

## MULTIPLE ROUTES TO CLAUSE UNION: THE DIACHRONY OF COMPLEX VERB PHRASES

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### 1. Introduction

This paper proceeds with two main premises in mind, both of which, for better or worse, I have always been inclined to take for granted:

- (i) The phenomenon of complex predicates is better viewed in the broader context of syntactic complexity; more specifically, of **syntactically-complex clauses** and **cognitively-complex events**.
- (ii) A synchronic typology, of whatever syntactic domain, can only make full sense from a **diachronic perspective**; that is, as a typology of the diachronic pathways that gave rise to the attested synchronic types within the domain.

In the course of trying to show that both my premises are eminently sensible, and that they are indeed applicable to the more-narrowly construed topic of complex predicates, I will first outline the two main diachronic sources of complex clauses--thus the two main pathways to clause union--verbphrase embedding ('complementation') and clause chaining. For each of the two, I will suggest, the syntactic properties of the resultant ('synchronic') complex clause are in large part predictable from its diachronic source.

Once the two main diachronic pathways to syntactic complexity have been established, I will turn to consider a number of well-known types of complex clauses that may or may not fit under the main two-way typology. To the extent possible, I will try to determine whether, and to what extent, the plethora of known types fits within the proposed two-way diachronic typology, and whether the latter needs to be expanded and/or enriched in order to accommodate those extra types.

Along the way it will become necessary to treat one typological parameter that often intersects with a predictive typology of complex clauses--**finiteness**. In this connection, I will first describe the extreme typological contrast between languages in which all non-main clauses are **non-finite** (or less finite), and languages that have only finite clauses. The latter, according to some, have no embedded clauses. Or perhaps put a better way, they have **less grammaticalized** subordinate clauses. While there are many examples of both extreme types, most languages tend to fall somewhere in the middle.

The term 'complex clause', much like 'complex event', begs for some explanation, however cursory. Following an earlier discussion (Givón 1991), I will suggest that a good point of departure could be to assume that:

(1) **Preliminary definition of complex clauses:**

- a. A single clause, whether simple or complex, must at the very least fall under a **single intonation contour**.
- b. A complex clause must, at the very least, contain **multiple lexical predicates**.

Both of the tentative definitions in (1) are to be taken as one-way ('if--', then--') conditional implications, which leaves the door open to at least two types of exceptions; respectively:

(2) **Systematic exceptions to the definitions in (1):**

- a. Syntactic units that fall under a single intonation contour but are not clauses; such as e.g. short **predicate-less interjections**. [FN 1]
- b. Multi-predicate clauses under a single intonation contour that are nevertheless not complex single clauses, since no clause-union is involved; such as e.g. **embedded relative clauses**.

One should note, lastly, that my sense of the term 'clause union' is in essence diachronic, so that the two main diachronic pathways that yield complex clauses are, from my perspective, the two main routes to clause union. [FN 2]

## 2. Some preliminaries

### 2.1. Grammaticalization, co-lexicalization and clause union

Clause union has been traditionally discussed almost exclusively within the context of morphological causativization, but is in fact a much broader phenomenon. Semantically first, a wide range of syntactic-semantic configurations can be the diachronic precursors to clause-union.

The semantic common denominator to all types of clause-union is either the **grammaticalization** or **co-lexicalization** of (at least) one predicate in the two precursor clauses to be merged. In cases where clause union arises from an embedded VP complement (Type A), if the main verb grammaticalizes or co-lexicalizes semantically, it also tends to grammaticalize or co-lexicalize syntactically, and thus to become an affix on the complement verb. [FN 3] In cases where complexity arises from clause chaining (Type B), full clause union tends to occur less frequently, even if cognitively-semantically the precursor configuration is the very same as in type (A) and the two events are cognitively merged into a complex single event.

Some of the more common semantic configurations that serve as precursors to clause-union are illustrated in (3) below. Their great semantic diversity also illustrates the fact that the very same syntactic type of complex clause may arise due to diverse functional motivations.

- (3) a. **Causativization:** (co-lexicalization)  
 She **let**-go of his hand
- b. **Tense-aspect-modal auxiliaries:** (grammaticalization)  
 He **will**-eat the apple  
 They **have**-eaten their supper
- c. **Evidentials:** (grammaticalization)  
 They **say** she's quitting  
 I **hear** she's quitting  
**Suppose** she quits?
- d. **Directionals:** (grammaticalization) [FN 4]  
 em tromwey sospan I-**go**  
 she threw.away pot PRED-**go**  
 'She threw the saucepan away'
- e. **Cognate object:** (grammaticalization)  
 She **made** a left turn
- f. **Ideophone:** (co-lexicalization)  
 It **went** kapow!
- g. **Resultative verb construction:** (co-lexicalization)  
 She **shot** him dead.
- h. **Co-verb constructions:** (grammaticalization , co-lexicalization) [FN 5]  
 liri-ma nga-ya-naggi munyababan  
 swim-ASP I-**go**-PAST other.side  
 'I swam to the other side'

The reason why clause union has always appeared so conspicuous in morphological causative constructions (3a) is first because morphological causatives involve full clause union, including co-lexicalization of the precursor verbs. And second, because the causative main verb in such constructions is transitive, and thus takes an object (the manipulee). When the complement verb is also transitive, competition ensues for the object GR in the merged clause, between the manipulee of the main verb and the patient of the complement. [FN 6] And thus, the topic of GR integration is broached.

## 2.2. Functional and structural dimensions of clause union

### 2.2.1. Event integration and clause union: The Complementation scale

Perhaps the best illustration of the functional and structural properties of clause union, and how the two run in parallel (isomorphism), is the complementation scale found in VP-embedding languages such as English (Givón 1980a; 2001 ch. 12). At the top of the scale one finds morphological causatives with maximal clause-union and co-lexicalization. As the bottom are the complements of cognition, perception and utterance verbs, falling under a separate intonation contours. The transition between the two extreme is gradual both semantically and syntactically.

(4) **The complementation scale:**

Semantic scale of verbs	syntax of COMP-clause
a. She <b>let-go</b> of the knife -----	CO-LEXICALIZED COMP
b. She <b>made</b> him <b>shave</b> c. She <b>let</b> him <b>go</b> home d. She <b>had</b> him <b>arrested</b> -----	BARE-STEM COMP
e. She <b>caused</b> him <b>to switch</b> jobs f. She <b>told</b> him <b>to leave</b> g. She <b>asked</b> him <b>to leave</b> h. She <b>allowed</b> him <b>to leave</b> I. She <b>wanted</b> him <b>to leave</b> j. She'd <b>like</b> him <b>to leave</b> -----	INFINITIVE COMP
k. She'd <b>like for</b> him <b>to leave</b> -----	FOR-TO COMP
l. She <b>suggested</b> that he <b>leave</b> m. She <b>wished</b> that he <b>would leave</b> n. She <b>agreed</b> that he <b>should leave</b> -----	SUBJUNCTIVE COMP
o. She <b>knew</b> that he <b>had left</b> p. She <b>said</b> that he <b>might leave</b> later -----	INDIR. QUOTE COMP.
q. She <b>said</b> : "He <b>will leave</b> later"	DIR. QUOTE COMP.

The semantic gradation of event integration in (4) is indeed fine, but may nonetheless be subsumed under three major features:

(5) **Main semantic features of even integration:**

- (I) **Referential integration**: The sharing of referents between the two events
- (ii) **Temporal integration**: Simultaneity or direct temporal adjacency of the two events
- (iii) **Spatial integration**: The sharing of the same location between the two events

Other widely-discussed features, such as successful (vs. intended) causation, intentional (vs. accidental) causation or direct (vs. indirect) causation, are relevant primarily because they imply, directly or indirectly, either co-temporality or co-spatiality of the two events (Givón 2001, ch. 12)

Syntactically, the seven syntactic forms of English complements in (4) also represent a fine gradation, which is made possible by the interaction of the following structural features:

(6) **Main syntactic devices that code clause union:**

- a. **Expression of the co-referent argument:** zero vs. presence
- b. **Grammatical relations:** And integrated single set vs. two distinct sets
- c. **Adjacency of the two verbs:** co-lexicalization vs. separation
- d. **Finite verb morphology:** presence vs. absence on the complement verb
- e. **Adjacency of the two clauses:** presence vs. absence of a complementizer
- f. **Intonation contours:** Joint vs. separate

### 2.2.2. Finiteness

Even a cursory look at the complementation scale (4) and the structural devices used to affect clause-union (6) would show a strong involvement of finiteness, provided one recognizes finiteness a feature of the whole clauses rather than just the verb. Thus, the most merged complement clause at the top of scale (4) have zero subjects (4a), no independent main-clause-like set of GRs (4b), co-lexicalized verbs (4c), and non-finite verb morphology (4d), all prominent features of clausal non-finiteness.

