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(eds)

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Root Indeterminacy and Polyvalence in Yukatekan Mayan Languages

Ximena LOIS and Valentina VAPNARSKY

Introduction

The question of lexical categories has been an important issue in recent years in theoretical debates as well as in descriptive work. Mayan languages present a combination of intricate properties which make this question especially interesting such as the absence of an overt copula in many constructions, the use of the same personal markers to indicate argument and possessive relationships, among others.

An important aspect of the study of lexical categories and root classes is the determination of the levels at which they are defined. In recent research, Marantz (1997) and subsequent works propose that roots are universally category-neutral and get defined in the syntax. Baker (2003) also proposes syntactic definition of lexical categories but does not tackle the problem of roots. For both authors the universal categories are Verb, Noun, and Adjective but are attributed at different levels: for Marantz, wordformation is basically pure syntax, while for Baker categorial determination is closer to the interface between the (mental) lexicon and the syntax. The problem of levels and wordformation processes is further discussed in the Introduction of this volume.

Among Mayanists different currents are found for dealing with roots and predicates. A “nominalist” approach was in vogue in the beginning of the 20th century (cf. De Charencey 1884, Seler 1887, Tozzer 1921, and more recently Bruce 1968). In the last decade other analyses have been developed (cf. Bricker et al. 1998, Hofling 2000, Hofling and Tesukun 1997, Lehmann 1993, Lucy 1994, Danziger 1996). Many authors propose lexical classifications based on a strict opposition, at the root level, between verb and noun. As a corollary, they postulate derivational processes to account for category changes – including a

rather large number of zero derivations, also called conversions – from nouns to verbs as well as from verbs to nouns. This kind of analysis has been coupled with a special concern for verb morphology. In this paper we will argue that both these approaches, the “nominalist” and the more “verbalist” one, are inadequate to explain root behaviour and category determination processes in Yukatekan languages.

Based on previous work (Lois and Vapnarsky 2003), we propose that many roots are categorially undetermined. For Yukatekan languages this conception is not entirely new. McClaran (1972), for example, maintains that the category distinction Noun/Verb is not relevant at the root level. Some authors working on other Mayan languages – especially on Tzotzil and Tzeltal, both spoken in Chiapas – have also suggested that a more flexible characterization of roots would be more adequate (cf. Laughlin 1975, Haviland 1994, Monod Becquelin 1997). Here we will try to go further in the analysis of how this root flexibility or polyvalence operates at the morphosyntactic level.

In our previous work we have presented a theory-independent account of Yukatekan languages according to which an important number of roots are undetermined with respect of verbhood or nounhood and, are, consequently, polyvalent. Verbal and nominal features are defined through phonological and morphological inflectional profiles. Following the basic lines of this analysis, we further examine in this paper some parallels observed between verbs and nouns, and arrive at a system where most (if not all) roots are undetermined. In particular, we consider the possibility that different roots get defined at different levels for different features such as category and participant structure. The data analyzed here should contribute to research on the argument structure of nominals, widely debated since Chomsky (1970). The characterization and classification of roots that we propose is mainly based on phonological properties and morphosyntactic behaviour of roots. Semantic correlates are part of ongoing research; only some aspects of the meaning of the lexical classes will be briefly mentioned in this paper. As discussed in the Introduction and in Carter (this volume) there are important issues with respect to the interface between the conceptual and linguistic levels that need to be considered for understanding lexical categories and how they are determined.

According to our analysis, roots in Yukatekan languages are divided into two main classes, Undetermined roots and Nominal roots. Undetermined roots (U-roots) are category neutral and can function as either verbal or nominal (including uses as participles and classifiers) without any derivational

process being involved. This group comprises all roots traditionally considered “verbal” and the so-called “verbal/action nouns”. Nominal roots (N-roots) can only function as nominals; they need overt derivation to function as verbs.

The determination and realization of category and argument or relational structure of roots is obtained through morphophonological and morphosyntactic processes. We argue for a word-formation process that we call “instantiation”, and which contrasts with derivation and compounding. Instantiation of a root corresponds to the process of entering directly into a given phonological profile (through definition of the root vowel) and a given morphological profile (including different types of morpheme inflection). The process of instantiation allows us to account for multiple category realization of the same root, and consequently we can dispense with unjustified zero derivations. Also, our analysis gives a new interpretation to some phonological facts which are conceived here as inflectional and not derivational. Argumental determination of U-roots is expressed by the phonology (root-vowel variations) and, categorial determination is defined by the morphosyntax. Argumental determination, which occurs independently, and perhaps before, categorial definition, distinguishes transitives from intransitives, and among the latter, actives from inactives. The active root class shows interesting overlaps with the nominal root class, suggesting that the borderline between undetermined roots and nominal roots is not so clear.

In section 1 relevant features of Mayan languages are presented. Previous classifications of lexical roots are reviewed in section 2. Our analysis is developed in section 3. First, we examine word formation processes in Yukatekan languages, introducing the notion of instantiation in 3.1; we offer a detailed description of the formation of phonological and morphological profiles in 3.2 and 3.3 respectively. In 3.4 we focus on verbal and nominal instantiations of U-roots. After showing that these are mainly distinguished at the syntactic level, we establish a correspondence between N-root and U-root subclasses, hence between argument and relational structures. In 3.5 we briefly introduce other possible instantiations, and in 3.6 an overview of the main derivational processes is given, which grounds the distinction between U-roots and N-roots as well as between the three subclasses of U-roots (multivalent, active and inactive). Following from our analysis, a conclusive presentation of root classes in Yukatekan languages is offered in 3.7, with some remarks on their semantic properties. Finally, section 4 further examines active intransitive U-roots, an especially interesting class because of its opposing tendency towards

full nominality on the one hand, and multivalence on the other hand. This class should help to understand indeterminacy and the relation between verbs and nouns in Mayan languages and the diachronic dynamics and synchronic flexibility of the root class system.

1. Some Properties of Yukatekan Mayan Languages

There are about thirty Mayan languages spoken in Guatemala, Mexico, and Belize, grouped into different branches. The Yukatekan branch is made up of four mutually intelligible languages or dialects, depending on the author, spoken in the Maya Lowlands: Yukatek, Itza', Mopan and Lakantun. In this paper we will deal mainly with Yukatek and Itza' and, abusively, we will refer to those two languages as Yukatekan languages, unless distinctions are made.¹

1.1 Phonology

The great majority of Mayan roots are monosyllabic CVC, and more rarely polysyllabic. In all Yukatekan languages, the vowel in the CVC sequence may have different values: short, long and glottalized. A tonal distinction is also observed with long vowels in Yukatek: a melodic opposition between a continuous “low” tone (marked with grave accent) and a rising-falling “high” tone (marked with acute accent); this is illustrated in Table 1.² The other

1 Mayan languages are spoken by some 3,500,000 speakers. For the Yukatekan branch: Yukatek (750,000 speakers in the Yucatecan peninsula), Itza' (less than 40 in Petén, Northern Guatemala), Mopan (8,000 in Belize and Guatemala), Lakantun (500 in Chiapas).

We gratefully acknowledge Richard Carter and Marcia Haag for their helpful comments of this article.

2 We use the following orthographic conventions. In the sequence CVC, C stands for consonant and V for vowel of any value: short, long, glottalized. This also applies to examples of roots. When a precise value is considered: *v* = short vowel, *vv* = long vowel, *v'v* : high-tone long vowel, *v̄v*: low-tone long vowel, *v'v̄* = glottalized vowel; vowel harmony is noted with an italic *v*. Small caps are used to refer to lexical roots. Glottalized vowels can also

languages of the branch (illustrated here in Itza') have no tone, but show a sixth vowel, central /ä/, which does not exist in Yukatek, as shown in Table 2. These phonological differences will be shown to play an equivalent role in the grammar. In some cases vowel values distinguish roots lexically; in other cases, like KACH “split(ting)”, the vowel value of the same root may change to mark grammatical functions, the consonants remaining invariable in all cases.

Table 1: Examples of CVC roots in Yukatek

short V	long low tone V	long high tone V	glottalized V
KAN four	KÀAN snake		KA'AN sky
KACH tr. split(ting)/ break(ing) it	KÀACH ap. split(ting)/ break(ing)	KÁACH mp. split/ break, a fracture	KA'ACH pas. be(ing) split/broken
KOJ tooth, puma		KÓOJ arrive(ing)	KO'OJ expensive
MIS muscle	MÍS cat	MÍS sweep(ing), broom	
	WÈECH armadillo		WE'ECH mange
	XÙUX wasp	XÚUX tall basket	

occur as *v'* although the Cv'C template is underrepresented at the root level. Some roots present a Cv' form, for example Yukatek and Itza' P'Ō' “wash”, NA' “mother”. In this case we consider the final glottal stop to be a consonantal phoneme, an instance of the general CVC template.

