

CLIPP

Christiani Lehmanni inedita, publicanda, publicata

titulus

(Coautrice Elisabeth Verhoeven:
Extraversive transitivization in Yucatec Maya and
the nature of the applicative

huius textus situs retis mundialis

[http://www.christianlehmann.de/publ/
lehmann_verhoeven_extraversion.pdf](http://www.christianlehmann.de/publ/lehmann_verhoeven_extraversion.pdf)

dies manuscripti postremum modificati

25.08.2005

occasio orationis habitae

Workshop 'Case, valency and transitivity', Universiteit
Nijmegen, June 17-20, 2003 (ab Elisabeth Verhoeven)

volumen publicationem continens

Kulikov, Leonid & Malchukov, Andrej & de Swart, Peter
(eds.), *Case, valency and transitivity*. Amsterdam &
Philadelphia: J. Benjamins (SLCS, 77).

annus publicationis

2006

paginae

465-493

Extraversive transitivization in Yucatec Maya and the nature of the applicative

Christian Lehmann & Elisabeth Verhoeven
(Universities of Erfurt and Bremen)

Abstract

Just as actor-focused transitivization may essentially be equated with causativization, undergoer-focused transitivization is often equated with applicative formation. Transitivization in Yucatec Maya by means of the morpheme *-t* resembles applicative formation in other languages to some extent. However, it differs from the latter in being basically a lexical operation with only limited syntactic regularity.

Yucatec Mayan transitivization by the suffix *-t* is described and analyzed with the aim of refining the concept of applicative. Special attention is given to a possible functional transition between plain undergoer-focused transitivization (named ‘extraversion’) and applicative formation. Such a transition is based on the kind of thematic roles typically involved in the two constructions.¹

1. Introduction

The aim of this contribution is to assess the place of a particular transitivization process of Yucatec Maya (YM), called extraversion, in the functional typology of participation, in particular of operations of installation and suppression of argument positions, of promotion and demotion of verbal dependents. We will compare extraversion with current assumptions about applicative formation and try to show that while it does render some of the service commonly attributed to applicatives, it is peculiar in other ways and does not obey certain generalizations that have been made about applicatives. The solution that we propose is to restrict the concept of applicative to certain syntactically regular promotion processes and to distinguish it from the concept of the extraversive, which is essentially a lexical-derivational process of providing an intransitive base with an undergoer slot.

¹ We thank Julia Galiamina and an anonymous reviewer for very helpful comments on an earlier version.

The paper is organized as follows: Section 2 gives an outline of the theoretical background and sets out the basic concepts of the analysis. Section 3 introduces extraversion in YM, concentrating on the types of thematic roles affected by this process. It is shown that while some cases of extraversion are indeed similar to what is commonly called applicative formation, most cases do not afford the promotion associated with the latter. Section 4 characterizes and defines the operations of applicative formation and extraversion in more detail and delimits them against each other. It thus sets the frame for a closer investigation of undergoer-focused transitivization in YM, which is undertaken in section 5. Here, it is shown that the YM operation mainly sticks to the lexical side of the continuum of undergoer-focused transitivization. Those cases that are more productive and regular seem to be either a more recent development, as e.g. addressee-applied-objects of communication verbs, or extraversion is combined with incorporation, resembling thus the rearrangement type of applicative formation. Section 6 posits a functional transition between extraversion and applicative formation.

2. Basic concepts

The analysis of the YM situation and its typological comparison will involve a few concepts that have been used in different ways and which we therefore do better in defining at the outset. A verb with its dependents designates a situation consisting of participants assembled around an immaterial center called the situation core. Depending on the specificity of the selection restrictions, a certain kind of participant may be more or less inherent in the concept of a predicate. Extreme cases of inherence are provided by verbs like ‘dream’ and ‘dance’, whose second participant may be exteriorized in the form of a cognate object. The conceptual operation of exteriorization² has a counterpart in interiorization, which manifests itself in the incorporation of nominal expressions in the verb.

Figure 1 serves to enumerate those thematic roles that will be taken up below and to arrange them by the two most important parameters, involvement and control/affectedness.

² Cf. Lehmann 1991, section 3.2 on exteriorization of participants. A holistic, undifferentiated situation is semantically represented just by the situation core which contains the participants. Exteriorization of a participant means that it receives its own linguistic representation which in turn comes along with individuation and referential independence. Thus, exteriorization can be conceived as an operation which gradually brings participants (included in the situation core) to the fore and opposes them syntagmatically to the situation core.

Figure 1. *Involvement and control of participants*

		control actor	←————→	affectedness undergoer
central	↑ involvement ↓	agent	force	theme patient
		experiencer		
		recipient/addressee/goal		
		emitter/source		
		beneficiary/place		
peripheral		comitative/instrument		

A participant may be more or less intimately involved in a situation (cf. Lehmann, Shin and Verhoeven 2000, section 2.3.1). A central participant is inherent in the concept of the predicate, so that if it is subtracted, the concept of the predicate changes. Peripheral participants do not concern the concept of the predicate, are compatible with many different predicates and may be so remote from the situation core that they may rather be part of another situation. Central participants are typically coded as verb complements, peripheral participants are typically coded as dependents of additional relators which may be case relators or even (subordinate or ‘co-subordinate’) verbs. The terms ‘predicate’ and ‘argument’ will be used to refer to the language-specific semantic representation of a verb and its complement.

There are operations of moving a peripheral participant to the center or, conversely, moving a participant out of the center of the situation. At the level of syntax, these appear as operations of promotion and demotion of verbal dependents. These concepts presuppose a hierarchy of syntactic functions that may roughly be depicted as in Figure 2 (where, for the sake of simplicity, syntactic ergativity is ignored):

Figure 2. *Hierarchy of syntactic functions*

1	subject
2	direct object / primary object
3	indirect object / secondary object
4	other complement
5	adjunct

Any operation that assigns a verbal dependent a syntactic function higher up in Figure 2 is an operation of promotion; any operation that assigns it a function lower down is an operation of demotion. If a participant is interiorized or not exteriorized, it has no syntactic function. In section 4.3, we will come back to the issue of whether ‘no syntactic function’ is the lowest position on Figure 2.

In Figure 1, the two most central participants are the agent who controls the situation, and the patient who is affected by it. These two notions are schematized in the form of

the two macroroles of ‘actor’ and ‘undergoer’.³ The semantic valence of most bivalent verbs uses the template of opposing an actor to an undergoer, i.e. a dependent that has more vs. less control in the situation. Promoting a peripheral participant often amounts to subsuming it under the undergoer macrorole. Many languages provide for a third macrorole, the indirectus (cf. Lehmann, Shin and Verhoeven 2000), which essentially neutralizes those roles in the center of Figure 1 that belong to highly empathic participants that are neutral or ambivalent as to the control cline, such as recipient, addressee, experiencer and beneficiary.

There are essentially two motivations for promoting a dependent on Figure 2. It may either be motivated semantically as drawing it into the control cline and subsuming it under one of the macroroles of actor, undergoer or indirectus. Or else the promotion may be motivated by functional sentence perspective (alias information structure), more particularly as granting topic continuity to the participant in question. For instance, given the context *She led him to her desk and* __, (1a) (without the repeated *she*) is a more likely continuation than (1b).

- (1) a. *She showed him a book.*
 b. *She showed a book to him.*

Operations of promotion and demotion lead to a rearrangement of the syntactic structure of the clause, in other words to a paradigmatic relationship between two syntactic constructions. For the morphological structure of the verb whose dependents are concerned, this may mean either of two things:

- either a deverbal verb derivation transfers the stem into a different valence class and marks this by some morphological process on the verb stem,
- or the same verb stem is used in two distinct valence frames, which may be described as (valence) conversion of the stem.

We will keep these two processes apart, i.e. we will not consider conversion as a kind of “zero-marked” derivation.⁴ In the case of a derivation, it is generally easy to recognize its direction, i.e. to tell which stem is the base and which is derived. In the case of conversion, the verb stem itself is not affected. Of the two syntactic constructions, one may be simpler than the other, i.e. involve syntactic functions higher up on Figure 2 or use less marking by case relators; and this may then be considered basic. By this criterion, we may say that in the English dative shift illustrated in (1), the direction of conversion is from a to b. There may be other criteria such as increased constraints on the distribution of the converted version, which we may forego here. Sometimes, no direction of conversion may be discerned, in which case we simply recognize categorical indeterminacy for such a verb stem.

³ For the concept of macroroles, see Foley and Van Valin 1984, Van Valin and LaPolla 1997 and Lehmann, Shin and Verhoeven 2000.

⁴ We are thereby radicalizing the position taken in Dixon and Aikhenvald 1997, 2000 and Peterson 1999, for which derivational marking of the applicative is only the prototypical case.

The syntactic or derivational operations involved may be viewed as installing or blocking a valence position – a “slot” – on a verb. The two slots most commonly affected by such operations are the ones associated with the actor and the undergoer macroroles. Those are then transitivity changing operations, which may be classified as in Table 1.

