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Control in Yucatec Maya

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Abstract

The manifestations of control in the verbal grammar of Yucatec Maya are investigated. In the semantic structure of a situation, a distinction between participant features, situation features and role features is made. In general, role features are grammaticalized to a much higher degree in Yucatec Maya than participant or situation features, and also to a higher degree than in other languages. There is a highly regular association of control properties with intransitive conjugation classes. Transitive verbs are more confined to the typical "transitive" situation, i.e. one with a clear control incline, than in many other languages. There are derivational operations which convert control into non-control verbs and vice versa and which are sensitive to control properties of their base.

1.   Prerequisites

Yucatec Maya (YM) is the Mayan language of the peninsula of Yucatan. §1.1 will introduce those notions of grammatical structure of YM that have to be presupposed for the analysis. The remainder of this contribution is intended to show how the concept of control structures the verbal grammar of YM. This concept will be defined in §1.2.2.

It should be made clear at this point that while control is essentially associated with the verbal sphere, it is not confined to it. It also plays a role in nominal possession. In the prototypical possessive relationship, the possessor has control of the possessed item. YM responds to this in two ways. On the one hand, it marks by a suffix on the head noun such adnominal relations where the attribute does no designate a controlling possessor. On the other hand, it has a large and productive paradigm of possessive classifiers to differentiate among such possessive relationships which are essentially constituted by some particular kind of control that the possessor has of the possessed item. Most of these possessive classifiers are derived from transitive verbs. For a detailed treatment of this matter, the reader may be referred to Lehmann 1996.

1.1.   Form classes of Yucatec Maya

YM has the following major word classes: nouns, adjectives, modals and verbs. Only the verbs will occupy us here. A **verb** may be defined structurally as a word which can be preceded by an

auxiliary.[1] A **transitive verb** (V_{tr}) is one which may be (and most often is) preceded by a subject clitic and followed by an absolutive suffix. Examples include *kon* 'sell' and *áan-t* 'help'.[2] Transitive roots are typically monosyllabic and have the canonical phonotactic shape CVC. An **intransitive verb** (V_{itr}) is one which only takes one of the two devices marking the transitive verb at a time.[3]

Three major conjugation classes of intransitive verbs will be distinguished according to suffixes which appear in certain tense/aspect/mood (TAM) categories. They are displayed in F1.

F1. *Intransitive conjugation classes*

TAM category class label \	incompletive	completive	examples
$V_{itr\text{-}0}$	-0	*-n(-ah/-ak)*	*meyah* 'work', *xiknal* 'fly'
$V_{itr\text{-}Vl}$	*-Vl*	-0	*lúub* 'fall', *ch'iih* 'grow'
$V_{itr\text{-}tal}$	*-tal*	*-chah* - *-lah*	*xol* 'kneel', *kux* 'live'

The second intransitive conjugation class ($V_{itr\text{-}Vl}$) contains a few irregular verbs such as *bin* 'go'. It is profitable to assign the three conjugation classes to two major groups, namely those that take a suffix in incompletive TAM categories and those that do not. All of these classes are productive. However, some facts indicate that the first conjugation class is the unmarked one for intransitive verbs. Polysyllabic roots, among them all Spanish loan verbs, generally join this class.

1.2.   The functional criteria

1.2.1. Classificatory features

We may conceive of the meaning of a predicate as a bundle of semantic features, some of which relate to the situation designated, others to the participants involved and yet others to the specific roles that the participants have in the situation. They will be called **situation features**, **participant features** and **role features**, respectively (cf. Lehmann 1991 and 1993 for details).

The **situation features** generate a gamut of situations ordered according to their dynamicity. It is displayed in F2 and will here be presupposed without further argument. The word classes of noun, adjective, modal and verb essentially manifest the situation types in this order.

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[1]   An auxiliary is a complex of a tense/aspect/mood word and a subject clitic. Both of these sets are defined extensionally.

[2]   The *-t* suffix on a class of transitive verbs is not an inflectional, but a derivational suffix and thus cannot define a conjugation class. More on this in §3.1.4.

