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Introduction:
An Overview of Event Integration Patterns in African Languages

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This paper is an introduction to the topic of our joint research project "Studies on event integration patterns in African languages" discussed in the collection of papers in the present issue of the journal. According to Talmy's typology of event integration (1991, 2000), verb-framed languages typically encode the core-schematic, framing event component of an event complex (the association function) (e.g., path in the case of motion) in the main verb, and express a co-event component (e.g., manner or cause in the case of motion) in an adverbial or a subordinate/non-main clause. On the other hand, satellite-framed languages characteristically use a satellite to express the association function, and encode the co-event component in the verb root. This contrast applies not only in the event domain of motion, but also in state change, realization, temporal contouring (aspect), and action correlation. However, there seem to be no studies that have ever looked at event integration patterns in all of the five domains across African languages. The goal of the present study is to examine how African languages fit and do not fit into Talmy's typology by investigating ten languages. It shows that all of these languages have multi-verb/clause constructions whose verbs/clauses express a co-event and the association function in this order (what may be called "temporal sequence constructions"), though the construction types vary, and these constructions can at least be used for macro-events whose co-event is a cause. The languages differ in how they can extend these constructions to events whose co-event is not a cause, for example, motion events whose co-event is a manner. Thus, the typology of event integration can be viewed not only in terms of the categories of grammatical constituents (verbs vs. satellites) used for a co-event and an association function, as Talmy discovered, but also in terms of the order in which these event components are expressed.

Keywords: typology, event integration, motion, aspect (temporal contouring), state change, realization, action correlation/correlating, verb-framed, satellite-framed, and equipollently-framed languages/constructions, iconicity, African languages, Talmy

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1. Introduction

A significant portion of the present issue of *Asian and African Languages and Linguistics* is an outcome of the joint research project "Studies on Event Integration Patterns in African Languages" funded by the Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies, from April 2012 until March 2015.

In this project, we examined how African languages fit and do not fit into Talmy's typology of event integration (1991, 2000) by investigating the ways that the languages in (1) express motion, state change, realization, temporal contouring, and action correlation:

(1) 'Ale (East Cushitic, Afro-Asiatic; Ethiopia) [Hiroshi Yoshino]
Akan (Kwa, Niger-Congo; Ghana) [Kyoko Koga]
Amharic (Ethiopian, Semitic, Afro-Asiatic; Ethiopia) [Motomichi Wakasa]
Bende (Bantu F12, Niger-Congo; Tanzania) [Yuko Abe]
Herero (Bantu R31, Niger-Congo; Namibia and Botswana) [Nobuko Yoneda]
Kumam (Western Nilotic, Nilo-Saharan; Uganda) [Osamu Hieda]
Kupsapiny (Southern Nilotic, Nilo-Saharan; Uganda) [Kazuhiro Kawachi]
Saamia (Bantu E34, Niger-Congo; Uganda) [Osamu Hieda]
Sidaama (East Cushitic, Afro-Asiatic; Ethiopia) [Kazuhiro Kawachi]
Yoruba (Yoruboid, Niger-Congo; Nigeria) [Junko Komori]

Note that the Herero data are restricted to non-agentive and self-agentive motion with manner as its co-event, and the Kumam and the Saamia data to motion, state change, and realization.

The present paper provides an overview of event integration patterns in the African languages that we investigated. It shows that some of the languages fairly consistently exhibit either the equipollently-framed or verb-framed pattern in motion, state change, and realization, but none of them shows any consistent pattern in either temporal contouring or action correlation or across all of the five domains.

It also shows that all of these languages can use multi-verb/clause constructions for complex events. In particular, all of them have constructions that express event components in their temporal order ("temporal sequence constructions" henceforth, as a superordinate term subsuming the group of constructions, though their construction types vary). They use such constructions at least for motion events whose co-event is a cause, state-change events whose co-event is a cause, and realization, whose co-event is always a cause. The languages differ in what other event domains or sub-domains they can also use their temporal sequence constructions for.

The present paper is organized as follows. Section 2 reviews the literature. Section 3 presents the issues that the present paper addresses. Section 4 briefly describes the methodologies that the project used. Section 5 reports the findings of the project as a whole. Section 6 discusses issues that arose from some of these findings. Section 7 concludes the paper.

Before going on to Section 2, let us go over basic morpho-syntactic properties of the languages that we looked at. Kupsapiny follows the VSO basic word order, ‘Ale, Sidaama, and Amharic follow the SOV basic word order, and all the other languages show SVO order. Yoruba and Akan are isolating languages, whereas all the other languages are agglutinative languages. All the languages except Yoruba convey information on the subject with a verb affix. ‘Ale, Sidaama, and Amharic (Amberber 2009) have a nominative-accusative case marking system. Kupsapiny is a marked-nominative language in that the case used for grammatical object is used much more widely than the nominative case. On the other hand, all the other languages have no morphological case marking on noun phrases.

2. Literature review

According to Talmy (1991, 2000), the cognitive process of event integration is the conceptual integration or conflation of an event as unitary that, more analytically, would be conceptualized as complex. In language, the process of event integration emerges as the expression of an event in a single clause that, more analytically, would be expressed by means of a more complex syntactic structure. Talmy argues that although languages differ as to what can be conceptualized as single events and expressed in a single clause, there is a class of events that tend to be recurrently conceptualized as macro-events and expressed in single clauses across languages. A macro-event is made up of two major components, a framing event and a co-event, as well as the support relation (e.g., manner or cause of motion, in the case of a motion event) of the co-event to the framing event. The framing event, which is the main event of a macro-event, constitutes the schematic component of the macro-event, and has a framing function relative to the macro-event. It “provides for the whole macro-event the overarching conceptual framework or reference frame within which the other included activities are conceived of as taking place,” and represents “the upshot — relative to the whole macro-event” in the sense that “it is the framing event that is asserted in a positive declarative sentence, that is denied under negation, that is demanded in an imperative, and that is asked about in an interrogative”; moreover, it determines the overall temporal and spatial frameworks, the argument structure, and the syntactic complement structure (Talmy 2000: 219).

The framing event consists of a figural entity, a ground entity, an association function, which associates the figural entity to the ground entity, and an activation process, which has the value of transition or fixity.[2] The association function (e.g., the path in the case of a motion event) constitutes a core schema by itself (or together with the ground entity). Talmy analyzes events in the five event domains — motion (specifically, translational motion), state change, realization, temporal contouring (aspect), and action correlation ("action correlating" in Talmy's terminology) — into components, as in Table 1.[3] Except for a realization event, which always requires an agent, a macro-event may or may not include an agent; if included in a macro-event, the agent might cause the framing event, the co-event, or both.

[2] The term "association function" may be replaced with "framing event" to roughly and informally refer to the schematic component of a framing event in some of the papers in the present issue of the journal, though a framing event has other components. The term "support relation" is substituted with "co-event" in the present paper, and in other papers in the present issue of the journal, to refer to a specific support relation such as manner or cause.

[3] In Talmy's typology, motion is restricted to translational motion, where the figure entity changes its location relative to the ground entity across time, and does not include self-contained motion (e.g., rotation, oscillation), where the figure entity does not change its relative location.

Table 1: Components of events in the five event domains in Talmy's (1991, 2000) framework

event component / event domain	Macro-event					
	(A g e n t c a u s a l c h a i n)	Framing event			Support relation of co-event	Co-event
		Figural entity	Core schema: ground entity	Core schema: association function	Activation process	
Motion		figure	ground	path	motion/ locatedness	manner, cause, etc.	e.g., 'run' in (2)
State change		object or situation	property	transition type (entry into a state, departure from a state, lack of transition)	change/ stasis	manner, cause, etc.	e.g., 'blow' in (4)
Realiza-tion		the agent's intention	stages or degrees of realization	(confirmation of the implicature of) the fulfillment of the agent's goal	transition caused by the agent	cause	e.g., 'hunt' in (5)
Temporal contour-ing		degree of manifestation of an event	points or periods of time	aspect (e.g., continuation, completion, repetition)	progression through time	constitu-tiveness	e.g., 'talk' in (6)
		affected object	temporal contour				
Action correlation		one agent's action	usually, another agent's (an agency's) same or same-category action	correlation of one action with respect to another	the agent's establishment of the correlation	constitu-tiveness	e.g., 'sing' in (7)

According to Talmy's typology of event integration, there are two major typological types: verb-framed languages (V-languages; e.g., Romance languages) and satellite-framed languages (S-languages; e.g., Germanic languages) (or languages with verb-framed constructions and those with satellite-framed constructions as their

characteristic constructions). As shown in Table 2, V-languages typically encode the core-schematic component of a framing event, namely the association function, in the main verb (a framing verb), and express a co-event component in an adverbial or a subordinate clause (or a non-main verb/clause), whereas S-languages characteristically use a satellite to the verb (a framing satellite) to express the association function, and encode the co-event component in the verb root. Here, the satellite, which "can be either a bound affix or a free word," is "the grammatical category of any constituent other than a nominal or prepositional-phrase complement that is in a sister relation to the verb root" (Talmy 2000: 222) (e.g., English verb particles, German verb prefixes).

