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Eastern Cham Serial Verb Constructions in Construction Grammar

1. Introduction

Despite the terminology, serial verb constructions (SVC's) have never, to my knowledge, been given a formal treatment in Construction Grammar in print.¹ This paper will work toward such an account of SVC's in Eastern Cham. First, I will explore what it means to be a SVC in the literature. From there, I will present the Eastern Cham language and diagnostics for SVC's in the language. These will allow me to then describe various subtypes of SVC's. Moving on to Construction Grammar, I will introduce mechanisms and theories that will allow a Construction Grammar formalism of Eastern Cham SVC's, before giving these formalisms themselves.

2. Previous literature

There is a large and often nebulous literature on serial verb constructions, largely because of difficulties of defining them. Most agree that SVC's, broadly, are single predicates that contain multiple verbs, but not those that syntactically select each other. To illustrate, 'Let's go eat' is considered an SVC in English, but not anything along the lines of 'I want to eat', because of the subordinating marker 'to' and because 'want' selects 'eat' as a complement.

SVC's are often found, however, in isolating languages, where it becomes difficult, if not impossible to make such distinctions (Sebba 1987). In a fairly authoritative cross-linguistic survey, Aikhenvald (2006) suggests that SVC's exist on a continuum, while others have suggested that they are epiphenomenal. Aikhenvald (2006: 4) and others list the following as the core characteristics of SVC's: 1) they are a single predicate; 2) they are mono-clausal; 3) they have the prosody of one clause; 4) they share tense, aspect, mood, and polarity; 5) they (somehow) mark "one event"; and 6) they share at least one argument. There appears to be cross-linguistic variation on numerous fronts, for example, which arguments are shared, whether verbs must be contiguous, and whether the verbs become one phonological word.

The "one event" semantics has been a stumbling block for many studies of SVC's, particularly in the Generative tradition. Bisang (2009), for example, posits a "macro-event property" (MEP) in

¹The closest I know of is Cleary-Kemp (2012)'s paper for this very class.

order to encapsulate the phenomenon. Others like Baker & Stewart (2002) create abstract formalisms utilizing an expanded VP in the Ramchandian tradition (e.g. Ramchand 2008).

Austronesian languages have been a hotbed in recent years for research on SVC's. This research has largely focused on languages of the Oceanic region (e.g. Crowley 2002, Senft 2008, cf. Cleary-Kemp 2012 for many others). Crowley (2002) outlines a variety of types of argument sharing² seen in Oceanic languages. In some languages, the subjects of both verbs in SVC's must be identical ("same-subject"). Sometimes, the object of the first verb is identical to the subject of the second ("switch-function"). Others include an "ambient" function in which the second verb does not in fact share any arguments, but acts more like an adverbial. SVC's in Oceanic languages (Cleary-Kemp 2012, citing Ross 2002), among others, are also noted to exhibit valence effects. In some languages, SVC's act as valence-increasing constructions, effectively adding an argument to the first verb, while others have no such effect on valence.

It is difficult to summarize the literature on the subject. Important takeaways are that serial verbs need not be contiguous, but they must share arguments, they must be part of one clause, and they must mark "one event". SVC's, however, seem to be highly language-specific, so I will now present the Eastern Cham language before exploring its serial verbs.

3. Eastern Cham

3.1. Background

Eastern Cham is an Austronesian language in the Western Malayo-Polynesian subgroup spoken on Mainland Southeast Asia in southern and central Vietnam. It is endangered, spoken by under 100,000 people, with diminishing intergenerational transmission (Brunelle & Văn Hân forthcoming). Chamic languages are noted for extreme contact phenomena due to Mainland Southeast Asian languages (e.g. Thurgood 1999). For examples, Eastern Cham has undergone tonogenesis, and historical disyllables have become reduced largely to monosyllables.

Nearly all speakers of Eastern Cham are fluent in Vietnamese, the political and economic language of the land. Brunelle & Văn Hân (forthcoming) posit that a vast majority of younger speakers are in fact L1 speakers of Vietnamese. Historically, the language has been in contact with others, such as Khmer. Contact phenomena will be noted occasionally in this paper, though I make no historical claims herein.

²"Symmetricality" in Aikhenvald (2006)'s terminology.

Eastern Cham is a highly isolating language. As far as I can tell, there are zero productive bound morphemes, as in Vietnamese. Several inherited Austronesian morphemes are occasionally visible (e.g. *pa-* ‘causative’), but are frozen. Eastern Cham words are predominantly monosyllabic, occasionally with a reduced pre-syllable (cf. the notion of the sesquisyllable, Matisoff 1973). Frozen morphology and compounding may produce longer words. (1) below demonstrates a compound; (2) gives an example of a frozen morpheme along with a sesquisyllabic root, produced by some speakers as a monosyllable. Phonological processes include rightward tone spreading.

- (1) *ěhŋĩn* ‘cloud’³ *ěh* ‘excrement’; *ŋĩn* ‘wind’
- (2) *takǎlĩŋ* ‘roll’ *ta-* ‘< *INADVERTENT’; *kǎlĩŋ* ‘roll’ [some speakers: *lĩŋ*]

There is a paucity of Western syntactic research on Eastern Cham. Accounts of Eastern Cham syntax are almost entirely limited to brief and basic descriptions. Brunelle & Văn Hân (forthcoming) give a brief account of the colloquial register. Thurgood & Li (2003) describe the grammaticalization paths of an auxiliary verb *hu*. Baumgartner (1998) and Ueki (2011) give brief accounts of Western Cham syntax, a closely related language. The only theoretical paper I have been able to find is Blood (1978), who gives a Generative Semantic account of Cham discourse structure. By contrast, there is much more work on the syntax of related languages, such as Acehnese and Malay.

3.2. Methodology

The data for this paper come from my fieldwork conducted on Eastern Cham in 2014. I have thus far worked with four male native Eastern Cham speakers, three living in Seattle, Washington; and one in San Francisco, California. The data includes over sixty hours of targeted elicitation, narratives, and conversations. Only elicitation will be used for this paper, with the other data types reserved for future parsing and research. Serial verb and serial verb-like constructions are highly frequent in elicitation, so I feel confident in these judgments. Examples, however, will be taken from one speaker with whom I elicited data specifically for this paper.

3.3. Basic clause structure

Eastern Cham is an SVO language (3-4). In (3), SV word order is permitted, but not VS. In (4), SVO order is preferred, never allowing SOV. Topic and focus-fronting are allowed, but result in marked information structure.

³Eastern Cham written in IPA. Brèves mark short vowels, grave accents mark low/breathy tone.

- (3) {pàŋuòl} doěy {*}⁴
 pangolin run
 ‘The pangolin runs.’ [cjm_mst_20141001]
- (4) lĩmɔŋ piǎʔ {*} mĩʔ {pàŋuòl}
 lion catch pangolin
 ‘The lion caught the pangolin.’ [cjm_mst_20141001]

Tense is unmarked, with the apparent exception of a future marker *thi* (dialectal: *si*), possibly borrowed from Vietnamese future marker *sẽ* (Brunelle & Văn Hân forthcoming). There is a variety of aspect markers, which appear in either pre-verbal or sentence-final positions. Compare the pre-verbal aspect marker in (5) with the clause-final marker in (6). Note that the verb phrases are bracketed.

- (5) tǎlǎʔ tǎʔ [tũʔ ʔǎm]
 1sg.POL⁵ PROG cook vegetable
 ‘I am cooking vegetables.’ [cjm_mst_20140917]
- (6) hĩ [tũʔ ʔǎm] wĩʔ
 2sg cook vegetable ITER
 ‘You cook vegetables again.’ [cjm_mst_20141005]

Negation in Eastern Cham is marked with a clause-final particle *o*, which frequently, but not necessarily co-occurs with what I consider a focus marker *hu* (7) (“completive emphatic” in Brunelle & Văn Hân forthcoming).