Finiteness--and especially its converse, non-finiteness--is best illustrated in VP-embedding, nominalizing languages, subordinate clauses are often fully or partially nominalized.

#### 2.2.2.1. Finiteness and nominalization

As a syntactic (rather than merely morphological) process, nominalization may be characterized as:

(7) **Nominalization as a syntactic process:**

Nominalization is the process via which a finite **verbal clause**--either in its entirety or only a subject-less **verb phrase**--is converted into a less-finite **noun phrase**.

A verbal clause is nominalized most commonly when it occupies a prototypical nominal position/function--subject, direct object, indirect object or nominal predicate--within another clause. The syntactic complexity of NPs arising through nominalization most commonly reflects the structure of their precursor verbal clause.

Within the nominalized NP, the erstwhile verb assumes the syntactic role of **head noun**, while other clausal constituents--subjects, objects, verbal complements or adverbs--assume the roles of various **modifiers**. Nominalization is thus best described as a **syntactic adjustment** from the finite verbal-clause prototype to the nominal (NP) prototype (Hopper and Thompson 1984; Givón 2001, ch. 2). The major components of such adjustment, at the full extreme, are:

(8) **Adjustment from the prototype finite verbal clause  
to the prototype noun phrase:**

- a. The verb becomes a *head noun*
- b. The verb acquires *nominal* morphology
- c. Loss of *tense-aspect-modal* marking
- d. Loss of *pronominal agreement* marking
- e. The subject and/or object assume *genitive* case-marking
- f. *Determiners* may be added.
- g. Adverbs are converted into *adjectives*

A simple example will illustrate the general pattern emerging out of (8), contrast the finite clause (9a) below with its nominalized version (9b):

(9) a. **Finite verbal clause:**

She **knew** mathematics extensively

b. **Non-finite nominalized clause:**

Her extensive **knowledge** of mathematics

It is of course hardly an accident that finiteness has been treated traditionally as a property of verbs, since many of its salient features (8a,b,c,d) indeed pertain to the verb. But the rest of the features (8e,f,g) pertain to other constituents of the clause. Finiteness is thus fundamentally an aggregate grammatical feature of clauses. Its converse, non-finiteness, is thus an aggregate grammatical feature of NPs derived—historically or transformationally, depending on one's theoretical perspective—from verbal clauses.[FN 8]

The same tradition also treats finiteness as a discrete, either-or feature. But since the finite prototype (or its converse) is patently an aggregate of many features, finiteness must be at least in principle a matter of degree. This has been already seen in the complementation scale in (4). Another illustration of this gradation may be seen in (10) below:

(10) **Scalarity of finiteness:**  
**least finite**

- =====
- a. Her good **knowledge** of math [helped a lot]
  - b. Her **knowing** math well [helped]
  - c. **For** her **to know** math so well [surely helped]
  - d. She wanted **to know** math well.
  - e. **Having known** math well since highschool, she...
  - f. **Knowing** math as well as she did, she...
  - g. He wished that she **would know** math better.
  - h. Had she studied harder, she **would have known** math better.
  - I. She knew math well.
- =====

**most finite**

### 2.2.2.2.. Nominalizing vs. finite languages

The broadest cross-language typological distinction in finiteness is the seeming chasm between extreme nominalizing and extreme finite languages. In the first type, all subordinate clauses are, at least historically, nominalized. Only main clauses display fully finite structure. In the second, no clause-type is nominalized, and all clause-types are thus fully finite. We will illustrate the two extreme types in order.

#### (A) Extreme nominalizing (embedding) languages

While most languages can nominalize clauses at least to some extent, some languages practice nominalization to the extreme, so that all their non-main clauses are nominalized to some degree, and are thus non-finite. Tibeto-Burman (Watters 1998), Turkic, Carib (Gildea 1998), Quechuan (Weber 1996), Gorokan languages of the Papuan Highlands (Thurman 1978) or No. Uto-Aztecans are conspicuous examples of this type. I will illustrate this extreme type with data from Ute (Uto-Aztecans). The three most conspicuous telltale signs of clause nominalization in Ute are:

- genitive case-marking on the subject
- nominal suffix on the verb
- object case-marking on the entire clause

Compare first the finite verbal clause (11a) with its various nominalized counterpart (Givón 1980b, 1993):[FN 9]

#### (11) a. Finite clause:

ta'wach 'u                      yoghovɰch-I pakha-qa-'u  
man/SUBJ DEF/SUBJ coyote-OBJ kill-PERF-he/him  
'The man killed the coyote'

#### b. Nominalized clause as a main-clausal argument:

ta'wach-I 'uway                      yoghovɰch-I pakha-qa-na-y  
man-GEN DET/GEN coyote-OBJ kill-PERF-NOM-OBJ  
ka-'áy-wa-t                      'ura-'ay  
NEG-good-NEG-NOM be-IMM  
'It was bad that the man killed the coyote'  
(Lit.: 'The man's killing (of) the coyote was bad')

c. **Complement of cognition verb:**

mamach 'u pucucugwa-pɛga  
 woman/SUBJ DEF/SUBJ know-REM  
 ta'wach-I 'uway yoghovɛch-I pakha-pɛga-na-y  
 man-GEN DET/GEN coyote-OBJ kill-REM-NOM-OBJ  
 'The woman knew that the man (had) killed the coyote'  
 (Lit.: 'The woman knew *the man's killing (of) the coyote*')

d. **Object REL-clause:**

yoghovɛch 'u [ta'wach-I 'uway pakha-pɛga-na]...  
 coyote/SUBJ DEF/SUBJ [man-GEN DET/GEN kill-REM-NOM]  
 'the coyote that the man killed...'  
 (Lit.: 'The coyote *of the man's killing...*')

e. **Subject REL-clause:**

ta'wach 'u [yoghovɛch-I pakha-qa-t]...  
 man/SUBJ DEF/SUBJ [coyote-OBJ kill-PERF-NOM]  
 'The man *who killed the coyote...*'  
 [Lit.: The *coyote-killer* man]

f. **Complement of modality verb:**

na'acich yoghovɛch-I pakha-vaa-ch 'ásti'i-pɛgay-'u  
 girl/SUBJ coyote-OBJ/GEN kill-IRR-NOM want-REM-she  
 'The girl wanted *to kill the coyote* '

g. **Complement of manipulation verb:**

mamach na'acich-I yoghovɛch-I pakha-vaa-ku máy-pɛga  
 woman/SUBJ girl-OBJ coyote-OBJ/GEN kill-IRR-NOM/DS tell-REM  
 'the woman told the girl *to kill the coyote* '

h. **'If'/'when'-ADV clause:**

ta'wach-I 'uwa-y kani-naagh yɛga-khw,...  
 man-GEN DEF-GEN house-in enter-SUB  
 'When the man entered/enters the house...'  
 (Lit.: '(upon) *the man's entering the house,...*')

(B) . **Extreme finite (non-embedding) languages**

At the other end of the typological chasm one finds languages in which all clause types are finite, including, in some languages, even lexical nominalizations. Iroquois (Mithun 1991), So. Arawak and Athabaskan languages are conspicuous examples of this type. But many serial-verb



languages are just as radically non-embedding (e.g. the Senufu branch of Niger-Congo; Carlson 1994). We will illustrate this type with data from Tolowa Athabaskan.

Consider first verb complements in Tolowa, which are all finite with, tense-aspect-modality and pronominal affixes matching the prototype main-clause pattern (Bommelyn 1997; Bommelyn and Givón 1998):

(12) a. **Main clause (IMPERF):**

nn-tʔ-sh-ʔi  
2s-TH-1s-observe  
'I observe you'

b. **Main clause (PERF):**

nn-tee-s-ii-ʔi-'  
2s-TH-PERF-1s-observe-PERF  
'I observed you'

c. **V-complement (implicative, IMPERF):**

nn-tʔ-sh-ʔi                      xa-sh-tʔ-sri  
2s-THM-1s-observe    INCEP-1s-L-do  
'I begin to observe you'  
(Lit. 'I begin-do I observe you')

d. **V-complement (implicative, PERF):**

nn-tee-s-ii-ʔi-'  
2s-TH-PERF-1s-observe-PERF    INCEP-PERF-1s-L-make/PERF  
'I began to observe you')  
(Lit.: 'I began-did I observed you')

e. **V-complement (non-implicative, IMPERF):**

nn-tʔ-sh-ʔi                      '-uu-sh-tʔ-te  
2s-TH-1s-observe    TH-DES-1s-L-want  
'I want to observe you'  
(Lit.: 'I want I observe you')

f. **V-complement (non-implicative, PERF-IMPERF):**

nn-tʔ-sh-ʔi                      'aa-w-ii-l-te  
2s-TH-1s-observe    TH-DES/PERF-1s-L-want  
'I wanted to observe you (but maybe didn't)'  
(Lit.: 'I wanted I observe you')

g. **V-complement (non-implicative, PERF-PERF):**

nn-tee-s-ii-{'-'                      'aa-w-ii-l-te  
 2s-TH-PERF-1s-observe-PERF    TH-DES/PERF-1s-L-want  
 'I wanted to observe you (and did)'  
 (Lit.: I wanted I observed you')

While some restrictions constrain the distribution of aspectual-modal combinations in (12), complement clauses display the very same finite structure of main clauses.