Table 2: Rough synopsis of Talmy's (1985, 1991, 2000) typology of event integration

	Association function (core-schematic component of framing event)	Co-event
V-languages	main verb root	adverbial, non-main verb/clause
S-languages	satellite	main verb root

(2), (3), and their glosses exemplify this contrast in motion expression patterns between Spanish and English. Spanish, a V-language, respectively uses the main verb *bajó* 'descended' or *metí* 'inserted' and the gerundive *corriendo* 'running' or the prepositional phrase *de una patada* 'with a kick' for the path of motion (the association function of the motion event) and the manner or cause of motion (the co-event component of the motion event). On the other hand, English, predominantly an S-language, expresses these event components with the satellite *down* or *in* (the first component of the preposition *into*) and the main verb *ran* or *kicked*, as in the English glosses for (2) and (3), respectively. The constituents expressing the association functions are underlined, and those expressing the co-events are in italics. (Because the prepositions for the vector TO, a path component of motion relative to the ground object, do not show any relevant typological properties, unless there is any other constituent in the sentence that expresses any other path component, they are not underlined.)

Motion

Spanish (adapted from Talmy 2000: 130)

(2) El hombre bajó a-l sótano *corriendo*.
the man descended to-the cellar running
'The man *ran* down to the cellar.'
(*lit.* 'The man descended to the cellar at a run.')

Spanish (adapted from Talmy 2000: 228)

(3)	Metí	la	pelota	a	la	caja	*de*
	I.inserted	the	ball	to	the	box	with
	una	*patada*.					
	a	kick					

'I *kicked* the ball into the box.'

(*lit.* 'I inserted the ball to the box from/by a kick.')

According to Talmy, this contrast applies not only in the event domain of motion, but also in the four other domains in Table 1: state change, realization, temporal contouring, and action correlation. (4)-(7) illustrate the typological difference in these domains. In these examples, the underlined words (main verbs in Spanish and verb particles in English) express association functions.

State change

Spanish (adapted from Talmy 2000: 243)

(4)	(a) Apagué	la	vela	*soplándola*.		
	I.extinguished	the	candle	blowing		
	(b) Apagué	la	vela	*de*	*un*	*soplido*.
	I.extinguished	the	candle	with	a	blow

'I *blew* out the candle.'

(*lit.* 'I extinguished the candle (a) [by] blowing-on it/(b) with a blow.')

Realization

Spanish

(5)	La	policía	*persiguió*	y	capturó	a-l	fugitivo.
	the	police	hunted	and	captured	to-the	fugitive

'The police *hunted* the fugitive down.'[4]

[4] For (5), at least some V-languages seem to use a construction that is less integrated than the ones used for (2)-(4) and (6)-(7) (often coordination as in the Spanish example (5)). A better V-framed example of realization is (i) from Tamil. This sentence expresses the confirmation of the fulfillment of the agent's goal with the verb for leaving, unlike (ii), which does not necessarily. Thus, the sentence for 'But he didn't die' cannot follow (i), though it could (ii).

Tamil (Talmy 2000: 278)

(i)	Nāṉ	avaṉai	koṉru-(*vi*)ṭṭēṉ.
	I	him	kill(NON-FINITE)-leave(FINITE)-PAST.1S
	'I killed him.'		
(ii)	Nāṉ	avaṉai	koṉrēṉ.
	I	him	kill.PAST.1S
	'I "killed" him.'		

Temporal contouring
Spanish (Kawachi 2007: 697)

(6) Ellos siguieron *hablando*.
they continued talking
'They *talked* on.'

Action correlation
Spanish (Kawachi 2007: 697)

(7) Yo lo acompañé *cantando*.
I him went.with singing
'I *sang* along with him.'

In addition to these two typological types, some researchers (e.g., Slobin 2004, Zlatev & Yangklang 2004, Ameka & Essegbey 2013) argue that there is a third type: equipollently-framed languages or languages with equipollently-framed constructions (serial verb constructions) as their characteristic constructions used for event integration. In serial verb constructions (e.g., (8)), the verbs have the same morphological status, and it is difficult to decide which verb is the main verb.

Thai (adapted from Zlatev & Yangklang 2004: 160)

(8) Chán *dəən* khâam thanŏn khâw paj naj sŭan.
I walk cross road enter go in park
'I walked across the road and into the park.'

Nevertheless, this type of construction is semantically not symmetrical, but usually presents a co-event and an association function in this order. Although it is controversial how to handle it (Talmy 2009), the present study uses the term "equipollently-framed".

There are many single-language and cross-linguistic studies on motion (e.g., Aske 1989, Slobin 1996, Brown 2003, Zlatev & Yangklang 2004) including those in African languages (e.g., Schaefer & Gaines 1997, Mietzner & Treis 2008, Dombrowsky-Hahn 2012, Ameka & Essegbey 2013) and some studies on state change and realization (e.g., Levin & Rappaport Hovav 1996) that have used Talmy's framework or tested his typology. However, there seem to be few studies that have been conducted in terms of Talmy's typology specifically on expressions of temporal contouring or action correlation in a particular language or across languages, aside from his own research. Moreover, there seem to be no studies that have looked at event integration patterns in the five event domains across African languages under this framework, except that the present author has looked at these in Sidaama, a Highland East Cushitic language of Ethiopia (Kawachi

2007, 2012). Thus, the present study is novel in that it examines the patterns of expressing events in all of the five event domains in African languages.

Talmy (2000: 222) classifies Bantu languages as verb-framed languages, though he does not mention any other African languages. Studies on motion expressions in African languages (e.g., Schaefer & Gaines 1997, Mietzner & Treis 2008) generally also regard them as verb-framed languages. Thus, at least some African languages seem to be mostly verb-framed.

On the other hand, the present author (Kawachi 2007, 2012), who looked at how Sidaama expresses events in the five event domains, as mentioned above, found that although it shows the verb-framed pattern in motion, state change, and realization, it deviates from it in some sub-domains of temporal contouring and action correlation. Moreover, for motion expressions in Bambara, a Mande language of Mali, Dombrowsky-Hahn (2012) states that this language is mostly verb-framed, but it also has a construction that could be analyzed as satellite-framed or equipollently-framed.

Furthermore, Ameka & Essegbey (2013), who examined motion expressions in Ewe, a Kwa language of Ghana, claim that this language is an equipollently-framed language. Furthermore, the present author (Kawachi 2014, this issue) also looked at Kupsapiny, a Southern Nilotic language of Uganda, and found that this language has satellites, and can exhibit the satellite-framed pattern as long as the path components of the expressed motion event fit in certain ranges of complexity, though it exhibits other patterns for expressing more complex events. Therefore, there seem to be African languages that are not invariantly or predominantly verb-framed or not verb-framed at all. Thus, the question is which African languages show what typological properties in expressing which of the event domains.

3. Issues

A central issue that the present study addresses is how the African languages that we are working on fit into Talmy's typology of event integration. In particular, the questions are: First, do the African languages show any patterns consistently across all the event domains? Second, if they do not, why? Third, are there any patterns found across the African languages?

These questions arose from the relative scarcity of studies on event integration in African languages mentioned in Section 2. Another motivation for the present study originates from queries about a recent trend toward attempts to find properties among African languages, especially those genetically unrelated (e.g., Heine & Nurse 2008). Unlike those properties used to argue for similarities across African languages, for example, the existence of particular forms and the polysemy of words for certain concepts

(e.g., Heine & Leyew 2008), event integration assumes a substantial aspect of grammar; this led us to investigate whether or not African languages are similar to each other in their event integration patterns.

