Iconicity of sequence in source and goal encoding in two Papuan languages of south-east Indonesia

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1. Iconicity of sequence[1]

Iconicity is a functional explanatory tool which observes that the structure of language reflects the structure of experience. The principle of iconicity is very general and has been applied to a great many linguistic phenomena in a great variety of ways (Haiman 1985, Newmeyer 1992). In this paper, I am concerned with a single type of iconicity: iconicity of sequence (Greenberg 1966: 103). This refers to language phenomena in which the sequence of linguistic forms in a sentence matches the sequence of experiences.

Iconicity of sequence has been used to explain several different orderings in complex clauses and sentences. For instance, the sequence of adverbial clauses relative to main clauses has been repeatedly argued to be determined by iconicity of sequence (e.g., Lehmann 1974 and Haiman 1978, 1983 on conditional clauses, Greenberg 1966 on purpose clauses, and Clark 1971 and Diessel 2005 on before- and after-clauses). Similarly, serialisation constructions of the kind '[go]-[do X]', '[take X]-[go]' and '[cause]-[caused]' are treated as adhering to sequential iconicity. In these it is seen that the order of verbs matches the temporal order of the actions they denote (e.g., Bruce 1988, Li 1991, Tai 1985). While all of these studies show that iconicity of sequence is an important determinant of the linear structuring of such complex clauses and sentences, in each case there are certain adverbial clauses and serialisations that are not consistent with the iconicity principle (discussed in, e.g., Diessel 2008 and Newmeyer 2004).

In this paper, I describe a phenomenon in which iconicity of sequence is not simply one of several determinants of the ordering of elements as in the above described cases, but actually governs it. The paper makes use of data from two previously undescribed Papuan languages of south-east Indonesia, Kamang and Bunaq. In these languages, source and goal NPs are introduced by one and the

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same morpheme. They are distinguished only by their position in the clause, with iconicity of sequence determining their ordering relative to the motion verb: (i) source as the starting point of the motion point precedes the motion verb, while (ii) goal as the end point of a motion follows the motion verb. Such syntactically-sensitive systems of differentiating source and goal are not only important for the typology of iconicity but are also new to typologies of goal and source.

This paper is structured as follows: Section 2 reviews the typological literature concerning the encoding and in particular the differentiation of goal and source NPs in clauses describing motion events; Section 3 presents data from Kamang and Bunaq that illustrate the role of iconicity of sequence in distinguishing goal and source in these languages, and; Section 4 summarises the findings of the paper.

2. Typology of source-goal differentiation

In Talmy's typology (1985, 2000), motion events are described as having four basic components: (i) FIGURE- the entity that moves; (ii) MANNER- the nature of the motion regardless of the figure's change of place (e.g., *skip*, *swim*); (iii) PATH- the course followed by the figure, and; (iv) GROUND- the entity that the figure (the moving entity) is moving in relation to (e.g., the direction, goal or source of a motion). Talmy's typology highlighted the differences between 'verb-framed' languages that encode the PATH component in the verb, and the 'satellite-framed' languages that encode PATH in a 'satellite' to the main verb. Whilst this distinction has been subject to some modification (e.g., Slobin 2004), it has dominated much of the motion literature and been the focus of description of motion events.

Considerably less studied is the coding of GROUNDS in motion events. Wälchli (2001) examines different 'loci' in displacement (change of location events), and creates a typology of adnominal (adpositional and case-marking) flagging of GROUNDS. Wälchli and Zúñiga (2006) present a cross-linguistic study of whether languages differentiate source and goal GROUNDS in displacement events. In their resulting typology, they identify three types of source-goal (in)difference: (i) Consistent Type, (ii) Mixed Type, and (iii) Indifferent Type.[2] Each of these three types is illustrated below.

Consistent Type languages are those languages which always distinguish between source and goal NPs by means of different flagging. The majority of Eurasian languages conform to this type. For instance, Dutch uses the preposition *naar* to introduce a goal (1a), and *uit* to introduce a source (1b).[3]

Dutch

(1) a. *Ik ben* [***naar*** *Brussel*]$_{\text{GOAL}}$. *gekomen.*
1SG am **to** Brussels
'I came to Brussels.'

b. *Ik ben* [***uit*** *Amsterdam*]$_{\text{SOURCE}}$ *gekomen.*
1SG am **from** Amsterdam
'I came from Amsterdam.'