Table 1. *Transitivity-changing operations*

operation	macrorole	
	actor	undergoer
installation	actor-focused	undergoer-focused
	transitivization: causative	transitivization: applicative, extraversive
suppression	actor-focused	undergoer-focused
	detransitivization: passive, anticausative	detransitivization: antipassive, introversive

We have not used the terms ‘valence increase’ and ‘valence reduction’ to label the row entries of Table 1. First, quantitative valence – the number of argument slots of a verb – is not what is at stake here. Very often, it remains unchanged after such an operation. Especially, the installation of a valence slot for a new argument is often at the expense of the demotion or suppression of an argument provided in the base. What these operations aim at is either to accommodate a certain argument in verb valence or, on the contrary, to eliminate it from verb valence. Augmentation or reduction of the number of slots may be a contingent consequence. Furthermore, valence is a property of a verb stem, not of a verb form. Therefore, inflectional operations such as SAE-style passive or Australia-style antipassive are not, strictly speaking, valence-changing operations.

On the other hand, these operations are sometimes called ‘(direct) object addition/deletion’ etc. (e.g. Dixon and Aikhenvald 1997, Haspelmath and Müller-Bardey 2004). However, whether a noun phrase (in a certain syntactic function) is mentioned or not mentioned is one matter; and the manipulation of valence slots of a verb is another matter. Grammatical and derivational operations are essentially concerned with the latter.

We intend our conception to be applied generally to languages with different alignment types of fundamental relations. Therefore we have resorted to the terms ‘actor’ and ‘undergoer’, because these are neutral as to syntactic ergativity or even active-inactive clause structure. However, in what follows, only accusative clause structures will be considered, so we may as well speak of ‘(transitive) subject’ and ‘direct object’ instead.

Here we are not concerned with the ‘actor’ column of Table 1. The two operations affecting the undergoer slot may be exemplified from YM:

- (2) a. *hun-túul máak túun yáakan*
 one-CL.AN person PROG:SBJ.3 groan
mèen hach yah ba'x k yùuchul ti'
 because very ache what IMPF SBJ.3: happen:INCMPL him
 'a person groans because it hurts him what is happening to him'
 (MPK_016)
- b. *tu yáakan-t-ah u yahilo'*
 PRV:SBJ.3 groan-TRR-CMPL POSS.3 ache:REL:D2
 'he bemoaned his pain' (ACC_0463)
- (3) a. *tin bul-ah tuláakal in tàak'in*
 PRV:SBJ.1.SG gamble-CMPL all POSS.1.SG money
 'I gambled away all my money' (RMC_0231)
- b. *ko'ne'x bùul*
 lets.go gamble\INTRV
 'let's play cards' (RMC_0234)

The terms 'extraversion' and 'introversion' (introduced in Paris 1985: 145-146) refer to derivational operations on a verb stem, thus lexical operations that change the syntactic potential of that stem. The main verb in (2a) is intransitive; in (2b), a direct object slot is installed on it by extraversion, the derivational process that is the object of this study. The main verb in (3a) is transitive; in (3b) its direct object slot is blocked by introversion, whose morphological mark is low tone in the base. The latter process will briefly be resumed in section 4.2.

3. Extraversion in Yucatec Maya

3.1. Basic facts

YM has actor-focused transitivization by means of a causative suffix whose main allomorph is *-s*, and undergoer-focused transitivization by means of the suffix *-t* (glossed as TRR 'transitivizer' throughout). The latter is a very common and frequent process in YM grammar (cf. Lehmann 1993, 2002, ch. 2.4.3, 5.3; Bohnemeyer 2004). Most commonly, it works on an intransitive verbal base. The action denoted by the verb is thus extended to an undergoer which is affected by it. Verbal bases that take the suffix *-t* typically belong to the active class of intransitive verbs. Suffixation of *-t* results in a recategorization so that the derived verb belongs to the class of transitive verbs. This was already illustrated in (2) above and is schematized in Figure 3.

Figure 3. *Extraversion in Yucatec Maya*

[[X]_{V-intr} -t]_{V-tr}
 action

YM has a set of more than 150 (mostly verbal) roots which can be marked by the suffix *-t*. Furthermore *-t* is productive and obligatory in transitive compound and incorporative verbs (cf. Owen 1973), which we will come back to in section 5.5. Moreover, all transitive verb stems based on Spanish loans, like *k-in formar-t-ik* (IMPF-SBJ.1.SG form-TRR-INCMPL) ‘I form it’, bear a final *-t*. Next to verbs, nouns and, very rarely, adjectives occur as bases. Thus, this process is clearly defined by its output, which is a transitive verb stem, whereas it is more liberal with respect to input categories.

In contrast to certain other languages that have a single generic transitivization process, YM generally keeps actor-focused and undergoer-focused transitivization apart. One exception is constituted by some active intransitive verbs of sound emission and manner of motion that derive a causative verb with *-t* (e.g. *tirix* ~ *tirix-t* ‘rattle ~ make rattle’, *balak* ~ *balak-t* ‘roll ~ roll sth.’, cf. Bohnemeyer 2004). Factitive verbs are a further exception: on such deadjectival transitive verb stems as *chak-kun-t* (red-FACT-TRR) ‘redden’, *-s* and *-t* appear to be in free variation with most such verbs for most speakers. However, derivation in *-t* is the only process of undergoer-focused transitivization that the language has. In particular, there is no contrast among derivational suffixes to disambiguate the thematic role of the direct object. Thus, *-t* is a rather general marker of transitivity.

3.2. Peripheral thematic roles

Transitivization is commonly analyzed by seeking a transformational relationship between the transitive construction and an intransitive base version such that the participant coded as the direct object of the former corresponds to some adjunct of the latter. This adjunct is typically adjoined by some suitable case relator. In YM, this could be one of a set of prepositions. We will first review a set of verbs in which such a regular syntactic relationship between an intransitive base verb and its transitivized counterpart does work out. In (4a) the experiential stimulus *u na* ‘his mother’ is joined to the intransitive verb *ts’úkil* ‘feel angry’ by the generic preposition *ti* (LOC) ‘at, to’ etc., while in the transitivized version of (4b) it takes the function of the direct object. (5) illustrates a similar alternation with a local participant.

- (4) a. *táan u ts’úkil (ti’ u na’)*
 PROG SBJ.3 feel.angry LOC POSS.3 mother
 ‘he is annoyed (with his mother)’ (HNAZ_0019.01)
- b. *táan u ts’úkil-t-ik u na’*
 PROG SBJ.3.SG feel.angry-TRR-INCMPL POSS.3.SG mother
 ‘he is annoyed with / is scolding his mother’ (NMP_0362)

- (5) a. *táan u bin bàab (ich le ha'-o')*
 PROG SBJ.3 go swim in DEF water-D2
- b. *táan u bin u bàab-t le ha'-o'*
 PROG SBJ.3 go SBJ.3 swim-TRR(SUBJ) DEF water-D2
 'he is going to swim (in the water)' (MPK_018/EMB)

These examples resemble intransitive-based applicatives in other languages: the applied objects of the b-versions are prepositional adjuncts in the intransitive frame of the a-versions.

We now apply the same method to various groups of extraversive verbs. That is, we try to paraphrase the transitive version with a construction based on the intransitive version, trying out such prepositions that promise to be viable, i.e. to lead to a construction that is grammatical, synonymous with the transitive version and in a regular (“transformational”) relationship with it. The verbs will be grouped by the thematic role mapped onto the direct object function of the extraversive verb. In the present section, we consider various peripheral participants; in the next section, we apply the method to central participants. We start with (6), where a verb of emotional expression is directed towards its metaphorical goal, coded as a direct object in (6b).

- (6) a. *láahk'iin táan u che'h*
 all:day PROG SBJ.3 laugh
 'he laughs the whole day' (CPP_0018)
- b. *t-in che'h-t-ah in wíits'in*
 PRV-SBJ.1.SG laugh-TRR-CMPL POSS.1.SG younger.sibling
 'I laughed at / derided my younger sibling' (AVC_0031)
- c. **h che'h-nah-en ti' in wíits'in*
 PRV laugh-CMPL-ABS.1.SG LOC POSS.1.SG younger.sibling
 intended: 'I laughed at/about my younger sibling' (ACC)
- d. *h che'h-nah-en yéetel/yóosal in wíits'in*
 PRV laugh-CMPL-ABS.1.SG with/because.of POSS.1.SG younger.sibling
 'I laughed with/because of my younger sibling' (AVC_0033)

(6c) and (6d) represent various attempts at accommodating that participant in the intransitive base frame of (6a). (6c) uses the preposition *ti'* which worked for (4); but it is ungrammatical. (6d) uses other prepositions; but then the participant in question clearly bears different roles. Similar verbs include *òok'(ol)(-t)* 'cry, weep ~ mourn', *áakan(t)* 'groan, complain' (cf. (2) above), *sunkal(-t)* 'grunt; roar, bawl', *héenkal(-t)* 'grunt, roar (of wild animals)', etc.

With another subgroup of transitivized verbs, the direct object represents the addressee. In (7b) the verb *xóob* 'whistle' is transitivized and in this way directed towards the addressee.

- (7) a. *le xibpal-o' túun xóob*
 DEF man:child-D2 PROG:SBJ.3 whistle
 'the boy is whistling' (ACC)
- b. *le xibpal-o' túun xóob-t-ik*
 DEF man:child-D2 PROG:SBJ.3 whistle-TRR-INCMPL
- le chàan x ch'úuppal-o'*
 DEF little F woman:child-D2
 'the boy is whistling at the girl' (AME_0052)
- c. **le xibpal-o'*
 DEF boy-D2
- túun xóob ti' le chàan x ch'úuppal-o'*
 PROG:SBJ.3 whistle LOC DEF little F woman:child-D2
 intended: 'the boy is whistling at the girl' (ACC)

As before, (7c) represents a futile attempt at accommodating the same participant in the intransitive base frame of (7a).