- (7) kǎw hu huǎʔ lo o
 1sg FOC eat.ricemuch NEG
 ‘I didn’t eat a lot.’ [cjm_mst_20141012]

Other important features of Eastern Cham clauses include sentence-final question particles like the polar question marker *lay*. Due to space and time, however, I will not go further.

⁴Brackets to mark sets of possible positions in a sentence, and parentheses to mark optionality. Bracketed information following sentence glosses include date and speaker codes.

⁵Eastern Cham has an extensive pronominal reference system involving kinship terms and politeness, à la Vietnamese. “POL” here meaning ‘polite’.

3.4. Serial verb constructions

The only references to Eastern Cham serial verb constructions appear to be Thurgood (2005) and Brunelle & Văn Hăn (forthcoming). The latter give two typical examples (8-9) and list four criteria for Eastern Cham SVC's: "1) capture a single event, 2) share their subject, 3) are not syntactic arguments of one another and 4) have the intonation of a single phrase".

- (8) *kɔw mĩʔ kiʔ **naw** tɔʔ pǎʔ nǎn⁶*
 1sg take chair go sit at DEM
 'I take the chair and go sit over there.' [Brunelle & Văn Hăn forthcoming: (44)]

- (9) *cà klu mĩʔ kan **hniʔ** bǎŋ*
 boy name take fish cook eat
 'Klu catches the fish, cooks it and eats it' [Brunelle & Văn Hăn forthcoming: (45)]

The notions of 1) capturing a single event, 3) not being syntactic arguments of each other, and 4) have been mentioned above in the SVC literature and seem to hold true for my data as well. For this language, 3) essentially amounts to a stipulation, as there may be no morphosyntactic cue to distinguish SVC's from subordinate clauses like (10).

- (10) *hi tǎkri tǎniʔ lĩsay*
 2sg like cook rice
 'You like to cook rice.' [cjm_mst_20141012]

Based on the noted tendency of Oceanic serial verb constructions not to share subjects per se (Crowley 2002), however, I see no reason to stipulate 2) yet, at least until these diagnostics have been tested. The diagnostics used in this paper will be outlined in the section below.

The basic structure of Eastern Cham serial verb constructions depends on the construction at hand. Essentially, they involve at least two verbs with a fixed order contained in one predicate. I do not consider direct contiguity of the verbs to be necessary for several reasons. For one, this is not considered a necessary feature of SVC's cross-linguistically (cf. Aikhenvald 2006). Second, Eastern Cham exhibits variable object positioning in some SVC's (11). In this sentence, *ʔǎm* 'vegetable' can appear between any of the three verbs.

- (11) *tǎlǎʔ cǎʔ {ʔǎm} tũʔ { } bǎŋ { }*
 1sg chop vegetable cook eat
 'I cut the vegetables to cook and eat.' [cjm_mst_20141203]

⁶Throughout the paper, I will bold SVC's or potential SVC's for convenience.

I see no reason to consider *tũ? bǎŋ* ‘cook-eat’ to be a serial verb, except not when the object intervenes, as the three variants in (11) appear to be almost entirely identical.

Variable object ordering is not a feature of all serial verb constructions, however. In (12), the object may only appear after the second verb. This is surely the result of the fact that the object is not an argument of the first verb, the intransitive *may* ‘come’. On that note, another feature of Eastern Cham serial verb constructions is that the valences of each constituent verb need not be identical, and the valence of the construction as a whole is their sum toto (cf. valence-increasing SVC’s). The construction in (12), for instance, is a transitive construction composed of an intransitive and transitive verb, respectively.

- (12) *nu may {*} pàŋ {cǎm}*
 3sg come study Cham
 ‘He came to study Cham.’ [cjm_mst_20141203]

Eastern Cham serial verb constructions, thus, are characterized by multiple verbs within one predicate, with possible variable ordering of arguments, and possibly differing valences.

3.5. Diagnostics

In this section, I will outline and defend diagnostics for Eastern Cham serial verb constructions. These diagnostics are largely based on clausehood. Other diagnostics described include argument structure, semantics, and prosody. In some languages, it may be necessary to establish that serial verbs do not constitute one phonological word. Due to the isolating and monosyllabic character of Eastern Cham, I consider separate wordhood a foregone conclusion.⁷ I also gloss over establishing the category of verb, noting that aspect markers may only be used with verbs.

3.5.1. Pre-verbal aspect

First, I assert that pre-verbal aspect markers can diagnose a serial verb construction in Eastern Cham. As described above, some aspect markers like *tũ?* PROG may appear at the beginning of the verb phrase. Therefore, if these aspect markers can appear in between verbs, we can assume that they constitute two predicates. (13-14) establish this contrast. In (13), the progressive marker may only appear once, but in (14), it may intervene. I consider (13) a serial verb construction, but (14) clearly biclausal.

⁷Not to mention the possibility of intervening words.

- (13) *nu* {*təʔ*} *may* {*} *pàɿ* *căm*
 3sg PROG come study Cham
 ‘He is coming to study Cham.’ [cjm_mst_20141203]
- (14) *nu* *kləʔ* *pətaw* // (*pətaw*) *təʔ* *ətəʔ* *min*
 3sg stab king PROG alive EMPH
 ‘He stabbed the king, but (the king) is still alive.’ [cjm_mst_20140913]

Upon further investigation, (14) appears to be a case of ellipsis. The sentence is clearly intonated as two clauses (as marked by </>), and *pətaw* ‘king’ may be repeated as the subject of the second clause. As a second example, the second subject must be repeated in (15). While Eastern Cham ellipsis is far from understood at present, it is clear that sentences like (15) are distinguished from serial verb constructions in a variety of ways.

- (15) *nu* *təʔ* *bəŋ* *(*nu*) *dih*
 3sg PROG eat 3sg sleep
 ‘He is eating and sleeping.’

Throughout this paper, *təʔ* ‘PROG’ will be used as a canonical pre-verbal aspect marker (for others, see Brunelle & Văn Hân (forthcoming)). *Təʔ* will diagnose a serial verb construction if it may appear before the predicate without any other effects like a repeated subject (15), and it may not intervene between the verbs (13-14).

3.5.2. Clause-final aspect

As a parallel diagnostic, clause-final aspect markers may only appear once per clause. If such a marker were to intervene between verbs, we would assume two separate clauses. (15-16) exemplifies this contrast. Again, (15) is a serial verb construction, but (16) two separate clauses.

- (15) *nu* *may* {*} *pàɿ* *căm* {*wəʔ*}
 3sg come study Cham ITER
 ‘He came to study Cham again.’ [cjm_mst_20141203]
- (16) *kăw* *bəŋ* () *tì tũʔ* *kăw* *dih* (*wəʔ*)
 1sg eat when 1sg sleep ITER
 ‘I ate (again) when I slept (again).’ [cjm_mst_20141203]

In (16), a variety of factors collude to indicate biclausality. Again, the subject is repeated. Additionally, there is a conjunction, *tì tũʔ* ‘when’. Potentially, the second subject and conjunction may be elided, rendering the repetition of *wəʔ* ‘ITER’ the only most visible distinguishing factor.

For this paper, *wĩ?* ‘ITER’ will be used as a shorthand for clause-final aspect markers. There are other such aspect markers (cf. Brunelle & Văn Hãn forthcoming), along with sentence-final particles like question particles. Much like *tò?* ‘PROG’, *wĩ?* ‘ITER’ will diagnose serial verb constructions if it may only appear after the verbs and it may be used without other effects like repeated subjects.