For simplicity of comparison we have opted for a single uniform alphabet for Yukatekan languages, the one proposed for Yukatek in 1984 (cf. Bastarrachea 1992, also adopted by the Academia de Lengua y Cultura Mayas de Quintana Roo, cf. Nikte' T'aan n° 1, 2004). In tables, vowel-initial roots appear with initial glottal; when the glottal is not firm (i.e. drops when preceded by set-A personal markers) it appears in parentheses.

By convention, forms that differ in Yukatek and Itza' will be indicated in that order and separated by a slash.

Table 2: Examples of CVC roots in Itza'

short V	long V	glottalized V	/ä/
CHAK maybe	CHAAK thunder	CHA'AK sago, sweet casava	CHÄK red
JOL tr. hole(ing) it, mp. hole, a hole	JOOL tumpline	JO'OL head	
KAN snake		KA'AN sky	KÄN four
KACH mp. split/ break, a fracture			KÄCH tr./ap. split(ting)/ break(ing) it
KUK roll(ing)	KUUK elbow	KU'UK squirrel	

1.2 Morphosyntax

Mayan languages belong to the head-marking type (Nichols 1986) because they mark grammatical relations on the predicate head (verbal, nominal, adjectival, or locative). This is done by means of obligatory person markers traditionally called “set A” (ergative) and “set B” (absolutive). These two sets are coindexed with the arguments of predicates with which they agree in person and optionally in number. Arguments may surface as nominal phrases, verbal phrases, or independent lexical pronouns. Neither subject nor object lexical arguments are obligatory (cf. 1–6) unless required for purposes of topicalization, and focalization.³

Our first two examples show verbal predicates: transitive (1) with two person markers, and intransitive (2) with only one person marker. A set-A marker preceding the root is coindexed with the subject (agent) in the transitive form (1); a set-B marker following the root is coindexed with the object in the transitive (1) and the subject (patient) in the intransitive form (2).⁴

3 Here we assume without any further analysis that the optional nominals are the arguments in Mayan languages, and not the set A and B personal markers themselves. A hypothesis in the opposite direction proposed by Jelinek (1984) for Australian languages could perhaps be adapted for Mayan languages. Nothing hinges on this decision for the present work.

4 The examples used here come from our own fieldwork and correspond to texts of different nature recorded since 1991 as well as elicitations. Yukatek data are from villages south of Felipe Carrillo Puerto and Itza data from San José, Petén.

(Yuk.1) *t-a-ts'ak-aj-en*
CP.TR-A2-cure/heal-CP₁-B1
“you cured/healed me”

(Yuk.2) (j) *lúub-en*
(CP.INTR) fall-B1
“I fell”

The following examples show stative, substantival (3) and adjectival (4) predicates. Set A marks the possessor in (3) whereas set B is coindexed with the subject of the predicate in (3) and (4).

(Yuk.3) *inw-atan-ech*
A1-wife-B2
“you are my wife”

(Yuk.4) *nojoch-en*
big-B1
“I am big”

The head-marking property together with the possibility of having incorporations on the predicate head (namely object and adverb incorporation) characterize Mayan languages as polysynthetic languages (cf. Mithun 1984, Baker 1988, 1995).

We will use the following abbreviations: 1: first person, 2: second person, 3: third person, A: set A personal marker (ergative), ANIM: animate, AP: antipassive, APP: applicative suffix, B: set B personal marker (absolutive), CAUS: causative, CLAS: numeral classifier (NOM.CLAS: nominal classifier), CONJ: conjunction, CP: completive, CP₁: completive transitive terminal TAM, CP₂: completive intransitive terminal TAM, CP.INTR: completive intransitive initial TAM, CP.TR: completive transitive initial TAM, DER: derivation, DET: determiner, DIST: distal, FACT: factitive, FEM: feminine, GEN: gender, HAB: habitual, generic, incomplete, HYP: hypothetical, INAN: inanimate, ICP: incomplete, ID: initial deictic, INCEP: inceptive, INCH: inchoative, INFL: inflection(al), INTR: intransitive, ITZ: itza', MAN: manner, MASC: masculine, MP: middlepassive, N: nominal root, NEG: negation, NOM: nominal, NOM₂: nominal suffix *-vl*, NOM₃: nominal suffix *-il*, NOM₄: nominal suffix *-el*, NOM₅: nominal suffix *-al*, NUM: numeral, OST: ostensive, PART₁: participle *-a'an*, PART₃: participle *-vll-al*, PAS: passive, PL: plural, PREP: preposition, PROG: progressive, PROS: prospective, PST: past, QUANT: quantifier, QUOT: quotative, RED: reduplicative, RETR: retrospective, SBJ: subjunctive, SP: Spanish (loan), SUB: subordinator suffix, TAM: tense, aspect, mood, TD: terminal deictic, TD₁: terminal deictic *-a'*, TD₂: terminal deictic *-o'*, TD₃: terminal deictic *-i'*, TD₄: terminal deictic *-e'/-ej*, TERM: terminative, TR: transitive, YUK: Yukatek.

As seen in examples (1) and (2), Yukatekan languages show intransitive ergativity. This is a general feature of the Mayan linguistic family. As do most languages in the family, Yukatekan languages also present an intransitive split which is mainly based on aspect and subordination. In the incompletive aspect, subjects of intransitive verbs are coindexed with set A rather than set B. Thus, in contrast with example (2) above, in (6) the subject of “fall” in the incompletive is coindexed with *in-* (set A), that is the same set used for the subject of “cure” in transitive (1) or (5); in other words, a nominative-accusative pattern is used in the incompletive aspect.⁵

(Yuk.5) *k-in-ts'ak-ik-ech*
 HAB-A1-cure/heal-ICP.TR-B2
 “I cure/heal you”

(Yuk.6) *k-in-lúub-ul*
 HAB-A1-fall-NOM₂
 “I fall”

1.3 General Similarities between the Projection of Verbs and Nouns

There are striking parallels between verbal and nominal phrases in different respects. These similarities are related to other properties of the language, such as the identity of person markers on nouns and verbs, the absence of an overt copula in most stative predications, and the split ergativity. First, verbal and nominal phrases, including adjectives (but see note 12), can both function as predicate (see 1–4) and as argument (e.g. as a relative clause, see examples 7 where the object of the sentence is a noun phrase in (a), a relativized verbal phrase in (b), and a “substantivized” adjectival phrase in (c)). Nominal and adjectival phrases can hence constitute a clause by themselves, without any overt linker neither verbal nor copular as in (3) and (4).

5 Besides the aspectual split, Mopan also shows a lexical split (see 4.1).

In Yukatekan languages the so-called “incompletive” aspect covers a large and quite heterogeneous group of TAM particles, which all trigger the use of the set A with the subject of intransitive verbs (Bricker 1981a, Vapnarsky 1999) for Yukatek, and Hofling (2000) for Itza'.

- (Yuk.7) a. *t-inw-il(-aj) le' máak-o'*
 CP.TR-A1-see(-CP₁) DET person-TD₂
 “I saw that man”
- b. *t-inw-il(-aj) le' j bin te'el-o'*
 CP.TR-A1-see(-CP₁) DET CP.INTR go there-TD₂
 “I saw that one who went there”
- c. *t-inw-il(-aj) le' x polok-o'*
 CP.TR-A1-see(-CP₁) DET FEM fat-TD₂
 “I saw the fat one (feminine)”

Second, inflected forms may be identical in nominal and verbal uses (cf. 8a and b).

- (Yuk.8) a. *le' kúim-il-o', tun biin u-kúim-il máak*
 DET die/death-NOM₂-TD₂ PROG.A3 go A3-die/death-NOM₂ people
ju-jun-tul-il bey-o'
 RED-one-NUM.CLAS-NOM₃ like-TD₂
 (that) death, people are dying one by one like that”
- b. *ya'ab máak k-u-kúim-il béehl-ak-e'*
 many people HAB-die/death-NOM₂ today-PST-TD₂
 “there are many people who die nowadays”

Third, as seen in examples 1 to 4, the same sets of person markers are used to refer to the participants of verbal and nominal phrases. Fourth, nominal and verbal clause structures show some symmetry, as illustrated in schemata 1 and 2:⁶

Schema 1: Nominal Clause

ID – NEG – NUM – CLAS – set A – GEN – adjective – NOM.CLAS – ROOT
 – DER – INFL/NOM – SET B/PL – TD

6 The sequences in schemata 1 and 2 may be expanded to include additional elements: in particular, other quantifiers can appear in initial position of nominal clauses, sometimes co-occurring with ID; various derivational suffixes can co-occur following the root; roots can be compounded (cf. section 3.7).