A further subgroup includes experiential verbs which, if transitivized, code the stimulus in direct object function. In (8), the experiential verb *tùukul* 'think' is directed toward the stimulus *in na'* 'my mother'.

- (8) a. *táan in tùukul*
 PROG SBJ.1 think
 'I am thinking' (ACC)
- b. *táan in tùukult-ik in na'*
 PROG SBJ.1 think:TRR-INCMPL POSS.1SG mother
 'I miss my mother' (ACC)
- c. **táan in tùukul ti' in na'*
 PROG SBJ.1.SG think LOC POSS.3 mother
 intended: 'I am thinking about / missing my mother.' (ACC)

And again, there is no way of expressing the same thematic role with the intransitive verb. Similar cases are *náay(-t)* and *wayáak'(-t)*, both 'dream of/about', *cha'n(-t)* 'contemplate, look at, enjoy seeing', *kanáan(-t)* 'watch over', etc.

With a further set of YM verbs, prepositional objects in intransitive frames do seem to alternate with direct objects in the transitivized frame, but they represent different thematic roles.⁵ For example, with the motion verb *síit* 'jump' the direct object refers to the traversed entity, as in (9a). (9b) shows that this participant cannot be joined as an adjunct to the respective intransitive verb. Instead, a complex sentence has to be

⁵ This does not, however, imply that a given verb may take only one type of participant as direct object. As with basic transitive verbs, the semantics of the direct object may be very general covering all kinds of undergoers. In certain cases, the concrete role depends on the empathy of the participant in question and is additionally inferred from the situation denoted and from the general context.

formed which explicates the role of the participant in question. Joining a prepositional phrase with *óok'ol* 'on/above/over' directly to the intransitive verb results in a change in meaning: in (9c), the object is not traversed, but serves as the support of the action.

- (9) a. *táan in sen sít'-t-ik le sùum-a'*
 PROG SBJ.1.SG very jump-TRR-CMPL DEF rope-D1
 'I am (perpetually / really) jumping over this rope' (AVC_0038)
- b. *h sít'-nah-en*
 PRV jump-CMPL-ABS.1.SG

káa h máan-en yóok'ol le kòot-o'
 CNJ PRV pass(CMPL)-ABS.1.SG on DEF wall-D2
 'I jumped over the wall' (AVC_0037)
- c. *h sít'-nah-en yóok'ol le kòot-o'*
 PRV jump-CMPL-ABS.1.SG on DEF wall-D2
 'I jumped (being) on the wall' (AVC_0036)

Other verbs that adjoin different undergoer roles in their intransitive vs. transitive frames are *báaxal* ~ *báaxt* 'play', *ba'te'l(-t)* 'fight', *meyah(-t)* 'work', *náahal(-t)* 'earn', *pàakat* ~ *pakt* 'look at, gaze', *cha'n(-t)* 'contemplate, look at, enjoy seeing', *ch'èeneb(-t)* 'peek, peer, spy', *kanáan(-t)* 'watch over', *óok'ot(-t)* 'dance' etc.

The upshot of this section is that while the direct object of an extraversive verb may code a variety of participants, only exceptionally may the same participant be coded as an adjunct of the intransitive base.

3.3. Central thematic roles

We now move on to such transitivized verbs whose direct object plays a central thematic role such as patient or theme. YM lexicalizes a number of action concepts involving a patient like 'write', 'sweep', 'weed', 'shell' (some of which are labile in English or German) by intransitive verbs, adding the transitive marker when the verb is used with an object. This group of verbs includes *mahàan(-t)* 'borrow, lend', *páay(-t)* 'haul water, pull on a rope', *ya'ch'(-t)* 'dissolve', *tsi'k(-t)* 'shred', *cháal(-t)* 'lute', *máay(-t)* 'strain', *húuy(-t)* 'stir', *tsíik(-t)* 'comb', *pak'ach(-t)* 'make tortilla', *sakal(-t)* 'weave', *lòobil(-t)* 'fight, slap', *wáay(-t)* 'bewitch, put a spell on', etc. Their use is illustrated by (10).

- (10) a. *Húuy-t le sa'-o' bik táak'-ak!*
 stir-TRR(IMP) DEF atole-D2 PROHIB stick/DEAG-SUBJ
 'Stir the atole lest it sticks!' (ACC_0265)
- b. *h húuy-nah-en*
 PRV stir-CMPL-ABS.1.SG
 'I stirred (sth.)'

- c. **Húuy-nen ti' / ich le sa'-o'!*
 stir-ITR.IMP LOC/ in DEF atole-D2
 intended: 'Stir (in) the atole!' (ACC)

Again, the transitivized versions of *tsikbal(-t)* 'converse, talk about', *nu'k(-t)* 'explain', *tse'k(-t)* 'preach, lecture, advise, scold', *p'a's(-t)* 'mock, criticize, ridicule', *xíix(-t)* 'sift through, cull', *éets'(-t)* 'imitate', *se'n(-t)* 'cough', *sín(-t)* 'blow nose', etc. take a theme argument as direct object, as illustrated in (11).

- (11) a. *t-in p'a's-t-ah le ba'x t-u mèt-ah-o'*
 PRV-SBJ.1.SG mock-TRR-CMPL DEF thing PRV-SBJ.3 do-CMPL-D2
 'I mocked / criticized the thing he did' (RMC_1073)

- b. *h p'àa's-nah-en*
 PRV mock-CMPL-ABS.1.SG
 'I mocked (sth./sb.)'

- c. **h p'àa's-nah-en*
 PRV mock-CMPL-ABS.1.SG

ti' / yéetel le ba'x t-u mèt-ah-o'
 LOC / with DEF thing PRV-SBJ.3 do-CMPL-D2
 intended: 'I mocked / criticized the thing he did' (ACC)

These two sets of verbs share with the ones represented by (6) – (9) the fact that the participant figuring as direct object of the transitive verb cannot be adjoined to the intransitive verb. The sets of verbs of this and of the previous section differ in the centrality of the participant coded as direct object. However, the examples show that this semantic difference is only partly correlated with different structural behavior: while some peripheral participants can be adjoined to the intransitive base verb, no central participant ever can. The latter is, in fact, less surprising, because a participant that could be adjoined in a regular way by a preposition would probably not be a central participant.

The data of this section shows that YM lexicalizes as intransitive verbs not only verbal concepts that range in the central region of the effectiveness continuum⁶ as e.g. 'look at', 'laugh at', etc., but also concepts with a higher effectiveness value, e.g. the equivalents of 'lend', 'shred', 'strain', 'stir', 'shell' and others. Both may have their origin in two classes of nouns common to most Mayan languages. The first of these comprises action concepts like *ts'úib* 'writing, write', *meyah* 'work, worker', *tsikbal* 'chat, chatting, story' etc. (cf. Kaufman 1990). The second class comprises concrete nouns (denoting physical objects) such as *oxo'm* 'shelled corn' – *oxo'm-t* 'shell', *pak'ach* 'tortilla' – *pak'ach-t* 'make tortilla', *sakal* 'cloth' – *sakal-t* 'weave'. According to Bohnemeyer 2002a: 179, 2002b, both classes of nouns would have been recategorized as active intransitive verbs in YM or in the Yucatecan branch.

⁶ See Tsunoda 1981, and cf. the concept of 'transitivity' in Hopper and Thompson 1980.

To summarize section 3, we may say that YM extraversion shares with applicative formation of other languages its basic nature of being an undergoer-focused transitivization process. It also sometimes behaves specifically like applicative formation in taking part in a transformational relationship between two constructions, one in which a certain participant is coded as an adjunct of an intransitive base and another in which the same participant is coded as the direct object of the transitivized base. This is, however, not typical of the YM extraversive. In general, the intransitive base is not used to speak about that participant that appears with the extraversive. Therefore we do not subsume the YM extraversive under the typological concept of the applicative, but instead compare them in the following section.

4. Types of undergoer-focused transitivization

In Table 1, we have introduced the applicative and the extraversive as two kinds of undergoer-focused transitivization. The distinction intended thereby is not generally made in the literature. Typically, the term ‘applicative (formation)’ is used for what we call undergoer-focused transitivization. Here are two representative examples: Corresponding to the first row of our Table 1, Dixon and Aikhenvald 2000 have the following subdivision: “5. Valency increase ... (1) Causative ... (2) Applicative”. Haspelmath and Müller-Bardey 2004 have the section headings: “3. Valency-increasing categories ... 3.1. Object-adding categories: the applicative ... 3.2. Agent-adding categories: the causative”. This concept commonly embodies the following two suppositions although these are not necessarily stated explicitly: First, although the processes in question are derivational processes, they can be stated in syntactic terms, i.e. a version of the transformational approach that we have applied in section 3 is taken for granted. Secondly and more specifically, installing a direct object slot on a verb amounts to a promotion of one of its dependents. This is stated explicitly in Dixon and Aikhenvald 2000: 14: “Applicative derivations all have a common syntactic effect, with a peripheral participant being brought into O function ...”.

Occasionally, an even broader concept of the applicative is found. Peterson’s (1999) concept of applicative involves coding a “semantically peripheral object in a more central morphosyntactic (and sometimes discourse) way than would otherwise be expected for it”. This includes promotion to the indirect or secondary object slot, thus presumably any upward movement in Figure 2 that does not reach level 1. Haspelmath and Müller-Bardey (2004: 1136), too, speak of “dative-adding applicatives”.