3.5.3. Negation

Third, I will appeal to negation to establish clausality outside of aspect. As with aspect, there may only be one polarity per clause. A serial verb construction (17) would not allow the negative particle to intervene between the two verbs, while other constructions like (18) allow it.

- (17) *nu hu may {*} pày cãm {o}*
 3sg FOC come study Cham NEG
 ‘He didn’t come to study Cham.’ [cjm_mst_20141203]

- (18) *kăw hu dīh līpay (o) naw pǐết nam (o)*
 1sg FOC dream NEG go Vietnam
 ‘I (didn’t) dream that I (didn’t) go to Vietnam.’ [cjm_mst_20141001]

3.5.4. Other clause-level phenomena

A few other diagnostics have been alluded to above that indicate separate clauses. For one, arguments may not repeat in serial verb constructions. The serial verb construction in (12) simply becomes two clauses when the subject is repeated. Also evident in (19) is an intonational break, marked by *</>*. This data, however, is presently impressionistic, based on my own and the speakers’ intuitions. Thus, I hesitate to commit to intonation as the sole diagnostic.

- (19) *nu may // nu pày cãm*
 3sg come 3sg study Cham
 ‘He came, he studied Cham.’ [cjm_mst_20141203]

Additionally, any kind of subordinator or conjunction is taken to be a marker of two clauses, as seen in (16) above.

3.5.5. Argument sharing

It is clear in the serial verb construction literature that each constituent verb must share at least one argument, and this is surely the case for Eastern Cham. All of my attempts to construct a

To conclude, the diagnostics outlined in this section are given in Table 1 below. Aspect markers and negation must appear in their usual slots and not between the two verbs. Subjects, conjunctions, and pauses must also not intervene. The verbs must share at least one argument, and they must be parts of a single event (here marked abstractly with “Y”). However, the second verb may not be a syntactic argument of the first.

	Pre-V1	V1	_	V2	Post-V2
ASP_	<i>tòʔ</i>		<i>*tòʔ</i>		
_ASP			<i>*wĩʔ</i>		<i>wĩʔ</i>
NEG			<i>*o</i>		<i>o</i>
SUBJ	SUBJ		<i>*SUBJ</i>		
CONJ			<i>*CONJ</i>		
INTON			<i>*//</i>		
VALENCE		{... X...}		{... X...}	
ARG		<i>*{... V2...}</i>			
“EVENT”		{Y}		{Y}	

Table 1: Eastern Cham SVC diagnostics

3.6. Data

For this paper, I investigated a variety of possible serial verb constructions in Eastern Cham. Those that failed the tests are largely included in the previous section, such as “eat-sleep”. In this section, I assign provisional labels to types of serial verb constructions in order to identify what, if anything, unifies them.

3.6.1. Allative

First is the allative, named in accordance with similar serial verb constructions (e.g. Cleary-Kemp 2012 on Papitalai). The basic construction is composed of a directional verb like *may* ‘come’, followed by a goal or purpose with a shared subject. Since the first verb is intransitive, the construction in effect takes on the valence of the second verb. (24a-d) give a basic example along with the aspect and negation diagnostics. Note that in the right-hand first line, the

transitivity of the construction is given, and coreference of the arguments in the right-hand second line.

(24a)	<i>ju</i> 3sg	<i>may</i> come	<i>pày</i> study	<i>căm</i> Cham	INTRANS + TRANS → TRANS {S _i } {S _i , O}
	'He came to study Cham.' [cjm_mst_20141203]				
(24b)	{tɔʔ}	{*}			ASP
(24c)		{*}		{wɨʔ}	ASP
(24d)	<i>hu</i>	{*}		{o}	NEG

I separate this type of SVC out, because in a variety of languages this is one of the few or only SVC's. As well see, though, SVC's in Eastern Cham are hardly limited to directional verbs.

3.6.2. Directional

A second type of SVC is in effect the mirror image of the allative. The directional involves a verb inherently involving movement followed by one of a small set of directional verbs like *may* 'come' (25a-d). In this case, it is the second verb that is invisible to the valence of the whole construction; the first verb may well be transitive (26a-d). Note also that it is in fact the object *saw* 'dog' that is coreferenced in (26). The directional SVC differs from the allative first in terms of relative ordering, and second in selectivity. The allative, as far as I can tell, can have any second verb that satisfies the purpose or goal of the first. By contrast, the directional may only have a specifically movement-based first verb (e.g. **ju pày căm may* 'He studied Cham here.').

(25a)	<i>saw</i> dog	<i>dōey</i> run	<i>may</i> come	<i>păʔ ni</i> here	INTRANS+INTRANS→ INTRANS {S _i } {S _i }
	'The dog ran here.' [cjm_mst_20141203]				
(25b)	{tɔʔ}	{*}			ASP
(25c)		{*}		{wɨʔ}	ASP
(25d)	<i>hu</i>	{*}		{o}	NEG

(26a)	<i>khəl ju</i> 3pl	<i>thuy</i> guide	<i>saw</i> dog	<i>may...</i> come	TRANS + INTRANS → TRANS {S, O _i } {S _i }
	'They brought the dog here (to the park).' [cjm_mst_20141203]				
(26b)	{tɔʔ}	{*}			ASP
(26c)		{*}		{wɨʔ}	ASP
(26d)	<i>hu</i>	{*}		{o}	NEG

It is worth noting that a similar construction exists in Vietnamese, as in (27), with a directional clause-final *đi* 'go', and other languages of the area (cf. Cleary-Kemp 2012 on Papitalai).

- (27) *tôi đi xem xi-nê đi*
 1sg go watch movie go
 ‘I went to see a movie.’

VIETNAMESE

3.6.3. Resultative

A third type of SVC in Eastern Cham is the resultative, reminiscent of English sentences like “He killed the king dead”. The resultative is characterized by an at least transitive first verb followed by an intransitive verb that indicates the result of the first action (28a-d). As with (26) above, the object of the first verb is also the subject of the second verb.

- | | | | | | |
|-------|---|------------|--------------|--------------|--|
| (28a) | <i>ju</i> | <i>cuh</i> | <i>păṭaw</i> | <i>măṭay</i> | TRANS + INTRANS → TRANS |
| | 3sg | shoot | king | die | {S, O _i } {S _i } |
| | ‘He shot the king dead.’ [cjm_mst_20141203] | | | | |
| (28b) | {??təʔ} | {*} | | | ASP_ |
| (28c) | | {*} | | {??wĩʔ} | _ASP |
| (28d) | <i>hu</i> | {*} | | {o} | NEG |

It must be noted in (28b-c) that the aspect markers are strange in this context. However, I attribute this infelicity to the event of shooting, which is not usually done progressively, and the event of dying (or resultant states in general), which is not usually done iteratively. It is telling, though, that the speaker did not indicate ungrammaticality per se, and that all of the other SVC diagnostics pass.

3.6.4. Purposive

Fourth is the purposive, in which a verb is followed by a second verb indicating the purpose of the first action (29a-d). In (29), the two verbs share both subject and object. It is unclear if this is a necessary feature of the purposive; perhaps it is circularly so. In any case, all of my examples behave this way.