Schema 2: Verbal Clause

ID – NEG – Initial TAM – set A – adverb – ROOT – DER – INFL + Terminal
TAM – SET B/PL – TD

- a) In both structures, set-A personal markers precede the root whereas set-B markers follow it.
- b) Modifiers may intervene between set-A and the root in nominal and verbal phrases: adjectives in general with the former, some adverbs with the latter.
- c) Some parallels may be established between the Initial TAM (Tense-Aspect-Mood) of verbal structures and typical elements of the nominal clause. First, both the Initial TAM and the Initial Deictic (which pertain to a set including determiners together with personal, spatial, temporal and manner expressions, cf. Hanks 1990)⁷ occur in a discontinuous form which is associated with suffixed or enclitic elements, the whole framing the root. In both cases the initial element has a richer and more defined value whereas the terminal element belongs to a more constrained paradigm of a more general sense. Second, initial TAM (aspect in particular) and numeral classifier phrases are apparently located in equivalent syntactic positions with respect to the root. At some level of analysis, Initial TAM particles and classifiers can be interpreted as having a similar function: to (aspectually and physically) configure an action or entity whose boundaries are underspecified by the lexical properties of the root.⁸

7 Examples of temporal deictics in Yukatek are *be(h)'òora* “now, presently”, *tolakheak* “back then (shared, distant past)”, and of manner is *bey* “like, so”. Initial deictics also include a modal expression, the assurative *je'el* “indeed for sure”.

8 Thus, for the Yukatek root *JUCH'* “grind”, for example, the aspectuals *ts'ò'ok*, *ta'ayt*, *táan*, *súuk* configure the action as terminated, imminent, progressive and customary respectively. Similarly, Yukatek *J'AS* “banana” gets different configurations depending on the classifier used: *jun-wáal ja'as* “one banana leaf”, *jun-ts'íit ja'as* “one banana”, *jun-kúul ja'as* “one banana tree”.

2. Previous Classifications of Lexical Roots

2.1 *Classes and Classification Criteria*

To determine root types, Mayanists have mainly used morphological criteria, sometimes associating semantic and argumental properties. Root categories have been identified with morphologically underived stems. Nominal roots have traditionally been distinguished from verbal roots.⁹ The latter have been divided into transitives and intransitives, a strong opposition observed in the morphosyntax of all Mayan languages and in the phonology, for some of them. Besides these main classes, other types of roots are isolated such as adjectives, particles, expletives, numerals and onomatopoeia, as well as “positionals” – a fairly important group of roots which refer to (dis)positions of the human body and of objects –, and “affects/affectives” – which refer to sensory qualities or perceptions and repetitive actions – (cf. in particular Laughlin 1975, Kaufmann 1990, Hofling and Tesucún 1997, Bricker et al. 1998).

Another important line of analysis for root classification claims that argumental and aspectual features distinguish two classes of intransitives (Owen 1969, McClaran 1972, Straight 1976, Lehmann 1993, Lucy 1994, Danziger 1996, Krämer and Wunderlich 1999, Bohnemeyer 2001). These classes basically correspond to the distinction between unergative and unaccusative verbs initially proposed by Perlmutter (1978). According to the prevalence given to either aspectual or argumental parameters, proponents characterize the two types of intransitives as process versus change of state, active versus inactive, agent-salient versus patient-salient. We will use the terms active/inactive to refer to these classes. Type of causation, internal versus external respectively (cf. Levin and Rappaport 1995), has also been used to explain the linking properties of the transitivization of these two types (Bohneymer 2004).

9 Seler (1887), Tozzer (1921), Bruce (1968), Owen (1969), McClaran (1972), Laughlin (1975), Straight (1976), Ulrich and Ulrich (1978), Bricker (1981), Kaufman (1990), Lehmann (1993), Haviland (1994), Lucy (1994), Danziger (1996), Hofling and Tesucún (1997), Bricker, Po'ot Yah and Dzul de Po'ot (1998), Bohnemeyer (2001).

2.2. Criticisms of Previous Root Classifications

Several criticisms can be made of previous classifications. First, most of the above-mentioned analyses assume that roots yield derived forms, either through overt morphological marking or zero derivation. In particular, it is assumed that transitive verbs with the *-t* suffix are derived from N-roots. The corresponding intransitive is considered to be an antipassive, derived from the transitive form with a zero suffix, *-t* having been dropped (Bricker et al. 1998: 350 for Yukatek, Hofling and Tesucún 1997 for Itza’):

(Yuk.9) N TS’ÍIB “writing” $\xrightarrow{\text{DER-t}}$ tr. ts’íib-t “write something” $\xrightarrow{\text{DER-}\emptyset}$ ap. ts’íib- \emptyset
 “write”

Certain nominal roots are also assumed to be the source of derivation of transitive verbs with a zero morpheme, for example Bricker et al. *ibid.*: 339.¹⁰

(Yuk.10) N PÁAY “debt, loan” \rightarrow tr. páay- \emptyset “borrow, lend something”
 N YÉEY “choice, selection” \rightarrow tr. yéey- \emptyset “choose, select, elect something”

Zero morphemes also serve for inflection. For example, according to Lucy (1994) the sentence in (11) includes four zero morphemes; the first two zeros are rather derivational and correspond to stem formation, the last two are inflectional:¹¹

(Yuk.11) k-in-sít’- \emptyset_1 - \emptyset_2 - \emptyset_3 - \emptyset_4
 HAB-A1-jump-DER-DER-INFL-INFL
 “I jump” (from Lucy 1994, our subscripts and glosses from his analysis)

10 This case is not represented in Itza’ where the transitive forms of these roots also involve the *-t* suffix.

11 \emptyset_1 alternates with *-t* transitivizer in the same root class, \emptyset_2 does not alternate with any morpheme in the same root class but occupies the slot of the “antipassive” *-aj* of another paradigm. \emptyset_3 alternates with *-n*, the so-called antipassive morpheme which Lucy considers to be a case marker, and \emptyset_4 alternates with the modo-aspectual inflectional markers *-aj* and *-ak* occurring in completive and subjunctive respectively.

We will claim that the appeal to zero morphemes, which gives an output of exactly the same form as the input, is unnecessary and that most zero derivations can be subsumed under instantiation (see below).

Another difficulty with such classifications lies in the analysis of certain affixes as having a derivational instead of an inflectional nature. For example, in (8) above, the *-VI* suffix (realized in this case with vowel harmony echoing the root vowel */i/*: *kíim-il*) is commonly interpreted as operating a nominal derivation. However, *-VI* suffixes also appear with nominal roots distinguishing between different kinds of possessive/relational constructions (cf. 12–14). This, together with some distributional properties, is according to our view evidence of its inflectional nature.

(Yuk.12) a. in-yùum
 A1-father/master/lord
 “my father/master/lord”
 b. u-yùum-il k’áax
 A3-master-NOM₃ forest
 “the master/owner of the forest, the spirit of the forest”

(Yuk.13) a. inw-o’och bak’
 A1-NOM.CLAS(food) flesh/meat
 “my meat (that I eat)”

b. in-bak’-el
 A1-flesh/meat-NOM₄
 “my meat (that I am made of)”/ “my flesh”

(Yuk.14) a. béejl-e’ Sàanta Krùus-e, jun-p’é(el) kàaj tàaj nojoch- \emptyset
 now-TD₄ Santa Cruz-TD₄ one-CLAS.INAN town very big-B \exists
 “now Santa Cruz, it’s a very big town” [FN]

b. Sàanta Krùus-e’, in-kàaj-al- \emptyset
 Santa Cruz-TD₄ A1-town-NOM₅-B \exists
 “Santa Cruz, it’s my town”

c. le’ ken’al u-j(ó)o(k)’-ol-o’ t u-kàaj-i(l) SàantaKrùus-e’
 DET CONJ A3-go out-NOM₂-3PL PREP A3-town-NOM₃ Santa Cruz-TD₄
 “when they will leave for the town of Santa Cruz”

In addition to the morphological difficulties mentioned above, previous analyses are also problematic on conceptual grounds: in too many cases, an original N-root simply does not exist. This forces the authors to classify a great number of roots as of “unknown origin”.

Thus, in one sense or another, all these classifications force a verb-noun opposition that should be relativized at least at the root level. In the following section we will present a new analysis which avoids such a division by assuming that there are undetermined lexical roots. We argue that our proposal allows a more adequate description of the data without invoking ad-hoc derivations.