[3]   The personal enclitic morphemes which precede verbs are called subject clitics because their reference comprises the actor of the transitive verb and — in incompletive TAM categories — the sole actant of the intransitive verb. The personal suffixes are called absolutive suffixes because their reference comprises the undergoer of the transitive verb and — in completive TAM categories — the sole actant of the intransitive verb.

F2. *Situation features*

stative 7) 6 dynamic

class inclusion	property	state	durative process	terminative process	ingressive event	punctual event

The most important **participant features** are those relating to the animacy hierarchy. Their subdifferentiation is presently of no concern.

The **role features** can be represented in a two-dimensional space, as in F3. The vertical dimension relates to the degree of involvement, of centrality vs. marginality of the participant to the situation. Sources (S) are less directly involved than goals (G), experiencers (E) less directly than patients. The horizontal dimension differentiates between directly involved participants according to the extent to which they control or are controlled by the situation, i.e., to which they are actors rather than undergoers. At the pole of the prototypical actor we find the agent (A); at the pole of the prototypical undergoer, the patient (P). Between them, there is a gradience of control where, among others, the participants of a predicate such as *k'áat* 'ask' find their places.

F3. *Involvement of participants*

```
            centrality
  control 7)))))))))))8))))))))6 affectedness
        A            *            P
                     E
                     *
                     *G
                   S*
                    9
             marginality
```

1.2.2. Operationalizing the notion of control

For a participant to **control** a situation means for it to have the power to let the situation realize or not. This presupposes that the participant may be animate. It will, in fact, generally be animate. The lifeless forces of the kind of the lightnings and falling stones that kill people are conceived as controllers in analogy with animate beings. Moreover, the situation has to be dynamic. Properties allow of no control, states only marginally. A situation that has a controlling participant is an **action**. A verb designating an action is called **agentive**.

One of the tests of control is the imperative test. It consists in inserting an intransitive verb in the frame F4.a, and a transitive one, in F4.b.

F4. *Imperative test frame*
     a. __-én! '__!'
     b. __-eh! '__ it!'

E1.   a.   kul-en!
           _{sit-IMP}   ˈsit down!'
      b.   u'y-eh!
           _{hear-IMP} ˈlisten!'

If the resulting sentence can designate a true command (cf. Dik 1978), as in E1, then the participant represented by the subject has control of the situation, and the verb can be classed as agentive.

Another test is usually more reliable than the imperative test, and this is the frame ˈJohn hesitated to __.' However, YM does not seem to have the verb 'hesitate', so that this test is inapplicable. However, F5 is similar.

F5. *Control test frame*
     Tu path u báah u __.   ˈHe dared/tried to __.'

E2.   t-u   pat-h   u   báah u   ku-tal
      _{PAST-SBJ.3}   _{dare-CMPL}   _{POSS.3}   _{self}   _{SBJ.3} _{sit-PROC}
      ˈhe tried to sit down'

As in F4, if the resulting sentence makes sense, the verb imputes control to its subject, as in E2, otherwise not (e.g. with *ah* ˈwake up'). In particular for the latter verb, F5 is clearly more reliable than F4.

A participant is **controlled** by a situation if this happens to it, rather than the participant bringing it about. For a subject, failure on the tests F4 or F5 usually implies that the participant represented by it is at least mildly controlled by the situation. For intransitive verbs, the resultative participle, i.e., F6, can serve as a test frame.

F6. *Controlledness test frame*
     __--a'n.   ˈIt is __-ed.'

E3.   a.   kul-a'n
           _{sit-RSLTV}   ˈ(he is) seated, at home'
      b.   ah-a'n
           _{wake-RSLTV}   ˈ(he is) awake'

If the form is possible, as in E3, this means that the participant is more controlled by, than controller of, the situation. For positionals such as *kul* ˈsit', this means that the ingressive action, as in E1.a and E2, may be controlled, while the resulting state, as in E3.a, may not.