Relative clauses in Tolowa are just as finite, involving no subordinating morpheme but mere juxtaposition (Valenzuela 1996; L. Bommelyn, i.p.c.):

(13) a. **Main clause:**

tr'ąąxe    0-s-ii-ts'ęms  
 woman    3s-PERF-1s-kiss  
 'I kissed the woman'

b. **Main clause:**

tr'ąąxe    te-s-0-ch'a  
 woman    TH-PERF-3s-leave  
 'The woman left'

c. **SUBJ EL-clause:**

tr'ąąxe [0-s-ii-ts'ęms]    te-s-ch'a  
 woman    [3s-PERF-1s-kiss] TH-PERF-leave  
 'The woman *I kissed* left'  
 (Lit.: 'I kissed the woman she left')

d. **Main clause:**

Tr'ąąxe ch'ęsne yę-s-0-ts'ęms  
 woman    man    TR-PERF-3s-kiss  
 'The woman kissed the man'

e. **OBJ REL-clause:**

Ch'ęsne [Tr'ąąxe yę-s-0-ts'ęms]    te-s-ch'a  
 man    [woman TR-PERF-3s-kiss] TH-PERF-away  
 'The man *the woman kissed* left'  
 (Lit.: The man kissed the woman and left')

Adverbial clauses are just as finite; and often the adverbial subordinator itself is historically a finite serial-verbal construction (Hennesy 1996; L. Bommelyn i.p.c.):

- (14) daach'ʔstʈna-'ʔn' naa-s-ee-ya, ch'ʔʔ-[n]-t'a' nʔʔ-[n]-nʔ-sh-ch'a  
 store-to MOV-PERF-1s-go AWAY-REV-fly/PERF MOV-REV-PERF-1s-go.away  
 'After I went to the store, I came back (home)'  
 (Lit.: 'I went to the store, flying back I came bac')

The extreme finiteness of Tolowa syntax is most conspicuously underscored by its lexical nominalizations, which display full finite structure. Only in some agent nominalizations does one find an (optional) nominalizing suffix. And if the verb is transitive, the now-extinct old antipassive ('impersonal object') prefix is used. Thus (Givón 2000):

- (15) a. **ch'**-u-l-ch'ak-**ne**  
 AP-CON-L-pinch-**NOM**  
 'hawk' ('he pinches things')
- b. k'waʔn'-**ch'**-uu-le'  
 ON-AP-CON-stick  
 'mosquito' ('he sticks something on')

In object/patient nominalization, the passive ('impersonal subject') prefix is used:

- (16) a. **ʔʔ-d**-k'ʔsh  
 TH-**D**-pull  
 'bow' ('one pulls it')
- b. ye'-na-y-**d**-tr'ʔsh  
 under-MOV-TR-**D**-wear  
 'underwear' ('one wears it under')
- c. **ʔʔ-d**-l-xʔt  
 TH-**D**-L-gulp  
 'water' ('one gulps it')

And in oblique nominalizations of three-argument verbs, both the passive and antipassive prefixes can be used:

- (17) a. mʔl-**ch'**ʔ-**d**-l-ts'a's  
 WITH-AP-**D**-L-whip  
 'whip' ('one whips things with it')

- b. mǝ'-**ch'**ᵘ-ghᵘ-**d**-t-t'e'sr  
 IN-**AP**-PERF-**D**-L-write  
 'book' ('one wrote things in it')
- c. k'wᵘᵘᵘ-gee-na-'**d**-'a  
 ON-UP-MOV-**AP**-**D**-say  
 'altar' ('one says things (prayers) on it')

### 3. Two diachronic routes to clause-union

#### 3.1. Preamble

In this section we will examine the two main diachronic pathways to clause-union. The first one involves the embedding of a clause into the verb phrase as a **verb complement**, whereby both main and complement clause now fall under a single intonation contour. Here the complement-clause event is treated analogically as a **nominal object** of the main clause. This 'syntactic metaphor' is not just a convenient simile, but is supported by the fact that in all languages the verbs that take embedded complements--'see', 'hear', 'feel'; 'want', 'finish', 'start'; 'make', 'tell', 'know', 'remember', 'say'--also, overwhelmingly, take nominal objects. On occasion one may even find the hybrid transitional constructions where both complements appear in the same clause (Givón 1991b; see section 6 below).

The second pathway involves the condensation of a **clause chain** into a single serial-verb clause. Here the resultant complex event is treated analogically as a **clausal conjunction**.

What I hope to show here, among other things, is that the first type leads to a much more complete clause union, including co-lexicalization and the integration of GRs into a coherent single set. In the second type, the resultant serial-verb clauses often displays only partial clause-union.

Four typological caveats need to be noted at this point:

- (i) Under some syntactic conditions--most conspicuously when the two (or more) verbs are adjacent and morphologically unmarked--complete clause-union may be achieved in serial-verb clauses.
- (ii) The distinction between a nominalizing vs. finite language does not always coincide 100% with the distinction between embedding vs. serializing languages, respectively. There is indeed a substantial correlation between the two features, but it is not absolute.
- (iii) A language may be predominantly embedding or serializing, but still have some construction of the opposite type.
- (iv) Finally, the syntactic differences between the two major types of clause union need not imply parallel semantic differences in event integration (as suggested by Pawley 1976/1980, 1987). Rather, these synchronic differences are mere syntactic consequences of the different diachronic pathways.

### 3.2. Clause-union in equi-subject (SS) configurations

#### 3.2.1. Verb adjacency and co-lexicalization

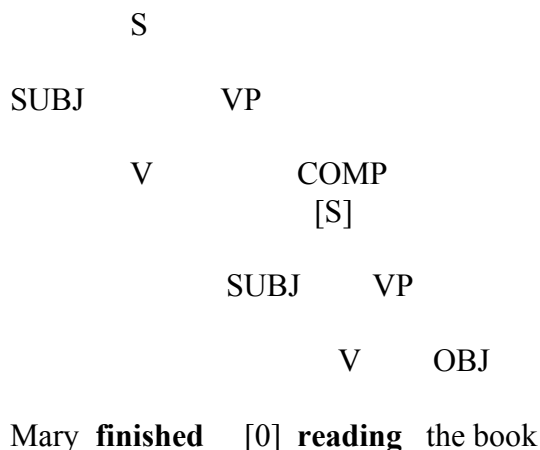
##### (A) VP-embedding languages

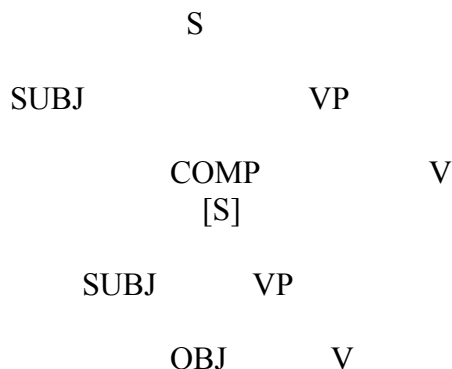
As noted earlier above, clause union in equi-subject (SS) configurations is the main diachronic venue of grammaticalized T-A-M markers (see (3b)), directionals (3d,h), cognate object constructions (3e), ideophone clauses (3f), resultative clauses (3g) and co-verb constructions (3h). In VP-embedding languages, complements in such a configuration are treated analogically as nominal objects of the transitive main verb. The main verb in such configuration retains the finite inflections, such as tense-aspect-modality and pronominal affixes. The complement verb is either partially or fully nominalized, exhibiting less-finite or non-finite morphology. When full clause union occurs, the grammaticalized main verb contributes all its finite marking to the co-lexicalized compound verb.