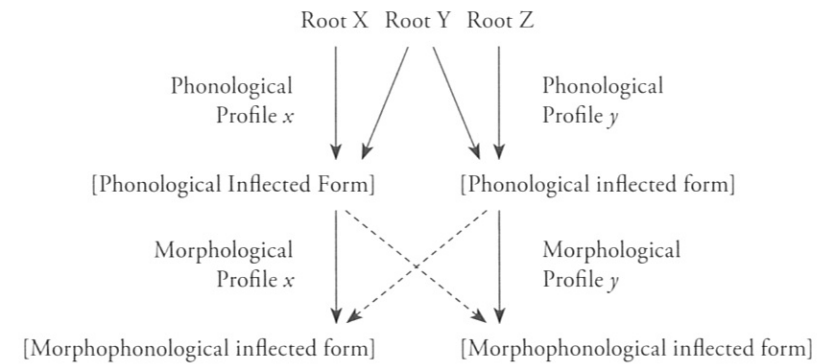
3. Categorical Polyvalence and Argumental (In)determination of Lexical Roots in Yukatekan Languages

To understand root classes, we need to look at word-formation processes. In the following sections, we propose that there are three main types of such processes: instantiation – a new notion that we introduce –, derivation, and composition.

3.1. Instantiation, Derivation and Compounding

We call *instantiation* of a root the process of entering directly into a given phonological and morphological profile (represented by continuous lines in Schema 3). Instantiation allows one to account for the fact that some roots can participate in several predicate formations with the same underived form. Consequently, unjustified zero derivations can be avoided. Instantiated forms can be verbal or nominal, with different argument or relational structures. Our notion of instantiation clearly differs from the traditional operation of conversion in that it does not imply an initial category from which another one is derived. Zero morphology typically changes the lexical class and semantics of the element it applies to. Even if conversion is defined as a nondirectional redundancy rule $V \leftrightarrow N$ it implies a category as input. By contrast, instantiation operates on a categorially undetermined root.

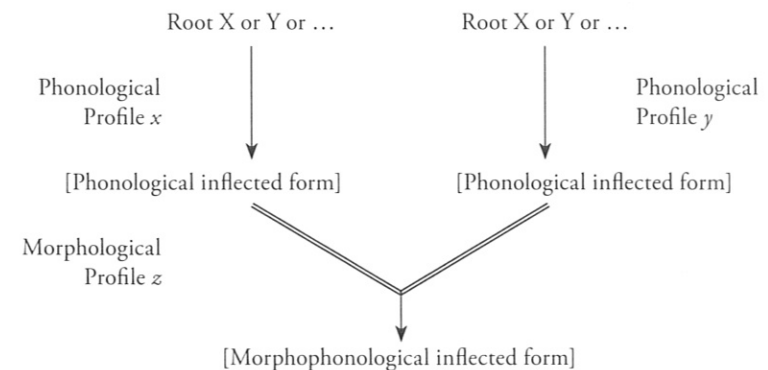
Schema 3: The Processes of Instantiation (Continuous Lines) and Derivation (Broken Lines)



We call *derivation* of a root the indirect adoption of a morphological profile. A form that already has a phonological profile indirectly enters into a morphological profile through derivation by adding required extra morphology (affixation, mostly suffixation) (represented by broken lines in schema 3).

The third word-formation process is *root compounding* (represented by double lines in schema 4). It consists in the combination of two roots of any class that already have a phonological profile.

Schema 4: The Compounding Process (Double Lines)



As we anticipated above our analysis leads to a distinction between two major root classes: Nominal (N) roots and Undetermined (U) roots. N-roots need

derivation to verbalize. They include (i) substantives denoting entities such as concrete nouns, kin and social terms, temporal and spatial divisions; (ii) adjectives denoting properties; and (iii) a small group of classifier roots.¹² In this work, we will deal mainly with substantives. U-roots can function as verbal or nominal without any derivation. Some of the U-roots are more strictly associated with an argument structure, namely intransitive roots (active and inactive) which need derivation to occur in a different argumental environment.¹³ Other U-roots, the multivalents, are more freely associated with different participant structures, which, for us, comprise argument as well as relational structure. Although the former is typically associated with events and the latter with entities, the generality of this is questionable in some cases, namely in nominal predication and event possession. The type and salience of participants, either arguments or relator/relatum, define different configurations. Some examples of members of the major root classes are given in Tables 3 and 4 below.

12 In spite of their semantic differences, substantives and adjectives share many properties in Yukatekan languages: a) they may appear in all kinds of phonological templates; b) they can both function as predicates with set-B personal markers; c) they use the same verbal derivation; d) they may both be possessed with set-A personal markers. But phonological and morphosyntactic distinctions between substantives and adjectives are observed in the use of certain modification processes: reduplication and adverbial modifiers are restricted to adjectives, and inversely, some modifiers appear only with substantives; also, they differ with respect to the attributive use. These differences are arguably explained by the semantics of each class (cf. Lois and Vapnarsky 2003), and are a reflect of the universal distinction between modification and reference (see Introduction of this volume).

13 This is a slightly revised terminology from Lois and Vapnarsky's (2003), although the extension of the classes has not changed. In that previous work, U-roots are called "verbo-nominal roots", multivalent roots have the same name but the two intransitives are grouped as "divalent roots" (because of their two instantiations, as intransitive and as nominal); intransitive active roots are called "agent-salient roots" whereas inactives are referred to as "patient-salient roots".

Table 3: Examples of U-roots in Yukatek and Itza'

Undetermined (U) Roots					
multivalent roots		active roots		inactive roots	
Yukatek/Itza'		Yukatek/Itza'		Yukatek/Itza'	
BAJ/BÄJ	nail(ing)	CHÁACH/CHAACH	sift(ing)	(*)ÉEL/(*')EL	burn(ing)
T'AN/T'ÄN	speak(ing), speech	CHE'EJ/CHE'EJ	laugh(ing)	(*)ÉEM/(*')EM	descend(ing)
CH'UY/CH'UY	hang(ing)	CH'ÚUK/CH'UUK	spy(ing)	(*)ÚUCH/(*')UCH	happen(ing)
JUCH'/JUCH'	grind(ing), dough	LÉETS'/LEETS'	lick(ing)	JÓOK'/JOK'	go(ing) out
MOL/MOL	gather(ing)	MÍIS/MIIS	sweep(ing), broom	KÍIM/KIM	die(ing), death
TSIL/TSIL	shred(ing)	TS'ÍIB/TS'IB	writ(ing)	MÁAN/MAN	pass(ing)

Table 4: Examples of N-roots in Yukatek and Itza'

Nominal (N) Roots					
substantive roots		adjectival roots		classifier roots	
Yukatek/Itza'		Yukatek/Itza'		Yukatek/Itza'	
BAK'/BÄK'	flesh, meat	CHAK/CHÄK	red	P'ÉEL/P'EEL	inanimate
BÄAK/BAK	bone	SÄAK'/SAK'	itchy	TÚUL/TUUL	animate
KÈEJ/KEEJ	deer	KÓOK/KOOK	deaf	TS'ÍIT/TS'IT	long & rigid
LU'UM/LU'UM	earth	TS'U'UY/TS'U'UY	hard	KÚUL/KUUL	Yuk.planted
K'ÍIN/K'IN	sun, day, time	CHÉECH/CHEECH	tearful, noisy		vegetal/Itz.
ATAN/ÄTAN	wife	CHOKOJ/CHOKOJ	hot		round object

3.2 The Formation of Phonological Profiles

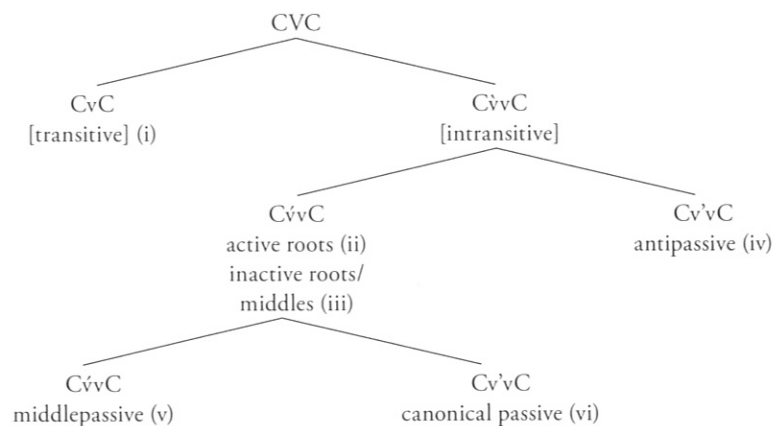
The first stage of word formation is phonological. In Yukatekan languages all roots initially share a *general template*, CVC, in which both Cs are completely determined but V only partially so. U-roots and N-roots behave differently in that vowel variation expresses regular grammatical distinctions for U-roots and mainly lexical ones for N-roots. For U-roots, vowel length (in all of the languages), tone (in Yukatek) and height (for the central vowel /ä/-/a/ in Itza', Lakantun and Mopan) become determined in the formation of phonological inflected forms. To anticipate, we will show that in this case tonal variations

and height variations are in fact two different means which fulfil the same function, namely the determination of participant structure. Phonological profiles are thus directly linked to syntactic structure.