- | | | | | | |
|-------|--|------------|---------------|------------|---|
| (29a) | <i>lĩmɔŋ pĩǎʔ</i> | <i>kěʔ</i> | <i>păṇuòl</i> | <i>bəṇ</i> | TRANS + TRANS → TRANS |
| | lion | bite | pangolin | eat | {S _i , O _j } {S _i , O _j } |
| | ‘The lion bit the pangolin to eat.’ [cjm_mst_20141203] | | | | |
| (29b) | {təʔ} | {*} | | | ASP_ |
| (29c) | | {*} | | {wĩʔ} | _ASP |
| (29d) | <i>hu</i> | {*} | | {o} | NEG |

It is worth asking whether different SVC types may be combined. If (29) is given both a purpose and result, as in (30), the sentence is infelicitous, regardless of the relative ordering of *măṭay* ‘die’ and *băṇ* ‘eat’. The speaker explained that it would be akin to describing the same event

twice and that only one of the verbs is needed. One might hypothesize that this indicates that there is only one formal slot for result/purpose. This is countered, however, by sentences like (31) in which there are both, likely because the falling down and dying are both discrete parts of the event of shooting a bird.

- (30) *līmɔŋ piǎʔ kěʔ pǎŋuəl {mǎtay} bǎŋ { }*
 lion bite pangolin die eat
 '???'The lion bit the pangolin dead to eat.' [cjm_mst_20141203]

- (31) *ŭraŋ cuh cim lěʔ trun mǎtay*
 man shoot bird fall down die
 'The man shot the bird (fall-down) dead.' [cjm_mst_20141025]

The capability of Eastern Cham SVC's to combine, thus, appears dependent on the semantics of the event at hand.

3.6.5. Oblique Purposive

I will separate out two subtypes of purposive SVC for further discussion. One is the oblique purposive, in which an oblique element of the first verb is the subject of the second verb. First, (32) gives an example of the verb *prày* 'give', in which the indirect object is marked by *ka* 'to'. *Ka* has a variety of other uses, such as a benefactive (33) and goal (34), in all cases marking an oblique.

- (32) *tǎlǎʔ prày pǎʔʔʔ ka ǎnĩʔ neh*
 1sg give mango to child
 'I gave a mango to the kids.' [cjm_mst_20141203]

- (33) *hi priŋ cuh ju ka kǎw*
 2sg try shoot 3sg for 1sg
 'You tried to shoot him for me.' [cjm_mst_20140917]

- (34) *hi mĩʔ pǎtaw pamay ka kǎw*
 2sg catch king bring to 1sg
 'Catch the king and bring him to me.' [cjm_mst_20140924]

Unexpectedly, a second verb may be added to (32) that passes every serial verb construction test (35a-d). In (35), the indirect object of *prày* 'give' is the subject of the second verb, and the object is shared by both. Note that instead of *wĩʔ* 'ITER', *kàmkàm* 'usually' is used, apparently with little difference.

(35a)	<i>tǎlǎʔ</i> 1sg.POL	<i>pràʔ</i> give	<i>pǎʔʔʔ</i> mango	<i>ka</i> to	<i>ǎnĩʔ nɛh</i> child	<i>ǎʔ</i> eat	DITRANS+TR → TR {S,O _j ,Obl _i } {S _i ,O _j }
	'I gave a mango to the children to eat.' [cjm_mst_20141203]						
(35b)	{ <i>tǎʔ</i> }		{*}		{*}		ASP_
(35c)			{*}		{*}	{ <i>kàmkàm</i> }	_ASP
(35d)	<i>hu</i>		{*}		{*}	{ <i>o</i> }	NEG

From examples like these, it seems that the two verbs in Eastern Cham need to share any argument, including indirect objects. One might hypothesize that it is the linked objects in (35) that satisfy the argument sharing condition, but consider (36). Here, the second verb is intransitive, and the shared argument is again marked by *ka*. More research on these sentences would be needed to make a firm conclusion, but the sentences are certainly intriguing.

(36)	<i>kǎw</i> 1sg	<i>tùʔ yun</i> rock	<i>ka</i> to	<i>ǎnĩʔ nɛh</i> child	<i>dĩh</i> sleep
	'I rocked the child to sleep.' [cjm_mst_20140928]				

3.6.6. Complex Purposive

Finally, there is a certain class of serial verb construction that is composed of subparts of a complex event. For the moment, I label these purposives, but this may be misleading. In (37a-d), there are three verbs, all apparently within one predicate, which describes the act of cooking. All three share subjects and objects and follow logically in the order in which they occur.

(37a)	<i>tǎlǎʔ</i> 1sg	<i>cǎʔ</i> chop	<i>ʔǎm</i> vegetable	<i>tũʔ</i> cook	<i>ǎʔ</i> eat	TR + TR + TR → TR {S _i ,O _j } {S _i ,O _j } {S _i ,O _j }
	'I cut the vegetables to cook and eat.' [cjm_mst_20141203]					
(37b)	{ <i>tǎʔ</i> }		{*}	{*}		ASP_
(37c)			{*}	{*}	{ <i>wĩʔ</i> }	_ASP
(37d)	<i>hu</i>		{*}	{*}	{ <i>o</i> }	NEG

As noted above, the object may appear in a variety of slots, after any of the three verbs, but aspect markers and negation are restricted. In (37) *ǎʔ* 'eat' is likely the result of the process of cooking, but is *tũʔ* 'cook' the result of *cǎʔ* 'chop'? It seems most parsimonious, however, to posit that these are all subparts of a larger event structure of cooking.

3.6.7. Conclusion

In this section, I hope to have established a variety of types of Eastern Cham serial verb construction. From this data, then, what would have to be encoded by a formal representation of SVC's? Some aspects are built into the diagnostics for SVC's themselves: the constructions must

be one clause prosodically and syntactically; contain one aspectual slot (per aspect) and one polarity; at least one argument must be shared; and be part of one event.

In greater detail, argument sharing becomes more nuanced. In all of these examples, the subject of second (or subsequent) verbs must be coreferenced with some element of the first verb. This certainly includes subjects (Allative), objects (Resultative), both (Purposive), or perhaps some subclass of oblique (Oblique Purposive).

In terms of overall structure, SVC's are not limited to two verbs or, for example, one result. They appear to be combinable (Complex Purposive, (31)) depending on the macro-event. And in terms of valence, the constituent verbs combine their respective valences to produce that of the SVC as a whole. Since the subject of secondary verbs is always coreferential, this results in the addition of any objects or obliques from secondary verbs.

4. SVC's in Construction Grammar

Construction Grammar is an attractive theory for serial verb constructions to a large extent due to its compatibility with Frame Semantics. Generative grammarians have jumped through a variety of hoops to capture the "single-event" property (cf. Bisang 2009: "MEP"), but with Frame Semantics the problem almost seems a non-issue: serial verbs could be elements of the same frame.

In this section, I will outline necessary formalizations of constituent verbs and of the serial verb construction as a whole. From this, I will attempt to investigate implications of these formalizations to Eastern Cham more broadly.

4.1. X-Schemas

Before delving into Eastern Cham SVC's, however, I will first explore how Construction Grammar can capture the mysterious "single event" property. In short, it can accomplish this through X-schemas. Feldman (2006: 228) explains that high-level control of basic human motor activities has been shown to cognitively have a general basic schema. These schemas, known as "X-schemas", represent the system of neuron activity evoked to perform any sort of motor routine, like say, walking to the store (Figure (1) below).