In both VO and OV languages, SS-complementation places the complement verb directly adjacent to the main verb, thus facilitating co-lexicalization and full clause-union. Thus compare the VO complementation pattern of English (18a) with the OV pattern of Ute (18b):

#### (18) Equi-subject (SS) clause-union in embedding languages:

##### a. English (VO)



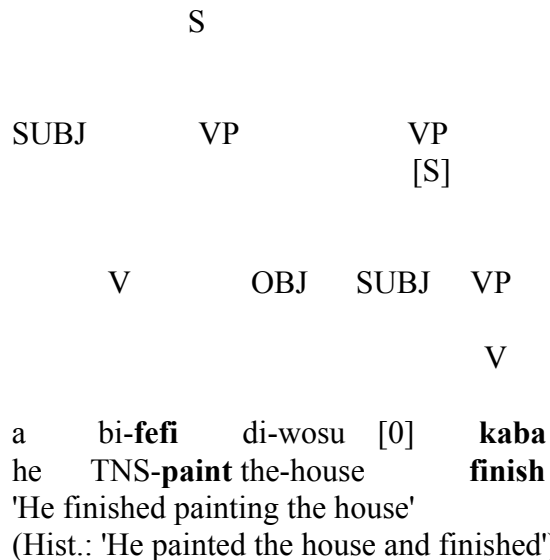
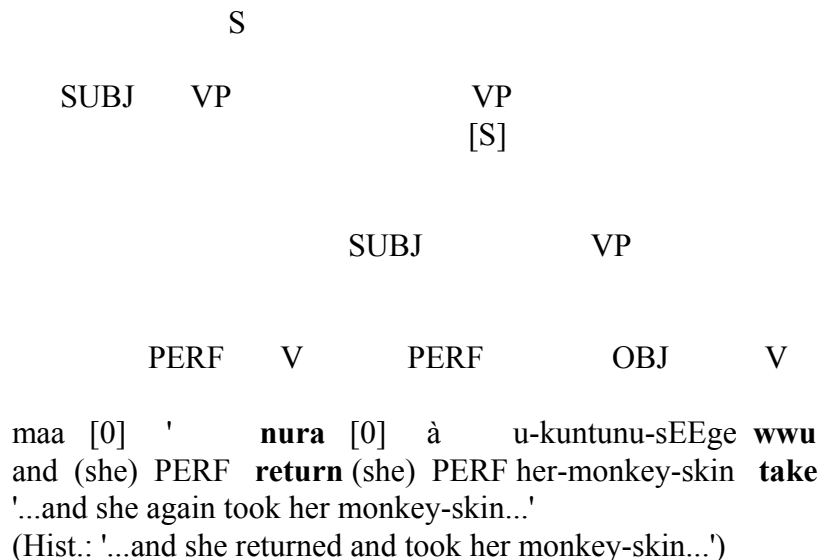
b. **Ute (OV)** (Givón 1980b):

Mary [0] po'oqwatæ **puni'ni-maku-kwa**  
 Mary book/OBJ **look.at-finish-PERF**  
 'Mary finished reading the book'

When the main verb ('finish') grammaticalizes as a perfect(I've) aspect, it becomes --at least initially--a finite auxiliary that remains, morpho-syntactically, the main verb of the complex two-verb clause. This is the case in English (18a). Eventually, if that auxiliary grammaticalizes fully, it becomes a prefix on the complement verb in a VO language, or a suffix in an OV language. With cliticization, the erstwhile auxiliary now brings along all its finite morphology to the complex main verb, as is the case in the Ute example (18b).

**(B) Serial-verb languages**

In serial-verb languages, two major factors conspire against complete clause-union. First, the precursor chained structure quite often prevents verb adjacency, scattering object nominals between verbs. One or more of the verbs in the clause may grammaticalize or co-lexicalize semantically, but it is not adjacent to another verb. As an illustration of this, compare the SS-complementation of the embedding languages in (18a,b) above with the serial-verb languages Saramaccan (VO) and Supyire (OV) in (19a,b) below:

(19) **Equi-subject (SS) clause-union in serial-verb languages:**a. **Saramaccan (VO)** (Byrne 1987):b. **Supyire (OV)** (Carlson 1994):

When 'finish' in (19a) and 'return' in (19b) grammaticalize as aspect markers, they often have no adjacent main verb to cliticize to.

### 3.2.2. Finiteness gradients and grammaticalization

A second factor that conspires to subvert full clause union in that of lack of clear finiteness gradients among the verbs in the serial clause. As noted above, the syntactic configuration that gives rise to clause-union in VP-embedding languages is structured by analogy with the V-OBJ configuration of the simple clause. In such constructions, the main verb retains all finite verbal features, while the complement verb is nominalized, non-finite or less-finite. When clause-union occurs in this syntactic configuration, the grammaticalized main verb--now co-lexicalized with the complement verb--contributes all its finite inflections to the new complex lexical verb. As an illustration of this, consider the Spanish auxiliaries, as in:

- (20) a. **se-lo-est-amos** explicando  
**DAT/3s-ACC/3sm-be-1p** explain/PART  
 'We are explaining it to him/her'
- b. **se-la-h-an** dado  
**DAT/3s-ACC/3sf-have-3p** give/PART  
 'They have given it to her/him'

In serial-verb languages, quite often the verbs in the precursor chain are of equal finiteness. When such a chain condenses into a single serial clause, the verbs in it likewise do not diverge in finiteness. What is more, even in languages where finite verbal morphology had consolidated on a single verb in the precursor chain--and thus on single verb in the resulting serial clause--that most-finite verb could just easily be either the one that is de-semanticized and grammaticalized, or the one that retains its initial lexical-semantic function. As an example consider Miskitu (OV), where the grammaticalized verb may be the finite chain-final/clause-final one, as in 'go' in (21a), or the non-finite chain-medial/clause-medial one, as in 'join' in (21b) (Hale 1991):

- (21) a. Baha usus-ka pali-i wa-**n**  
 that buzzard-CNS fly-INF go-**PAST/3**  
 'That buzzard flew **away**'  
 (Hist.: 'The buzzard flying, it went')
- b. Yang nani ulta kum maki-i bangwh-**I** s-na  
 1 PL house one build-INF join-**INF** be-1  
 'We are building a house **together**'  
 (Hist.: 'We building a house, joining, we are')



In Akan (Benue-Kwa; Niger-Congo), the verbs in the precursor chain or the condensed serial clause may be of equal finiteness, as in (22a). Or the grammaticalized verb may be non-finite (22b). Thus (Osam 1997):

- (22) a. Kofi soa-a            adaka-no ko-**o**            skuul  
           Kofi carry-PAST box-the go-**PAST** school  
           'Kofi carried the box **to** school'
- b. Kofi **de**    abaa-no    hwe-e            abofra-no  
           Kofi **take** stick-the whip-PAST child-the  
           'Kofi whipped the child **with** the stick'

The conflation of both factors--verb dispersal and lack of consolidated single locus of finite morphology--renders clause-union in -serial-verb languages much more problematic, as compared to embedding languages.

### 3.3. Clause-union in switch-subject (DS) configurations

#### (A) VP-embedding languages

Switch-subject (DS) clause union involves a family of broadly causative or resultative constructions, where the subject/agent of the complement verb is co-referent with the object/manipulee of the main verb. These structures are broadly patterned on DS-complementation of manipulation verbs such as 'make', 'cause', 'force' or 'let'. In VP-embedding languages, finite marking again gravitates to the main verb, leaving the complement verb nominalized, non-finite or less-finite. In an OV language, the main causative verb in DS complementation of this type always winds up adjacent to the complement verb. This makes co-lexicalization and full clause-union only a matter of time--provided the main verb is high enough on the complementation scale, as is the case with the causative construction in Ute (Givón 1980b):

- (23) S
- SUBJ VP
- OBJ COMP CAUS
- [S]
- SUBJ VP
- OBJ V
- mamach ta'wachi [0] tækuavi **cíira-ti**-kyay-'u  
 woman/SUBJ man/OBJ meat/OBJ **fry-CAUS-ANT-3sAN**  
 'The woman made the man fry the meat'

The syntactic structure in (23) is probably too abstract or 'historical', since full clause-union and co-lexicalization leaves us a complex bi-transitive verb with two objects--one the causee, the other the patient of 'fry'. A more realistic synchronic structure is thus:

- (24) S
- SUBJ VP
- OBJ OBJ V
- mamach ta'wach-i tækuavi **cíira-ti**-kyay-'u  
 woman/SUBJ man-OBJ meat/OBJ **fry-CAUS-ANT-3sAN**  
 'The woman made the man fry the meat'

In a VO languages such as English, it appears first that there is no automatic verb adjacency in DS-complementation, since the object of the main verb intervenes between the two verbs:

(25) S

SUBJ VP

V OBJ COMP  
[S]

SUBJ VP

V OBJ

Mary **made** John [0] **cook** the-meat

Over time, however, a VO languages can affect predicate raising and co-lexicalization in such a construction, as in Spanish:[FN 9]

(26) María se-la-**hizo** **comer** la manzana a Juan  
 Mary him-it-**make/PRET/3s** **eat/INF** the apple DAT John  
 'Mary made John eat the apple'

### (B) Serial-verb languages

Here again, serial-verb languages come short of full clause-union. Because of the dispersal of verbs among objects, such languages often fail to achieve full co-lexicalization (6c). Their objects often cluster with their respective verbs as distinct VPs, so that several objects in the serial clause may bear the same GR--each to its own verb (6b) (Osam 1997). And finite morphology often fails to concentrate in a single verb (6d).