In what follows, we shall argue for a narrower concept of applicative which is opposed to extraversive. In characterizing the two concepts, we consider both formal and functional criteria.⁷ We begin by discussing applicative formation (section 4.1)

⁷ Cf. Comrie 1985, Drossard 1991, Lehmann 1991, Dixon and Aikhenvald 1997, 2000, Peterson 1999, Haspelmath and Müller-Bardey 2004.

followed by extraversión (section 4.2) before arranging both processes on a continuum of undergoer-focused transitivity in section 4.3.

4.1. *Applicative formation*

4.1.1. *Applicative as a promotion process*

The simplest form of applicative is found with intransitive bases, as in (12) from Indonesian (Shibatani 1996: 159).

- (12) a. *Saya duduk di kursi.*
 I sit in chair
 ‘I am sitting on the chair.’
- b. *Saya men-duduk-i kursi.*
 I ACT-sit-APPL chair
 ‘I am occupying the chair.’

Here the adjunct of the intransitive version (12a) is promoted to direct object in the applicative transitive version b.

If the base is already transitive, as in (13), then the first phase of the process is the same as before. This, however, ousts the direct object of (13a) from its position; so in a second phase, this is demoted onto some lower level of Figure 2, in the present case, into the function of a secondary object.

- (13) a. *Saya akan mem-belibuku untuk orang itu.*
 I FUT ACT-buy book for person DEF
 ‘I will buy a book for the man.’
- b. *Saya akan mem-beli-kan orang itu buku.*
 I FUT ACT-buy-APPL person DEF book
 ‘I will buy the man a book.’

German does not have a secondary object function. Here the demoted direct object ends up as an adjunct, as in (14) (from Comrie 1985: 313f).

- (14) a. *Hans pflanzt [Bäume]_{DO} [im Garten]_{PO}.*
 ‘Hans plants trees in the garden.’
- b. *Hans bepflanzt [den Garten]_{DO} [mit Bäumen]_{PO}.*
 ‘Hans plants the garden with trees.’

The German derivation by the prefix *be-* may promote to direct object function not only peripheral dependents, as in (14), but also indirect objects, as in (15).

- (15) a. *Maria schenkte [dem Mann]_{IO} [ein Buch]_{DO}.*
 ‘Mary gave a book to the man (as a present).’

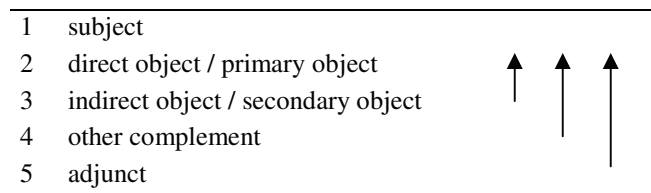
- b. *Maria beschenkte [den Mann]_{DO} [mit einem Buch]_{PO}.*
 ‘Mary presented the man with a book.’

Various Bantu languages including Swahili, Chichewa and ChiMwi:ni possess an applicative operation of the same type. (16) from Chichewa (Baker 1988: 229) features the recipient as a prepositional object in the a-version. In the applicative b-version it is promoted to direct object, while the erstwhile direct object is demoted to secondary object.

- (16) a. *Mbidzi zi-na-perek-a msampha kwa nkhandwe.*
 zebras SBJ-PST-hand-FV trap to fox
 ‘The zebras handed the trap to the fox.’
- b. *Mbidzi zi-na-perek-er-a nkhandwe msampha.*
 zebras SBJ-PST-hand-APPL-FV fox trap
 ‘The zebras handed the fox the trap.’

Thus, irrespective of the transitivity of the base verb and the resulting valence of the derived verb, applicative formation presupposes the hierarchy of syntactic functions introduced in Figure 2 and involves a promotion to direct or primary object function as visualized in Figure 4.

Figure 4. *Applicative formation*



4.1.2. *Functions of the applicative*

The main function of applicative formation is the centralization of the participant concerned. In semantic terms, this entails an increase in involvement and affectedness, where these concepts are understood as visualized in Figure 1. In the German (17a), the burglar is involved more indirectly and coded as an indirect object, while in (17a') he is directly involved in the situation and coded as a direct object. The verb is transitivized by the prefix *ver-*. A similar functional distinction of involvement is conveyed by the prepositional vs. direct object marking in (17b)/(17b'), featuring again the applicative prefix *be-* (cf. (14)).

- (17) a. *Paul folgte dem Einbrecher.*
 ‘Paul followed the burglar.’
- a'. *Paul verfolgte den Einbrecher.*
 ‘Paul pursued the burglar.’

b. *Paul herrschte über die Teutonen.*

‘Paul reigned over the Teutons.’

b’. *Paul beherrschte die Teutonen.*

‘Paul governed/controlled the Teutons.’ (Lehmann 1991: 207-8)

Note that the examples in (17) differ from those of (14) and (15) regarding the transitivity of the base verb. However, irrespectively of whether the promotion involved in applicative formation occasions the demotion of an argument occupying the direct object function of the base verb, as in (14) and (15), or the direct object function is newly installed on the verb, as in (17), applicative formation principally aims at heightening the involvement of the promoted participant.

In (14) and (17), there is not only an increase in involvement of a peripheral participant but also an increase in its affectedness in the situation. In the basic versions, the participant in question is only weakly or partly affected. Through the operation of applicative formation it becomes strongly or totally affected. In the a-version of (14), for instance, the locative participant may only be partly affected, the trees occupying only part of the garden, while in the applicative version (14b), the whole garden is planted with trees (cf. Comrie 1985: 314).⁸

From the point of view of information structure, topic continuity plays an important role in the foregrounding of a participant (cf. Givón 1983). Given that topic continuity requires topical participants to be in higher-ranked syntactic functions and applicative formation enables a peripheral participant to appear in just such a function, it is often performed on a peripheral participant that is repeated or topicalized (cf. Rude 1986, Peterson 1999, ch. 3). The examples in (18) and (19) show a participant that is topical in the first clause and then referred to again in the second clause. The relative pronouns in (18a) and (19a) are in direct object function with respect to the subordinate applicative verbs, while in (18b) and (19b) they depend on appropriate local prepositions. From the point of view of functional sentence perspective, (18a) is better than (18b); and the same goes for (19a) and (19b).

(18) a. *das Apartment, das Nicole besitzt und das Chantal bewohnt*

‘the apartment that Nicole owns and Chantal inhabits’

b. *das Apartment, das Nicole besitzt und in dem Chantal wohnt*

‘the apartment that Nicole owns and that Chantal lives in’

(19) a. *der Bürgersteig, der vor unserem Haus ist und den er (mit Sand)*

(be)streuen muß

‘the pavement that is in front of our house and that he has to strew (with sand).’

⁸ Cf. furthermore Michaelis and Ruppenhofer (2001, ch. 5.3.3), who identify an intensification of the action after applicative derivation with *be-* in examples like (17b) and other pairs such as *schimpfen* ~ *beschimpfen* ‘scold at ~ insult’, *lehren* ~ *belehren* ‘teach ~ instruct, inform’ etc.

- b. *der Bürgersteig, der vor unserem Haus ist und auf den er (Sand) streuen muß*
 ‘the pavement that is in front of our house and that he has to strew (sand) on.’

Thus, promotion of a peripheral participant in applicative formation is motivated by goals concerning thematic roles and/or information structure.

4.2. Extraversion

Extraversion is well attested in those languages (e.g. Oceanic languages) whose basic verbs are usually intransitive and which mark the verb as transitive when it is used with a direct object. In this case, there is generally no regular alternative that would allow accommodating the direct object participant of the derived transitive verb in the ‘underlying’ intransitive frame. One such Oceanic language is Tolai, illustrated by (20):

- (20) a. *A vavina i momo.*
 ART woman SBJ.3 drink
 ‘The woman drank (something).’
- b. *A vavina i mom-e ra tava.*
 ART woman SBJ.3 drink-TRR ART water
 ‘The woman drank the water.’ (Mosel 1991: 248)

(20) shows a derivation of an intransitive base verb with the aim of joining a further ‘new’ participant in direct object function, thus extraversion as in YM. The semantics of the process consists of directing the action denoted by the verb towards a further participant. The participant in question is typically intrinsic to the situation denoted by the base verb, as the patient in (20).⁹ In (20b) the participant is exteriorized, i.e. it receives its own lexical representation.

It appears that languages have a choice as to the valence pattern they use in the lexicalization of action concepts involving such an intrinsic undergoer.¹⁰ One alternative is to lexicalize such concepts as basic intransitive verbs and to apply extraversion if the undergoer must be exteriorized. This is illustrated by (20) and equally by the YM verb for ‘eat’: *hàan* is basically intransitive and has to be transitivized if the thing eaten is to be joined, viz. *hàan-t* ‘eat sth.’. The other alternative is to lexicalize such concepts as basic transitive verbs and to apply introversion – the mirror image of extraversion – to focus on the action as such. This is shown in (21) from YM with the

⁹ Cf. the discussion of omitted objects in English in Rice 1987, section 5.4, where it is argued that they are present on a conceptual level.

¹⁰ There is an analogous alternative concerning the provision of an actor with process concepts such as ‘break’. Such verbs may either be basically intransitive and be transitivized by causativization, or they may be basically transitive and be detransitivized by anticausativization. Cf. Haspelmath 1993 and Nichols, Peterson and Barnes 2004.

basic transitive verb *kon* ‘sell’, which is detransitivized in the b-version by introversion.