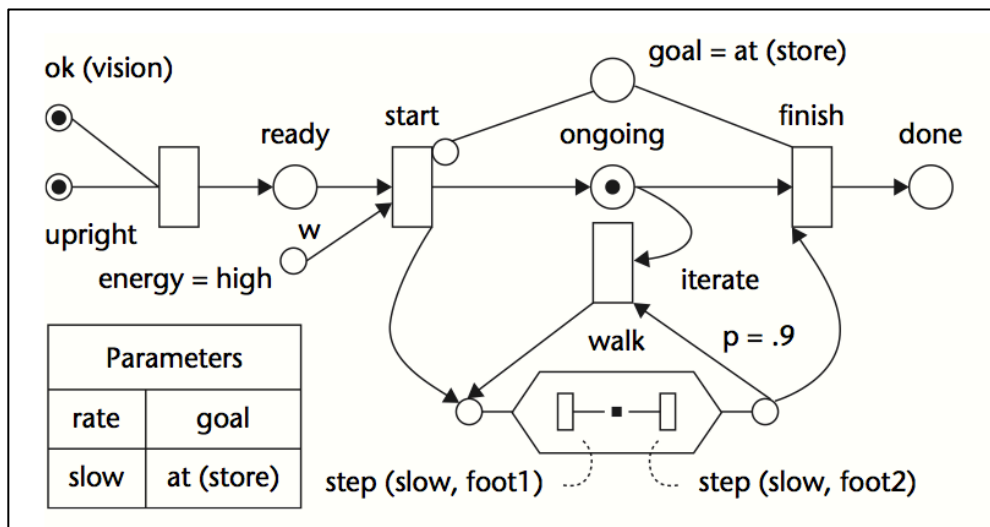


Figure 1: "Simulation of walking to the store" (Feldman 2006: 229)

These X-schemas, initially a cognitive model, were used to show how children could perform language acquisition. Subsequently, it was shown that X-schemas were in fact highly generalizable, with an abstract schema given in Figure (2).

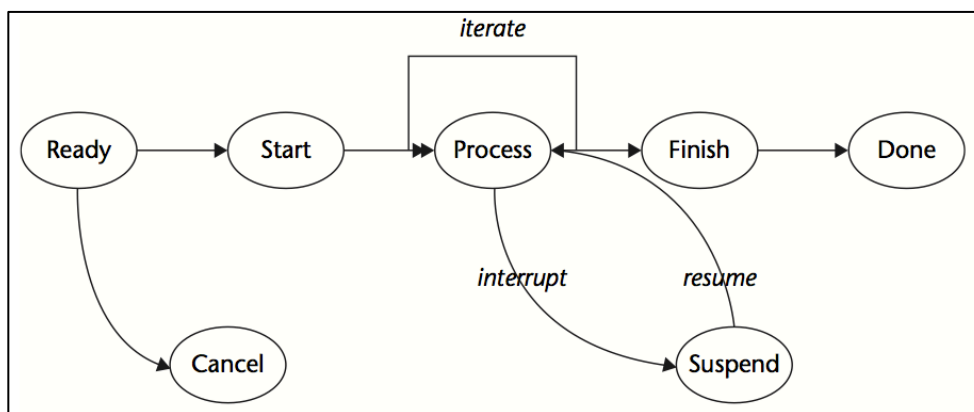


Figure 2: "The generalized controller X-schema" (Feldman 2006: 231)

Narayanan (1997) takes advantage of the generalized X-schema to move toward explaining linguistic aspect from a cognitive standpoint. In order to do so, Narayanan decomposes and manipulates certain pieces of the schema. The discrete parts of the generalized X-schema given are: 1) getting into a state of readiness; 2) the initial state; 3) the starting process; 4) the main process; 5) an option to stop; 6) an option to resume; 7) an option to iterate or continue main process; 8) a check to see if goal has been met; 9) the finishing process; 10) the final state (Feldman 2006: 230).

The generalized X-schema is intriguing due to its similarity with the types of SVC's both in Eastern Cham and cross-linguistically. The starting process is reminiscent of Allatives and, elsewhere, causatives. The main process may be complex (cf. Complex Purposives). The finishing process invokes Purposives, while the final state recalls Resultatives and Directionals.

Given these similarities, I posit that if a predicate were allowed to be lexically decomposed into multiple verbs, the order and content of these verbs may well map on to the generalized X-schema. This would link motor routines, and hence, frames to serial verbs, much like how Narayanan (1997) links X-schemas to aspect. To illustrate this, potentially the serial verb construction COME - STUDY (cf. (12)) is in fact a decomposition of a broader construction. STUDY is not a complement of COME; they are both selected by higher-level frame. If this is true of serial verb constructions, then one consequence would be that neither verb could be an argument of each other. Fortunately, this is precisely the case.

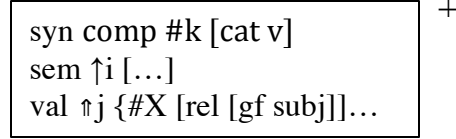
4.2. Constituent verbs

Based on the above conclusions about Eastern Cham serial verb constructions, a variety of features of verbs in the language must be restricted. First, it seems clear that there are two different kinds of verbs in SVC's. The first verb is free to have any manner of arguments, but every subsequent verb must have its subject coreferenced with an element of the first. For this reason, I will consider these first verbs to be heads and will label them " V_0 ". Subsequent verbs, however, may not be syntactic complements in order to distinguish SVC's from subordination. For now, I will label subsequent verbs " V_N " (or when instantiated: " $V_1, V_2 \dots$ ").

Both V_0 's and V_N 's are naturally syntactically verbs. They must have no potential for polarity or aspect marking. Since SVC's do not, as far as I can tell, involve semantic bleaching or grammaticalization (with the possible exception of Directionals), each verb must contribute a frame (captured below by, " $\uparrow 1$ " and " $\uparrow i$ "). Additionally, each verb's valence must be shared upward (captured by " $\uparrow 2$ " and " $\uparrow j$ " below). Finally, for V_N 's, as mentioned above, the subject must be coreferenced with an argument of V_0 . These are all summarized in Figures (3-4) below. Figure (3) gives a preliminary V_0 construction, and (4) a V_N .

syn head #3 [cat v] sem $\uparrow 1$ [...] val $\uparrow 2$ {... #X...}

Figure 3: V_0 subconstruction

Figure 4: V_N subconstruction

It is clear from examples like (31) that there is no limit to the number of V_N 's in a serial verb construction, hence the Kleene plus beside Figure 4.

4.2. SVC constructions

The matrix serial verb construction has many of the mirror properties. Exactly one slot must be available for aspect⁸ and polarity. It would again syntactically constitute a verb. Semantically, at least two frames would be shared, one from the V_0 and one from the V_N . However, unlike English Verb Phrase constructions, in which the head frame contains all of the elements of the phrase, we must posit a third frame ("A") in the SVC that instead contains both V_0 and V_N as frame elements. As described above with X-schemas, this process allows the distinction between SVC's and subordination. Lastly, the valence of the whole construction is the total of those of V_0 and V_N . Figures (3-4) are connected into a full SVC temple in Figure (6). Note the three separate frames, which allow V_N to not be an argument of V_0 .