Let us first analyze the Yukatek system, illustrated in Schema 5. To obtain underived inflected forms, Yukatek first distinguishes vowel length. This differentiates transitive from intransitive forms. The former take a short vowel (k-u-*juch*'-ik "(s)he grinds it"), the latter a long-toned vowel. Intransitive roots can only have the long vowel realization. They also have high tone, irrespectively of their argument structure (e.g., active root k-u-*ts'íib*' "(s)he writes", inactive root k-u-*jóok*'-ol "(s)he goes out"). However, for the other U-roots, namely the multivalents, tone variations further distinguish intransitives according to their argument structure: low tone for antipassives (k-u-*jùuch*' "(s)he grinds") and high tone for middles/inactives. Glottalization of the vowel ultimately distinguishes two types of inactives: middle (k-u-*júuch*'-ul "it gets ground") and canonical passive (k-u-*ju'uch*'-ul "it is ground").

Itza', and (according to data available to us) Mopan and Lakantun, reveal a different but equivalent pattern, illustrated in Schema 6. From the general CVC template, a height distinction of the central vowel is made: /ä/-/a/. This distinguishes transitive from intransitive underived inflected forms, which corresponds to Yukatek's use of length for the same end. Transitives take the high central vowel /ä/ (k-u-*k'äx*-ik "(s)he ties it"), and intransitives the low central vowel /a/ (k-u-*k'ax* "(s)he ties").¹⁴ In Itza', length is used to distinguish different types of intransitives according to argument structure. Inactives take a short vowel (k-u-*juch*'-ul "it gets ground"), whereas actives, including antipassives, take a long vowel (k-u-*juuch*' "(s)he grinds").¹⁵ Notice that, contrary to Itza', Yukatek does not distinguish intransitive roots (active versus

Schema 5: Phonological profiles in Yukatek with examples



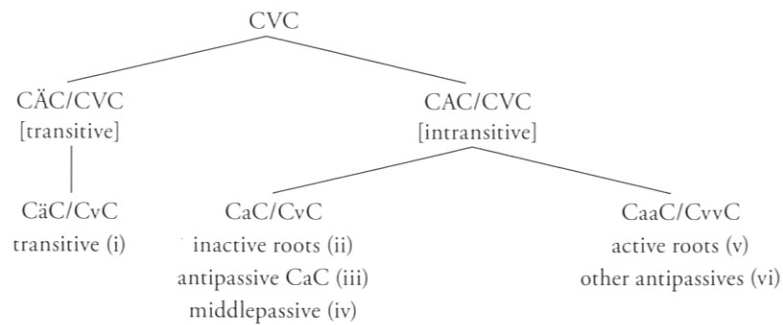
	nominal		incomplete		completive	
(i)	u- <i>juch</i> '-ik	"her grinding it"	k-u- <i>juch</i> '-ik	"she grinds it"	t-u- <i>juch</i> '-aj	"she ground it"
(ii)	u- <i>ts'íib</i>	"her (piece of) writing"	k-u- <i>ts'íib</i>	"she writes"	ts'íib-n-aj-ij	"she wrote"
(iii)	u- <i>jóok</i> '-ol	"her going out"	k-u- <i>jóok</i> '-ol	"she goes out"	<i>jóok</i> '-ij	"she went out"
(iv)	u- <i>jùuch</i> '	"her grinding, dough"	k-u- <i>jùuch</i> '	"she grinds"	<i>jùuch</i> '-n-aj-ij	"she ground"
(v)	u- <i>júuch</i> '-ul	"its getting ground"	k-u- <i>júuch</i> '-ul	"it gets ground"	<i>júuch</i> '-ij	"it got ground"
(vi)	u- <i>ju'uch</i> '-ul	"its being ground"	k-u- <i>ju'uch</i> '-ul	"it is ground"	<i>ju'uch</i> '-ij	"it was ground"

¹⁴ The height distinction does not affect the other vowels; nevertheless, the alternation between /ä/ and /a/ should arguably be sufficient to set a pattern in this direction. Length, anyway, distinguishes the other vowels (cf. *juch*'/*juuch*').

¹⁵ In Itza', the long vowel of active inflected forms is sometimes optional. Also, a variation is observed between /a/ and /ä/ with certain antipassive forms of multivalent roots. The nature of this optionality and variation (context-dependent, idiolect-dependant, or other) needs further study.

The canonical passive in Itza' is not phonological but morphological: a passive morpheme *-b* is added to the transitive phonological profile (k-u-*k'äx-b*-äl "it is tied"; k-u-*juch-b*-ul "it is ground").

Schema 6: Phonological profiles in Itza' with examples



	nominal		incomplete		completive	
(i)	u-k'äx-ik u-juch'-ik	"her tying it" "her grinding it"	k-u-k'äx-ik k-u-juch'-ik	"she ties it" "she grinds it"	t-u-k'äx-aj t-u-juch'-aj	"she tied it" "she ground it"
(ii)	u-nak'-äl u-jok'-ol	"her climbing, ascension" "her going out"	k-u-nak'-äl k-u-jok'-ol	"she climbs" "she goes out"	nak'-ij jok'-ij	"she climbed" "she went out"
(iii)	u-k'ax	"her tying"	k-u-k'ax	"she ties"	k'ax-n-aj-ij	"she tied"
(iv)	u-k'ax-äl u-juch'-ul	"its getting tied" "its getting ground"	k-u-k'ax-äl k-u-juch'-ul	"it gets tied" "it gets ground"	k'ax-ij juch'-ij	"it got tied" "it got ground"
(v)	u-paats' u-ts'iib	"her massage" "her writing"	k-u-paats' k-u-ts'iib	"she massages" "she writes"	paats'-n-aj-ij ts'iib-n-aj-ij	"she massaged" "she wrote"
(vi)	u-juuch'	"her grinding, dough"	k-u-juuch'	"she grinds"	juuch'-n-aj-ij	"she ground"

inactive) phonologically (but both languages do distinguish active versus inactive instantiations of multivalent roots).

In Yukatekan languages, the following generalization seems to hold for U-roots: underived transitives are typically associated with CvC (short vowel) in Yukatek and CäC in the other languages; underived intransitives are associated with CvvC (long vowel) plus high or low tone in Yukatek, and, CaC in the other languages.

Bricker (1981b) considers the phonological variations affecting multivalent roots (for her transitive roots) to be voice changes, lying on processes of phonological derivation through tones. However, from our point of view, they only represent different realizations of the vowel that can operate at the same level of word formation. Morphophonologically, nothing justifies considering one value of the vowel to be more primitive relative to the others, implying that there is no primitive argument structure in this case.

Also, as shown in schemas 5 and 6, the forms resulting from phonological instantiation processes can function as verbal or nominal. This leads us to consider these roots as initially categoryless with the implication that there are no purely verbal roots. Nevertheless, purely nominal roots exist.

Contrary to U-roots, N-roots exhibit all kinds of vowel values, even if we observe a strong tendency for substantives to have a long vowel in Yukatek, and a short one in Itza'.¹⁶ Furthermore, there is no general phonological pattern, neither characterizing classes of nouns nor conveying grammatical distinctions such as the ones exhibited by U-roots. The function of vowel variation in N-roots consequently appears to be mainly lexical. However, it is worth noticing that a small group of substantives in Yukatek show vowel variation with grammatical implications. This variation concerns relational structure and distinguishes absolute versus possessive use. As with U-roots, the variation involves tone change and affects participant structure (cf. 15 and 16, from Lehmann 1998, his E37-38, our orthography and glosses). Although marginal, this fact suggests that N-roots might also be analyzed as being undetermined, at least with respect to participant structure, at a deeper level.

16 Among nominal (substantive) CVC roots in Yukatek, a review of Bricker et al.'s (1998) dictionary gives 23% with short vowel versus 77% with long vowel. The CvvC (low-tone long vowel) roots are by far the most frequent, comprising 60% of all monosyllabic roots; then follows CävC (high-tone long vowel) with 20% and Cv'vC with 17%. By contrast, the corresponding Itza' roots show a majority of short vowel roots (63%), followed by 20% of long vowel roots and 17% of glottalized Cv'vC.