- (21) a. *Úuchak wáah a kon-ik to'n le kùuts-o'?*
 possible INT SBJ.2 sell-INCMPL us DEF pheasant-D2
 ‘Is it possible that you sell us the pheasant?’ (HK'AN_481.1)
- b. *Bix u k'áat-a'l hun-p'éel tìimbreh*
 how SBJ.3 ask-PASS.INCMPL one-CL.INAN stamp
ti' le máak k-u kòn-ol- o'?
 LOC DEF person IMPF-SBJ.3 sell\INTRV-INCMPL-D2
 ‘How does one ask for a stamp from the man who sells [things]?’
 (BVS_11.01.22)

In other languages like English or German, action verbs are basically transitive but possess an optional direct object, i.e. there is no morphological indication of transitivity or detransitivization.¹¹

In some respects, the central participant exteriorized from intransitive bases by extraversion is like a cognate object (e.g. with *dream*, *dance*) or an object of result, as with verbs of bodily action/function (e.g. *laugh*, *cough*). The respective predicates are said to be ‘pregnant’ with the participant in question. However, exteriorization of such closely related internal participants seems to be subject to restrictions in many languages, e.g. they need to be modified or they do not take regular object marking. This indicates that these objects do not have the same degree of independence vis-à-vis the verb as a normal object, including an extraversive object (cf. Lehmann 1991: 192f).

4.3. *Applicative vs. extraversive*

Extraversion and applicative formation are two processes of undergoer-focused transitivity. They are not in opposition, but rather in complementary distribution on an asymmetric gradient.¹² The common semantic denominator of both processes may be paraphrased by ‘direction of action towards an undergoing participant’ (which, incidentally, is also the idea behind the term ‘transitive’). Extraversion is a derivation, thus a lexical process and not productive for all verbs of some class in a language. Applicative formation may be productive to different degrees. Some languages have rather productive applicatives, as is e.g. reported for the Wolof instrument applicative (Comrie 1985: 318f).

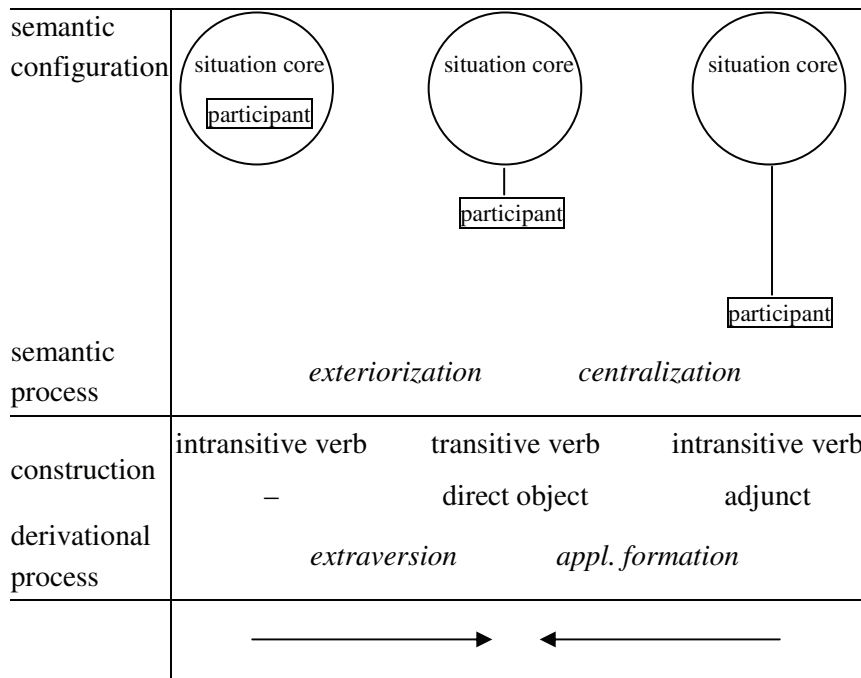
Furthermore, extraversion is restricted to intransitive bases while applicative formation operates both on intransitive and transitive bases. Thus, extraversion is valence-

¹¹ For English cf. Lemmens 1998, ch. 5.4 on ‘objectless transitives’, who notes that these verbs often have a restricted set of possible objects which are understood in the intransitive version.

¹² The position of the dashed line in Figure 6 is intended to reflect this asymmetry.

increasing, while applicative formation may be valence-increasing (with (in)transitive base verbs) or valence-rearranging (with transitive base verbs), as established in Comrie 1985. While applicative formation promotes adjuncts in diverse relatively peripheral roles, extraversion exteriorizes a participant closely related to the situation core designated by the base verb. It thus serves the individuation of this participant. The broad concept of applicative is liable to obscure this difference if a participant that cannot be accommodated in the frame of an intransitive base verb is said to be promoted in the transitivized version, as if ‘no syntactic function’ were the lowest position on the hierarchy of syntactic functions Figure 2. This difference between the two processes is visualized in Figure 5.

Figure 5. *Undergoer-focused transitivization*



The regular relationship between an adjunct construction and an applicative construction as illustrated, e.g. in (12a) and (12b) is often conceived thus: The dependent in question is joined to the verb by means of a case relator. In the adjunct construction, this takes the form of an adposition heading the adjunct. In the applicative construction, the case relator instead attaches to the verb so that what was the complement of the adposition now becomes a direct complement of the verb. The same can happen with different case relators which then correspond to local, benefactive, instrumental etc. applicatives. Whether or not this can be verified as an historical change in some languages, it is certainly a useful approach to understand the mechanism of applicative formation. At the same time, this model is not applicable to extraversion because in the prototypical case, there is no adjunct construction to begin with. Instead, there is just transfer of an intransitive base into the transitive valence class by means of a transitivizer.

Finally, since applicative formation is a promotion process, it may play a role in functional sentence perspective, a function that is not accessible to extraversion because there is no alternative syntactic frame, and thus, no choice of coding. Figure 6 summarizes the differences between the two processes.

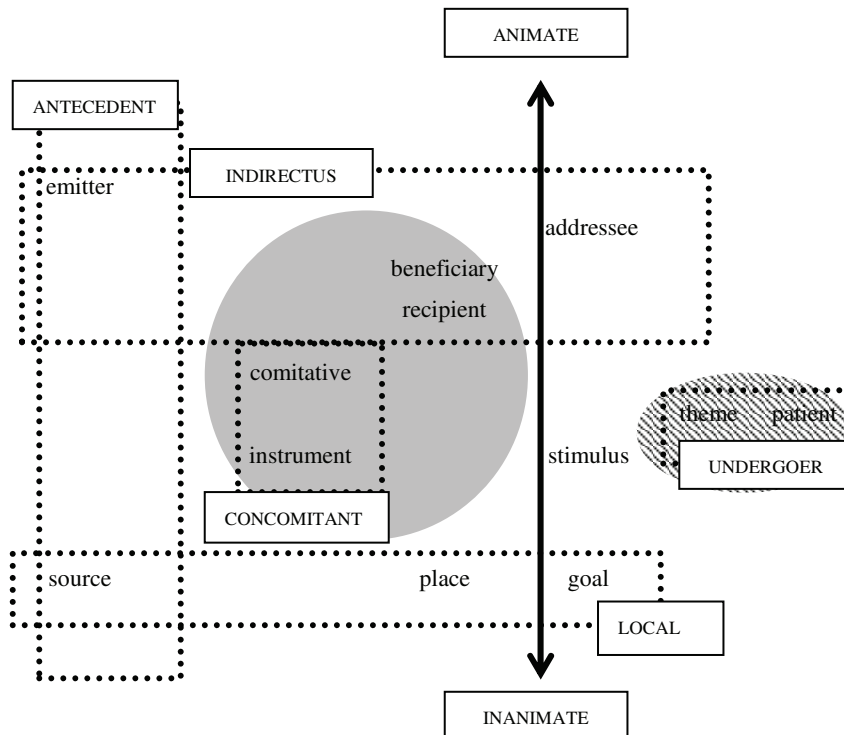
Figure 6. *Continuum of undergoer-focused valence-increasing operations*

lexical	syntactic
non-productive	productive
base has no direct object slot	base may have direct object slot
purely valence-increasing	valence-increasing or rearranging
exteriorized roles determined by lexical base	applied roles determined by applicative marker
(increased) individuation of exteriorized object	increased affectedness of applied object
-	feeds topic continuity
extraversive	applicative

Some of the parameters mentioned on the left side of Figure 6 hold for both extraversive and applicative formation, while those mentioned on the right side exclusively characterize applicative formation.

We are now prepared to take a closer look at the thematic roles involved in both processes. Figure 7 visualizes the semantic space of thematic roles relevant in applicative and extraversive constructions. The horizontal distribution is arranged according to a role's position in the causal chain of an event (following Croft 1991 and Luraghi 2001). Further parameters considered in Figure 7 are the empathy of the participant, its macrorole and its cross-linguistic frequency in applicative constructions. The empathic roles are positioned in the upper part of Figure 7, the anempathic ones in the lower part and the neutral ones (theme, patient, stimulus) in between. The macroroles undergoer and indirectus are included in a box in the same way as the local, the concomitant and the antecedent roles.

Figure 7. Focal instances of thematic roles in extraversive and applicative constructions



Since extraversion is a lexical process, it involves thematic roles that are more or less inherent in the lexical frame of the base verb. These are prototypically patient and theme, as indicated by the hatched field in Figure 7. The same goes for the stimulus with experiential verbs, addressee or theme with communication verbs and place, goal or source with position and motion verbs.