The Mixed Type is found in languages that have some weakly grammaticalised source marker or construction.[4] That is, there is no dedicated morpheme encoding source, but rather a construction which can be used to express it where necessary. This type is illustrated by Ujir, an Austronesian language of the Aru Islands in eastern Indonesia. Used as an independent clausal verb, *bana* is an intransitive motion verb denoting 'walk, depart', as in (2a). Like other motion verbs in Ujir, *bana* as a main verb can be followed by a locative prepositional phrase denoting goal, as in (2b). *Bana* can also take a second argument denoting a source, as in (2c). *Bana* also appears in verb serialisations following another motion verb, such as *-fan* 'fall' in (2d). Here *bana* introduces the noun *kai* 'tree' denoting the source of the motion into the clause. As a source-introducing serial verb, *bana* shows signs of grammaticalisation in that it does not occur with agreement prefixes as in its independent use.

Ujir (own fieldnotes)

(2) a. *Ku-bana.*
1SG.ACT-walk
'I walked/left.'

b. *Ku-**bana*** [*ana bel tuti*]$_{\text{GOAL}}$.
1SG.ACT-**walk** LOC coast top
'I walked to / left for the beach.'

c. *Ku-**bana** juma.*
1SG.ACT-**walk** house
'I walked out of /left the house.'

d. *Ku-fan* [***bana*** *kai*]$_{\text{SOURCE}}$.
1SG.ACT-fall **walk** tree
'I fell from a tree.'

The Indifferent Type involves languages in which source and goal are not distinguished. Languages of this type use one and the same morpheme to encode both roles; only verbal semantics and the discourse context disambiguate the meaning of the morpheme. This type is illustrated by Teiwa, a Papuan language spoken on the island of Pantar in eastern Indonesia. Teiwa uses the serial verb *ma*

'come' used to introduce oblique NP into a clause (Klamer 2010: 324–337). The oblique NPs encoded by *ma* include goal (3a) and source (3b).

Teiwa (Klamer 2011)

(3) a. *Gi* [*boʻoi* ***ma***]$_{\text{GOAL}}$ *yix-in.*
3PL river **come** descend-REAL
'They went down to the river.'

b. [*Sangubal* ***ma***]$_{\text{SOURCE}}$ *bir-an daa.*
Sangubal come run-REAL ascend
'(They) ran up from Sangubal'

In this paper, I present evidence for an additional, fourth type of source-goal differentiation: (iv) the Iconic Type. In this, source and goal are not distinguished by morpheme, but by their position in the clause. That is, I show that there are languages which, whilst *morphologically* 'indifferent' to the source-goal distinction in the sense of Wälchli and Zúñiga's (2006) typology, *syntactically* distinguish source and goal by exploiting iconicity of sequence in their coding.

3. Data on iconic source and goal encoding

This paper discusses source and goal encoding in two languages, Kamang and Bunaq. They are both Papuan languages of the Timor-Alor-Pantar (TAP) family. Languages of the TAP family are spoken on islands with the same names located in south-east Indonesia and East Timor. Bunaq, spoken on Timor, and Kamang, spoken on Alor, are only distantly related; they belong to separate primary subgroups of the family (Schapper 2010). The data used in this paper stem from original fieldwork by the author conducted in Indonesia between 2006 and 2010.

Despite their genetic distance, Kamang and Bunaq share a single, broad typological profile. Like the other languages of the family, they are for the most part head-marking, head-final languages. They are basically SOV, have a limited set of postpositions, clause-final conjunctions and basic Genitive-Noun word order. Verbal morphology consists of agreement prefixes and aspectual suffixes (if any). The languages have little to no derivational morphology, no copular and no passive.

Kamang and Bunaq are almost entirely reliant on the serialisation of predicates to encode events involving more than two participants.[4] In clauses expressing motion events, NPs denoting source and goal are introduced by predicates headed by locative postpositions. These predicates have no intrinsic directionality, and the interpretation of the additional NP they introduce as denoting 'to/into' or 'from/away' rests on the ordering of the locative predicate relative to the motion verb. The template in (4) illustrates the ordering rules: a source (PRED1) as the location

at which a motion starts precedes the verb expressing the motion (PRED2), and; a goal (PRED3) as the location which is obtained as a result of the motion follows the motion verb (PRED2).