With transitive verbs, the subject usually represents the actor, the object the undergoer. Cases such as *mùuk'yah-t* (V_{tr}) ˈsuffer, stand' are no exceptions: application of F4 and F5 shows that the subject does retain some control. Therefore, the question of the degree of being controlled generally arises for the direct object.

Among affected undergoers, there is a scale extending from very weak mental **affectedness** (e.g. *k'áat* ˈask') over stronger mental affectedness (*tus* ˈlie, deceive'), mild physical affectedness (*méek'* ˈembrace') down to strong physical affectedness (*ch'ak* ˈhack'). While these degrees are

as yet largely a matter of intuition, F7 is at least an example of the sort of test that may be applied.

F7. *Affectedness test frame*
  Hach chich u __-ah. ʼHe __-ed it very hard.ʼ

A transitive verb has to be inserted. The resulting sentence is fine with predicates that strongly affect their undergoers (e.g. *hats'* ʼbeatʼ, ʼhitʼ), and awkward with those that only weakly control them (e.g. *áan-t* ʼhelpʼ).

Finally, a useful distinction can be made between total and partial affectedness. Examples are *kìin-s* ʼkillʼ (total) vs. *lòobit* ʼdamageʼ (partial). All the predicates that entail some sort of movement of their undergoer (e.g. *hok* ʼpull outʼ, *k'ex* ʼchangeʼ) affect it totally.

2.   Structural manifestation of role features

The distribution of roots of different morphological classes over the semantic classes of predicates is noteworthy. While many of the more stative multi-participant situations are expressed by verbs that have been transitivized with the *-t* suffix (cf. §3.1.4 below), most of the basic transitive roots are found in the most dynamic predicate classes. There is not a single basic transitive root among stative predicates and relatively few among durative predicates. This means, evidently, that multi-participant predicates are prototypically more dynamic, while one-participant predicates are prototypically more stative.

In one-participant predicates, there is a clear association of control properties with intransitive conjugation classes. If lack of control is to be expressed, one of the two incompletive (overt) suffix classes is chosen (*-Vl* or *-tal*). If no lack of control is to be expressed, the incompletive suffixless class comes in. As was said in §1.1, this functions as the default class. As a consequence, it does contain all the agentive verbs, but also many non-agentive verbs that for some reason were not assigned to either of the incompletive suffix classes.

There are several bivalent intransitive verbs which designate two-participant concepts. In these cases, one of the participants is a non-entity, viz. a proposition or a place. Such situations typically evince a less pronounced control incline. Such predicates as *k'a'h* ʼrememberʼ, *tu'b* ʼforgetʼ (E4), which involve less than complete control on the part of one participant, or less than complete affectedness on the part of the other participant, are typical examples.

E4. h   tu'b   tèen le   ba'l-o'
     PAST   forget(ABS.3) me   DEF   thing-D2
     ʼI forgot that thingʼ (lit. ʼthat thing got forgotten to meʼ)

Such bivalent non-agentive verbs are intransitive. They require the use of a preposition (mostly *ti'* LOCATIVE or *éetel* ʼwithʼ) with the second actant. Agentive bivalent verbs are transitive. YM thus confirms the well-known principle (cf. Hopper & Thompson 1980) that the prototypical transitive verb is one that represents a maximally dynamic event controlled by one participant and completely affecting the other participant. The prototypical intransitive verb, on the other hand, represents a durative one-participant predicate.

In YM, transitive verbs are more narrowly confined to the typical "transitive" situation, i.e. one with a clear control incline, than in many other languages. Strong evidence for this generalization is provided by phasal predicates such as ʻstartʼ, ʻcontinueʼ, ʻfinishʼ. While in English and other European languages, these are normally constructed personally (e.g. *I start working*), this is not so in YM. They are impersonal intransitive verbs, as illustrated by E5.

E5.   k-u   chúun-ul   in   meyah
       IMPF-SBJ.3 start-INCMPL   SBJ.1.SG work
       ʻI start workingʼ (lit. ʻmy working startsʼ)

It is true that such predicates as *il* ʻseeʼ and *uʼy* ʻhearʼ are transitive verbs, too. However, they do pass the control tests of F4 and F5 (cf. E1.b). All in all, this means that the semantic role properties of the syntactic subject are more narrowly defined in YM than in English.[4] This is in consonance with the ingredient of ergativity to be found in YM grammar.