Applicative formation, on the other hand, is (at least potentially) open to all roles posited in Figure 7. Following the typological study of Peterson 1999, however, peripheral roles such as beneficiary, comitative and instrument are predominant. Applicative constructions are in general most productive with these latter roles.¹³ Furthermore, these roles may be added to different kinds of situations such as creation or destruction, action in general, motion, transfer and others. These roles have been included in the gray area in Figure 7.

5. Assessing Yucatec Maya extraversion

5.1. Frequency

Table 2 shows the distribution of roles over undergoers created by transitivization of 63 YM verbs with the *-t* suffix. Patient (as in (10)) and theme roles (as in (11)) predominate clearly, followed by the stimulus (as in (4), (8)) and local roles (as in (5), (9)). Roles subsumed under the indirectus, such as addressee (as in (7)), beneficiary,

¹³ Cf. again the instrument applicative in Wolof (Comrie 1985).

recipient, are seldom involved in YM extraversion. Certain thematic roles frequently involved in applicative formation in other languages, such as the instrument and the comitative, do not occur at all.

Table 2. Frequency of thematic roles occurring in YM extraversion¹⁴

thematic role	frequency
patient	22
theme	17
stimulus	11
goal / source / path	11
place	8
addressee	5
beneficiary	2
recipient	2

5.2. Nature of roles: central vs. peripheral participants

Apart from theme and patient extraversion, other central or closely related participants may be exteriorized. (22) shows that a verb-inherent local participant such as the path of a motion may be the direct object of the transitivized verb. Contrast this with (23), where it is not the local adjunct of (23a) that underlies the direct object of (23b). In general, peripheral local roles – here a location with respect to a perception verb – cannot be represented by the direct object of an extraversive verb.

- (22) a. *h áalkab-nah-en t-u bèel-il in kòol*
 PRV run-CMPL-ABS.1.SG LOC-POSS.3 way-REL POSS.1.SG milpa
 ‘I ran on the way to my milpa¹⁵’
- b. *t-in wáalkab-t-ah u bèel-il in kòol*
 PRV-SBJ.1.SG run-TRR-CMPL POSS.3 way-REL POSS.1.SG milpa
 ‘I ran the way to my milpa’ (AVC_0003/4)
- (23) a. *le ko’lel-o’ táan u ch’èeneb ti’ le hòol-o’*
 DEF woman-D2 PROG SBJ.3 peek LOC DEF hole-D2
 ‘the woman is peeking through the door’ (MPK_031)
- b. *le ko’lel-o’ táan u ch’èeneb-t-ik*
 DEF woman-D2 PROG SBJ.3 peek-TRR-INCMPL
 (*bix yan-il*) *le hòol-o’*
 how EXIST:EFOC DEF hole-D2
 ‘the woman is examining the door’ (MPK_032)

¹⁴ Since some verbs allow for more than one participant type as object, the total number of roles is higher than that of verbs.

¹⁵ A milpa is a cleared field, usually located in the rainforest, which is used for agriculture.

Promotion of such peripheral roles is, however, well attested with local adjuncts of action verbs in languages with applicative systems, witness (24) from Chichewa (Mchombo 1998: 506/7) and (25) from Kichaga (Tanzania, Bresnan and Moshi 1993: 49).¹⁶

- (24) a. *Kalúlu a-ku-phík-á maûngu pa chulu.*
 1a:hare 1.SBJ-PRS-cook-FV 6:pumpkin 16:on 7:ant.hill¹⁷
 ‘The hare is cooking some pumpkins on the ant-hill.’
- b. *Kalúlu a-ku-phík-ír-a pa chulu maûngu.*
 1a:hare 1.SBJ-PRS-cook-APPL-FV 16:on 7:ant.hill 6:pumpkin
 ‘The hare is cooking on ant-hill the pumpkins.’
- (25) a. *N-ǎ-ĩ-ly-à k-élyà.*
 FOC-1.SG-PRS-eat-FV 7-food
 ‘He/She is eating food.’
- b. *N-ǎ-ĩ-lyì-í-à m-rì-nyì k-élyà.*
 FOC-1.SG-PRS-eat-APPL-FV 3-homestead-LOC 7-food
 ‘He/She is eating food at the homestead.’

This confirms that YM extraversion chiefly allows for central participants to appear in direct object function, while applicative formation chiefly allows for peripheral participants to appear in direct object function.

5.3. Nature of roles: affected human participants

The direct object of an extraverted intransitive root practically never codes an affected human participant. The closest one can get is the addressee of a verb of communication. However, this is not really affected, and even there the construction is marginal. The canonical frame for a verb of communication is ‘message = direct object, addressee = indirect object’, as shown in (26a) and (27), first variant. An alternate frame has the addressee as direct object if there is no NP referring to the theme, as in (26b). Some speakers allow for absolutive (i.e. direct object) marking of the addressee even with the basic communication verb *tsikbat* ‘tell, chat’, as is shown in (27), second variant, though conservative speakers judge it as ungrammatical. Note that this pattern is restricted for a number of reasons. First, it violates rules of YM grammar since there is no cross-reference marking of the lexical NP in object function *hun-p’él ba’l* ‘one thing’, the absolutive suffix-slot being occupied by the absolutive marker for the second person. Furthermore, this frame seems to be conditioned by overt marking of

¹⁶ Although the local marking is preserved with the local dependents in the applicative constructions in (24b) and (25b), these exhibit syntactic properties of a primary object in Bantu, i.e. adjacency to the verb, passivizability, and possible object cross-reference on the verb (see Alsina and Mchombo 1993, section 4.3, Bresnan and Moshi 1993).

¹⁷ In the Bantu examples, arabic numerals (occasionally followed by a small letter) in front of nouns indicate noun classes.

the addressee appearing as an absolutive suffix on the verb. Since the third person singular absolutive suffix is zero in non-clause-final position, a third person (singular) addressee could not be distinguished from cross-referencing the message argument. Note furthermore that in any case, the addressee of *tsikbat* cannot become the subject of a passive version, from which we may conclude that it is not a canonical direct object.¹⁸

- (26) a. *káa in tse'kt te'x u t'àan diyos*
 CNJ SBJ.1.SG preach:TRR(SUBJ) you.all POSS.3 speech god
 'so that I preach you the word of god' (ACC)
- b. *táan in tse'k-t-ik le máak-o'b-a'*
 PROG SBJ.1.SG preach-TRR-INCMPL DEF person-PL-D1
káa y-ohel-t-o'b
 CNJ SBJ.3-know-TRR(SUBJ)-3.PL
ba'x k-u tàal u yúuch-ul
 what IMPF-SBJ.3 come SBJ.3 happen-INCMPL
 'I am preaching to these people so that they come to know what is going to happen' (AVC_0019)
- (27) *táan in* $\left\{ \begin{array}{l} \textit{tsikbat-ik} \\ \text{chat:TRR-INCMPL(ABS.3.SG)} \end{array} \right.$ *tèech* $\left. \begin{array}{l} \textit{hun- p'éel} \\ \text{one- CL.INAN} \end{array} \right\}$ *ba'l*
 PROG SBJ.1.SG $\left\{ \begin{array}{l} \textit{?tsikbat-ik-ech} \\ \text{chat:TRR-INCMPL-ABS.2.SG} \end{array} \right.$ $\left. \begin{array}{l} \text{you} \\ \text{thing} \end{array} \right\}$
 'I am telling you something' (RMC_1324)

Thus, applicative promotion of the addressee is heavily constrained in several respects: First, in a complete frame displaying message and addressee, the message is always coded as the direct object while the addressee takes the function of the indirect object. Second, absolutive coding of the addressee is restricted for basic verbs of communication, as explained above. It may be of relevance that the most basic verb of communication, *a'l* 'say', is only used in the canonical frame illustrated in (27), first variant and excluded from a frame like (27), second variant. We therefore hypothesize that the addressee in the position of a direct object of an extraversive verb is a secondary development.

5.4. Development: locative alternation

There are a number of contact verbs displaying extraversion together with a valence alternation. With these either the theme/patient (28a) or the place of contact (28b) is in

¹⁸ This is, in fact, the only sentence in our corpus that might lead one to suspect a primary/secondary object distinction for YM.

direct object function. While there is no alternative intransitive frame for the patient (28a'), the place may as well be accommodated in an intransitive frame (28b').

(28) a. *táan in ts'ûb-t-ik hun-p'éel t'àan màayah*
 PROG SBJ.1.SG write-TRR-INCMPL one-CL.INAN speech maya
 'I am writing a Mayan word' (RMC_2011)

a'. **táan in ts'ûb ti' hun-p'éel t'àan*
 PROG SBJ.1.SG write LOC one-CL.INAN speech

b. *táan in ts'ûb-t-ik hun-p'éel hu'n/pak'*
 PROG SBJ.1.SG write-TRR-INCMPL one-CL.INAN paper/brickwork
 'I am writing on a paper / a wall' (RMC_2011)

b'. *táan in ts'ûb ti' hun-p'éel hu'n /pak'*
 PROG SBJ.1.SG write LOC one-CL.INAN paper / brickwork
 'I am writing on a paper / a wall' (ACC)

(28) involves two alternations. The alternation between (28b) and (28b') looks like applicative formation, as the place argument is promoted to direct object function. The relationship between (28a) and (28b), however, is a commutation of two participants in direct object function and thus looks like a semantic valence alternation, one frame displaying the theme/patient of writing in direct object function, the other displaying the place of writing in direct object function.