Basic template of source-goal serialisation

(4) $[\text{Mover}]_{\text{NP}}$ $[\text{Source}]_{\text{PRED1}}$ $[\text{Motion}]_{\text{PRED2}}$ $[\text{Goal}]_{\text{PRED3}}$

Whilst this template captures the broad source-goal coding strategy used in Kamang and Bunaq, there are some differences between the languages in regards to: (i) whether both source and goal can be expressed in a single clause; (ii) whether both inanimate and animate goals and sources conform to the template, and; (iii) how goals are treated with transitive verbs of displacement (e.g., 'move X', 'drop X' etc.). The template in (4) and the language specific deviations from it are discussed for Kamang in Section 3.1 and Bunaq in Section 3.2.

3.1 Kamang

Kamang has a set of four locative postpositions marking different static localisations: *mi* 'IN' (interior localisation), *taa* 'ON' (top localisation), *ii* 'UNDER' (bottom localisation) and *wo* 'AT' (vertical surface localisation). Each of these can head a postpositional phrase (PP) that acts as an independent predicate denoting a static location, as in (5a) with *mi*. With a verb denoting a stationary event, a PP denoting a static location occurs before the verb, as in (5b).

Static location

(5) a. *Nal* [*kadii* ***mi***]$_{\text{STATIC.LOC}}$
1SG house **IN**
'I am in the house.'

b. *Baal* [*meera* ***taa***]$_{\text{STATIC.LOC}}$ *dii.*
ball table **ON** lie
'A ball is lying on the table.'

As per the template in (4), locative PPs can be serialised with other predicates, but have different interpretations depending on their position in the clause. Source-encoding PPs precede the motion verb. For instance, in (6a) the PP headed by *mi* occurs before the motion verb *yaangme* 'go down' to denote the location from which the motion proceeds. Similarly, in (6b) the PP headed by *taa* precedes *mu'tan* 'fall' to express the start location of the coconut before its fall.

Source

(6) a. *Nal* [*kadii* ***mi***]$_{\text{SOURCE}}$ *yaangme.*
1SG house **IN** go.down
'I went down from the house.'

b. *Wate uh nok* [*gabuu* ***taa***]$_{\text{SOURCE}}$ *mu'tan.*
coconut fruit one tree.top **ON** fall
'A coconut falls from the tree top.'

The same Kamang postpositions are used to encode goals. In this function, however, the phrases they head follow the motion verb. For instance, in (7a) the PP headed by *mi* follows the motion verb *yaangme* 'go down' to denote the goal of the motion. In (7b) the motion verb *mu'tan* 'fall' is followed by a PP headed by *taa* denoting the end location of the fallen bird.

Goal

(7) a. *Nal yaangme* [*il waai* ***mi***]$_{\text{GOAL}}$.
1SG go.down water pond **IN**
'I went down into the pond.'

b. *Atoi mu'tan* [*kadii gamang* ***taa***]$_{\text{GOAL}}$.
bird fall house roof **ON**
'A bird fell onto the roof of the house.'

Transitive verbs denoting displacement on the part of the object occasionally also occur with a locative PP denoting goal. As with intransitive verbs, the goal encoding PP follows the transitive verb denoting the displacement. For instance, consider the position of source and goal PPs in the examples in (8) where the transitive verb *-sooran* 'push' takes the object *Markus*. In (8a) the PP headed by *mi* encodes the goal of the object in the motion expressed by *-sooran* and thus follows that verb. In (8b) the PP encodes the object's source and, as with an intransitive motion verb, precedes the verb denoting the motion.

(8) a. *Na Markus ga-sooran* [*kadii* ***mi***]$_{\text{GOAL}}$.
1SG.AGT Markus 3.PAT-push house **IN**
'I pushed Markus into the house.'

b. *Na Markus* [*kadii* ***mi***]$_{\text{SOURCE}}$ *ga-sooran.*
1SG.AGT Markus house **IN** 3.PAT-push
'I pushed Markus out of the house.'