4. Methodologies

The present author designed the questionnaire shown in the appendix at the back of this paper based on Talmy (1985, 1991, 2000) and Kawachi (2007, 2012). All the authors except Wakasa, who used only texts for his paper, elicited data from their consultants in the field using this questionnaire, and some of us additionally looked at text data. In using the questionnaire, the project members were careful not to ask their consultants to merely translate the English sentences in the questionnaire into their languages, but to also give them sufficient semantic information on each event, and to ask them how they would describe the event. Thus, unlike Wakasa, who examined the frequencies of the constructions used in texts, but did not test what constructions are possible for each event domain or sub-domain, the other authors elicited as many constructions as possible that can be used for each event domain and sub-domain, though it was not possible to take into account how frequently the constructions are used.

5. Data

Tables 3, 4, 5, and 6 display the constructions that the languages use for motion, state change and realization, temporal contouring, and action correlation, respectively. See the individual papers for details (Kawachi 2012 for the Sidaama data). The present author owes the classification of each construction to the researcher of the language. (Tables 3a, 3b, and 3c show the constructions used for motion events whose co-event is a manner, a cause, and a concomitance, respectively, and the first column of Table 4 shows those used for state-change events whose co-event is a cause only, though these types of events can have other kinds of co-events.[5] The Herero data appear only in Table 3a, and the Saamia and the Kumam data only in Tables 3 and 4.)

In the tables, those constructions that follow the order of "co-event – association function" are italicized and underlined. Those where a verb for a co-event carries a suffix for an association function are only italicized, because it is not clear how relevant the positional relation between the verb and the suffix is to the order of the event components. [V/H] and [S/NH] respectively mean verb-framed constructions or head-framed constructions (following Matsumoto 2003) and satellite-framed constructions or non-head framed constructions, where the association function shows up in a non-verbal constituent.

[5] We have only a limited amount of data for motion events whose co-event is not a manner, a cause, or a concomitance, and for state-change events whose co-event is not a cause.

(The constructions with [S/NH] other than the satellite suffix constructions in Kupsapiny are those where the association function occurs in an adverbial or in any other non-main verb constituent.) The serial verb constructions (SVCs) in Akan and Yoruba, the Kumam no-linker construction, which connects two finite clauses without any linker, and the coordination in Bende and Amharic are treated as equipollently-framed, and are marked with [E]. Constructions that are difficult to classify into any of the types are indicated with [UC] (for "unclassifiable"). The note in the pair of parentheses right after the construction name indicates what constituent expresses the association function (AF). [Data unavailable] in the tables indicates cases where the researcher has no data for the event sub-type, and [No example in text data], which is used only for the Amharic data, means that the Amharic researcher, Wakasa, did not find any examples in the texts that he looked at.

V1 and V2 respectively mean that the association function appears in the first verb and the second verb (or in the verb of the first clause and that of the second clause) when a multi-verb construction contains two verbs (or clauses). Although a multi-verb construction may have to contain or most commonly contains two verbs, there are those that could have more than two verbs. For such constructions (e.g., (8)), V2 in the tables should be interpreted as the final verb or (a) non-initial verb(s), depending on the construction.

Tables 3a-3c list a constituent expressing a path component of motion relative to the ground object (e.g., a preposition for a vector taking a noun phrase for a goal or source) only when it is the only constituent in the sentence that expresses a path component, because otherwise it usually does not make any difference across the different typological types of languages, as already mentioned for (2) and (3).

Table 3a: Constructions used for motion (co-event: manner)

	Motion (non-agentive/self-agentive)	Motion (agentive)
Akan	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [S/NH]: *Verb taking prepositional phrase* (AF in preposition)	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)
Yoruba	[E]: *Serial verb construction* (AF in V2)	[E]: *Serial verb construction* (AF in V2)
Bende	[V/H]: Simultaneity construction (AF in V1: main verb), [S/NH]: *Verb with applicative suffix and adverb* (AF in applicative suffix and adverb)	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb)
Herero	[S/NH]: *Verb taking bare NP/prepositional phrase* (AF in bareness of NP/preposition), [S/NH]: Verb with applicative suffix (AF in applicative suffix), [S/NH]: *Verb taking infinitive verb* (AF in infinitive verb), [V/H]: Simultaneity construction (AF in V1: main verb)	[Data unavailable]
Saamia	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2), [S/NH]: *Simultaneity construction* (AF in V2: verb of 'while' clause)	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2)
Kumam	[V/H]: Simultaneity construction (AF in V1: main verb), [V/H]: *Verb taking infinitive verb* (AF in infinitive), [S/NH]: *Verb taking satellite + prepositional phrase* (AF in satellite + preposition), [E]: *Two finite clauses without any linker* (AF in second clause)	[Data unavailable]
Kupsapiny	[S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es)), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb)	[S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es)), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb)
'Ale	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Sidaama	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Amharic	[V/H]: *Simultaneity construction* (AF in V2: main verb), [V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Verb taking prepositional phrase* (AF in main verb)	[No example in text data]

Table 3b: Constructions used for motion (co-event: cause)

	Motion (non-agentive/self-agentive)	Motion (agentive)
Akan	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)
Yoruba	[E]: *Serial verb construction* (AF in V2)	[E]: *Serial verb construction* (AF in V2)
Bende	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb)	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb)
Saamia	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2)	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2)
Kumam	[S/NH]: *Construction with 'until'* (AF in 'until' clause), [E]: *Two finite clauses without any linker* (AF in second clause)	[Data unavailable]
Kupsapiny	[S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es)), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb)	[S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es)), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb)
'Ale	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Sidaama	[V/H]: *Converb construction* (AF in V2: main verb)	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Amharic	[E]: *Coordination* (AF in clause 2)	[No example in text data]

Table 3c: Constructions used for motion (co-event: concomitance)

	Motion (non-agentive/self-agentive)
Akan	[E]: *Serial verb construction* (AF in V2)
Yoruba	[E]: *Serial verb construction* (AF in V2)
Bende	[V/H]: Simultaneity construction (AF in V1: main verb)
Kumam	[UC]: Adnominal clause[6]
Kupsapiny	[S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es)), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb)
'Ale	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Sidaama	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)
Amharic	[V/H]: *Simultaneity construction* (AF in V2: main verb)

[6] According to Osamu Hieda (p.c.), Kumam cannot use any of the constructions that are used for other types of events for motion with a concomitance as its co-event.

Table 4: Constructions used for state change and realization

	State change	Realization
Akan	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [S/NH]: *Verb taking adverb* (AF in adverb)
Yoruba	[E]: *Serial verb construction* (AF in V2)	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Verb taking prepositional phrase* (AF in preposition), [S/NH]: *Verb taking ideophone* (AF in ideophone)
Bende	[V/H]: *Consecutive construction* (AF in V2: consecutive verb)	[V/H]: *Consecutive construction* (AF in V2: consecutive verb)
Saamia	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2)	[S/NH]: *Finite verb – non-finite verb without any linker* (AF in V2)
Kumam	[S/NH]: *Construction with 'until'* (AF in 'until' clause), [E]: *Two finite clauses without any linker* (AF in V2)	[E]: *Two finite clauses without any linker* (AF in V2)
Kupsapiny	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb)	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb)
'Ale	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: *Consecutive construction* (AF in V2: consecutive verb)
Sidaama	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Simultaneity construction* (AF in V2: main verb)	[V/H]: *Converb construction* (AF in V2: main verb)
Amharic	[V/H]: *Converb construction* (AF in V2: main verb), [E]: *Coordination* (AF in clause 2), [V/H]: *Conditional* (AF in clause 2: main clause)	[No example in text data]

Table 5a: Constructions used for temporal contouring (completion and termination)

	Completion: 'finish'	Termination: 'stop'
Akan	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)	[V/H]: Verb taking infinitive verb (AF in main verb)
Yoruba	[E]: *Serial verb construction* (AF in V2), [V/H]: Verb taking infinitive verb (AF in main verb)	[V/H]: Verb taking infinitive verb (AF in main verb)
Bende	[V/H]: Verb taking infinitive verb (AF in main verb)	[V/H]: Verb taking infinitive verb (AF in main verb)
Kupsapiny	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb taking infinitive verb (AF in main verb)
'Ale	[V/H]: *Verb taking infinitive verb* (AF in main verb), [V/H]: *Simultaneity construction* (AF in V2)	[V/H]: *Verb taking infinitive verb* (AF in main verb), [V/H]: *Simultaneity construction* (AF in V2)
Sidaama	[V/H]: *Converb construction* (AF in V2: main verb)	[V/H]: *Verb taking infinitive verb* (AF in main verb)
Amharic	[V/H]: *Converb construction* (AF in V2: main verb), [V/H]: *Verb taking deverbal noun* (AF in main verb)	[No example in text data]

Table 5b: Constructions used for temporal contouring (continuation and repetition)