The only structural device serializing languages use consistently to indicate clause integration is the most universal and iconic one--intonation; so that the multi-verb serial clause falls under a unified intonation contour, with neither pause nor a subordinator (6f).

Thus, consider the serial resultative (DS) constructions in:

(27) a. **Akan** (VO; Osam 1997):

Esi yi-**i** tam-no fi-**i** pon-no-don  
 Esi take-**PAST** cloth-the leave-**PAST** table-the-on  
 'Esi took the cloth off the table'  
 (Hist.: 'Esi took the cloth and **it** left the table')

b. **Miskitu** (OV; Hale 1991):

Yang truk-kum atk-**ri** wa-**n**  
 I truck-a sell-**DS/1** go-**PAST/3**  
 'I sold the truck away'  
 (Hist.: 'I sold the truck and **it** went away')

c. **Tok Pisin** (VO; Givón 1991):

...em layt nau paya **i**-kamap...  
 she light now fire **PRED**-come.up  
 '...She lights the fire...'  
 (Hist.: 'She lights the fire and **it** comes up')

d. **Tok Pisin** (VO; Givón 1991):

...em tromwey sospan **i**-go...  
 she threw.away saucepan **PRED**-go  
 'She threw the saucepan away'  
 (Hist.: 'She threw the saucepan and **it** went away')

e. **Kalam** (OV; Givón 1991):

...mon d-angiy-**ek** yin-**ip**...  
 wood take-light-**PAST/SEQ/DS/3s** burn-**PERF/3s**  
 '...She lights the wood...'  
 (Hist.: 'She takes and lights the wood and **it** burns')

In all these examples, the object of the first verb is semantically the subject of the second. Often the old switch-reference morphology of the precursor chain is left intact in the serial clause (27b,e) above. But, by all available syntactic tests for GRs, the semantic 'subject' of the second clause is a grammatical **object** in the serial clause.

The same also applies to bona-fide causative constructions in serial-verb languages, as in:

(28) a. **Supyire** (Carlson 1994):

mii à u **karima** à ngukuu **lyi**  
 I PERF him **force** PERF chicken **eat**  
 'I forced him to eat the chicken'  
 (Hist.: 'I forced him and he ate the chicken')

b. **Ijo** (Williamson 1965):

woni u mie-**ni** indi die-**mi**  
 we him make-**ASP** fish share-**ASP**  
 'We made him share the fish'  
 (Hist.: 'We made him and **he** shared the fish')

c. **Ijo** (Williamson 1965):

ari u mie mu-**mi**  
 I him make go-**ASP**  
 'I chased him away'  
 (Hist.: 'I chased him and **he** went')

#### 4. The transfer of finite morphology from chains to serial clauses

The morpho-syntactic properties of the serial clauses are often imported wholesale from its precursor clause chain. If one catches the condensation early enough in the process, the only syntactic difference between chain and serial clause is their intonational packaging--separate clausal contours vs. a single-clause contour, respectively.

In Akan clause chains, in most tense-aspects all verbs are equally finite and carry the same tense-aspect marker. This feature is transferred intact to the condensed serial clause:

(29) a. **Clause-chain:**

Araba to-**o**, dwow, nyen-n, kyew-**e**  
 Araba buy-**PAST** yam fry-**PAST** sell-**PAST**  
 'Araba bought yam, fried it and sold it'

B. **Serial-V clause:**

Kofi yi-**i** tam-no fi-**i** pon-no-do  
 Kofi take-**PAST** cloth-the leave-**PAST** table-the-on  
 'Kofi took the cloth off the table'  
 (Hist.: Kofi took the cloth, and it left the table')

If the clause-chaining system has chain-medial switch-reference morphology, the entire system may be transferred from the chain to the serial clause. Thus in Miskitu, the participial/infinitive suffix serves as a chain-medial SS marker, and the finite past suffix as a chain-medial DS marker, as in (Hale 1991):

(30) a. **Participle suffix as chain-medial SS marker:**

Yang ulta-ra dim-**i** kauhw-ri  
 I house-in enter-**INF/SS** fall-PAST/1  
 'I entered the house and fell'

b. **Participle suffix as clause-medial SS maker:**

Baha usus-ka pali-**i** w-an  
 That vulture-CS fly-**INF/SS** go-PAST/3  
 'The vulture flew away'

c. **Past suffix as chain-medial DS marker:**

Witin sula-kum kaik-**an** plap-an  
 he deer-one see-**PAST/3/DS** run-PAST/3  
 'He saw the deer and it ran'

d. **Past suffix as clause-medial DS marker:**

Witin sula yab-**an**                      plap-an  
 he     deer make-**PAST/3/DS** run-PAST/3  
 'He made the deer run'

Substantial re-analysis of the verbal morphology, between clause-chains and serial clauses, can of course occur and is indeed predictable given enough time-gap from the onset of clause-union. Thus for example, in Kalam (Papua-New Guinea) an extensive chain-medial verb morphology signals cataphoric SS vs. DS and simultaneous vs. sequential distinctions, as well as various tense-aspect-modal categories (see Pawley 1966, 1976/1980, 1987). In most serial clauses, most of the clause-medial verbs are stripped of all such morphology. Thus (Givón 1991):

(31) a. **Chain-medial DS-SS morphology:**

...kikaruk am-nak-**nin**,                      nuk kimb-**iy**, mon kamb-ak yupiri-sap...  
 Chicken go-IPAST/s3-**SIM/DS** she leave-**SS** wood heap-the carry-PERS/3s  
 '...the chicken having escaped, she leaves and carries a heap of wood...'

## b.

...mon tip-pang kom moch g-**ip**...  
 wood chop-break roll crush do-**PERF/3s**  
 '...he cuts-chops-rolls-crushes the wood...'

Only in few complex serial clauses in Kalam has the SS/DS morphology been integrated into the structure of the complex clause, as in (Givón 1991)::

(32) a. **SS complements of modality verbs:**

...nying man-**ning** gi-sap...  
 water fill-**IRR/SS** do-PRES/3s  
 '...she intends to fill it with water...'  
 (Hist.: 'She intends and fills it with water')

b. **DS complements of causative verbs:**

'...mon d-angiy-**ek**                                      yin-imb...  
 Wood take-light- **RPAST/3s/SEQ/DS** burn-PERF/3s...  
 '...she lights the wood...'  
 (Hist.: 'She takes-lights the wood and it burns')

5. **Other known types of complex predicates**

Having established the broad context for the diachronic rise of complex clauses, and thus also for a big chunk of the diachronic rise of complex-hierarchical syntactic structures, [FN 10] we are now in the position to survey some of the better-known types of 'complex predicates'.

### 5.1. Clearly serial

We have already surveyed this type extensively above. What we will note briefly here is the recruitment of serial verbs for the coding of **argument structure**; that is, **case-marking**. This pattern can be seen in many Kwa (Benue-Congo, Niger-Congo) languages, as in (Givón 1975):

- (33) a. iywi **awa** utsi iku (patient; Yatye)  
 boy **took** door shut  
 'the boy shut the door'
- b. mo **fi** ade ge naka (instrument; Yoruba)  
 I **took** machete cut wood  
 'I cut the wood with the machete'
- c. o **fi** ogbon ge igi (manner; Yoruba)  
 he **took** cleverness cut tree  
 'he cleverly cut the tree'
- d. mo so **fun** o (dative; Yoruba)  
 I say **give** you  
 'I said to you'
- e. nam utom emi **ni** mi (benefactive; Efik)  
 do work this **give** me  
 'Do this work for me!'
- f. o gbara **gaa** ahya (allative; Igbo)  
 he ran **go** market  
 'He ran to the market'

This use of serial verbs is extremely wide-spread, and the semantics of the small group of verbs that partake in this function is highly universal and indeed striking: 'take' (PAT, INSTR, MANN), 'give' (DAT, BEN), 'go' (ALL) and 'come' (ABL). These are, of course, members of a slightly larger set of **'the usual suspects'** that are repeatedly implicated in various types of grammaticalization. Thus for example, the set 'take/have', 'be/stay/sit', 'finish', 'start', 'want', 'go' and 'come' is most prominent in the grammaticalization of tense-aspect-modality.

For the purpose of the discussion here, it is important to remember that the morpho-syntax of case-marking serial verbs owes its structure largely to its diachronic precursor, the clause-chain. This is particularly striking in terms of the incomplete grammaticalization of such verbs, which often retain older formal verbal properties in spite of their new grammaticalized function (Osam 1997).