3.   Change of role features

3.1.   Verbal valency change

YM grammar is extremely sensitive to role features of participants. It makes a decisive difference for verbal morphology and syntax whether a verb is transitive or intransitive, and if it is intransitive, what the role of the actant is. In English and many other languages, it is possible to use a given verb in different valency frames. The verb *sell*, e.g., may be used with both actor and undergoer specified (*Helen sells books*), or only with actor (*Helen is selling*), or only with undergoer (*the books sell well*). This is impossible in YM. In reviewing the derivational morphology for the change of role features, we limit ourselves to verbal derivation. By valency increase, an intransitive verb may get an actor or an undergoer slot added. Similarly, by valency decrease, a transitive verb may loose its actor or its undergoer slot. The relevant operations are summarized in F8.[5] In the following subsections, more or less formal definitions will be provided for each of the respective derivational processes in YM.

F8. *Operations of valency change*

role affected / valency change	actor	undergoer
detransitivization	deagentivization	introversion
transitivization	agentivization	extraversion

3.1.1. Deagentivization

To deagentivize a base is to block its actor slot. The result designates a situation core which has no actor, which entails that the situation is not controlled. YM has a variety of such operations which differ mainly in the emphasis being put on the idea that the situation, typically contrary to normal expectations, happens without the intervention of any instance that would bring it about.

3.1.1.1.   Simple deagentivization

Base: monosyllabic transitive verb root.
Morphological change: root vowel gets high tone; derived stem joins $V_{itr\,-Vl}$ class.
Syntactic change: actor role and direct object slot of base disappear; undergoer role is mapped
        on subject slot.
Semantic change: situation happens by itself, without agentive control.
F9 enumerates some examples, E6 illustrates the mechanism.

F9. *Examples of simple deagentivization*

base V_{tr}	meaning	deagentive $V_{itr\,-Vl}$	meaning
bul	submerge	búul	sink
ch'ul	wet (V_{tr})	ch'úul	get wet
kach	break	káach	break
k'al	shut	k'áal	close oneself
hay	extend	háay	extend oneself
p'at	leave	p'áat	stay

E6.   a.   t-in   ch'ul-ah   in   xanab
           PAST-SBJ.1.SG   wet-CMPL   POSS.1.SG   shoe
           ʻI wetted my shoes'
       b.   h   ch'úul   in   xanab
           PAST   wet\DEAG   POSS.1.SG   shoe
           ʻmy shoes got wet'

Deagentivization applies most easily to verbs signifying processes which can conceivably affect their undergoer without the intervention of an actor, which can, so to speak, happen by themselves. This presupposes, among other things, that no too specific requirements are made on the part of the actor, especially that no specific instruments are used. For this reason, for instance, *ho'p* ʻdig out', *xot* ʻcut', *xok* ʻread' are excluded from deagentivization.[6]

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[6]   Stefflre 1972:87 even claims *chup* ʻfill' to be excluded.

3.1.1.2. Extended deagentivization

Base: monosyllabic transitive verb root.

Morphological change: root vowel gets high tone, root is suffixed with *-pah*; derived stem joins $V_{itr\text{-}Vl}$ class.

Syntactic change: actor role and direct object slot of base disappear; undergoer role is mapped on subject slot.

Semantic change: process happens by itself, without agentive control.

F10 enumerates some examples, E7 illustrates the mechanism.