(Yuk.15) máax ti'-al le' k'áan-a'
 who PREP-NOM₅ DET hammock-TD₁
 "whose is this hammock?"

(Yuk.16) he'l in k'àan-a'
 OST A1 hammock-TD₁
 "here is my hammock"

3.3 The Formation of Morphological Profiles

Phonological profiles are combined with morphological ones in the mapping with a syntactic structure. Yukatek and Itza' share the same morphological profiles. They are based on a small set of -VC suffixes (-Vk, -Vl, -Vj, -V') that are associated with different vowels (/a/, /e/, /i/ plus vowel harmony, here noted as *v*). As with roots, these suffixes are formed by a fixed consonant and a variable vowel. Vowel variation conveys different values of a general meaning transmitted by a given -VC suffix such as aspectual, modal or relational values. We observe then that vowels establish grammatical distinctions not only in roots, but also in affixes. The morphological profiles can be used either directly, by instantiation, or indirectly, by derivation. They are distinguished according to different argument structures (transitive, active, inactive) as well as relational structures (inalienable, alienable, neutral; see below). Thus, participant structure, which partly depends on inherent semantic properties and can be obtained either by instantiation or by derivation, constrains the morphological profiles that a root can take.

Table 5: Inflectional Morphology

	Nominal/ Incomplete	Completive	Subjunctive
transitive	-ik	-aj	-ej (Yuk.) / -v' (Itz.)
inactive	-vl	-Ø	-vk
active	-Ø	-n-aj	-n-ak

Morphological profiles comprise inflectional paradigms. Our analysis differs from previous accounts in considering some morphemes as inflectional

rather than derivational. In particular, this is the case of the *-n* suffix which has been treated as an antipassive verbal derivation by some authors (Bricker 1981b, Lucy 1994, among others). In Lois and Vapnarsky (2003) we argue for its inflectional nature based on diachronic and synchronic evidence. Also the -Vl suffix has been considered to be a nominalizer, but as we will see below its presence indicates relational changes and not categorial derivation.

3.4 Verbal and Nominal Instantiations

Verb-noun opposition appears, for U-roots, at the morphosyntactic level. Thus, any U-root is able to enter directly into verbal or nominal constructions. We will focus here on nominal instantiations since these reveal important implications of our analysis and nominality has been a topic of much debate among Mayanists.

3.4.1 Defining Verbal and Nominal Environment

For Yukatekan languages, we define a verbal environment by its temporal, aspectual and modal properties but, as we will see, not all TAM particles require a verbal environment. TAM information is mainly conveyed by Initial and Terminal markers (cf. 1.3). The combinations of these two elements define three main paradigms: incomplete, complete and subjunctive (see Table 5).

The incomplete paradigm is distinguished from the others in that an ergative split occurs. Under traditional diachronic analysis, incomplete Initial TAM particles function as high predicates, taking the rest of the structure as a complement, and this explains its nominal form; an illustration of this hypothesis is given in (17).

(Itz.17) tan-Ø in-ts'iib
 PROG-B3 A1-write(ing)
 "I am writing", lit. "my writing is happening"

Following Bricker (1981b), we extend this analysis, originally proposed for intransitives, to transitive forms. Incomplete is then a case where aspect does not select a verbal environment, even if, from a synchronic perspective,

incompletive clauses function as a single predicate (cf. Lois and Vapnarsky 2003, chapter IV).¹⁷ In spite of the fact that incompletive does not require a verbal environment it seems to need a complement with argument structure. In fact, N-roots, contrary to nominals of U-roots, are not allowed to appear with incompletive TAM (cf. 18). This separation of verbal category from argument structure is also apparent by other facts presented below.

(Itz.18) *tan-Ø inw-atan
 PROG-B3 A1-wife
 lit. “my being his wife is happening”

Other nominal environments are common to N and U-roots, for example, quantifier phrases (including numeral+classifier -equivalent to the indefinite determiner) and simple clauses functioning as arguments. Numeral expressions are illustrated here in Yukatek in 19 (with N-root), 20 (with active nominal), 21 (with inactive nominal), and 22 (with transitive nominal). As for clausal arguments, they are illustrated in Itza': 24 (with transitive as object), 25 (with inactive as object), 26 (with inactive as subject), and 27 (transitive as subject of stative predicate); 23 is given for a comparison with an NP argument. For U-roots, the second environment includes subordinate clauses without initial TAM (24 and 25).¹⁸

(Yuk.19) k-uy-il-ik-Ø bin jun-p'e(él) nõoj bèej
 HAB-A3-see-ICP.TR-B3 QUOT one-CLAS.INAN big road
 “he sees a big road, they say”

17 Other cases concern aspectual adverbs such as Yuk. *j(á)an* “rapidly”, *láaj 'òora* “constantly”, which can occur in some nominal constructions (Lois and Vapnarsky 2004).

18 There are three cases to distinguish concerning subordination: 1) aspectless subordinate clauses (e.g. 24, 25 in the text and (i) below); 2) initial TAM-marked subordinate clauses e.g. (ii); relative clauses which always require TAM, e.g. (iii):

- (i) t-uy-il-aj-Ø u-lúub-ul “he saw his fall”
 CP.TR-A3-see-CP₁B3 A3-fall-NOM₂
- (ii) t-uy-il-aj-Ø táan u-lúub-ul / j lúub-ij “he saw that he was falling/he fell”
 CP.TR-A3-see-CP₁-B3 PROG A3-fall-NOM₂ / CP.INTR fall-CP.B3
- (iii) t-uy-il-aj-Ø le' ts' u- lúub-ul-o' “he saw the one who just fell”
 CP.TR-A3-see-CP₁-B3 DET TERM A3-fall- NOM₂-TD₂

(Yuk.20) ko'ox u'uy-ik-Ø jun-p'é(él) u-k'àay in-madim
 let's hear-ICP.TR-B3 one-CLAS.INAN A3-sing/song A1-mother-in-law
 “let's listen to one-my mother-in-law's song”

(Yuk.21) t-u-k'áat-aj-Ø bin jun-p'é(él) chan je'l-el
 CP.TR-A3-desire/demand-CP₁-B3 QUOT one-CLAS.INAN small rest-NOM₂
 “he asked for a short rest, they say”

(Yuk.22) t-inw-il-aj-Ø jun-píul u-jan-lox-ik-Ø
 CP.TR-A1-see-CP₁-B3 one-CLAS.TIMES A3-fast-hit/beat-ICP.TR.-B3
 in-suku'un
 A1-older brother
 “I saw him once hitting my older brother rapidly”

(Itz.23) t-uy-il-aj-Ø-oo' nojoch keej ti bej
 CP.TR-A3-see-CP₁-B3-3PL big deer PREP road
 “they saw a big deer on the road”

(Itz.24) inten-ej t-inw-u'y-aj-Ø u-tsikbal-t-ik-Ø
 1PR-TD₄ CP.TR-A1-see-CP₁-B3 A3-talk (about)/story-APP-ICP.TR-B3
 in-nol
 A1-grandfather
 “I heard my grandfather telling it (a story)”

(Itz.25) k-aw-il-ik-Ø kan, k-u-b'et-ik-Ø u-jak'-äl
 HAB-A2-see-ICP.TR-B3 snake HAB-A3-do-ICP.TR-B3 A3-frighten-NOM₂
 aw-ool-ej
 A2-soul/spirit-TD₄
 “when you see a snake, it frightens you”

(Itz.26) u-tal-el a' winik-ej k-u-k'as-kun-t-ik-Ø
 A3-come-NOM₄ DET man-TD₄ HAB-A3-bad-FACT-APP-ICP.TR-B3
 inw-ool
 A1-soul/spirit
 “the coming of the man makes me angry”

(Itz.27) k'as-Ø u-kon-ik-Ø a' nukuch k'aax-e'
 bad-B3 A3-sell-ICP.TR-B3 DET big forest-TD₄
 “the selling of big forests is bad”

Some restrictions are observed with the transitive nominal forms in these two environments. Contrary to intransitives, they do not easily appear following a numeral phrase with the inanimate/generic classifier *p'éel* (28a) although the classifier for “times” *piul* is sometimes allowed (cf. 22).

