lâh
 Walk-EP-VEN LOC:EGO-field
 ‘come to the field (where I am)’

³ According to Greenberg (1963), Tima belongs to the Kordofanian branch of Niger-Congo, but Dimmendaal (2011: 252) questions the genetic unity of this proposed grouping. This does not concern us here, since Tima’s affiliation to Niger-Congo is beyond doubt.

⁴ Tima data were collected between 2006 and 2012 as part of an endangered language documentation project financed by the Volkswagen Foundation. I gratefully acknowledge this support.

The deictic marker on the prepositional phrase expressing the position of EGO may also occur without a corresponding Ventive marker on the verb.

- (13) wór[↓] ṭ́máádéh àn-ṭ́ów-ák-éη-àá[´] còràη ñṭ́ó-ṭ́òndó[`]
 man PER-drop-AP-VEN-INST stick LOC:EGO-street
 ‘the man threw the stick into the street (where the speaker was)’

Dimmendaal (2013) interprets Ventive marking on verbs and marking the position of the speaker on prepositional phrases in Tima as an evidentiality marking strategy, as these markers express the fact that the speaker is or was a witness of the event. Alternatively, by omitting these morphological strategies, the conversational implicature is that the speaker is, was or will not be a witness of the event expressed by the verb.

Tima, like Hausa, may combine the Ventive marker with lexical roots in order to express a second, subsequent event, as in the imperative verb forms in examples 14 and 15. If the core meaning is a non-motion event, the conversational implicature is that the act expressed by the verbal root is performed first before the Agent (as the Figure) moves in the direction of the speaker.

- (14) móòk-íη
 drink-VEN
 ‘drink and come (to where I am)!’
- (15) móòk-íη
 build-VEN house
 ‘build the house and come (to where I am)’

Constituent order in clauses such as (15) may be considered non-iconic in that the object complement (‘house’) and the verbal event associated with it (‘build’) are discontinuous, due to the intervening Ventive marker which expresses a subsequent event.

Morphologically complex verbs in (14) and (15) express macro-events (Bohnemeyer et al. 2007), in that negation markers or time adverbs have scope over both events expressed by one phonological and grammatical word (no tones indicated).

- (16) kaa-móòk-íη=àη
 NEG.2SG-drink-VEN-NEG
 ‘do not drink and (do not) come (to where I am)!’

In other words, in Tima it is not only multi-verb constructions that may have macro-event properties; single verbs may also.

2.3 Nilotic (*Nilo-Saharan*)

Ventive marking is particularly prominent in a third African phylum, Nilo-Saharan. Whereas the formal expression differs between languages (i.e. not all Ventive markers are cognate), the concept itself is a stable property of the derivational morphology of verbs in this phylum (Dimmendaal 2014: 600). One important reason for this may be the fact that this morpheme again plays an important role as an evidentiality marker (stating that the speaker witnessed or

witnesses an event), as in Tima. In this discussion of Nilo-Saharan, I will focus on Ventive marking in one major subgroup, Nilotic, because it illustrates two additional structural properties of this marker and of alloying in general, namely that the pivot may be expressed not only as a subject (prototypically the Agent) but also as an object (usually expressing the Patient or Theme). Moreover, Nilotic languages show that the second sub-event, marked by way of the Ventive marker, may also express a simultaneous (rather than a subsequent) event.

In order to understand this type of construction in Nilotic, a brief outline of argument structures and corresponding formal marking is in order. Tucker and Mpaayei (1955: 187) show that Maasai postverbal subjects are inflected for (Nominative) case by means of tone. Moreover, when a first or second person is the object, cross-reference marking for the latter occurs by means of prefixes on the verb.

- (17) áa-dól ɔlméót mórúo`
 3>1-see giraffe:NOM old
 ‘the old giraffe sees me’

Nouns, noun phrases, proper names or independent pronouns take Absolutive case in Maasai unless they occur as postverbal subjects (in which case they take Nominative case, as in 17) above. Tucker and Mpaayei (1955) call this unmarked case form Accusative rather than Absolutive. It should be noted, however, that the “Accusative” case form is also used for preverbal (as opposed to postverbal) subjects, predicative nouns, nouns in isolation etc. Consequently, I prefer the term Absolutive. Examples 18 and 19 illustrate the tonal alternation for the proper name Sironka in subject and object position (Tucker and Mpaayei 1955: 175-176).

- (18) á-dól Sirónka`
 1SG-see Sironka:ABS
 ‘I see Sironka’
- (19) áa-dól Sírònka`
 3>1-see Sironka:NOM
 ‘Sironka sees me’

The passive in Maasai is expressed by means of a suffix (whose actual form depends on the different Tense-Aspect-Mood categories with which it occurs). As is typical in Nilotic, objects remain objects (i.e. no object-to-subject raising occurs) and retain their Absolutive case marking.

- (20) é-ísís-í Sirónka`
 3-praise-PASS Sironka:ABS
 ‘Sironka is praised; one praises Sironka’

Also, pronominal objects remain in object position in passives, and the same cross-reference marking occurs as with active constructions, as a comparison with (19) above shows (no tone marking given).

- (21) aa-rɛ-ɔn-i
 3>1-drive-VEN-PASS
 ‘I am driven this way’

In Maasai and other Nilotic languages, pronominal subject and object marking by way of independent pronouns in addition to the verbal affixes only occurs for pragmatic reasons, e.g. in order to focus upon or topicalize such a constituent. Thus, in example (21) above, the Absolutive pronoun *nano* ‘me’ may be added for pragmatic reasons, but syntactically it is superfluous.