This is particularly striking when one compares these case-marking serial verb with the very same functional development in an embedding/nominalizing language, where grammaticalization of the erstwhile verbs is much more complete. For example, Ute derives all locative case-markers from historically-still-traceable precursor verbs. But these erstwhile verbs cliticize as noun suffixes, are in most cases phonologically reduced, and carry no discernible residue of verbal properties. Thus (Givón 1996):

(34) **De-verbal Ute post-positions:**

post-position	source verb
-va/-pa 'at'	-paa 'pass (through)' (morphologically defective; old)
-kwa 'to'	-kwa 'go to' (morphologically defective; old)
-chux 'to' (an. obj.)	-chugwa 'meet (an. obj.)'
-tux 'to' (inan. obj)	-tugwa 'go to'
-mana 'from'	-mana 'leave'
-caw 'Toward'	-cawi 'come to'
-naagh 'in'	-naagha 'enter'
-tarux 'on (top)'	-tarugwa 'climb'
-pa'agh 'on (top)'	-pa'agha 'ascend'
-təvwa 'down'	-təvwa 'descend'
-ruk 'under'	-rukwa 'descend'
-yaakwi 'down into'	-yaakwi 'descend into'
-paw 'down'	-pawi 'descend'

## 5.2. Clearly embedded

In this section I will review three well-known multi-predicate constructions, suggesting that in each case their structural properties point to a reasonably clear VP-embedding diachronic source.

### 5.2.1. Cognate object constructions

Cognate object constructions, as they are known in English, are a type of multi-predicate clause. In such constructions, a member of a relatively small group of highly de-semanticized **'light' verbs** carries the finite verbal morphology. Such a main verb may be followed by a nominalized verb, an adjective, an adverb, or even an ideophonic exclamation. The group of 'light' verbs that partake in this construction is small and contained a predictable selection of **'the usual suspects'**. In contrast, the nominalized **'heavy' verbs** that follow contain much of the semantic weight of the construction, and are much more numerous. As a brief illustration, consider:



- (35) a. **Give:** give speech/talk/lecture/demonstration/performance; give a hint, give it a thought, give a kiss, give a signal, give a break, give chase, give a try, give it a shot  
 b. **Put:** put an end, put some thought into, put one's mind to, put some effort into, put a question to, put to a vote, put to flight/sleep/work/good use, put in a good word  
 c. **Make:** make a decision/effort/attempt/try/decision/error/ suggestion/mistake/promise/pass; made a turn/ circle/top/start; make do without, make haste, make believe, make the grade, make good time, make eyes at, make a joke, make sense  
 d. **Pay:** pay attention, pay heed, pay ones respect, pay a visit  
 e. **Throw:** throw a fit/party/question/suggestion/curve  
 f. **Take:** take an oath/break/leap/plunge/turn/look/leak/crap/ risk; take heart, take stock of, take time to, take care of, take sick, take effect, take a stand  
 g. **Have:** have a feast/ball/party/cry/laugh/doubt/idea/pity; have a problem, have a second thought have lunch, have a meeting  
 h. **Get:** get busy/mad/sad/happy/wild/corny/old/young (etc.); get going, get on in years, get along with, get to the point  
 i. **Do:** do justice to, do...out of, do good, do injury, do a disservice, do a service, do a favor, do a show, do a song, do without  
 j. **Go:** go nuts/mad/hungry, go well with, go too far, go fifty-fifty on the deal, go dutch, go to a lot of trouble, go against the grain, go back on one's word, go off like a rocket, go kapow!, go bang!, go  
 k. **Come:** come clean/loose/true; come to an understanding, come into blows, come to a halt, come along, come to think/believe/understand/know/realize  
 l. **Stand/stay:** stand accused/guilty/tall/corrected; stand to gain/loose, stand trial, stand to reason, stand close scrutiny; stay put/healthy/alive/active/alert/in touch  
 m. **Turn/become:** turn yellow/green/white/red/blue/hostile etc.  
 n. **Utterance verbs:** utter a cry/curse, say a prayer/blessing, cry uncle, sing the praise of

### 5.2.2. Ideophone constructions

An extreme case of the 'cognate-verb' construction may be found in So. Bantu languages, where hundreds of multi-predicate clauses may be built by combining a single 'light' verb--'say'/'do'-with so-called **ideophones** that carry a large variety of meaning, many manner adverbial. Many of these ideophones are etymologically related to extant verb stems. Others are perhaps onomatopoeic, and many are of undetermined origin. The 'light' verb *say/do* is the only finite verb in the ideophonic construction, and the ideophones themselves carry no finite verbal morphology. As a cursory illustration from Tswana, consider(Cole 1955):

- (36) a. dithupa dine ts-arobega ts-a-**re** kgothu kgothu  
 stick those they-broke they-PAST-**say** ID ID  
 'the sticks broke going "snap" "snap"'
- b. (na) a-ntse a-**re** na na na  
 (he) he-walking he-**say** ID ID ID  
 '(he) walking very softly'
- c. pula e-ne entse e-**re** gwaa  
 rain it-fall on.ground it-**say** ID  
 'the rain fell heavily'
- d. ba-bo-tsaya ba-bo-**re** goro fafa-tse  
 they-it-pour.out they-it-**say** ID on-ground  
 'they poured it down on the ground'
- e. logadima lono lo-gaketse lo-**re** lai lai  
 lightning that it-fierce it-**say** ID ID  
 'the lightning was fierce, flashing repeatedly'
- f. mme rraagwe a-mo-tshwaara a-mo-**re** thusu thusu thusu kamoretlwa  
 father his he-him-caught he-him-say ID ID ID Stick  
 'his father caught him and hit him swish swish swish with a stick'
- g. yo-le a-didimala fela a-**re** tuu  
 she-be she-quiet complete she-**say** ID  
 'she said nothing, keeping very quiet'

### 5.2.3. Co-verb constructions

In light of what was said about the last two constructions, let us consider the classical co-verb construction. In Wagiman (Australia), a small group of light verbs, 45 in all, can head complex multi-predicate clauses. These verbs take the full range of finite verbal morphology, and may also stand by themselves and code states or events without any added predicates. They form a closed lexical class, and include all '**the usual suspects**' found in the serial clauses of Benue-Kwa or the cognate-verb constructions of English (italicized in (37) below). Thus (Wilson 1999):

- (37) hit, eat, *stand*, *come*, cut, *take*, *put*, *get*, *turn/become*,  
 burn, step on, *be*, *become*, hear, throw, spear, *cry*, *go*, bite,  
 cook, dream, *cause*, name/beget, *leave/go*, lose, *make*, tell  
 lies, *have/keep*, follow, sew, love oneself, fuck, chase, see,  
 give, fear, look for, *bring*, tell off, sing, *stay*

The bulk of events/states in Wagiman are coded by combining one or more non-finite 'co-verbs' with at least one 'light' verb. Semantically, a co-verbs may code an intransitive state ('be sick'), an intransitive event ('swell'), an intransitive motion ('run'), a communicative act ('talk'), a bodily function ('yawn'), a transitive event of impact ('kick') or possession ('hold'), a bi-transitive transfer event ('pour'), an environmental phenomenon ('thunder'), or a manner adverbial ('quickly'). The lexical class 'co-verb' is, as one would expect, large and wide open. In terms of finite marking, co-verbs can take one semantically-bleached 'aspectual' suffix and a number of derivational suffixes. For some illustrative examples of these constructions, consider (Wilson 1999):

- (38) a. liri-ma    nga-**ya**-naggi    munyababan  
          swim-ASP I-**go**-PAST    other.side  
          'I swam to the other side'
- b. bewh-ma    nga-**bu**-ni    boran  
          cross-ASP I-**hit**-PAST    river  
          'I crossed the river'
- c. guk-ga    nga-**ge**-na    gahan warri-buga?  
          sleep-ASP I-**put**-PAST    that    child-PL  
          'did you put the children to sleep?'
- d. ngarrmen    lem            **du**-ng  
          hollow.log    be/PRFV    **3s/cut**-PAST/PFV  
          'it entered the hollow log'
- e. gabarn-na    wek-ga            ga-**ra**-n  
          quickly-ASP    swallow-ASP    3s-**throw**-PAST/PFV  
          'he swallowed it quickly'

The suggestion that the semantically-heavy 'co-verbs' arose as embedded complements is strengthened by their pre-light-verb position, given the incipient--or at least reconstructable--OV order found in Australian language.

### 5.3. Complex multi-stem the verbal word

We come now to the more difficult cases, those of multiple stems that co-lexicalize to form a single verbal word. Some of these constructions may be too old to allow reconstruction of the pathway that gave them rise. But in some cases the pathway may still be transparent.