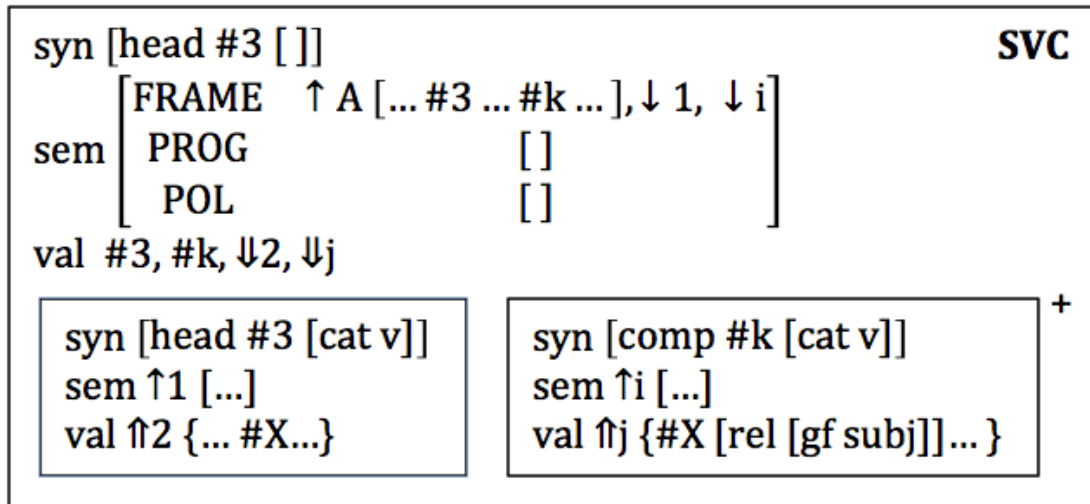


Figure 5: Eastern Cham SVC construction

This template, I purport, allows us to capture all the features of Eastern Cham serial verb constructions laid out in the previous section. Again, there is only one slot for aspect and

⁸Throughout, I will use PROG as a stand-in for one of the various aspects. Note that there may certainly be other aspects.

polarity. The verbs must share arguments in a particular way. Frames are combined in a way that distinguishes SVC's from other verb phrases. And valence is given a mechanism to combine.

4.3.1. Allative

Now, I will attempt to illustrate the SVC construction with a few examples from the data. First, the allative is given below in Figure 7 and reprinted as (24a).

- (24a) *nu may pày cãm*
 3sg come study Cham
 'He came to study Cham.' [cjm_mst_20141203]

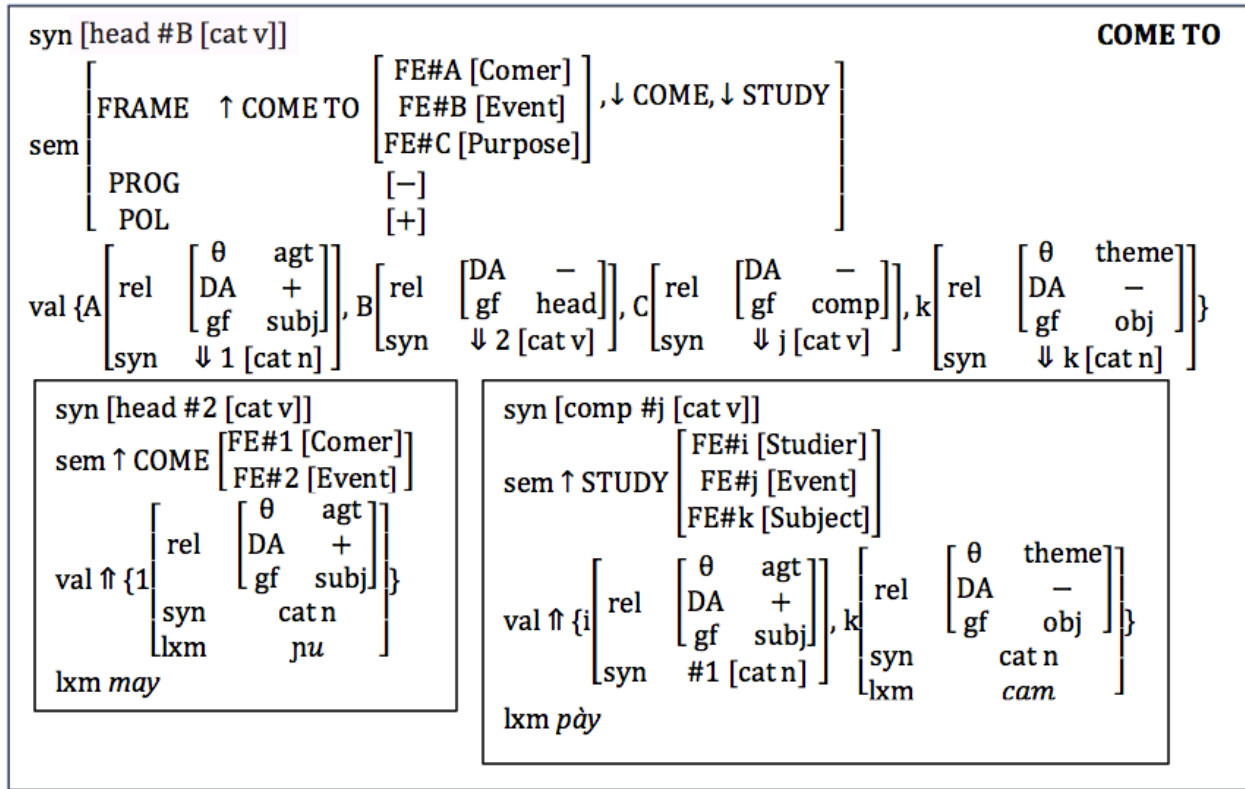


Figure 6: Allative SVC (24a)

In this construction, note the distinction between the frames COME TO and COME. The subject of COME (#1) and STUDY (#i) is coreferenced with the subject of COME TO (#A). Additionally, both V₀ and V₁ fall out as arguments of COME TO. The object of STUDY (#k) is sent up to the matrix construction, where it is otherwise unrelated to COME (TO). Note that throughout, the mechanism by which the subject is incorporated with the predicate is largely ignored.

4.3.2. Directional

Next is the Directional, (25a) and Figure (8). Here, a matrix frame of MOTION TO is created in order to restrict V_0 to a motion-related verb and V_1 to a directional verb. Again note the coreferencing of the subjects. For Directional SVC's such as (26a) above, it is simply the object of V_0 that would be coreferenced.

- (25a) *saw dōey may pǎ? ni*
 dog run come here
 'The dog ran here.' [cjm_mst_20141203]