(29) suggests that the frame with a local direct object, as in (28b), is secondary or derived. While in (29a) both participants, i.e. the theme and the place, can be accommodated, this is not the case in (29b) (~(28b)). Speakers judge the adjunction of the effected object as infelicitous since the verb *ts'ûb(t)* 'write' already implies the 'object' *t'àan* 'speech, words' so that its coding in a concomitant phrase seems to be superfluous.

(29) a. *táan in ts'ûb-t-ik le t'àan ti' le hu'n-o'*
 PROG SBJ.1.SG write-TRR-INCMPL DEF speech LOC DEF paper-D2
 'I am writing that word on the paper' (EMB_0630)

b. *táan in ts'ûb-t-ik hun-p'éel hu'n*
 PROG SBJ.1.SG write-TRR-INCMPL one-CL.INAN paper

(²*yéetel t'àan-o'b*)

with speech-PL

'I am writing on a paper (words)', lit.: 'I am writing a paper with words'
 (ACC)

Total demotion of the underlying patient may also be observed in genuine applicative constructions, e.g. in examples like (14), where applicative formation, promoting the place to direct object function, may be used in order not to mention the patient anymore. This may be due to the fact that the patient is understood in the context or is implicit in the verb, so that it would be infelicitous to mention it.

5.5. *Development: incorporation plus transitivization*

To complete the picture, we have to look at incorporative verbs, i.e. verbs that have an incorporated noun. These take the transitivizing suffix *-t*, too.¹⁹ Part of them displays the rearranging type of applicative construction, in the following form: The underlying direct object is demoted by being incorporated in the verb. The incorporative verb is intransitive. Subsequent transitivization reopens the direct object slot for another participant. (30) illustrates promotion of a place adjunct, (31) demonstrates promotion of a (human) goal adjunct to direct object function.²⁰

- (30) a. *t-in* *ch'ak-ah* *che'* *ichil* *in* *kòol*
 PRV-SBJ.1.SG cut-CMPL tree in POSS.1.SG milpa
- b. *t-in* *ch'ak-che'-t-ah* *in* *kòol*
 PRV-SBJ.1.SG cut-tree-TRR-CMPL POSS.1.SG milpa
 'I chopped trees in my cornfield.' (Bricker, Po'ot Yah and Dzul de Po'ot 1998: 354 / RMC_1685)
- (31) a. *t-in* *wek-ah* *ha'* *ti'* *h-piil*
 PRV-SBJ.1.SG spill-CMPL water LOC M-Philip
- b. *t-in* *wek-ha'-t-ah* *h-piil*
 PRV-SBJ.1.SG spill-water-TRR-CMPL M-Philip
 'I threw water on Philip' (Bricker, Po'ot Yah and Dzul de Po'ot 1998: 354)

In such cases, the function of *-t* is indistinguishable from the applicative. However, not all combinations of incorporation plus transitivization are applicative in this sense. There are a number of lexicalized incorporatives, as in (32a), which do not possess a regular paraphrase such that the participant underlying their direct object would be accommodated in their base verb frame. Here, the function is again extraversive, the intransitive incorporative verb *lek'ich* being the basis of derivation. The direct object participant of the transitivized incorporative verb is a new participant arising from the semantic change brought about by the operation of incorporation.

- (32) a. *t-u* *lek'-ich-t-ah* *u* *xìun*
 PRV-SBJ.3 open-eye-TRR-CMPL POSS.3 spouse
- b. [?]*t-u* *lek'ah* *u* *yich* *ti'* *u* *xìun*
 PRV-SBJ.3 open-CMPL POSS.3 eye LOC POSS.3 spouse
 'he looked scornfully at his wife' (EMB_0176, RMC_2000)

¹⁹ For a comprehensive analysis of incorporation and related processes in YM, cf. Lehmann and Verhoeven 2005.

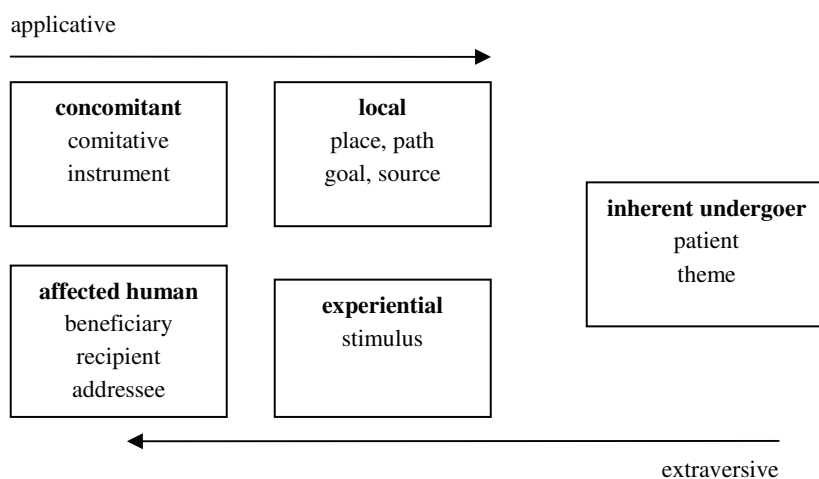
²⁰ Other languages that display rearranging applicative constructions on the basis of incorporation include Chukchee (cf. Nedjalkov 1976, Spencer 1995), Ainu (cf. Kaiser 1997) and Oluta Popoluca (cf. Zavala Maldonado 1999).

Summarizing the YM constructions involving derivation in *-t*, there are only a few that fulfill the criteria of applicative constructions. Most of these are derived or secondary with regard to extraversion, or a recent development, as in the case of addressee-direct-objects.

6. Conclusion

Peterson (1999, section 5.4) postulates the following implicational relationship between different applicative types: locative and circumstantial applicatives depend on the presence of other applicative constructions, while benefactive and instrumental/comitative applicatives do not. That is, the locus of applicative formation is in the promotion of benefactive and instrumental/comitative arguments. These serve as anchors, as it were, for the development of additional applicative constructions marked either by the same or distinct morphology. This is visualized in the upper half of Figure 8.

Figure 8. *Expansion of constructions with respect to thematic roles*



The upper half of Figure 8 represents a developmental path for the extension of applicative constructions. The facts of YM now suggest that the picture can be completed by looking at the process of extraversion with its developmental characteristics. Extraversion and the thematic roles affected by it are shown in the lower half of Figure 8. The locus of extraversion is in the exteriorization of the patient and theme. If other, more peripheral, roles like goal, place, stimulus etc. join the transitive pattern, this may take on features of applicative marking, provided there is a regular, transformational relationship between alternative alignments. Such favorable circumstances may be provided, e.g., by incorporation or by the locative alternation. Extraversion may then fulfill functions proper to applicative formation. Thus, a derivational process may develop from extraversive to applicative passing through the less inherent roles on the left side of Figure 8. Given that the two processes are related as shown in Figure 6 above, each of them may expand over part of the overall domain of thematic roles.

In purely structural terms and disregarding paraphrase relationships, extraversion and applicative formation are the same thing. We have repeatedly emphasized that the distinction we are making is gradual. It may be rephrased this way: Undergoer-focused transitivization is called applicative formation to the extent that it is a syntactic process marked on the verb; it is called extraversion to the extent it is a lexical process with syntactic consequences.

We do not want to be misunderstood. We are not objecting to the attempt to provide a syntactic analysis of constructions involving processes of word-formation. We have tried it ourselves. Discovering and formulating regularities is an important facet of the epistemic interest of linguistics. However, we suspect that in the case of applicative constructions, transformational relationships have been overemphasized. That is, if our proposal to distinguish between applicative and extraversive is accepted, then we expect that many applicatives which figure in linguistic descriptions will turn out to be more like an extraversive upon critical examination.²¹

²¹ This can be hypothesized on the basis of statements like the following: “The applicative derivation is seldom fully productive, being normally restricted to a limited set of intransitive roots.” (Dixon and Aikhenvald 1997: 80). Here features like reduced productivity and restriction to intransitive bases, which are typical of extraversion, are diagnosed on the applicative instead.