#### 5.3.1. Pre-verbal incorporation of post-positions in Rama

In some languages, the incorporation of adpositions into the verb is a diachronically recent and still ongoing process, so that the governing mechanism can be still observed. One such case has been seen in Rama (Chibchan), as described by Craig and Hale (1987) and Craig (1991). In this language, post-positional phrases that code various indirect objects may either follow or precede the verb. When they precede it, the object noun may be zeroed out, in context of either anaphoricity or, more commonly, non-referentiality or non-topicality (antipassive).**[FN 11]** The remaining post-position, sitting adjacent to the verb, then cliticizes as a verbal prefix. Thus consider:

- (39) a. ngang an-tangi Juan-**ya**  
           bed they-gave John-**DAT**  
           'they gave the beds to John'
- b. ngang Juan-**ya** an-tangi  
           bed John-**DAT** they-gave  
           'they gave John a bed'
- c. Rama **ya**-an-tangi  
           Rama **DAT**-they-gave  
           'they gave (it/something) to some Rama person'
- d. ngang **ya**-an-tangi  
           bed **DAT**-they-gave  
           'they gave him a bed'

Many of the post-positions involved turn out to have a verbal etymology, so that ultimately their incorporation may be viewed as one type of creating a multi-predicate construction. Rama is presently a VP-embedding, mostly-OV language. But related Chibchan and Misumalpan languages show a considerable level of serial-verb constructions (Hale 1991; Young and Givón 1990). Given the strong finiteness gradient between the main verb and the incorporated ex-verbal stem, the source of the incorporated post-positions may have been pre-verbal clausal complements. But this conclusion is not absolute certain, and the construction may have arisen from clause-chaining.

### 5.3.2. Pre-verbal incorporated preposition in Romance and Germanic

Pre-verbal incorporated adpositions can be found all over Germanic and Romance, where prepositions have been incorporated as verb prefixes much like in Rama. This occurred, presumably, under the same typological (SOV word-order) and functional (zeroed indirect-objects, most likely non-referential/antipassive) conditions as in Rama. By way of illustration, consider the Latin-derived abstract prepositional verbs in English, all in one way or another metaphoric extension of concrete, often spatial expressions:

#### (40) Prepositional prefixes in Latin-derived verbs (English):

suggested old concrete meaning					
'close'	'hold'	'build'	'call'	'press'	
in-clude	main-tain	con-struct	ex-claim	ex-press	
ex-clude	ob-tain	de-struct	de-claim	im-press	
pre-clude	de-tain	in-struct	re-claim	de-press	
con-clude	re-tain	ob-struct	pro-claim	re-press	
se-clude	per-tain	Re-struct(ure)	ac-claim	com-press	
oc-clude	con-tain		pro-claim	op-press	
	at-tain		dis-claim	sup-press	
	enter-tain		de-claim		
	abs-tain				
'carry'	'bend'	'pull'	'breathe'	'form'	'throw'
com-port	ex-tend	ex-tract	in-spire	re-form	e(x)-ject
ex-port	in-tend	de-tract	ex-spire	in-form	in-ject
im-port	con-tend	re-tract	re-spire	de-form	ob-ject
de-port	dis-tend	con-tract	con-spire	con-form	re-ject
re-port	at-tend	at-tract	a(d)-spire		de-ject
		sub-tract	per-spire		pro-ject
					tra-ject(ory)

Since the original process in Latin is old, no firm verbal etymology for the preposition may be available, although many possible connection between prepositions and old verb stem can be suggested. Still, given that old Latin was an strongly embedding and nominalizing OV language, the pre-verbal position of the incorporated prepositions suggest that this construction may have arisen initially through the VP-embedding pattern.

One may as well note that the same process of incorporation still goes on in English, but in conformance with the current VO syntax, prepositions are incorporated post-verbally, yielding the so-called verb-particle constructions, as in:

(41) **Post-verbal incorporated prepositions in English**

- a. The window broke
- b. The meeting broke **up** (early)
- c. Her car broke **down** (on the freeway)
- d. Her skin broke **out** (in a rash)
- e. He turned (and left)
- f. (So finally) he turns **up** (in Las Vegas)
- g. They turned **in** (for the night)
- h. It turned **out** (that she was right)
- i. She worked (hard)
- k. It worked **out** (just fine)
- l. They worked **out** (in the gym)
- m. He worked **up** a sweat
- n. They broke the furniture
- o. She broke **up** their engagement
- p. They broke him **in** (gradually)
- q. He broke it **down** (for them into small pieces)
- r. He turned the key
- s. He turned the key **over** (to her)
- t. They turned her **down** (for the job)
- u. She turned **in** her report (and went home)
- v. They shut the door
- w. She shut him **up**
- x. They shut the plant **down**
- y. We shut them **out** completely (ten to nothing!)
- z. He shut the water **off**.

These 'stranded' prepositions in English, while semantically part of the verb, have not yet fully incorporated into the verb morpho-syntactically. For one thing, they still retain their lexical stress. For another, in many contexts they are not adjacent to the verb, so that the order variation V-OBJ-PREP vs. V-PREP-OBJ is functionally significant (Chen 1986). The syntactic pattern of this incorporation probably follows established Germanic patterns (pre-verbal in the old OV Germanic dialects), and thus does not imply a direct connection to the VP-embedding pathway.

### 5.3.3. Incorporated objects, instruments, adverbs and verbs in No. Uto Aztecan

Object nouns, instruments and manner adverbs can incorporate into verbs. Over time, such a process may yield complex multi-stem verbal words that are on occasion also discontinuous, stranding non-lexical element between other parts of the compounded verbal word. As a quick illustration of how incorporation may over time yield complex 'bi-partite' verbs, consider No. Paiute, (Thornes 1996; Delancey 19991, 1999b):

- (42) a. ka-tʰ-pongosa      **ma**-tabui-na      (*ma*- 'hand')  
 ACC-POSS-arrow **hand**-create-ASP  
 '(they) hand-made their arrows'
- b. tʰ-tama-ma      o-**gʰ**-pada-na      (*gʰ*- 'bite')  
 POSS-teeth-INST 3-**bite**-bend-ASP  
 '(they) bend it by biting with their teeth'
- c. i-kaazi    **to**-noyoi      (*to*- 'fist')  
 my-car **fist**-move  
 '(you) push my car'
- d. dʰ-**gu**-hani      (*gu*- 'fire')  
 my/ASP-**fire**-prepare  
 '(s/he) cooks for me'
- e. **ta**-hani      (*ta*- 'foot')  
**foot**-prepare  
 'herd (sheep/cattle)'
- f. **ku-pi**-suki      (*ku*- 'fire', *pi*- 'back')  
**fire-back**-warm  
 'warm one's back at the fire'
- g. **pa-ko-ma**-ma'i      (*pa*- 'water', *ko*- 'face', *ma*- 'hand')  
**water-face-hand**-wash  
 'wash one's face'
- h. **tʰa**-noyoi      (*tʰa*- 'grasp')  
**grasp**-move  
 'pull'

- i. i-giki-kuba **wi**-ni-u (wi- 'long')  
 my-foot-on **long**-step-ASP  
 '(s/he) stepped on my foot'
- j. kosso-kimaba a-**tsi**-kwini-ki (tsi- 'sharp')  
 fire-beside ??-**sharp**-stand/pl-ASP  
 'stick (the sticks) along the fire'

While many of the affixes involved are too old to determine their etymology, it is most likely that they have been derived through the incorporation--of nouns, adjectives or verbs--into formerly-simple verbs. In Ute, a related Numic language, the same pattern of pre-verbal incorporation is synchronically productive as, among other things, an antipassive device for non-referring objects or instrumentals, a semantic pattern reminiscent of Rama and Latin/English, above. Thus (Givón 1980b):

(43) **Object-incorporation antipassive in Ute:**

a. **Active-transitive:**

ta'wach 'u kwanach-i 'uwa-y pakhá-pæga  
 man/SUBJ DEF/SUBJ eagle-**OBJ/AN** DEF/**OBJ/AN** kill-REM  
 'The man killed the eagle'

b. **Antipassive:**

ta'wach 'u kwana-pakhá-pæga  
 man/SUBJ DEF/SUBJ **eagle**-kill-HAB  
 'The man killed eagles'  
 'The man did some eagle-killing'

Object incorporation is also used in Ute nominalizations, which have the same object-suppressing antipassive flavor as their English counterparts:

(44) a. **Agent nominalization:**

ta'wach kwana-pakha-mi-t 'ura-'ay  
 man/SUBJ eagle-kill-HAB-**NOM** be-IMM  
 'The man is an eagle-killer'  
 (> He kills eagles in general)

b. **Action (VP) nominalization:**

kwana-pakha-ta ka-'ay-wa-t 'ura-'ay  
 eagle-kill-**NOM** NEG-good-NEG-NOM be-IMM  
 'Eagle-killing is bad'  
 (> 'the killing of eagles in general')



This pre-verbal incorporation pattern is also productive in Ute with semantically-appropriate verbs, adjectives, adverbs and instrument, as in (Givón 1980b):

- (45) a. **saku**-paghay-'way  
           **limp**-walk-IMM  
           's/he limp-walks'
- b. **mama**-paghay-'way  
           **woman**-walk-IMM  
           'he walks like a woman'
- c. **wii**-pakha-ux-kway-'u  
           **knife**-kill-ASP-REM-him/her  
           's/he killed him with a knife'
- d. **'atu**-may-puga  
           **well/good**-speak-REM  
           's/he spoke well, eloquently'

The antipassive object-incorporation pattern requires no invocation of pathway to complexity beyond the OV order of No. Uto-Aztecan. This pattern may have been later extended, analogically, to incorporated verbs. In such extreme nominalizing, VP embedding languages, the VO-embedding pathway is strongly suggested. The bare-stem, non-finite, status of the incorporated verbs certainly conforms with this pattern.