F10. *Examples of extended deagentivization*

base V_{tr}	meaning	deagentive $V_{itr\text{-}Vl}$	meaning
chun	start	chúumpah	start (intr.)
he'	open	hée'pah	open (intr.)
t'och	spit, pick	t'óochpah	stumble
chuk	fill, stuff	chúukpah	become complete
xa'k'-t	mix	xáa'k'pah	mix oneself

E7.　a.　t-in　　　　　he'-ah　　　le　　hòol-o'
　　　　　PAST-SBJ.1.SG　open-CMPL　DEF　door-D2
　　　　　'I opened the door'
　　b.　h　　hée'-pah　　　　　　　le　　hòol-o'
　　　　　PAST　open-EXT.DEAG(ABS.3)　DEF　door-D2
　　　　　'the door opened'

The process also applies to some roots such as *chuk* (cf. Barrera Vásquez et al. 1980 s.vv. *chuk chi', chuk olah*) which do not (i.e., probably, no longer) directly provide word stems. As some of the examples show, the semantic change is sometimes irregular.

3.1.2. Introversion

To introvert a base is to block its undergoer slot, so that the situation designated does not extend beyond the actor itself.

Base: transitive verb stem.

Morphological change: root vowel gets low tone; derived stem joins $V_{itr\text{-}0}$ class.

Allomorphy: some verbs take a *-Vl* suffix in addition to the tone change, others, including all derived or polysyllabic stems, take a *-bal* suffix instead.

Syntactic change: undergoer role and direct object slot of base disappear.

Semantic change: actor acts on unspecified undergoer (the undergoer being the typical one or the action being habitual).

F11 enumerates some examples, E8 illustrates the mechanism.

F11. *Examples of introversion*

base V$_{tr}$	meaning	introversive V$_{itr\,-0}$	meaning
kol	clear (wood)	kòol	clear wood
xok	read	xòok	study
kach	break	kàach	break (things)
chuy	sew	chùuy	sew
k'ay	sing	k'àay	sing
p'at	leave	p'àat	quit

E8. a. tíin   chuy-ik   (le   nòok'-a')
         PROG:SBJ.1.SG sew-INCMPL   DEF   cloth-D1
         'I am sewing it/this cloth'
     b. tíin   chùuy
         PROG:SBJ.1.SG sew\INTROV
         'I am sewing'

Introversion applies most easily to verbs with narrow selection restrictions as to their direct object, as e.g. *tak* 'put on (cloth)'. If the meaning of a verb is completely open as to the kind of undergoer it may affect, such as *cha'* 'let' or *sat* 'lose', the action is not easily typified, and the verb does not easily lend itself to introversion.

An example of the *-bal* suffix appears below in E10.b. It may be morphologically complex. The *-b* could be identified with the *-b* which forms the passive, and the *-al* could be a derivational variant of the *-Vl* suffix that attaches to non-agentive intransitive bases. We will come back to this possibility in §3.1.3.1.2.

3.1.3. Agentivization

To agentivize a base is to provide it with an actor slot. This new participant then has most control in the designated situation, which means that if the base already had an actor slot, this actor loses most of its control.

3.1.3.1.   Causativization

Base: intransitive verb stem.
Morphological change: base gets causative suffix; derived stem joins V$_{tr}$ class.
Allomorphy: the allomorphs *-(e)s* and *-bes* of the causative suffix are partly conditioned by the basic or derived nature of the base and partly in free variation.[7]
Syntactic change: subject slot with its role is converted into a direct object slot with undergoer role; subject slot with actor role is added.
Semantic change: provision is made for an additional participant which controls the situation.

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7   Examples of free variation are *luk'(e)s* 'move away' and *sa't(e)s* 'forgive'.

3.1.3.1.1. Causativization of simple base

Base: monosyllabic intransitive verb root, mostly of *-Vl* conjugation class.
Morphological change: root gets *-(e)s* suffix.
F12 enumerates some examples (cf. Owen 1969, ch.II.5), E9 illustrates the mechanism.

F12. *Examples of causativization of simple base*

base V_itr	meaning	causative V_tr	meaning
hóok' (-Vl)	go out	hó's	get sth. out
kim (-Vl)	die	kins	kill
wen (-Vl)	sleep	wèens	put to sleep
ah (-Vl)	wake up	ahs	wake up
kah (-Vl)	start	kahs	start
máan (-0)	pass by	máans	transport

E9.   a.   h   ah   in   suku'n
      PAST wake(ABS.3) POSS.1.SG   elder.brother
      'my elder brother woke up'

   b.   t-in   w-ah-s-ah   in   suku'n
        PAST-SBJ.1.SG   0-wake-CAUS-CMPL   POSS.1.SG   elder.brother
        'I awakened my elder brother'

3.1.3.1.2. Causativization of derived base

Base: derived intransitive verb stem.[8]
Morphological change: root gets *-bes* or *-(e)s* allomorph of the causative suffix.
Allomorphy: the *-s* allomorph is impossible if the base ends in /s/.
F13 enumerates some examples, E10 illustrates the mechanism.