	Continuation	Repetition
Akan	[E]: *Serial verb construction* (AF in V2), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [E]: Serial verb construction (AF in V1)	[E]: Serial verb construction (AF in V1), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb), [S/NH]: *Verb taking adverb* (AF in adverb), [UC]: Reduplication
Yoruba	[S/NH]: *Verb taking adverb* (AF in adverb), [E]: *Serial verb construction* (AF in V2)	[S/NH]: Verb taking preverbal adverb (AF in preverbal adverb)
Bende	[S/NH]: Verb taking verb prefix (AF in verb prefix)	[S/NH]: *Verb taking adverb* (AF in adverb)
Kupsapiny	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb taking infinitive verb (AF in main verb), [S/NH]: *Verb taking adverb* (AF in adverb), [UC]: Repetition, [S/NH]: *Verb with path/deictic suffix(es)* (AF in path/deictic suffix(es))	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb taking infinitive verb (AF in main verb), [S/NH]: *Verb taking adverb* (AF in adverb), [UC]: Repetition
'Ale	[V/H]: *Simultaneity construction* (AF in V2: main verb)	[V/H]: Consecutive construction (AF in V1 'return': main verb)
Sidaama	[UC]: Continuous aspect construction, [UC]: Progressive aspect construction	[S/NH]: Converb construction (AF in V1 'return': converb), [UC]: Reduplication/repetition

Amharic	[No example in text data]	[S/NH]: Converb construction (AF in V1 'return': converb), [S/NH]: Verb taking adverb (AF in adverb), [UC]: Reduplication

Table 5c: Constructions used for temporal contouring (initiation and habitual action)

	Initiation	Habitual action
Akan	[E]: Serial verb construction (AF in V1), [S/NH]: *Consecutive construction* (AF in V2: consecutive verb)	[Data unavailable]
Yoruba	[V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: Verb with habitual auxiliary (AF in habitual auxiliary)
Bende	[V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: Verb taking verb prefix (AF in verb prefix)
Kupsapiny	[V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: Present habitual verb prefix, [S/NH]: Verb taking adverb (AF in adverb)
'Ale	[V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: Verb taking adverb (AF in adverb)
Sidaama	[V/H]: *Verb taking infinitive verb* (AF in main verb), [UC]: Proximative aspect construction for 'be about to do'	[UC]: *Imperfective aspect suffix*, [S/NH]: Verb taking adverb (AF in adverb)
Amharic	[V/H]: *Verb taking verbal or deverbal noun* (AF in 'start': main verb), [UC]: *Verb taking IPFV verb* (AF in 'start'), [V/H]: *Verb of saying taking IPFV verb* (AF in main verb)	[No example in text data]

Table 5d: Constructions used for temporal contouring (gradualness and frequency)

	Gradualness	Frequency
Akan	[S/NH]: *Verb taking adverb* (AF in adverb)	[S/NH]: *Verb taking adverb* (AF in adverb)
Yoruba	[S/NH]: Verb taking postverbal modifier (AF in postverbal modifier)	[Data unavailable]
Bende	[V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: Verb taking verb prefix (AF in verb prefix)
Kupsapiny	[S/NH]: Verb taking adverb (AF in adverb), [UC]: Progressive construction	[S/NH]: *Verb taking adverb* (AF in adverb)
'Ale	[V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: Verb taking adverb (AF in adverb)
Sidaama	[UC]: Progressive construction, [S/NH]: Verb taking adverb (AF in adverb)	[S/NH]: Verb taking adverb (AF in adverb), [S/NH]: Converb construction (AF in V1 'return': converb)
Amharic	[UC]: *Simultaneity construction* (AF in construction)	[No example in text data]

Table 6a: Constructions used for action correlation (concert and accompaniment)

	Concert: 'together with'	Accompaniment: 'along with'
Akan	[Data unavailable]	[Data unavailable]
Yoruba	[S/NH]: *Verb taking prepositional phrase* (AF in preposition), [S/NH]: Verb taking preverbal modifier (AF in preverbal modifier)	[S/NH]: *Verb taking prepositional phrase* (AF in preposition)
Bende	[S/NH]: *Verb taking adverb* (AF in adverb)	[E]: Coordination (AF in construction)
Kupsapiny	[S/NH]: Verb suffixes for 'together', [S/NH]: *Verb taking adverb* (AF in adverb), [S/NH]: Verb taking prepositional phrase (AF in preposition), [S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb)	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Simultaneity construction (AF in V1: main verb), [S/NH]: Simultaneity construction (AF in V2: verb of 'while' clause) [UC]: Simultaneity construction as a whole
'Ale	[S/NH]: Verb taking adverb (AF in adverb)	[S/NH]: Verb taking adverb (AF in adverb)
Sidaama	[S/NH]: Verb taking NP with comitative noun (AF in comitative noun), [S/NH]: Verb taking adverb (AF in adverb)	[S/NH]: Verb taking NP with comitative noun (AF in comitative noun), [S/NH]: Verb taking adverb (AF in adverb)
Amharic	[S/NH]: Converb construction (AF in V1 'join': converb), [S/NH]: Verb taking comitative postpositional phrase (AF in comitative postposition)	[No example in text data]

Table 6b: Constructions used for action correlation (surpassment and imitation)

	Surpassment 'out-V'	Imitation: 'in imitation of'
Akan	[S/NH]: *Verb taking prepositional phrase* (AF in preposition)	[E]: Serial verb construction (AF in V1)
Yoruba	[V/H]: Split verb taking prepositional phrase (AF in split verb)	[Data unavailable]
Bende	[V/H]: Verb taking infinitive verb (AF in main verb)	[S/NH]: Verb taking infinitive verb (AF in infinitive verb)
Kupsapiny	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [UC]: Temporal sequence participle construction (AF in V1: main verb), [V/H]: Verb with prepositional phrase (AF in V1: main verb)	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb with prepositional phrase (AF in V1: main verb)
'Ale	[V/H]: *Simultaneity construction* (AF in V2: main verb)	[S/NH]: Verb taking adverb (AF in adverb)
Sidaama	[S/NH]: Converb construction with V1 'surpass': converb (AF in V1), [V/H]: *Verb for 'surpass' taking a locative noun* (AF in main verb)	[S/NH]: Converb construction with V1 'become X' (AF in V1),
Amharic	[UC]: Verb for 'be better' taking ablative postposition phrase (AF in main verb and in ablative postposition)	[No example in text data]

Table 6c: Constructions used for action correlation (demonstration)

	Demonstration: 'in demonstration'
Akan	[Data unavailable]
Yoruba	[Data unavailable]
Bende	[V/H]: Verb for 'demonstrate' (AF in 'demonstrate')
Kupsapiny	[S/NH]: *Temporal sequence participle construction* (AF in V2: participle verb), [V/H]: Verb for 'demonstrate' (AF in 'demonstrate')
'Ale	[V/H]: *Verb for 'demonstrate'* (AF in 'demonstrate')
Sidaama	[V/H]: *Verb for 'demonstrate'* (AF in 'demonstrate')
Amharic	[No example in text data]

6. Findings

Our general findings are as follows. For more language-specific findings about individual languages, see the papers by the project members in this issue of the journal.

(i) None of the languages consistently shows one of the typological patterns across all five event domains, or any one of the patterns in expressing temporal contouring or action correlation. These languages exhibit different patterns due to language-specific factors. The factors include the event domain/sub-domain, the path type, the verb, and the tense. Nevertheless, some of the languages display characteristic patterns – Akan and Yoruba are predominantly equipollently-framed and Sidaama and Amharic are mostly verb-framed in expressing motion, state change, and realization. However, these languages are quite different from typical verb-framed and satellite-framed languages such as Romance and Germanic languages, respectively, described by Talmy. The difference is presumably due to the order of mentioning a co-event and an association function in temporal sequence constructions, as discussed in Section 7.

(ii) All of the languages have temporal sequence constructions, which are multi-verb/clause constructions used to express events in their sequential order, and they all use them for events in some of the event domains and sub-domains, usually in the order of a co-event and an association function.[7] The temporal sequence constructions, which are of miscellaneous types, include the serial verb constructions in Akan and Yoruba, the consecutive constructions in Akan, Bende, Herero, and 'Ale, the no-linker constructions in Saamia and Kumam, the temporal sequence participle construction in

[7] The temporal sequence constructions follow the order of a co-event and an association function in most cases, but not necessarily. There is one case where the temporal sequence constructions express an association function and a co-event in this order, though they still retain the sequential order of the event components – they occur in this order when the co-event is that of subsequence (Talmy 2000: 47, e.g., 'They locked the prisoner into his cell', 'I laid the painting down on the table'), which occurs after the association function. Such cases are excluded from the present paper.