- (Yuk.28) a. *t-inw-u'uy-aj-Ø *jun-p'éel* *u-k'ay-ik-Ø* *kùumbia*
 CP.TR-A1-hear-CP₁-B3 one-CLAS.INAN A3-sing/song-ICP.TR-B3 cumbia
 b. t-inw-u'uy-aj-Ø *u-k'ay-ik-Ø* *jun p'éel* *kùumbia*
 CP.TR-A1-hear-CP₁-B3 A3-sing/song-ICP.TR-B3 one-CLAS.INAN cumbia
 “I heard him sing a cumbia”
 c. t-inw-u'uy-aj-Ø *jun-p'éel* *u-k'àay-il* *kùumbia*
 CP.TR-A1-hear-CP₁-B3 one-CLAS.INAN A3-sing/song.AP-NOM₃ cumbia
 “I heard a cumbia song”

Also, in certain subordinate structures, transitive nominal forms are excluded (replaced by subjunctive forms, for example 29a and 30a which contrast with intransitive nominals in 29b and 30b). Transitive nominals (i.e., in the incomplete form) may also be interpreted as gerundial (example 31a contrasting with the subjunctive in 31b, from Bricker 1981b).

- (Itz.29) a. *bel in-ka'a(j) in-käx-t-e(j) jun-tul ba'alche'*
 go A1-PROS A1-search-APP-SBJ.TR.B3 one-CLAS.ANIM animal
in-ts'on-o'
 A1-shoot-SBJ.TR
 “I am going to look for an animal to shoot”

- versus b. *bel in-ka'a(j) ti wen-el*
 go A1-PROS PREP sleep-NOM₂
 “I am going to sleep”

- (Itz.30) a. *k-u-jop'-ol u-jan-t-e(j), ki' u-jam-b-äl*
 HAB-A3-begin-NOM₂ A3-eat-APP-SBJ.TR.B3 good A3-eat-PAS-NOM
 “he begins to eat it, it is good to eat”

- versus b. *k-u-jop'-ol ti jan-al*
 HAB-A3-begin-NOM₂ PREP eat-NOM₂
 “he begins to eat”

- (Yuk.31) a. *k-u-tàal u-mol-ik-Ø*
 HAB-A3-come A3-gather-ICP.TR-B3
 “he comes gathering it”
 b. *k-u-tàal u-mol-ej*
 HAB-A3-come A3-gather-SBJ.TR.B3
 “he comes to gather it”

This can be explained assuming that the transitive suffix *-ik* has some aspectual value (cf. Bricker 1981b) that clashes with quantification and is more or less accepted depending on the aspectual requirements imposed by some matrix predicates. Given all these facts, *-ik* has clearly some more verbal properties, lacking in the other nominal inflections, that makes it similar to gerundive forms (see also Lois and Vapnarsky 2004).

Plurality and determination do not provide good evidence for nounhood versus verbhood. The nominal plural marker *-o'obl/-oo'* is the same form as the third person set-B marker which is used to coindex object of transitives, as well as themes of verbal intransitives and of nominal stative predicates. As for determination, it is expressed by Initial and Terminal deictics which can equally operate on verbs and nouns.

3.4.2. Subclasses of Nominals from U-roots and N-roots

Inflectional properties and participant structure configuration set different subtypes of nominals while revealing interesting relationships between nominal instantiations of U-roots and N-roots. Nominal uses of U-roots involve the same morphological profiles as N-roots. N-roots are directly instantiated in two morphological profiles, depending on whether they take a -V1 suffix or not.¹⁹ This configures three main classes of N-roots, corresponding to Lehmann's (1998) classification of Yukatek nouns, also applicable to Itza'. Lehmann's classification is based on possession: absolute versus possessive use (in the latter, the possessor is always coindexed with a set-A marker irrespectively of its semantic interpretation):

19 The -V1 suffix, which we consider inflectional based on its syntagmatic and paradigmatic distribution, has several realizations: *-il*, the most frequent, *-el* and *-al* for some body parts, and *-vl* for inactives and classifiers in possessive use.

- 1) Inalienable nouns (unsuffixed when they are possessed, suffixed by *-tsil* in absolute use);²⁰
- 2) alienable nouns (always suffixed when they are possessed, unsuffixed in absolute use);
- 3) neutral nouns (suffixed or unsuffixed when they are possessed, unsuffixed in absolute use).

A correspondence of nominal uses of U-roots with these three classes is observed.

U-roots that have acquired transitive value – either by a phonological instantiation (as *p'at* in 33) or by derivation – occur in the same profile as inalienable nouns (32) that is, unsuffixed in possessive use. Furthermore, like inalienable nouns, transitive forms always imply two participants.

(Yuk.32) *inw-atan-ech* (= Yuk.3)

A1-wife-B2
“you are my wife”

(Yuk.33) *k'áas in-p'at-ik-ech*

bad A1-abandon-ICP.TR-B2
“It's bad that I abandon you/my abandoning you is bad”

U-roots that have acquired active intransitive value (36, 37) occur in the same profile as neutral nouns (34, 35) that is, unsuffixed in possessive and absolute uses.

(Yuk.34) *ts'a ten in-k'ib*

give 1PR A1-candle
“give me my candle!”

(Yuk.35) *kon ten ka'a-ts'it kib*

sell 1PR two-CLAS candle
“sell me two candles”

20 Not all inalienable nouns can have absolute use, this construction is mainly restricted to kinship terms and is achieved by the affixation of *-tsil*: *le'ti'e' suku'untsil* “he is the eldest brother”, *tulàak le' yúuntsilo' yàan uk'aba'o' te' tulibro le' páalalo'* “all the big men whose name is on the children books” (compare with examples 12).

(Yuk.36) a. *u-m'is in-k'ik-e' jach seeb-a'an-Ø* (process reading)

A3-sweep A1-older sister-TD₄ very fast-PART₁-B3
“my older sister's sweeping is very fast”

b. *le' m'is ts'-u-b'èet-aj-Ø jach s'èeb-a'an-Ø*

DET sweep TERM-A3-do-CP₁-B3 very fast-PART₁-B3
“the sweeping that she did was very fast”

(Yuk.37) a. *ts'-u-la'ab-al in-m'is* (instrument reading)

TERM-A3-worn out-NOM₂ A1-broom
“my broom is worn out”

b. *ts'-u-la'ab-al le' m'is-a'* (instrument reading)

TERM-A3-worn out-NOM₂ DET broom-TD₁
“the broom is worn out”

Neutral nouns can also appear suffixed with *-il* in possessive use depending on the type of relationship established. According to Lehmann, *-il* appears when the possessor is not higher in empathy than the possessed, for example a human possessed noun with a non-human possessor (cf. 38a and b from Lehmann *ibid.*, his example E. 30, our orthography and glosses).

(Yuk.38) a. *tu'ux yàan u x-bay Jwàan?*

where EXIST A3 FEM-bag John
“where is John's bag?”

b. *tu'ux yàan u x-bay-il in-nòok'?*

where EXIST A3 FEM-bag-NOM₃ A1-cloth
“where is the bag for my clothes?”

Like neutral nouns, active intransitives always occur in a bare form in absolute use and may be suffixed with *-il* when they are possessed. When actives do not bear the *-il* suffix in possessive use, the possessor always refers to an agent or an owner (depending on the reading, whether process or concrete object) (cf. 36a and 37a above). By contrast, with *-il*, the possessor can only refer to an oblique participant, with various possible interpretations (beneficiary, goal, locative, material, topic/subject matter, activity, etc.) (compare 37 with 39 and see 40 to 43).

- (Yuk.39) a. *ts'-u-la'ab-al* *u-m'is-il* *in-na(j)-il*
TERM-A3-WORN out-NOM₂ A3-sweep(ing)/broom-NOM₃ A1-house-NOM₃
 “the broom of my house is worn out” (locative)
- b. **ts'-u-la'ab-al u-m'is in-naj-il*
- (Yuk.40) a. *u-ts'àak j m'èen* (agent)
A3-cure MASC curer/medicine man/shaman
 “the shaman’s medicine/cure”
- versus b. *u-ts'àak-il le' 'o'o'tsil k'oja'an-o'* (beneficiary)
A3-cure-NOM₃ DET poor sick-TD₂
 “the medicine/cure for the poor sick person”
- c. *u-ts'àak-il x'èej* (purpose/end)
A3-cure-NOM₃ vomit
 “the medicine/cure for vomiting”
- d. *u-ts'àak-il 'ospital* (location)
A3-cure-NOM₃ hospital
 “the medicine/cure of the hospital”
- (Yuk.41) a. *u-j'ùuch' in-k'iiik* (agent/owner)
A3-grind(ing) A3-older sister
 “my older sister’s grinding/dough”
- b. *u-j'ùuch'-il ja'as* (material)
A3-grind(ing)-NOM₃ plantain
 “dough made out of plantain”
- c. *u-j'ùuch'-il màatan* (purpose)
A3-grind(ing)-NOM₃ offering
 “the dough for the offerings”
- (Itz.42) a. *in-t'an* (agent)
 “my speech/talk (that I make)”
- b. *in-t'an-il* (beneficiary)
 “the speech/talk about me”