Kamang does not allow both source and goal to be expressed in a single clause (possibly reflecting a goal-bias in the language, see Verspoor et al. 1999). Where the speaker wishes to express both, the source is encoded in a separate clause from the verb expressing the motion. For instance, (9) is bi-clausal with the constituent clauses coordinated by *=bo* 'SEQ'. The first clause has a single postpositional predicate denoting the present location of the speaker. The second clause denotes a motion, expressed by the verbal compound *maa* 'walk', and the goal of the motion to Bukapiting, expressed by the following PP. Without *=bo* speakers reject example (9).

(9) *Nal* [*Nailang**mi***]$_{\text{SOURCE}}$=*bo* *maa* [*Bukaapiting* ***mi***]$_{\text{GOAL}}$.
1SG Nailang **IN**=SEQ walk Bukapiting **IN**
'I am in Nailang and then walk to Bukapiting.'

In the examples examined thus far, only inanimate sources and goals have been considered. In Kamang, animate sources and goals are encoded by a single inflecting postposition *-at*.[5] The inflection of *-at* marks the person and number of the source or goal it encodes. The interpretation of the participant introduced by *-at* is determined by its linear ordering in respect to the motion verb. Preceding the verb of motion, *-at* denotes a source, as in (10). Following the verb of motion, *-at* denotes a goal, as in (11).

Animate source
(10) *Gal* [*kui g-**at***]$_{\text{SOURCE}}$ *tak-ma.*
3 dog 3-**TO/FROM** run-PFV
'S/he ran from the dog.'

Animate goal
(11) *Atoi=a lila sue* [*kui g-**at***]$_{\text{GOAL}}$.
bird=SPEC fly arrive dog 3-**TO/FROM**
'A bird came flying to the dog.'

In sum, animate and inanimate goals and sources are differentiated in Kamang by distinct morphemes used to introduce them. However, both types of goals and sources in Kamang are distinguished from one another by their iconic ordering relative to the motion verb, be it intransitive or transitive.

3.2 Bunaq

Bunaq has two locative postpositions: *no* and *gene*. They refer to a general locative relation, and both are glossed here simply as 'LOC'. More specific localisations (surface, interior, top, bottom, etc.) are expressed by the use of locative nouns in a PP. For instance, in (12a) and (12b) we see *mil* and *wa* used in PPs to denote 'interior' and 'top' locations respectively.

(12) a. *reu* *mil* ***no** / **gene***
house inside **LOC**
'inside the house'
b. *reu* *wa* ***no** / **gene***
house top **LOC**
'on top of the house'

PPs headed by locative postpositions can appear as independent clausal predicates denoting static locations, as in (13a). With a verb denoting a stationary event, a static location PP occurs before the verb, as with *mit* 'sit' in (13b).

Static location

(13) a. *Neto* [*reu* ***no***]$_{\text{STATIC.LOC}}$.
1SG house **LOC**
'I am at home.'

b. *Neto* [*Atambua* ***gene***]$_{\text{STATIC.LOC}}$ *mit.*
1SG Atambua **LOC** sit
'I am sitting in Atambua.'

In serialisation with motion verbs, sources and goals are also encoded with one of the Bunaq locative postpositions. A source-encoding PP precedes the verb of motion. For instance, in (14a) the PP headed by *no* denotes the source of the motion denoted by *sai* 'exit' and accordingly precedes that verb. Similarly, in (14b) the motion verb *ciwal* 'flee' is preceded by a PP headed by *gene* and expressing the location from which the speaker fled.

Source

(14) a. *Neto* [*reu* ***no***]$_{\text{SOURCE}}$ *sai.*
1SG house **LOC** exit
'I leave the house.'

b. *Neto* [*Honaru* ***gene***]$_{\text{SOURCE}}$ *ciwal.*
1SG Bobonaro **LOC** flee
'I fled from Bobonaro.'

A goal-encoding PP follows the verb of motion. For instance, in (15a) the goal *mar* 'garden' occurs in a PP headed by *no* following the motion verb *sai*. In the same manner, the motion verb *ciwal* is followed by a goal-encoding PP in (15b).