Kupsapiny, and the converb constructions in Amharic and Sidaama. This point is returned to in Section 7.

(iii) Only Kupsapiny has clear instances of satellites. It has path and deictic verb suffixes, which are used as satellites for motion events, and has a small number of satellites for other event domains.

(iv) Non-agentive and self-agentive motion events with a manner as their co-event seem to be more likely to be integrated into a single event, and are expressed in a more fused way than events with a cause as their co-event in many of the languages. The relatively integrated constructions used for non-agentive and self-agentive motion events whose co-event is a manner include the constructions where a verb takes a prepositional phrase in Akan, Herero, and Amharic, the satellite-framed construction in Kupsapiny, and the simultaneity constructions in Bende, Herero, Kumam, Saamia, ‘Ale, Sidaama, and Amharic.

(v) As shown in Tables 3–6, even genetically related languages show some differences in their expression patterns of event integration. ‘Ale and Sidaama, which are both East Cushitic languages, use different sets of constructions. Two noticeable differences between these two languages is that unlike Sidaama, which uses its converb construction extensively, ‘Ale lacks this construction; whereas the consecutive construction, which Sidaama does not have, exists in ‘Ale (Yoshino this issue). Furthermore, the three Bantu languages also somewhat differ from each other in their inventories of constructions used for motion events.

7. Discussion

This section demonstrates that all the languages that we investigated have one important property in common: their temporal sequence constructions, which present a co-event and an association function in this order, can be used at least for events whose co-event is a cause. It also discusses how the languages differ in their use of this type of construction, and what this difference means to the typology of event integration.

When a language combines verbs/clauses to express complex events, it normally has at least two strategies, the use of (a) simultaneity construction(s) and the use of (a) temporal sequence construction(s), though the two types of constructions differ morpho-syntactically across languages. The simultaneity construction expresses the occurrence of one event component during another, whereas the temporal sequence construction expresses event components in their temporal order. The two types of

constructions differ from each other in the order in which they present the association function and the co-event. The order of expressing the association function and the co-event in the simultaneity construction depends on the basic word order of the language. With the simultaneity construction, VO languages (Bende, Herero, Kumam, and Kupsapiny) usually express the association function and the co-event in this order ('the framing event happens while the co-event is happening'), whereas OV languages ('Ale, Sidaama, and Amharic) normally show the order of the co-event and the association function ('while the co-event is happening, the framing event happens').[8] On the other hand, the temporal sequence construction generally follows the "co-event – association function" order, regardless of the basic word order of the language and regardless of the typological framing pattern, because the co-event usually precedes the associative function (but see Footnote 7) and the temporal sequence construction expresses the event components in their temporal order. This applies to all the temporal sequence constructions in the languages that we examined.

The temporal sequence construction is useful for expressing events whose co-event is a cause – in such events, the co-event precedes the framing event; a cause and its effect are likely to be linguistically presented in this order, and to be expressed by a construction with a relatively loose linkage compared to components of other types of events. Events of this type include motion events whose co-event is a cause as well as state-change events, whose co-event is most commonly a cause, and realization, whose co-event is always a cause. In fact, all the languages that we looked at can use their temporal sequence construction for any of these types of events. (9)-(25) are examples of the use of the temporal sequence constructions in different languages. (9)-(14) are examples of motion events with a cause, (16)-(20) are examples of state-change events, and (21)-(25) are examples of realization. The examples are either adapted from the papers in the present issue of the journal (see the papers for more data) or examples that the researchers provided for the present paper (indicted with "p.c."). In the literal gloss for each of the examples that have past tense interpretations, the past tense is used for all the verbs (see Komori (this issue) for the past interpretations of Yoruba dynamic verbs despite no tense marking on them), and no conjunction is used between the two clauses, although 'and' could be placed there.

[8] According to Hieda (this issue), however, Saamia has an unusual simultaneity construction (e.g., *lit.* 'S/he ran while s/he entered a house.'), where a manner and a path appear in the main clause and the 'while' clause, respectively, to express a motion event with a manner as its co-event (S/he ran into a house), rather than the occurrence of the manner during the motion event.

Motion with a cause as its co-event

Akan: consecutive construction (Kyoko Koga, p.c.)[9]

(9)	ɔ = ɔ-*to*	boɔ	a-kɔ	ni = fie	mu.
	3SG=PROG-throw	stone	CONS-go	3SG.POSS=house	inside

'S/he is throwing a stone into his/her house.'

(*lit.* 'S/he is throwing a stone, it goes into his house.')

Akan: serial verb construction (adapted from Koga, this issue)

(10)	ɔ = *to*-o	boɔ	kɔ-ɔ	ni = fie	mu.
	3SG=throw-PST	stone	go-PST	3SG.POSS=house	inside

'S/he threw a stone into his/her house.'

(*lit.* 'S/he threw a stone, it went into his house.')

Bende: consecutive construction (adapted from Abe, this issue)

(11)	gha-a-*teél*-e	é-bhwé	ly-á-jingíl-á	mú-ny-umba.
	3SG-PST-throw-F	5-stone	5-CONS-enter-F	LOC18-9-house

'S/he threw a stone into the house.'

(*lit.* 'S/he threw a stone, it entered the house.')

Saamia: no-linker construction (Osamu Hieda, p.c.)

(12)	Yáá-*sukuna*	ómupíira,	kwéengira	mú-nyumba.
	3SG.PST-throw	ball	PST.enter	LOC-house

'S/he threw the ball into the house.'

(*lit.* 'S/he threw the ball, it entered the house.')

Kupsapiny: temporal sequence participle construction (Kawachi, this issue)

(13)	kà-*wir*	neetó	rwaantét	kú-wo	kó.
	T.PST.3-throw	3SG.NOM	ball	PTCP.3-go	house

'S/he threw the ball thither into the house.'

(*lit.* 'S/he threw the ball, it went to the house.')

[9] According to Koga (p.c.), in Akan, the consecutive construction (e.g., (9)) and the serial verb construction (e.g., (10)) are in complementary distribution with respect to tense and aspect – the consecutive construction is restricted to the future tense and the progressive aspect, whereas the serial verb construction occurs with the other tense and aspect categories.

Sidaama: converb construction

(14) íse kowaasé min-í-ra
3SG.F.NOM ball.AO house-GEN.M-ALL
ol-t-e ee-ss-i-t-inó.
throw-3SG.F-CON enter-CS-EP-3SG.F-D.PRF.3
'She threw the ball into the house.'
(*lit.* 'She threw the ball to the house, it entered.')

State change with a cause as its co-event

Akan: consecutive construction (Kyoko Koga, p.c.)

(15) mi = i-*hu* kanea = no a-dum = no.
1SG=PROG-blow candle=the CONS-extinguish=INAN.OBJ
'I am blowing the candle out.'
(*lit.* 'I am blowing the candle, I extinguish it.')

Yoruba: serial verb construction (adapted from Komori, this issue)

(16) mo *fẹ́* àbẹ́là náà pa.
I blow candle the extinguish
'I blew the candle out.'
(*lit.* 'I blew the candle, I extinguished it.')

Saamia: no-linker construction (adapted from Hieda, this issue)

(17) Ndá-*huba* ómusaacha, yáá-fa.
1SG.PST-hit man 3SG.PST-die
'I hit the man to death.'
(*lit.* 'I hit the man, he died.')

Kupsapiny: temporal sequence participle construction (Kawachi, this issue)

(18) kàà-*lay*-o kaawáánɨk kù-mut.
T.PST.3-boil-PL coffee.DEF.PL PTCP.3-decrease
'The coffee boiled down.'
(*lit.* 'The coffee boiled, it decreased.')

‘Ale: consecutive construction (Hiroshi Yoshino, p.c.)

(19) awšo = si tor-no-ttay i = *kuɗ-am*-i = pa xum-uy.
coffee=this heat-GER-INS 3=dry-PASS-PFV.3SG.M=NF end-CONS.3SG.M
‘This coffee boiled away.’
(*lit.* ‘This coffee became dried, heating with heat, it ended.’)

Sidaama: converb construction

(20) bún-u *huɬ*-ø-e ba’-ø-inó.
coffee-NOM.M boil-3SG.M-CON disappear-3SG.M-D.PRF.3
‘The coffee boiled away.’
(*lit.* ‘The coffee boiled, it disappeared.’)