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[8]   The basis of such a derived stem may itself be obsolete. For *chik*, cf. Barrera Vásquez et al. 1980 s.v. *chiktahal*.

F13. *Examples of causativization of derived base*

root V_{tr}	meaning	base derived V_{itr}	meaning	causative V_{tr}	meaning
chik	find	chíik (-Vl)	appear	chíikbes	exhibit
kan	learn	ka'n (-Vl)	be learnt	ka'ns	teach (thing)
kan	learn	kambal (-0)	learn	kambes	teach (person)
sat	lose	sa't (-Vl)	get lost, disappear	sa't(e)s	destroy; forgive

E10. a. táan   kan-ik
           PROG:SBJ.2 learn-INCMPL   ʽyou are learning it᾽
       b. táan   kam-bal
           PROG:SBJ.2 learn-INTROV   ʽyou are learning᾽
       b. tíin   kam-bes-k-ech
           PROG.SBJ.1 learn-CAUS-INCMPL-ABS.2.SG ʽI am teaching you᾽

It is possible that the suffix *-bes* consists of two morphs, *-b* and *-es*. The former would detransitivize the base, the latter would add the causer slot. Then *kambal* and *kambes* would contain the same *-b*. The derived stem *kam-b* as such would get an intransitive suffix (cf. §3.1.2), while the suffix *-es* would convert it into a transitive stem. While this is a real possibility for some earlier stage of YM, today these elements appear to be but submorphemic units.

3.1.3.1.3. Restrictions

The base is typically an intransitive verb stem. Transitive bases are excluded. Although this appears to be a syntactic restriction, it is easily subsumed under a semantic one: the base must not be an action verb. This has two consequences. First, causatives from transitive bases can only be formed by a detour via an intransitive stem. The way of achieving this is shown in §3.1.3.1.2. Take the V_{tr} *kan* ʽlearn᾽ as an example: it is first passivized, yielding *ka'n* ʽbe learnt᾽, and from this the causative *ka'ns* ʽteach (something to somebody)᾽ may be derived. Second, even intransitive verbs are ineligible if they designate actions rather than processes. The base must designate a process which does not require control. This is why such verbs as *bàab* ʽswim᾽, *míis* ʽsweep᾽, *t'àan* ʽspeak᾽, *e'l* ʽlay eggs᾽ and many others are excluded from causativization. Apparent exceptions to this generalization include the basic motion verbs *bin* ʽgo᾽, *tàal* ʽcome᾽ and *máan* ʽpass᾽, which do form the causatives *bis* ʽcarry᾽, *tàas* ʽbring᾽ and *máans* ʽtransport᾽. However, these bases do not require, but merely do not exclude control.

Some causatives have a base which is not an intransitive verb. Among these are *k'ìinbes* ʽcelebrate the anniversary of᾽ from *k'ìin* ʽday᾽, and *sahbes* ʽfrighten᾽ from a base *sah* ʽfear᾽ of which only derivations are attested.

3.1.3.2. Factitivization

Base: adjective stem (for the exceptional monosyllabic transitive root, see below).

Morphological change: base gets *-kun-t* suffix; derived stem joins V$_{tr}$ class.
Allomorphy: Suffix vowel is /u/ after front root vowel (including /a/), /i/ after back root vowel.
       The second (transitivizing) part of the complex suffix may be either *-t* or *-s*.
Syntactic change: unique slot with its role is converted into a direct object slot with undergoer
       role; subject slot with actor role is added.
Semantic change: situation is controlled by additional participant.[9]
F14 enumerates some examples (cf. Owen 1969, ch.II.5), E11.a/c illustrates the mechanism.