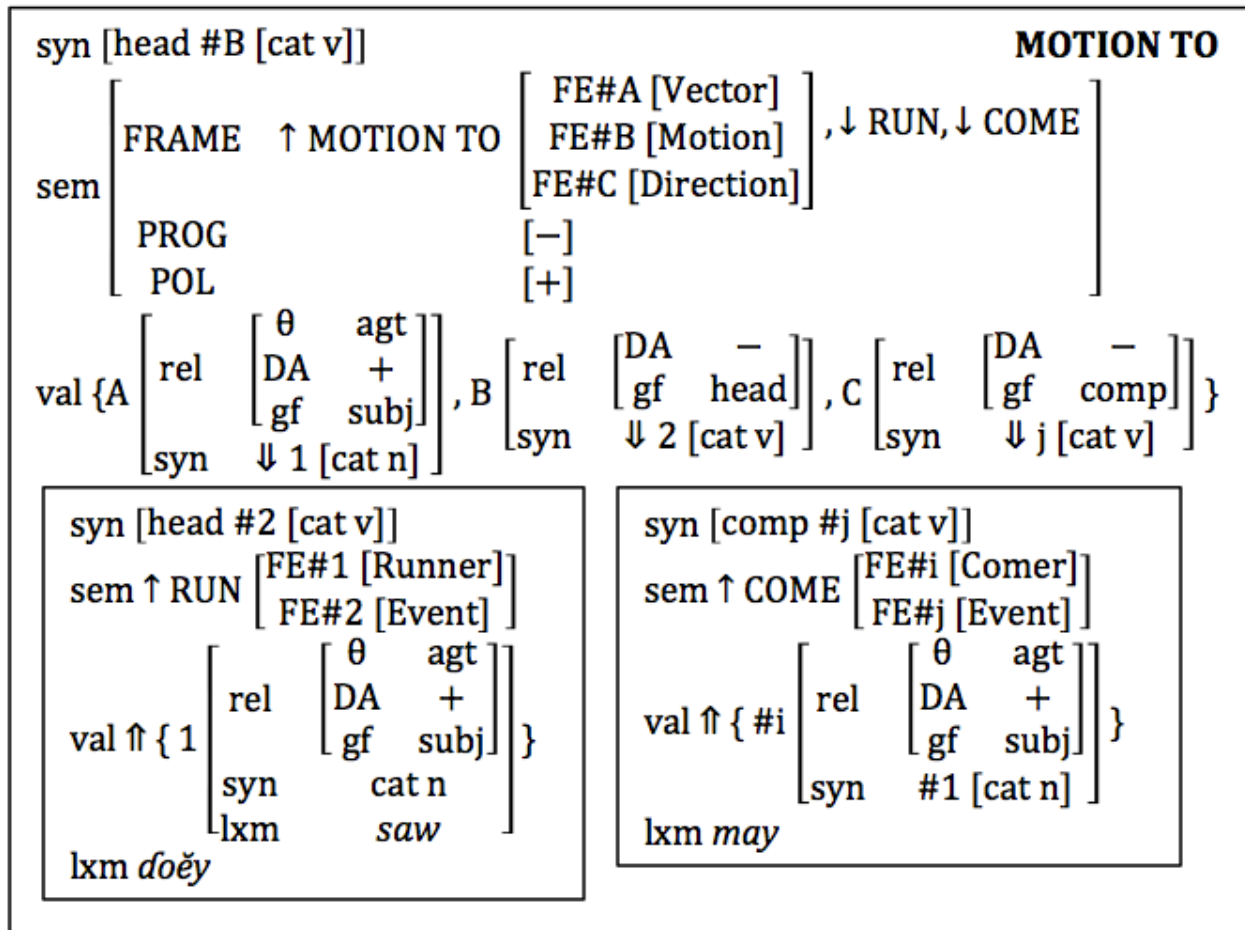


Figure 8: Directional SVC (24a)

4.3.3. Resultative

Third is the Resultative (28a), Figure (9). Here, I am uncertain what to label the matrix frame. Provisionally, I label it KILL as a nod to lexical decomposition literature of yore. Here, both the subject and object are frame elements of V_0 , with V_1 simply coreferencing its subject.

- (28a) *ju cuh pătaw mătay*
 3sg shoot king die
 ‘He shot the king dead.’ [cjm_mst_20141203]

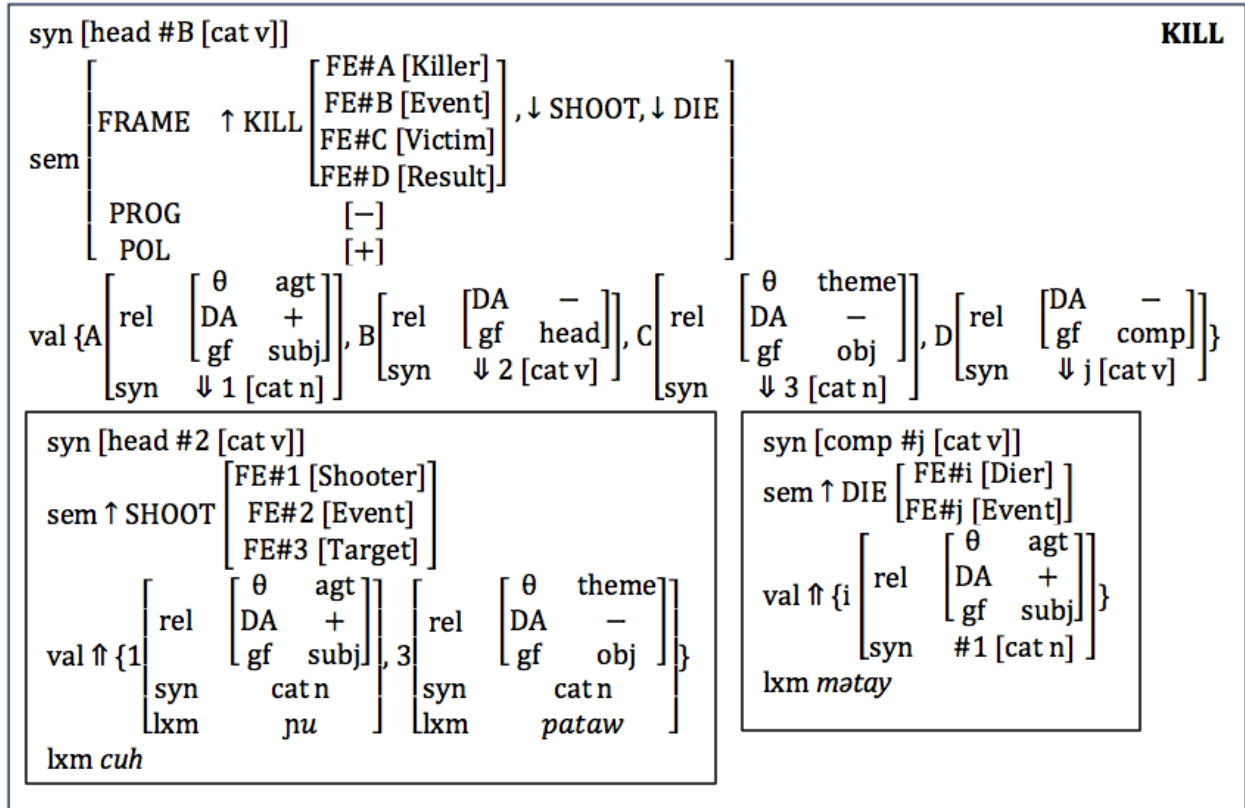


Figure 9: Resultative SVC (28a)

4.3.4. Purposive

The Purposive ((29a), Figure (10)) is similar to the Resultative in that the V_1 does not add any new arguments. However, here, both the subject and object of V_0 are coreferenced.

- (29a) *lĩmɔŋ piă? kě? pǎŋuòl bǎŋ*
 lion bite pangolin eat
 ‘The lion bit the pangolin to eat.’ [cjm_mst_20141203]