#### 5.3.4. Pre-verbal incorporated adverbials in Athabaskan

In Athabaskan languages, the lexical verb-sense is obtain from combinations of old verb stems with 'adverbial' prefixes. The latter may have begun their life as verbs, but then grammaticalized as post-positions and eventually incorporated into the verbal word (Underriner 1997; Givón 2000). As an illustration of many of the adverbial prefixes with a single verb, consider Tolowa Athabaskan, the oldest of these prefixes (-*na*- 'motion') can be augmented by more recent ones, many of them with clear verbal etymology (Bommelyn 1997; Givón 2000):

- (46) a. na-l-da 's/he runs' (-na 'move around')  
 MOV-L-run  
 b. waa-na-l-da 's/e runs that-a-way' (-wa 'go')  
 c. yaa-l-da 's/he runs through (it)' (-ya 'go')  
 d. daa-na-l-da 's/he runs into (it)' (-da 'sit/live')  
 e. k'wee-na-l-da 's/he is running behind (it)"  
 f. tr'ee-na-l-da 's/he runs down'  
 g. see-na-l-da 's/he runs up'  
 h. tee-na-l-da 's/he runs under water'  
 i. yee-na-l-da 's/he runs under (it)'  
 j. ch'aa-l-mæ̃s 's/he runs off (road)' (-ch'a 'leave')  
 k. lee-na-y'-l-da 'we-2 run together' (-l- reciprocal)  
 l. l-ch'aa-na-l-da 's/he runs apart'  
 m. taa-na-l-da 's/he runs outward' (-ta 'push away')  
 n. 'ee-na-l-da 's/he runs in a circle'  
 o. k'wæt-na-l-da 's/he runs upon (it)'  
 p. ts'ee-na-l-da 'she runs out there'  
 q. gee-na-l-da 's/he runs away'  
 r. xaa-na-l-da 's/he begins to run' (-xa 'lift up')

The diachronic pathway through which the Athabaskan incorporation pattern arose is not, for the moment, clear. On the one hand, Athabaskan languages are extremely finite, non-nominalizing and non-embedding. But still, it is not yet clear to what extent serial-verb clauses--the intermediate stage of the condensation in the alternative pathway--can be shown in Tolowa. Since clause-chaining is a universal construction across all typologies, however, the initial stage of this pathway is, at least in principle, always available. However, Rice (2006) has recently argued that the slot in which these 'adverbial prefixes' in Athabaskan incorporate is a nominal slot, and that the incorporated ex-verbal stems have a **nominal** form. This suggests that in spite of their highly non-finite syntax, Athabaskan languages created these complex predicate constructions via the nominalization route (Type A)..

## 6. Final reflections

The two major diachronic pathways to clausal complexity can both lead, at least potentially, to co-lexicalization, and thus to morphologically complex verbal words. The dispersal of verbs among objects in serial clauses certainly lowers the potential for such co-lexicalization in serial-verb languages. But as the Kalam data indicate, this tendency is far from absolute. My own suspicion is that Kalam serial clauses represents a more advance diachronic stage, where serial verbs have by and large been stripped bare of their finite morphology. In contrast, the serial constructions in both the Miskitu and Akan are probably diachronically much younger, so that much of the verbal morphology found in clause chains is still found in the 'condensed' serial clauses.

My discussion thus far may have left the unfortunate impression that only in serializing languages (Type B) does one start initially from a two-clause parataxis, which is then condensed into a complex clause under a single intonation contour. In a subsequent study I intend to show that in embedding languages (Type A) too, complex clauses arise through the condensation of paratactic precursors in which main and complement clause fell under separate intonation contours. In both major diachronic pathways, therefore, the process of creating complex clauses begins with two-clause parataxis, proceeds through an intermediate stage of condensation under a single intonation contour, and may end in co-lexicalization and complex words (for an extensive discussion of the latter stage, see Dahl, 2004).

The distribution of finite marking is but a methodological, heuristic tool that makes it easier to reconstruct the diachronic pathway, be it VP embedding or clause-chaining, in the absence of explicit historical records. But in the final stage of the condensation process, that of complex (co-lexicalized) verbal words, the telltale signs of diachrony have been largely zeroed out, so that reconstructing the diachronic pathway that led to the complex verbal word is much harder.

The two major diachronic pathways can be thus summarized schematically as in:

(47)	<b>stage:</b>	<b>embedded pathway:</b>	<b>clause-chain pathway:</b>
	i. <b>paratactic source:</b>	paratactic main+COMP	chained main+COMP
	ii. <b>complex clause:</b>	embedded main+COMP	serial-verb clause
	iii. <b>complex word:</b>	complex verbal word	complex verbal word

As a quick example of the early paratactic hybrid constructions that can lead to the eventual condensation of verb-complement complex clauses, consider V-complements in Biblical Hebrew, where this process remained endemic across a diachronic continuum spanning over 1,000 years (Givón 1991b):

- (48) a. va-yar' 'elohim 'et kol 'asher "asa ve-hine tov  
 and saw God ACC all REL made and-lo good  
 'And God saw all that he had done that it was good'  
 (Lit.: 'And God saw all that he had done, and lo it was good') [Genesis 1.31]
- b. 'al ti-r'u-ni she-'ani sHarHoret  
 NEG you-see-me REL-I swarthy/sf  
 'Don't see me that I am swarthy'  
 (Lit.: 'Don't see me, I who am swarthy') [Song of Songs, 1.6]

Similar examples of such condensation from earlier parataxis are discussed by Heine and Kuteva (forthcoming).

In the same vein, one may as well note that the one major venue to clausal complexity not discussed here, the rise of **embedded relative clauses**, also progresses through the three diachronic stages: From parataxis to embedding in the NP (Givón 1991b; 2001, ch. 14; Heine and Kuteva, forthcoming). And at least potentially, embedded REL-clause can also lexicalization, yielding nouns or names.

Lastly, note that both stages of condensation along our diachronic pathways--syntacticization (embedding) and lexicalization --are driven by functional-cognitive imperatives, and thus ultimately by **usage frequency**. This is the real significance of our list of **'the usual suspects'**, this ubiquitous small group of verbs ('closed class') whose initial usage frequency is high in all languages. These are the verbs that retain old ('irregular') forms long after those are leveled off in the rest of the verbal lexicon (Zipf 1935). These are the verb that tend to become classificatory, generic, grammaticalized, 'light' or de-semanticized, and thus become operators on other ('operand') predicates. Through whatever pathway, these high-frequency verbs tend to partake disproportionately in multi-predicate combinations that code complex events. But it is their initial semantics--general, classificatory, cognitively and communicatively central--that lends them their ubiquity.

## FOOTNOTES

1

An event clause in natural connected discourse need not, of course, contain an explicit lexical predicate, although when it doesn't, one is most often implicit (Chafe 1994; Givón 2002, ch. 3).

2

The term 'clause union' was used initially in the early 1970s context of Relational Grammar, in a purely synchronic sense, dependent as it was on the notion of 'syntactic transformation'.

3

This affixation of one verb to another is sometimes called 'predicate raising'.

4

Tok Pisin (Givón 1991a), here this is a serial-verb construction.

5

Wagiman (Wilson 1999). While recognized syntactically as a *co-verb* construction, the semantic configuration here is that of *directional*, thus akin to (3d) above.

6

Comrie (1976) has attempted to deal with this competition with a mechanical syntactic hierarchy. Both Shibatani (1976b) and Cole (1977/1984) have shown that the competition is resolved along semantic grounds.

7

The discussion of finiteness here is based on Givón (2001, vol. II), mostly on various sections of chs 11 (noun phrases), 12 (verbal complements), 14 (relative clauses) and 18 (clause chaining).

8

Most of the syntactic relations between clauses that were taken to be synchronic 'transformations' in Harris (1956) and Chomsky (1957, 1965) turn out to have at least some diachronic reality. This is analogous to Chomsky and Halle's (1968) *Sound Patterns* turning out to be, primarily, a recapitulation of the history of English phonology.

9

Since the intervening object (causee) is highly topical, often anaphoric and thus marked as verbal inflection or zero, its 'intervention' between the two verbs is often illusory.

10

The only major pathway to syntactic complexity we deliberately refrained from covering here is the one that gives rise to are NP-embedded REL-clauses. This is so because, with few exceptions, this pathway does not give rise to merged clauses. But here too, the ultimate source is parataxis.

11

A text-based functional study by Tibbitts (1995) strongly suggests the latter.

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