F14. *Examples of factitivization*

base	meaning	factitive V$_{tr}$ -kunt	meaning
uts (Adj)	good	utskint	improve
su'lak (Adj)	ashamed	su'lakkunt	make ashamed
síis (Adj)	cold	síiskunt	cool
bèey (Adj)	such	bèeykunt	make such
ch'eb (V$_{tr}$)	tilt	ch'ebkunt	tilt
hets' (V$_{tr}$)	calm	hets'kunt	pacify

E11. a. uts   'it is good'
      b. k-u   y-uts-tal
          IMPF-SBJ.3   0-good-PROC   'it gets well'
      c. k-in   w-uts-kint-ik
          IMPF-SBJ.1.SG   0-good-FACT-INCMPL   'I enhance/repair it'

Factitivization is a close paradigmatic counterpart of processive derivation in *-tal*, as shown by
E11.b (cf. also E2). Most bases that can undergo the latter can also undergo factitivization. There
is only a semantic restriction demanding that the process can conceivably be brought about by
outside impact. This is why formations such as *pàahkunt* 'render moldy' are improbable.

The factitivization of transitive bases remains to be investigated. It is possible that it presupposes
their deagentivization. That is, *hets'kunt* may really be *héets'kunt*. Otherwise, *hets'kunt* and *hets'*
(V$_{tr}$) should be synonymous, and one would not see the raison d'être of the former.

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9   Often (e.g., in Owen 1969, ch.II.5), no distinction is made between causative and factitive. Derivational operations
are principally goal-determined rather than base determined (i.e., all the stems formed by a given derivational process
share their category, not necessarily the category of their base). Therefore, if factitivization and causativization were the
same derivational operation, differing only in the category of their bases, one should expect the same formal process in
both cases. YM does make a difference here, joining, in this, the majority of languages.

3.1.4. Extraversion

To extravert a base is to provide it with an undergoer slot. This undergoer is then most directly affected by the situation, which means that if the base already had an undergoer slot, this will lose its undergoer status and either be demoted to a peripheral position or be lost altogether.

Base: intransitive verb stem, mostly of *-0* suffix class.
Morphological change: stem gets *-t* suffix; derived stem joins V_{tr} class.
Syntactic change: direct object slot with undergoer role is added.
Semantic change: action extends to undergoer and affects it.
F15 enumerates some examples, E12 illustrates the mechanism.

F15. *Examples of extraversion*

base V_{itr}	meaning	extraversive V_{tr}	meaning
xíimbal	walk	xíimbat	visit
hàan (-Vl)	eat	hàant	eat
tsikbal	chat	tsikbat	tell
páak	remove weed	páakt	remove (weed)
pak'ach	make tortilla	pak'acht	make (tortilla)
ts'íib	write	ts'íibt	write

E12. a.   h   ts'íib-nah-en
           PAST write-CMPL-ABS.1.SG   'I wrote'
      b.   t-in   ts'íib-t-ah
           PAST-SBJ.1.SG write-EXTRAV-CMPL 'I wrote it'

Intransitive verb bases must be agentive (cf. Stefflre 1972:94f). Correspondingly, all intransitive bases belong to the $V_{itr\ -0}$ class, with the one exception of *háan*, which is morphologically irregular. The agentivity requirement excludes such verbs as *ah* 'wake up' or *wen* 'sleep' from extraversion.

Apart from this, the *-t* suffix forms transitive verbs affecting their undergoer on a larger scale. Bases need not be intransitive verbs; they may also be nouns. Compound transitive verbs invariably take this suffix, whatever their composition. Spanish loans which are used as transitive verbs also have it. It is, thus, a sign of transitivity.[10]

3.1.5. Summary of valency-changing operations

Apart from the differences in productivity, the four valency-changing operations are maximally symmetric, as is already implied by F8. This applies both to their grammatical and semantic input

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[10]   Cf. Owen 1969:33-36 for a different account.

restrictions and to their grammatical and semantic effects. In particular, the opposition between non-agentive *-Vl* verbs and agentive *-0* verbs is fed by the detransitivization operations and is mirrored by the transitivization operations, since agentivization, which adds an actor slot, prefers non-agentive input – mostly *-Vl* class verbs –, whereas extraversion, which adds an undergoer slot, prefers agentive input – mostly *-0* class verbs.