Abbreviations

Morpheme glosses and syntactic categories

1	1 st person	IMPF	imperfective
2	2 nd person	INAN	inanimate
3	3 rd person	INCMPL	incompletive
ABS	absolutive	INT	interrogative
ACT	active	INTRV	introversive
AN	animate	ITR	intransitive
APPL	applicative	LOC	locative
ART	article	M	masculine
CL	classifier	PASS	passive
CMPL	completive	PL	plural
CNJ	conjunction	POSS	possessive
D1	proximal deixis	PROG	progressive
D2	distal deixis	PROHIB	prohibitive
DEAG	deagentive	PRS	present
DEF	definite	PRV	perfective
EFOC	extrafocal	PST	past
EXIST	existential	REL	relator
F	feminine	SBJ	subject
FOC	focus	SG	singular
FUT	future	SUBJ	subjunctive
FV	final vowel	TRR	transitivizer
IMP	imperative		

Text sources

- BVS Blair, Robert W. and Vermont-Salas, Refugio 1965-7, *Spoken (Yucatec) Maya. 2 vols.* Chicago: University of Chicago, Dept. of Anthropology. Reprint: Columbia, Miss.: Lucas Brothers, 1979.
- HK'AN Dzul Poot, Domingo 1986, "J-k'an yajaw". In: *Cuentos mayas (tomo II). Edición bilingüe: español – maya.* Mérida, Yucatán: Maldonado; INAH, SEP; 89-114.
- HNAZ Bolio, Antonio 1930, "H Nazario". Andrade, Manuel J. and Más Collí, Hilaria (eds) 1991, *Cuentos mayas yucatecos; Tomo II*, Mérida: Universidad Autónoma de Yucatán; 64-127.
- ACC Amedée Colli Colli, Felipe Carrillo Puerto, Q. Roo, Mexico,
- AME Antonio May Ek, Yaxley, Q. Roo, Mexico,
- AVC Aniceto Velázquez Chi, F. Carrillo Puerto, Q., Mexico,
- CPP Catalino Poot Peña, Yaxley, Q. Roo, Mexico
- EMB Ernesto May Balam, Yaxley, Q. Roo, Mexico

MPK María Puk Ciau, Yaxley, Q. Roo, Mexico
 NMP Norma May Pool, Yaxley, Q. Roo, Mexico
 RMC Ramón May Cupul, Yaxley, Q. Roo, Mexico

References

- Alsina, A. and Mchombo, S.A. 1993. "Object asymmetries and the Chichewa applicative construction". In *Theoretical aspects of Bantu grammar*, S. Mchombo (ed.), 17-45. Stanford: Center for the Study of Language and Information [CSLI lecture notes 38].
- Baker, M. 1988. *Incorporation. A theory of grammatical function changing*. Chicago etc.: University of Chicago.
- Bricker, V., Po'ot Yah, E. and Dzul de Po'ot, O. 1998. *A dictionary of the Maya language as spoken in Hocabá, Yucatán*. Utah: University of Utah Press.
- Bohnenmeyer, J. 2002a. *The grammar of time reference in Yucatec Maya*. München: LINCOM Europa [LINCOM Studies in Native American Linguistics 44].
- Bohnenmeyer, J. 2002b. Activity nouns, unaccusativity, and argument marking in Yucatekan. Talk held at the SSILA meeting; LSA; San Francisco; 2002.
- Bohnenmeyer, J. 2004. "Split intransitivity, linking, and lexical representation: The case of Yucatek Maya". *Linguistics* 42: 67-107.
- Bresnan, J. and Moshi, L. 1993. "Object asymmetries in comparative Bantu syntax". In *Theoretical aspects of Bantu grammar*, S. Mchombo (ed.), 47-91. Stanford: Center for the Study of Language and Information [CSLI lecture notes 38].
- Comrie, B. 1985. "Causative verb formation and other verb-deriving morphology". In *Language typology and syntactic description, Vol.III: Grammatical categories and the lexicon*. (repr. 1990), T. Shopen (ed.), 309-348. Cambridge etc.: Cambridge University Press.
- Croft, W. 1991. *Syntactic categories and grammatical relations*. Chicago: Chicago University Press.
- Dixon, R.M.W. and Aikhenvald, A.Y. 1997. "A typology of argument-determined constructions". In *Essays on language function and language type. Dedicated to T. Givón*, J. Bybee, J. Haiman and S.A. Thompson (eds), 71-113. Amsterdam and Philadelphia: John Benjamins.
- Dixon, R.M.W. and Aikhenvald, A.Y. 2000. "Introduction". In *Changing valency: Case studies in transitivity*, R.M.W. Dixon and A.Y. Aikhenvald (eds), 1-29. Cambridge: Cambridge University Press.
- Drossard, W. 1991. "Transitivität (vs. Intransitivität) und Transitivierung (vs. Intransitivierung) unter typologischem Aspekt". In *Partizipation: Das sprachliche Erfassen von Sachverhalten*, H. Seiler and W. Premper (eds), 408-445. Tübingen: Narr [Language Universal Series 6].

- Givón, T. 1983. "Topic continuity in discourse: An introduction". In *Topic continuity in discourse: a quantitative cross-language study*, T. Givón (ed.), 1-41. Amsterdam and Philadelphia: John Benjamins.
- Foley, W.A. and Van Valin, R.D. 1984. *Functional syntax and universal grammar*. Cambridge: Cambridge University Press [Cambridge Studies in Linguistics 38].
- Haspelmath, M. 1993. "More on the typology of inchoative/causative verb alternations". In *Causatives and transitivity*, B. Comrie and M. Polinsky (eds), 87-120. Amsterdam and Philadelphia: John Benjamins [Studies in Language Companion Series 23].
- Haspelmath, M. and Müller-Bardey, T. 2004. "Valence change". In *Morphology*. Vol. 2, G. Booij et al. (eds), 1130-1145. Berlin and New York: de Gruyter.
- Hopper, P. and Thompson, S. 1980. "Transitivity in grammar and discourse." *Language* 56: 251-299.
- Kaiser, L. 1997. "The interaction of noun incorporation and applicative formation in Ainu". In *Yearbook of Morphology 1997*, G. Booij and J. van Marle (eds), 157-178. Boston: Kluwer Academic Publishers.
- Kaufman, T. 1990. "Algunos rasgos estructurales de los idiomas Mayances". In *Lecturas sobre la lingüística Maya*, N.C. England and S.R. Elliot (eds), 59-114. La Antigua, Guatemala: Centro de Investigaciones Regionales de Mesoamérica.
- Lehmann, Ch. 1991. "Predicate classes and PARTICIPATION". In *Partizipation: Das sprachliche Erfassen von Sachverhalten*, H. Seiler and W. Premper (eds), 183-239. Tübingen: Narr [Language Universal Series 6].
- Lehmann, Ch. 1993. "Predicate classes in Yucatec Maya". *Función* (Guadalajara) 13/14: 195-272.
- Lehmann, Ch. 2002. *Possession in Yucatec Maya*. Erfurt: Seminar für Sprachwissenschaft der Universität [ASSidUE 10]. Second revised edition.
- Lehmann, Ch., Shin, Y.-M. and Verhoeven, E. 2000. *Direkte und indirekte Partizipation: Zur Typologie der sprachlichen Repräsentation konzeptueller Relationen*. München: LINCOM Europa [LINCOM Studies in Language Typology 4].
- Lehmann, Ch. and Verhoeven, E. 2005. "Noun incorporation and participation. A typological study on participant association with particular reference to Yucatec Maya". In *Aspects of participation: Typological studies on concomitance and incorporation*, Ch. Lehmann (ed.), 103-204. Berlin: Akademie Verlag [Studia Typologica 7].
- Lemmens, M. 1998. *Lexical perspectives on transitivity and ergativity: causative constructions in English*. Amsterdam and Philadelphia: John Benjamins [Current issues in linguistic theory 166].
- Luraghi, S. 2001. "Syncretism and the classification of semantic roles". *STUF* 54: 35-51.
- Mchombo, S.A. 1998. "Chichewa (Bantu)". In *The handbook of morphology*, A. Spencer and A.M. Zwicky (eds), 500-520. Oxford and Massachusetts: Blackwell.

- Michaelis, L. and Ruppenhofer, J. 2001. *Beyond alternations: A constructional model of the German applicative pattern*. Stanford: CSLI Publications.
- Mosel, U. 1991. "Towards a typology of valence". In *Partizipation: Das sprachliche Erfassen von Sachverhalten*, H. Seiler and W. Premper (eds), 240-251. Tübingen: Narr [Language Universal Series 6].
- Nedjalkov, V.P. 1976. "Diathesen und Satzstruktur im Tschuktschischen". In *Satzstruktur und Genus verbi*, R. Löttsch and R. Růžička (eds), 181-211. Berlin: Akademie-Verlag [Studia Grammatica XIII].
- Nichols, J., Peterson, D.A. and Barnes, J. 2004, "Causativizing and decausativizing languages". *Linguistic Typology* 8: 149-211.
- Owen, M.G. 1973. "Semantic aspects of Yucatec dual-object constructions". In *Meaning in Mayan language. Ethnolinguistic studies*, Edmonson (ed.), 51-57. The Hague and Paris: Mouton [Jan. ling. Ser. Pract 158].
- Paris, C. 1985. "Relations actanciennes et valence verbale en avar: effacement de l'actant et mise au jour du sens". *Actances* 1: 135-153.
- Peterson, D.A. 1999. Discourse-functional, historical, and typological aspects of applicative constructions. Dissertation, Berkeley: University of California.
- Rice, S.A. 1987. Towards a cognitive model of transitivity. Dissertation, San Diego: University of California.
- Rude, N. 1986. "Topicality, transitivity, and the direct object in Nez Perce". *International Journal of American Linguistics* 52: 124-153.
- Shibatani, M. 1996. "Applicatives and benefactives: A cognitive account". In *Grammatical constructions: Their form and meaning*, M. Shibatani and S.A. Thompson (eds), 157-194. Oxford: Clarendon Press.
- Spencer, A. 1995. "Incorporation in Chukchi". *Language* 71(III): 439-489.
- Tsunoda, T. 1981. "Split case-marking patterns in verb types and tense/aspect/mood". *Linguistics* 19: 389-438.
- Van Valin, R.D. and LaPolla, R.J. 1997. *Syntax: Structure, meaning and function*. Cambridge etc.: Cambridge University Press.
- Zavala Maldonado, R. 1999. "External possessor in Oluta Popoluca (Mixean). Applicatives and incorporation of relational terms". In *External possession*, D. Payne and I. Barshi (eds), 339-372. Amsterdam and Philadelphia: John Benjamins.