Realization

Yoruba: serial verb construction (adapted from Komori, this issue)

(21) ó *nu* tábìlì náà mọ́.
3SG wipe table the be.clean
‘S/he wiped the table clean.’
(*lit.* ‘S/he wiped the table, it was clean.’)

Bende: consecutive construction (adapted from Abe, this issue)

(22) gha-a-*kans*-e e-ghwánda ly-â-labh-á.
3SG-PST-wash-F 5-shirt 5-CONS-be.white-F
‘S/he washed the shirt clean.’
(*lit.* ‘S/he washed the shirt, it was white.’)

Kupsapiny: temporal sequence participle construction (Kawachi, this issue)

(23) kaa-*sít* anì saatít ku-tilít.
T.PST.3-wash 1SG.NOM shirt PTCP.3-become.clean
‘I washed the shirt clean.’
(*lit.* ‘I washed the shirt, it became clean.’)

‘Ale: consecutive construction (Hiroshi Yoshino, p.c.)

(24) ano kote an = *šox*-i = pa piʔ-as-a.
1SG.NOM shirt 1=wash-PFV.1SG=NF be.white-CS-CONS.1SG
‘I washed the shirt clean.’
(*lit.* ‘I washed the shirt, I made it clean.’)

Sidaama: converb construction

(25) isi uddanó *haišš*-ø-e seekk-ø-ino.
3SG.NOM clothes.AO wash-3SG.M-CON make.good-3SG.M-D.PRF.3
'He washed the clothes clean.'
(*lit.* 'He washed the clothes, he made them good.')

Although the languages that we investigated can use their temporal sequence construction for these types of events, they differ in how much they can extend their temporal sequence construction to other types of events. Generally, Bantu languages seem to be able to apply their temporal sequence construction (specifically, their consecutive construction) to fewer event domains/sub-domains compared to other languages, because this construction is looser in its clause linkage than the temporal sequence constructions in the other languages. First, all the non-Bantu languages that we looked at can also use their temporal sequence construction for motion events whose co-event is a manner.

Motion with a manner as its co-event

Akan: consecutive construction (Kyoko Koga, p.c.)

(26) bɔɔl=no o-*munimuni* a-ba fie=yi mu.
ball=the PROG-roll CONS-come house=this inside
'The ball is rolling hither into this house.'
(*lit.* 'The ball is rolling, it comes to the inside of this house.')

Yoruba: serial verb construction (adapted from Komori, this issue)

(27) ó *sáré* jáde láti inú ilé.
3SG run exit from inside house
'S/he ran out of the house.'
(*lit.* 'S/he ran, s/he exited the inside of the house.')

Sidaama: converb construction

(28) íse *dod*-d-e min-í-nni ful-t-inó.
3SG.F.NOM run-3SG.F-CON house-GEN.M-AIM exit-3SG.F-D.PRF.3
'She ran out of the house.'
(*lit.* 'She ran, she exited the house.')

Saamia: no-linker construction (adapted from Hieda, this issue)

(29) *Yéeruha*, yéengira mú-nyumba.
3SG.PST.run 3SG.PST.enter LOC-house
'S/he ran into the house.'
(*lit.* 'S/he ran, s/he entered the house.')

On the other hand, when the main verb and the consecutive verb of the Bende consecutive construction are used for a manner and a path, respectively, what the construction expresses are two separate events, where the manner is terminated before the motion expressed by the path verb starts, as in (30).

Bende: consecutive construction (Yuko Abe, p.c.)

(30) gha-a-*kílím*-á ghá-á-fum-á mú-ny-umba.
3SG-PST-run-F 3-CONS-exit-F LOC18-9-house
'S/he ran, and then exited the house.'
(*lit.* 'S/he ran, s/he exited the house.')

The following Bantu languages seem to work in a similar way: Herero (Nobuko Yoneda p.c.), Shona (S10) (Schaefer & Gaines 1997: 215), Swahili (G42), Tswana (S31), and Zulu (S42) (Gaines 2001).[10]

Second, all the non-Bantu languages can also use their temporal sequence constructions for completion in the domain of temporal contouring, and many of them can also use them for continuation.

Kupsapiny: temporal sequence participle construction (Kawachi, this issue)

(31) kaaku-*kóɲ* neetó kú-pok.
T.PST.3-run.thither 3SG.NOM PTCP.3-become.finished
'S/he finished running thither.'
(*lit.* 'S/he ran thither, s/he became finished.')

[10] However, according to Gaines (2001: 5–9), who compared the consecutive construction in different Bantu languages, unlike in the other languages, the one in Kikuyu (Gikuyu) (E51) can be used not only for separate events but also for single motion events with a manner as their co-event. (The present author thanks Yuko Abe for pointing this out.)

Akan: serial verb construction (Kyoko Koga, p.c.)

(32) egya = no a-*hye* a-kyɛ.
fire=the PRF-burn PRF-take.long
'The fire lasted for a long time.'
(*lit.* 'The fire burned, it took long.')

However, Bantu languages do not seem to use their temporal sequence constructions for these categories of temporal contouring, as in the Bende examples in (33) and (34).

Bende: infinitive construction (Yuko Abe, p.c.)

(33) na-a-hw-ã kú-*nyw*-a ø-chaái.
1SG-PST-finish-F INF-drink-F 9-tea
'I finished drinking the tea.' or 'I finished the activity of tea-drinking.'

Bende: persistive aspect verb prefix (Abe, this issue)

(34) a-syá-*sahul*-a.
3SG-PER-talk-F
'S/he was still talking.'

For completion, Saamia (Osamu Hieda, p.c.) and Swahili (Yuko Abe, p.c.) also use the infinitive construction. (According to Yuko Abe (p.c.), Swahili also has a verb prefix for completion). For continuation, a majority of Bantu languages use the persistive aspect verb prefix (Yuko Abe, p.c.). (Swahili uses the adverb for 'still', which may occur before or after the verb for the co-event.)

Thus, these African languages differ as to how much they can extend the range of application of their temporal sequence construction from events whose co-event is a cause to other event domains/sub-domains.

Therefore, these languages are different from languages that do not have to follow the "co-event – association function" order. For example, Romance and Germanic languages, which Talmy describes as representative V- and S-languages, respectively, often exhibit the "association function – co-event" order.[11] This is illustrated with two examples each for state change in Spanish and German in (35)-(38). In the Spanish examples (35) and (36), the verb for the association function is followed by the prepositional phrase or the gerundive, which expresses the co-event. In the German examples (37) and (38), the satellite for the association function is followed by the verb for the co-event.

[11] As in the (non-literal) English glosses for (35)-(38), English seems to be more likely to follow the "co-event – association function" order than German.

State change
Spanish (Tamly 2000: 240)
(35) Lo mataron *con fuego/quemándolo*.
'They burned him to death.'
(*lit.* 'They killed him with fire/by burning him.')

Spanish (Tamly 2000: 247)
(36) El perro destrozó el zapato *a mordiscos/mordiéndolo* en 30 minutos.
'The dog bit the shoe up in 30 minutes.'
(*lit.* 'The dog destroyed the shoe with bites/[by] biting it in 30 minutes.')

German (Tamly 2000: 241)
(37) (er-)*drücken/schlagen/würgen/stechen/schiessen*
'to squeeze/beat/choke/stab/shoot (to death)'

German (Tamly 2000: 247)
(38) Der Hund hat den Schuh in 30 Minuten kaputt*gebissen*.
'The dog bit the shoe up in 30 minutes.'

Also in the examples for completion, in (39) and (40), both Spanish and German express the association function and the co-event in this order.

Temporal contouring (completion)
Spanish (Tamly 2000: 234)
(39) Terminé de *escribir* la carta.
'I finished writing the letter.'/'I wrote the letter to completion.'

German (Tamly 2000: 234)
(40) Ich habe den Brief fertig *geschrieben*.
'I finished writing the letter.'/'I wrote the letter to completion.'

Talmy's typology of event integration could be regarded as being based on the figure-ground organization of language. As already seen in Table 2, the association function is generally expressed in a more backgrounded way than the co-event (with a main verb as compared to an adverbial or non-main verb/clause in a V-language, and with a satellite as compared to a main verb in an S-language), regardless of the type of language. V-languages express both event components in a more foregrounded way (with a main verb and an adverbial or non-main verb/clause) than S-languages (which express

the event components with a satellite and a main verb). In addition to the dimension pertaining to the figure-ground organization of language, there is another dimension along which languages can be classified in terms of event integration, namely, the preference for the iconicity (Haiman 1980, 1983) in the order of expressing event components, corresponding to the temporal order of their occurrence. The African languages that we investigated are faithful to this iconicity, which often overrides their typological properties based on the figure-ground organization. In contrast, for Romance and Germanic languages, the figure-ground organization serves as a stronger factor than iconicity in characterizing their event integration patterns.