Since these operations are so regular and largely in a mirror-image relation, there is hardly any cumulation of them possible. Relevant examples involve some kind of meaning specialization. From *lech* (V_{tr}) ‘hang’, the introversive *lèech* ‘fish (hang up the typical undergoer)’ may be derived, and this may in turn be extroverted to *lèech-t* ‘fish (some object which may or may not be a fish)’.

3.2.   Formation of spontaneous verbs

Base: monosyllabic verb or adjective root.
Morphological change: base gets *-k'ah* suffix; derived stem joins $V_{itr\text{-}Vl}$ class.
Allomorphy: there may be some allomorphy between *-k'ah, -pah, -chah* and *-tal*.
Syntactic change: in a transitive verb base, actor role and direct object slot disappear; undergoer
        role is mapped on subject slot.
Semantic change: situation is represented as process that happens spontaneously, without the
        intervention of a controller, potentially even unexpectedly or against his will.
F16 enumerates some examples, E13 illustrates the mechanism.

F16. *Examples of spontaneous derivation*

base	meaning	spontaneous $V_{itr\text{-}Vl}$	meaning
he' (V_{tr})	open	he'k'ah	open oneself
kach (V_{tr})	break	kachk'ah	break
sat (V_{tr})	lose	satk'ah	get lost
sùut ($V_{itr\text{-}0}$)	return	sùutk'ah	return unexpectedly
kul ($V_{itr\text{-}tal}$)	sit	kulk'ah	get into a sitting position

E13.   a.   t-in   kach-ah
                PAST-SBJ.1.SG   break-CMPL   ‘I broke it’
       b.   h   kach-k'ah-ih
                PAST   break-SPONT-ABS.3.SG   ‘it broke asunder’

A base is eligible for spontaneous derivation if the situation designated involves a non-controlling participant and can conceivably happen spontaneously. Consequently, such verbs as *bah* ‘hammer’ or *xot* ‘cut’ will not undergo this process.

The difference between spontaneous and deagentive derivation resides in various factors. As to type of base, deagentivization only applies to transitive verbs, while spontaneous derivation applies to verbs in general. On the other hand, the semantic conditions on the base are less strict in the case of deagentivization since the component 'quite by itself/on its own' is not present. In some cases, however, the processes may be in free variation. Their exact relationship remains to be investigated.

4. Conclusion

In general, YM is extremely sensitive to role features of participants and reflects them in many parts of its grammar. Control, in particular, shapes (apart from the nominal grammar of possession) the following aspects of verbal grammar:

- Among bivalent verbs, only such as designate situation cores with relatively high dynamicity and a relatively clear control incline between two participants are transitive.
- Intransitive verbs fall into three conjugation classes, one agentive, two non-agentive.
- There is a tightly knit system of derivational processes that change control properties of participants, emphasizing control or non-control.
- Derivational processes such as causativization and extraversion are sensitive to the agentivity of the base.

These properties are in line with the character of a language which, in principle, grammaticalizes semantic relations by reflecting them closely in grammatical and often even morphological structure (cf. Lehmann 1996, ch. 6).

Abbreviations in interlinear morphemic glosses

0	submorphemic unit	INTROV	introversive
1	first person	POSS	possessive
2	second person	PROC	processive
3	third person	PROG	progressive
ABS	absolutive	RSLTV	resultative
CAUS	causative	SBJ	subject
CMPL	completive	SG	singular
D1	first person deictic	SPONT	spontaneous
D2	second person deictic		
DEAG	deagentive		
DEF	definite		
EXT	extended		
EXTRAV	extraversive		
FACT	factitive		
IMP	imperative		
IMPF	imperfective		
INCMPL	incompletive		

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