Goal

(15) a. *Neto* *sai* [*mar* ***no***]$_{\text{GOAL}}$.
1SG exit garden **LOC**
'I go out to the garden.'

b. *Neto* *ciwal* [*Atambua* ***gene***]$_{\text{GOAL}}$.
1SG flee Atambua **LOC**
'I fled to Atambua.'

Transitive verbs of displacement frequently occur with a locative PP denoting goal. In Bunaq, the position of the PP depends on which participants are displaced. Where both subject and object are displaced, the goal-encoding PP follows the transitive verb in the same way as it does with an intransitive motion verb. For

instance, in (16) the goal *reu mil* occurs in a PP headed by *no* following the transitive verb *tula* 'move'. This clausal position for the goal PP signals that both the subject, *neto* '1SG', and the object, *hoza* 'coconut', change location. However, where only the object is displaced, the goal PP occurs between the object and the verb. For instance, in (17) *tula* denotes a displacement event effecting only the object, *hoza*, and the goal PP occurs between the verb and its object.

Goal with displacement of subject and object

(16) *Neto hoza tula* [*reu mil* ***no***]$_{\text{GOAL}}$.
1SG coconut move house inside **LOC**
'I move the coconuts into the house.'

Goal with displacement of object only

(17) *Neto hoza* [*kura* ***no***]$_{\text{GOAL}}$ *tula.*
1SG coconut horse **LOC** move
'I load the coconuts onto the horse.'

So, in the case of transitive motion verbs, Bunaq does not make use of iconic ordering of a goal PP relative to the verb where only the object is displaced. Rather the goal PP acts as an adjunct to the verb and is fixed in the immediately preverbal position.

Bunaq differs from Kamang in that it allows both goal and source to be encoded in a single clause. We see in (18a) and (18b) that source- and goal-encoding PPs can respectively occur before and after one and the same motion verb.

(18) a. *Neto* [*reu* ***no***]$_{\text{SOURCE}}$ *sai* [*mar* ***no***]$_{\text{GOAL}}$.
1SG house **LOC** exit garden **LOC**
'I go out from the house to the garden.'

b. *Neto* [*Honaru* ***gene***]$_{\text{SOURCE}}$ *mele* [*Atambua* ***gene***]$_{\text{GOAL}}$.
1SG Bobonaro **LOC** walk Atambua **LOC**
'I walk from Bobonaro to Atambua.'

Whilst inanimate goals and sources are distinguished in Bunaq by the place of the encoding PP in the clause, animate sources and goals are not. In other words, animate sources and goals do not conform to the template in (4). Rather they are introduced into the clause by distinct inflecting postpositions,[6] both of which precede the motion verb: (i) *-o* 'FROM' introduces animate sources into the clause, illustrated in (19), and; (ii) *-ta* 'TO' introduces animate sources into the clause, illustrated in (20).[7] Where an animate source and goal are expressed in a single clause, the source must precede the goal, while the verb expressing the motion follows both, as in (21).

Animate source

(19) *Mea'gol* [*eme* ***g-o***]$_{\text{SOURCE}}$ *he.*
child mother **3AN-FROM** run
'The child ran from its mother.'

Animate goal

(20) *Mea'gol* [***ni-ta***]$_{\text{GOAL}}$ *he.*
child **1EXCL-TO** run
'The child ran to me.'

Animate source and goal

(21) *Mea'gol* [*eme* ***g-o***]$_{\text{SOURCE}}$ [***ni-ta***]$_{\text{GOAL}}$ *he.*
child mother **3AN-FROM 1EXCL-TO** run
'The child ran from its mother to me.'

So, Bunaq PPs encoding animate source and goal are not ordered iconically relative to the motion verb, but only relative to one another. This aberration is the result of the fact that, unlike *no* and *gene* 'LOC', the animate source encoder *-ta* 'TO' cannot head predicates and therefore cannot occur independently in a clause-final predicate position.

In sum, inanimate goals and sources are encoded in Bunaq by one and the same morpheme but are differentiated from one another by their iconic ordering relative to an intransitive motion verb. However, such iconicity with respect to the motion verb does not hold in all cases where the verb is transitive, and where source and goal have inanimate referents.