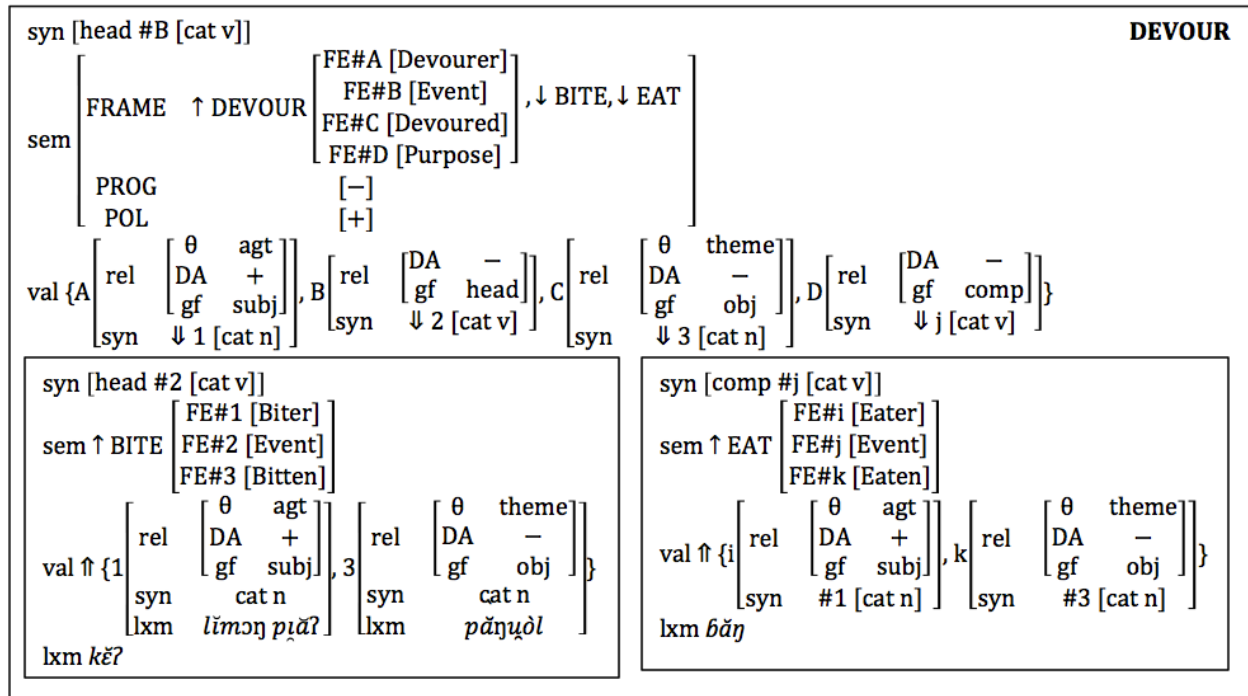


Figure 10: Purposive SVC (29a)

For the time being, I will ignore the Oblique Purposive, as it is well beyond my current understanding of Construction Grammar. However, it seems clear that the indirect object must be involved in the valence of the V_0 in some meaningful way.

4.3.5. Complex Purposive

Finally, I will look at a Complex Purposive ((37a), Figure (11)). Due to space constraints, it is difficult to fully render this sentence, and due to its complexity, there are many ways to represent it. Here, I left out the final verb from the matrix SVC, instead embedding it under COOK. In a more fully fleshed-out construction, this could in fact be represented by two nesting SVC's. As for the matrix SVC, I attempted to indicate that the event is decomposed into two actions. While the labels are very preliminary, this is the direction I would like to take. Alternately, COOK could simply be a purpose of CUT, in which case one could represent this sentence as two nesting Purposive constructions.

- (37a) *tǎlǎ? cǎǎ? ʔǎm tǔ? bǎŋ*
 1sg chop vegetable cook eat
 'I cut the vegetables to cook and eat.' [cjm_mst_20141203]

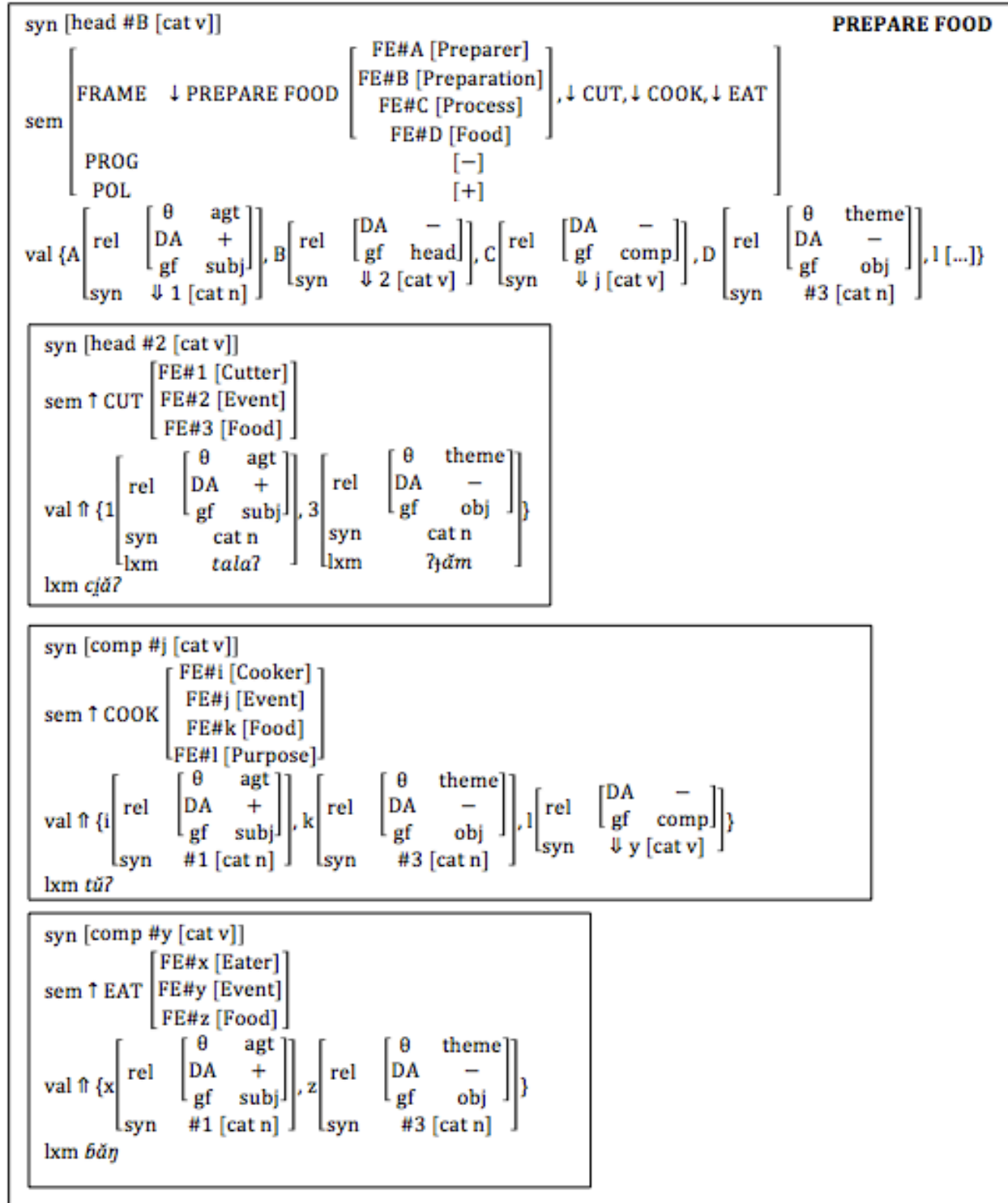


Figure 11: Complex Purposive SVC (37a)

4.4. Conclusion

Throughout this section, I have attempted to use the basic SVC construction template in order to account for the wide range of SVC's in Eastern Cham. During the course of this, it has become clear that the system of frames therein enables a formalization of SVC's without alluding to an abstract "single-event" property.

But what exactly is the serial verb construction in Eastern Cham? In languages where SVC's are limited (e.g. Papitalai, Cleary-Kemp 2012), it would seem most parsimonious to posit that there are a discrete number of such constructions, such as a Resultative construction. In languages with unbounded SVC's, perhaps the Verb Phrase construction itself always involves lexical decomposition. Eastern Cham lies somewhere in the middle. While there are numerous SVC types, it conspicuously lacks a causative, or any SVC where the main verb is not the first in the sequence.

For this reason, it seems that there is a privileged position in Eastern Cham SVC's that must be distinguished somehow: that of V_0 . Perhaps there is a macro-SVC construction that encodes the difference between V_0 and V_N (cf. Figure 5). Perhaps, there is a V_N construction, akin to a Transitive Object construction, that is evoked whenever there are more than verbs in a predicate. Or perhaps, there is a general constraint built into the Verb Phrase construction that the first verb must be its head.

This all will require further research, however. As will a continuing effort to diagnose what is and isn't a serial verb construction in Eastern Cham, and more effort to catalogue different subtypes of them. The result remains clear, though: Construction Grammar provides a unique lens with which to view SVC's and, at least for my present purposes, an adequate means of formalization.

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