8. Conclusion

The present study has shown that only some of the African languages that we examined exhibit fairly consistent patterns in expressing motion, state change, and realization, and that none of them follows the same pattern across all five event domains. Nevertheless, for events whose co-event and association function can be interpreted as occurring in this order, that is, events whose co-event is a cause, these languages seem to prefer the order of expressing them in the corresponding order.[12] The present study suggests that the preference for this order reflecting iconicity is another factor in which languages can differ in event integration, and can be a typological parameter.

Admittedly, the present study used genetically and geographically biased samples, and lacks sufficient data. We are planning to extend this study to a larger project to include many more languages in the future. One issue to be investigated is whether there is any correlation between the tightness of linkage of the different types of temporal sequence constructions and the event domains/subdomains for which they are used.

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[12] This seems to apply to some Asian languages as well. A possible future research topic on the typology of event integration will be to compare African languages with various Asian languages, and try to find any similarities between them, and any differences from languages in other areas.

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Abbreviations

1	first person	INAN.OBJ	inanimate object
2	second person	INF	infinitive
3	third person	INS	instrumental
(other numbers)	noun classes	IPFV	imperfective
AF	association function	LOC	locative
AIM	ablative-instrumental/ manner	M	masculine
		NF	non-final
ALL	allative	NOM	nominative
AO	accusative-oblique	PASS	passive
CON	converb	PER	persistive
CONS	consecutive	PFV	perfective
CS	causative	PL	plural
DEF	definite	POSS	possessive
D.PRF	distant perfect	PRF	perfect
D.PST	distant past	PROG	progressive
EP	epenthesis	PST	past
F	feminine	PTCP	participle
GEN	genitive	S/SG	singular
GER	gerund	T.PST	today past

References

Abe, Yuko. This issue. “Event integration patterns in Bende (Bantu, F12)”.

Amberber, Mengistu. 2009. “Differential case marking of arguments in Amharic”. In Andrej Malchukov and Andrew Spencer (eds.) *Handbook of Case.* Oxford: Oxford University Press. pp.742–756.

Ameka, Felix K. and James Essegbey. 2013. “Serialising languages: Satellite-framed, verb-framed or neither”. *Ghana Journal of Linguistics* 2.1. pp.19–38.

Aske, Jon. 1989. “Path predicates in English and Spanish: A closer look”. *Proceedings of the 15th Annual Meeting of the Berkeley Linguistics Society*. Berkeley, CA: Berkeley Linguistics Society. pp.1–14.

Brown, Penelope. 2003. “Position and motion in Tzeltal frog stories: The acquisition of narrative style”. In Sven

Strömqvist and Ludo Verhoeven（eds.) *Relating Events in Narrative: Typological and Contextual Perspectives.* Mahwah, NJ: Erlbaum. pp.37–57.

Dombrowsky-Hahn, Klaudia. 2012. "Motion events in Bambara (Mande)". *Journal of African Languages and Linguistics* 33.1. pp.37–66.

Gaines, Richard. 2001. "On the typology of directional verbs in Bantu". In Robert Botne and Rose Vondrasek (eds.) *Indiana University Working Papers in Linguistics* 3. Bloomington, IN: IULC Publications. pp.1–12.

Guillaume, Antoine. 2013. "Reconstructing the category of 'associated motion' in Tacanan languages (Amazonian Bolivia and Peru)". In Ritsuko Kikusawa and Lawrence A. Reid (eds.) *Historical Linguistics 2011: Selected Papers from the 20th International Conference on Historical Linguistics, Osaka, 25–30 July 2011*. Amsterdam: John Benjamins. pp.129–151.

Haiman, John. 1980. "The iconicity of grammar: Isomorphism and motivation". *Language* 56. pp.515–540.

————. 1983. "Iconic and economic motivation". *Language* 59. pp.781–819.

Heine, Bernd, and Derek Nurse (eds.). 2008. *A Linguistic Geography of Africa.* Cambridge: Cambridge University Press.

Heine, Bernd, and Zelealem Leyew. 2008. "Is Africa a linguistic area?" In Bernd Heine and Derek Nurse (eds.) *A Linguistic Geography of Africa*. Cambridge: Cambridge University Press. pp.15–35.

Hieda, Osamu. This issue. "Complex motion events and clause combining in Saamia".

Kawachi, Kazuhiro. 2007. "A grammar of Sidaama (Sidamo), a Cushitic language of Ethiopia". Ph.D. Dissertation, University at Buffalo, the State University of New York.

————. 2012. "Event integration patterns in Sidaama (Sidamo)". *Proceedings of the 34th Annual Meeting of the Berkeley Linguistics Society, General Session*. Berkeley, CA: Berkeley Linguistics Society. pp.175–186.

————. 2014. "Patterns of expressing motion events in Kupsapiny". In Osamu Hieda (ed.) *Recent Advances in Nilotic Linguistics (Studies in Nilotic Linguistics Vol. 8)*. Tokyo: Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies. pp.103–136.

————. This issue. "Event integration patterns in Kupsapiny".

Koch, Harold. 1984. "The category of 'associated motion' in Kaytej". *Language in Central Australia* 1.1. pp.23–34.

Koga, Kyoko. This issue. "Event integration in Akan".

Komori, Junko. This issue. "Event integration patterns in Yoruba".

Levin, Beth, and Malka Rappaport Hovav. 1996. "Lexical semantics and syntactic structure". In Shalon Lappin (ed.) *The Handbook of Contemporary Semantic Theory*. Oxford: Blackwell. pp.487–507.

Matsumoto, Yo. 2003. "Typologies of lexicalization patterns and event integration: Clarifications and reformulations". In Shuji Chiba et al. (eds.) *Empirical and Theoretical Investigations into Language: A Festschrift for Masaru Kajita*. Tokyo: Kaitakusha. pp.403–418.

Mietzner, Angelika and Yvonne Treis (eds.). 2008. *Encoding Motion: Case Studies from Africa (Annual Publication in African Linguistics Jahrgang 2007, Nr. 5).* Köln: Rüdiger Köppe.

Nurse, Derek. 2008. *Tense and Aspect in Bantu.* Oxford: Oxford University Press.

Schaefer, Ronald P. and Richard Gaines. 1997. "Toward a typology of directional motion for African languages". *Studies in African Linguistics* 26.2. pp.193–220.

Slobin, Dan I. 1996. "Two ways to travel: Verbs of motion in English and Spanish". In Masayoshi Shibatani and Sandra A. Thompson (eds.) *Grammatical Constructions: Their Form and Meaning*. Oxford: Clarendon Press. pp.195–220.

————. 2004. "The many ways to search for a frog: Linguistic typology and the expression of motion events". In Sven Strömqvist and Ludo Verhoeven (eds.) *Relating Events in Narrative, Volume 2: Typological and Contextual Perspectives*. Mahwah, NJ: Lawrence Erlbaum. pp.219–257.

Talmy, Leonard. 1985. "Lexicalization patterns". In Timothy Shopen (ed.) *Language Typology and Syntactic Description, Volume 3: Grammatical Categories and the Lexicon*. Cambridge: Cambridge University Press. pp.57–149.

————. 1991. "Path to realization: A typology of event conflation". *Proceedings of the 17th Annual Meeting of the Berkeley Linguistics Society*. Berkeley, CA: Berkeley Linguistics Society. pp.480–519.

————. 2000. *Toward a Cognitive Semantics, Volume II: Typology and Process in Concept Structuring.* Cambridge, MA: MIT Press.

————. 2009. "Main verb properties and equipollent framing". In Jiansheng Guo, Elena Lieven, Nancy Budwig, Susan Ervin-Tripp, Keiko Nakamura and Şeyda Özçalişkan (eds.) *Crosslinguistic Approaches to the Psychology of Language: Research in the Tradition of Dan Isaac Slobin*. New York: Psychology Press. pp.389–402.

Wakasa, Motomichi. This issue. "An analysis of complex event representation in Amharic texts".

Wilkins, David P. 1991. "The semantics, pragmatics and diachronic development of 'associated motion' in Mparntwe Arrernte". *Buffalo Working Papers in Linguistics* 91. pp.207–257.

Yoneda, Nobuko. This issue. "Event integration patterns in Herero: The case of motion event components".