In example 22 (Tucker and Mpaayei 1955: 124), such a direct object constitutes the pivot of an alloying construction involving two events: An (unexpressed) Agent (expressed as subject) seeing or observing somebody, and a Patient (expressed as object) moving in the direction of the Agent (no tones indicated).⁵

- (22) ɛ-dɔl-ɔn-i
 3-see-VEN-PASS
 ‘(s)he is seen coming this way’

Whereas in Hausa and Tima, the Ventic marker expresses a subsecutive event, the Maasai Ventic marker usually (though not always) expresses a simultaneous event that again is causally unrelated to the event expressed by the verb root. In fact, this is a general characteristic of Eastern Nilotic. How could this difference have come about? A closer look at related languages of the Southern Nilotic branch provides a possible historical explanation.⁶

Contrary to Eastern Nilotic languages like Maasai, Southern Nilotic languages make a formal distinction between direction involving movement or not. Mietzner (2009) gives a detailed description of these phenomena and of spatial orientation in general in Nilotic languages. She, along with other authors (e.g. Rottland 1982, Kießling 2007), shows that a separate Mobilitive marker is added to the Ventic marker (expressing direction) in order to show that movement is involved. Rottland (1982: 244-245) reconstructs the Ventic marker as *-u for Proto-Southern Nilotic. Synchronically, this marker is often realized through vowel shift on a preceding verb root. The same author reconstructs the Mobilitive marker as *-aan- when preceding the Ventic marker (hence Mobilitive-Ventic: *-aan-u) for Proto-Southern Nilotic. Synchronically, the suffixation of these and other verb derivation markers usually involves complex morphophonological alternations, but these should not concern us here. Examples 23 and 24 are from Datooga (adapted from Rottland 1982: 186).

⁵ Unfortunately, no examples are available with alloying and a first or second person object.

⁶ Nilotic is usually divided into three primary branches: Eastern Nilotic, Southern Nilotic, and Western Nilotic; the former two branches are probably more closely related to each other than they are to Western Nilotic.

a coherent semantic and culturally meaningful frame for speakers and hearers in a given speech community.⁷ Alloying in these languages shows that a single verb can designate two causally unrelated sub-events which do not necessarily overlap temporally either, although they may do so (namely when expressing simultaneous events). Moreover, the second event is not caused by the first. Instead, it constitutes a frame for another event. This does not necessarily lead towards unwarranted ambiguity, as knowledge of the real world helps to make sense of the intended meaning.

3. Language production and language processing

Whenever a speaker was or is capable of observing some action or event happening, the information is presumably more reliable than indirect information deriving from hearsay. Speakers apparently prefer to be explicit about this cognitive state, as suggested by the widespread use of Ventive markers expressing or specifying the location of the speaker. The inferred meaning or conversational implicature may therefore be assigned to the field of evidentiality marking.

Interestingly, the Ventive marker expressing this cognitive experience may also be attached to verb roots. Alloying, or the conflation of two morphemes expressing separate verbal events into one phonological and grammatical word in three distinct languages which are geographically wide apart and belong to three unrelated phyla strongly suggest that there is a common cognitive basis for this phenomenon.

The most plausible explanation for this type of verb framing may be found in a well-known linguistic phenomenon, the economy principle.⁸ This principle may apparently override diagrammatic iconicity in that no one-to-one mapping of elements into components of the semantic structure is necessarily required.

As example (22) above shows, the semantic relations between those components are complex (involving Agent as well as Patient relations) and often highly context-sensitive. From a speaker's point of view, this conflation of sememes expressing different events into one phonological word results in a clear property enhancement, namely the conveyance of a complex situation or event structure in an economic way. Slobin (2004) points out that expression by a single word rather than a phrase or clause as a shortcut strategy also provides advantages for the hearer in terms of language processing.

Alloying allows speakers to designate a co-occurring activity which is not directly or causally related to the action or event expressed by the verb root, but which nevertheless is relevant to the event described by the verb root. In the concrete case of the Ventive, this dimension is evidentiality, i.e. stating that one witnesses or witnessed the event. Such collocations usually do not refer to established semantic frames (as the Ventive can occur fairly freely with many verbs). But these collocations may lexicalize and become a single culturally recognized unit stored as a template in the long-term memory, as the following lexicalized forms illustrate. In Hausa, such lexicalized verbs may express direction or movement and at the same time the manner in which the event occurs (Newman 1977: 17).

⁷ The term "frame" goes back to Fillmore (1977); it expresses an abstraction of an indivisible perception, memory, experience, action or object.

⁸ Dimmendaal (2000: 185-187) gives further examples of non-iconic phenomena in morphology.

(29) bull-ō ‘appear suddenly or unexpectedly’

When the Path component is tightly packaged in a language, this potentially results in the expression of Manner and Path in one and the same verb.

Similarly, idiomatic examples in Maasai show that specific semantic frames may become conventionalized (Tucker and Mpaayei 1955: 125).

(30) a-mōs-ū ‘tell (lit. eat in this direction)’
INF-eat-VEN

Presumably, what is necessary is that the situation or experience evokes a cultural unit that is familiar and meaningful to those who use the word.

Abbreviations

ABS	=	absolute
AP	=	antipassive
DEF	=	definiteness
EP	=	epenthetic
F	=	feminine
FUT	=	future
GEN	=	genitive
IMP	=	imperative
INF	=	infinitive
INST	=	instrumental
IT	=	itive
LOV	=	locative
M	=	masculine
MOB	=	mobilitive
NARR	=	narrative
NEG	=	negative
NOM	=	nominative
NPST	=	non-past
PASS	=	passive
PER	=	perfect
PL	=	plural
PREP	=	preposition
SG	=	singular
SU	=	subject
VEN	=	ventive

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