4. Summary and discussion

This paper has shown how iconicity of sequence is exploited in encoding goal and source in Kamang and Bunaq. In these, source and goal NPs are typically introduced into the clause using one and the same locative morpheme. The interpretation of the NP is determined *exclusively* by their iconic ordering in serialisation relative to the motion verb: sources precede the motion verb, while goals follow the motion verb. This basic pattern holds in both languages for the coding of inanimate sources and goals with intransitive motion verbs; language-specific deviations are observed in the coding of source and goal with animate referents and in transitive clauses. Such morphologically-indifferent but syntactically-sensitive systems of encoding source and goal have not been previously described and add to the typology of source and goal.

Given that iconicity of sequence in the ordering of source and goal NPs has gone untreated in the typological literature, we might wonder how widespread the phenomenon is. In fact, we need not look far to find that even well-described languages such as Dutch make use of this principle: source precedes goal (22a), with the alternative order being ungrammatical (22b).[8] It is noteworthy that this is by no means a necessary restriction in a language with distinct morphemes for source and goal. English, for example, allows both orders (23a–b).

Dutch

(22) a. *Ik ga* [***vanuit** het huis*]$_{\text{SOURCE}}$ [***naar** de tuin*]$_{\text{GOAL}}$.
1SG go from the:NEUT house to the:CMN garden
'I go from the house to the garden.'

b. ?/* *Ik ga* [***naar** de tuin*]$_{\text{GOAL}}$ [***vanuit** het huis*]$_{\text{SOURCE}}$.
1SG go to the:CMN garden from the:NEUT house

English

(23) a. *I go* [***from** the house*]$_{\text{SOURCE}}$ [***to** the garden*]$_{\text{GOAL}}$.
b. *I go* [***to** the garden*]$_{\text{GOAL}}$ [***from** the house*]$_{\text{SOURCE}}$.

Of course, there are two important differences in the iconicity of sequence displayed by Dutch and that described in this paper. These are: (i) the absence/presence of distinct morphemes for source and goal, and (ii) the relevance/irrelevance of the ordering of source and goal with reference to the motion verb. It remains for future research to investigate the extent to which these different kinds of iconicity of sequence may be present in source/goal encoding in the languages of the world and what syntactic correlations each may carry with it.

Notes

1. This research was undertaken as part of the Project "Alor-Pantar languages: Origins and Theoretical Impact" (http://www.alor-pantar.org/) and is supported by a EuroCORES grant (08-EuroBABEL-OP-O25). Abbreviations used in the glossing conform to the Leipzig Glossing Rules. Additional abbreviations used are: ACT 'active'; AGT 'agent'; AN 'animate'; CMN 'common'; NEUT 'neuter'; PAT 'patientive'; REAL 'realis'; SEQ 'sequential'; SPEC 'specific'. The grapheme {'} denotes glottal stop.

2. Creissels (2006) and Nikitina (2009) discuss languages with additional types of source-goal ambiguity in which particular verbs either (i) subcategorise for either source or goal, or (ii) take a locative argument that can be interpreted as either source or goal depending on the discourse context. In neither case is iconicity a factor in the interpretation of locative NPs as source or goal.

3. This utterance would be appropriate, for instance, in reply to a question such as, *Waar ben je vandaag vandaan gekomen?* 'Where have you come from today?'.

4. Due to space restrictions, it is not possible here to provide the defining features of serialisations in each of the languages. For details, the reader is referred to Schapper (2010) and Schapper (2011).

5. Inflecting postpositions are postpositions which inflect for the person and number of their NP complement in the manner of verbs. However, they are different from verbs in that they cannot host aspectual morphology (Schapper 2011).

6. Bunaq inflecting postpositions inflect for the person of their NP complement in the manner of verbs. However, they are different from verbs in that they cannot occur as an independent predicate (Schapper 2010: 114–117).

7. Whilst *-o* is strictly limited to animates, *-ta* can in fact also introduce an inanimate. However, where *-ta* is used, the inanimate is not a goal but a direction *towards* which the motion occurs; its use does not entail that the location is reached as a locative postposition does.

8. Following the PP headed by *naar*, the PP headed by *vanuit* is for most speakers seemingly only acceptable in an after-thought topicalisation construction. In this case, *vanuit* is separated with the preceding elements by a 'comma' intonation, and cannot be said to be part of the clause proper.

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