Yoshino, Hiroshi. This issue. "Event integration and the consecutive construction in 'Ale".

Zlatev, Jordan and Peerapat Yangklang. 2004. "A third way to travel". In Sven Strömqvist and Ludo Verhoeven (eds.) *Relating Events in Narrative, Volume 2: Typological and Contextual Perspectives.* Mahwah, NJ: Lawrence Erlbaum. pp.159–190.

Appendix: Questionnaire for Studies on Event Integration Patterns

The project members obtained data using this questionnaire, which is based on Talmy (1985, 1991, 2000) and Kawachi (2007, 2012). Each member was careful not to simply ask his/her consultants to translate the sentences into their languages, and to follow the following steps when s/he elicited data from them: (i) to provide the consultants with the context, (ii) to elicit as many sentences as possible (and at the same time, see what pattern(s) the language exhibits in expressing a particular event domain/sub-domain, and if relevant, whether there are any factors in causing the language to show different patterns), and (iii) to check whether each sentence has any other interpretation(s).

[1] MOTION

Manner as a Co-event

1. The ball rolled down (the hill). (Talmy 2000: 30)
2. The ball rolled into the house. / The ball rolled in.
3. She ran out of/into the house. / She ran out/in.
4. The bird flew into/out of the nest.
5. She ran around the field (one time/more than one time).
6. The woman ran to the market yesterday.
7. She climbed up the tree/mountain to the top.
   (Check whether the sentence that you get expresses only upward motion, or a manner of motion in addition to upward motion.)
8. The bottle floated into/out of the cave.
9. She jumped over the rock/puddle.

10. She limped/walked/crawled/rushed/crept/staggered/slid/swam, etc. to him/the tree/into the house.
11. She limped/walked/crawled/rushed/crept/staggered/slid/swam, etc. from him/the tree/out of the house.
12. She ran past the tree/me.
13. She ran along the road.
14. She ran away from the dog.
15. combination of these path components (e.g., out of the house, past the tree, into the cave), together with various manners of motion
16. He rolled a pen across the table to her.

Cause as a Co-event

17. She threw a stone/stick/ball into his house.
18. She kicked the ball across the field (onset causation: by kicking the ball one time/extended causation: by kicking the ball more than one time).

Concomitance as a Co-event

19. She wore a green dress to the party. (Talmy 2000: 46)
20. She wore a watch to school.
21. She came into the house, hiccupping/whistling.
22. He went, looking downward/with his body leaning to one side.
23. He whistled past me/across the field. / He passed by me/crossed the field, whistling.
    (Note that such events might be expressed as "associated motion" events (Koch 1984, Wilkins 1991, Guillaume 2013) (e.g., Kupsapiny (Southern Nilotic): *ku-ɲéér-noo-n* [D.PST.3-get.angry-along-hither] 'S/he got angry repeatedly (or was angry) as s/he moved toward the deictic center.'))

Motion with other types of Co-events

24. Glass splintered onto the carpet. (*Precursion*) (Talmy 2000: 42)
25. I locked him in the house. (*Precursion*)
26. The honey dripped into the container. (*Precursion*)
27. Could you reach/grab that bottle down off the shelf? (*Enablement*) (Talmy 2000: 42)
28. She opened the door, and entered. (*Enablement*)
29. He untied the rope from the cow, and took it outside. (*Reverse enablement*)
30. I'll look in at the stew cooking on the stove. (*Subsequence*) (Talmy 2000: 47)

Other types of complex events

31. She went to the market, bought salt, and came back.
32. He swam in the river yesterday, and ran on the field today.
33. Take this orange now, and carry it to your brother tomorrow.
34. As she ran into the cave, she sneezed.
35. While she was eating, she sneezed.

Other types of motion events without any co-event (non-macro events)

36. She arrived at the house/church.
37. She came down from the top of the tree.
38. He crossed the field/road/river.
39. She took/brought water to the house.
40. He put the rock in the cave/box. / He took the rock out of the cave/box. (The agent's manipulation of the figure could be regarded as a cause.)
41. She put the ring on his finger. / She took the ring off his finger. (The agent's manipulation of the figure could be regarded as a cause.)

[2] STATE CHANGE

42. The candle blew out. (Talmy 2000: 217)
43. The candle burned out.
44. The butter melted away.
45. The coffee boiled away.
46. I blew out the candle.
47. I melted the butter away.
48. He dried the clothes by squeezing them (one time/multiple times at certain intervals).
49. He pushed the door open/closed.
50. She boiled the coffee away.

[3] REALIZATION

Check which of the patterns involving realization (Talmy 2000: 261–271) each example follows.

51. I kicked the hubcap. / I kicked the hubcap flat.
52. The police hunted the fugitive/thief. / The police hunted the fugitive/thief down.
53. I tried drowning him. / I drowned him. / I tried drowning him, but he did not die.
54. I washed the shirt. / I washed the shirt clean.
55. She tied her shoes. / She tied her shoes tightly.

56. He drank the water from the pot. / He drank up the water from the pot.
57. She used up his money.

[4] TEMPORAL CONTOURING (ASPECT)

(i) Completion/termination

58. I finished drinking the coffee. / I finished the activity of coffee-drinking.
59. She finished running (a specific distance) (across the three fields). / She stopped the activity of running.
60. She stopped coughing (for good). / He quit chewing tobacco (for good).
61. He would not stop talking. (He kept on talking.)
62. The food got finished.
63. The story came to an end.

(ii) Initiation

64. The baby started to cry.
65. The baby is about to cry.
66. When she was about to exit the house, she sneezed/a bird came in.
67. He started to build a house.

(iii) Continuation

68. She talked on.
69. He has been standing outside for the whole three hours.
70. She is singing now.
71. He spent all day eating yesterday.
72. She kept dancing all night.
73. He spent all his life waiting for her.
74. The fire in the mountain lasted for a short time.

(iv) Habitual action

75. I drink milk every day.
76. Also check other expressions for habitual actions, e.g., every evening, every year.

(v) Repetition

77. She came again. / She came again and again.
78. She coughed again. / She coughed again and again.

(vi) Gradualness

79. When I saw him, he was in the process of sitting down.
80. He is in the process of getting drunk.
81. It is getting dark little by little.
82. Advise your child little by little.
83. He is returning the money he borrowed little by little.
84. The cows died one after another.

(vii) Frequency

85. We sometimes go to the market.
86. Come and visit me from time to time.
87. She goes to the market once a week.
88. How often do you go to the market? – Frequently/Once a week.

[5] ACTION CORRELATING

(i) Concert

89. I played the melody together with him.
90. She danced/ran together with him.
91. They went to the market together.
92. Come together.

(ii) Accompaniment

93. I played the melody along with him.
94. She sang along.
95. I sang along with him.
96. While she ran, I also ran.
97. While he played drums, she sang.
98. I met them for dancing/drinking.
99. Spanish
    Yo lo *acompañé* cuando tocamos la melodía.
    'I accompanied him when we played the melody' (both he and I played).
    (Talmy 2000: 258)
100. Spanish
    Yo lo *acompañé* tocando la melodía.
    'I accompanied him [by] playing the melody' (only I played). (Talmy 2000: 258)

(iii) Surpassment

101. I outplayed him.
102. She swims/runs faster than him.
103. She cooks better than them.
104. The gin/beer at this bar is better than the one at that bar.
105. She is taller than him.
106. Spanish
Yo le *gané* tocando la melodía.
'I surpassed him playing the melody.' (Talmy 2000: 260)

(iv) Imitation

107. She danced in the imitation of him.
108. German

Ich	habe	ihm	die	Melodie	*nach*-gespielt.
1SG	have	him	the	melody	in.imitation.of-played

'I played the melody in imitation of him.' (Talmy 2000: 260)

109. Spanish
Yo lo *seguía* cuando tocamos la melodía.
'I followed him when we played the melody' (both he and I played).
(Talmy 2000: 260)
110. Spanish
Yo lo *seguía* tocando la melodía.
'I followed him [by] playing the melody' (only I played). (Talmy 2000: 260)

(v) Demonstration

111. She showed/demonstrated him how to dance.
112. German

Ich	habe	ihm	die	Melodie	*vor*-gespielt.
1SG	have	him	the	melody	in.demonstration.to-played

'I showed him how I/how to play the melody.'
(*lit.*, 'I played the melody in demonstration to him.') (Talmy 2000: 261)
113. Spanish
Yo le *mostré* como toco/tocar la melodía.
'I showed him how I/how to play the melody.' (Talmy 2000: 261)