- (Itz.43) a. *u-ts'on in-suku'un* (owner)
A3-shoot/rifle A1-older brother
 “my old brother’s rifle”
- b. *u-ts'on-il b'äk'-s-aj* (purpose)
A3-shoot/rifle-NOM₃ meat-CAUS-AP
 “the rifle for hunting”
- A similar semantic distinction is found with neutral nouns: The unsuffixed possessive form typically expresses ownership whereas the possessive form suffixed with *-il* may express various other relations akin to those found with active nominal instantiations (44 to 46; compare 44 to 34).
- (Yuk.44) a. *u-k'iiib-il San Juan* (beneficiary)
 “the candle for San Juan”
- b. *u-k'iiib-il r'èesa* (activity, end)
 “the candle for praying/for the prayer”
- c. *u-k'iiib-il 'ig'lèesya* (location)
 “the candle of the church”
- d. *u-k'iiib-il k'aaab* (material)
 “the candle made of beeswax”
- (Yuk.45) *le je'el-a' u-k'áax-il ts'àak* (purpose)
DET OST-TD₁ A3-plant-NOM₃ cure/medicine
 “this is a plant for curing / a medicinal plant”
- (Itz.46) *u-che'-il a' krus-e u-che'-i(l) ya'* (material)
A3-wood/tree-NOM₃ DET cross-TD₄ A3-wood/tree-NOM₃ zapote tree
 “the wood (used) for crosses is zapote tree wood”

Finally, inactive nominal instantiations of U-roots occur with the same profile as alienable nouns, that is, they are always suffixed in possessive use (cf. 47, 48). However, the suffix with inactives shows vowel harmony with the root instead of being realized as *-il*. We interpret vowel harmony as a signal of the presence of an argument structure.²¹ Indeed, in their main nominal uses, inactive

21 Other cases of harmonic suffixes are found in forms that also involve an argument structure, namely transitive subjunctive in Itza' and middle participles in Yukatek.

intransitives, consistently have an argument structure shown by the nature of the referent of set A and the obligatory action noun reading.²²

(Yuk.47) u-yáax-lúub-ul in-pàal yàaj-l-aj-ij
 A3-first-fall-nom₂ A1-child hurt-INCH.CP-CP₂-INTR.B3
 “the first fall of my child hurt”

(Itz.48) t-in-nay-t-aj-Ø u-k'och-ol aj taankaj-il
 CP.TR-A1-dream-APP-CP₁-B3 A3-arrive-NOM₂ MASC foreigner-NOM₃
 “I dreamt of the arrival of the foreigner”

To conclude, in spite of remarkable symmetries between N and U-roots, there is no exact mapping between argument and relational structure and the kind of participants involved in each case. However, some interesting correspondences are found. First, both transitives and inalienables, which always imply two participants, show the same pattern of nominal inflection (with no suffix in possessive use). Second, actives and neutral nouns by contrast may equally well appear in absolute or possessive uses. Furthermore, for both, the form with *-il* may establish many kinds of relations, but the unsuffixed possessive use imposes constraints on the possessor. Lastly, with respect to participant structure, the case where the mapping is less clear is inactive/alienable. Whereas inactives typically appear in possessive use with argument structure, alienables are defined by their absolute use, that is, by not having relational structure. Nevertheless, both are characterized by their non association with a relational structure.²³

22 Two contexts are found where inactives in nominal uses (i.e. with *-VI*) occur without set A. The first one presumably involve an empty pronominal, either controlled by the matrix subject cf. (i), or with a generic interpretation (only in Itza', cf. (ii)).

(Itz.i) *bin-en ti wen-el* “I went to sleep”

(Itz.ii) *k'och-ol ti Peten jach ko'oj* “the arrival/to arrive to Peten is very expensive”

The second case concerns the use of inactives with *-VI* and no set A when preceded by a determiner, including a numeral phrase with classifier (iii).

(Yuk.iii) *jun-p'è(el) chan je'l-el* “a short rest” (cf. Yuk.21)

No argument structure seems to be involved in this second use, which is always accepted in elicitation but not frequent in spontaneous speech, except for some lexicalized forms, e.g. *kiimil/kimil* “death”.

23 We have found one construction in Yukatek where an inactive root in nominal instantiation bears the *-il* suffix (besides its regular *-vI*), illustrated below:

Another important distinction arises between nominals of the transitive and inactive type on the one hand, and active nominals on the other hand. Whereas the former always refer to an action and typically have argument structure, the latter may take a relational structure and have a concrete-noun interpretation of various types, such as (a) instrument (*múis/miis* “sweep(ing)”, “broom”; Itz. *lo'op* “remove(ing) with gourd/spoon”, “spoon”, “gourd”), (b) resulting object (*la'ach* “scratch(ing) lightly”, “light scratch”; Yuk. *ch'áach'* “refill(ing) (holes)”, “repair(ing)”, “patch”), and (c) cognate object (*nóok'/nook'* “snore(ing)”; *cha'an* “look(ing) at/on”, “observe(ing)” “spectacle”, “(a) show”). This might be due to some semantic properties of the class to which we will turn later.

3.5 Other Instantiations

Other lexical categories akin to nominals, such as classifiers and participles, can frequently be formed by root instantiation, for example CH'UY “hang(ing)”, *ch'úuy* “bunch” as a classifier (example 49, cf. also 50) and *ch'úuy-ul* “hang-ing” as a middle participle (see also 51, 52).

(Yuk.49) *jay-ch'úuy kooko t-u-man-aj-Ø a-suku'un?*
 QUANT-CLAS.hang(ing) coconut CP.TR-A3-buy-CP₁-B3 A2-older brother
 “how many bunches of coco did your older brother buy?”²⁴

(Itz.50) *ma' patal u-jok'-s-ik-Ø jun-xeet' che'*
 NEG able A3-go OUT-CAUS-ICP.TR-B3 one-CLAS.break/piece wood
 “he can't take out a piece of wood from it”

(Yuk.i) *a-wen-(e)l-il-e'*, *jach u-wen-(e)l-il* *in-tàat*
 A2-sleep-NOM₂-NOM₃-TD₄ very A3-sleep-NOM₂-NOM₃ A1-father
 “your way of sleeping is really like my father's way of sleeping”

The interpretation conveyed by *-il* in this case does not imply a participant but “the typical way of doing what the root denotes”. This construction is not restricted to inactives, it also occurs with active forms:

(Yuk.ii) *u-jüuch'-il in-mama bey-o'*, *tumen bey u-'estiilo u-meyaj*
 A3-grind-NOM₃ A1-mother like-TD₂ because like A3-style A3-work
 “my mother's way of grinding is like that, because this is her way of working”

24 From Briceño Chel, 1993: 74:91.

(Yuk.51) ma' sáam áaj-ak-Ø, chik-a'an-Ø,
 NEG RETR wakeup-SBJ.INTR-B3 visible-PART₁-B3
 wèel-el-Ø uy-ich!
 bind/mark-PART₃-B3 A3-face
 "she woke up not long ago, you can see that her face is marked (by the threads of the hammock)!"

(Itz.52) tan-in-käxän-t-ik-Ø, sat-al-Ø in-ta'k'in
 PROG-A1-search-APP-ICP.TR-B3 lose-PART₃-B3 A1-money
 "I'm looking for it, my money is lost"

Another important case of instantiation, mainly from multivalent roots, concerns positionals which may be realized with special morphology as inactive intransitives or nominals (53a) as well as transitives (53b).²⁵

(Itz.53) a. k-u-chin-tal
 HAB-A3-bow/crouch-POSIT
 "she bows/crouches"

b. k-u-chin-ik-Ø
 HAB-A3-bow/crouch-ICP.TR-B3
 "she bends it"

(Itz.54) te' yan k'in k-u-b'el yaab'-o' ti much'-tal-o' u-ta-s
 ID exist day HAB-A3-go lot-TD₂ PREP gather-POSIT-3pl A3-come-CAUS
 ja'
 water
 "there are days that many people go there to gather and bring water"

We will leave these instantiations outside of the present study but see Lois and Vapnarsky (2003) for a more detailed analysis.

25 Other instantiations of MÜCH' are transitive *much'*, antipassive *mùuch'*, passive *mu'uch'*, middle *mi'uch'*, and numeral classifier *mi'uch'*.

3.6 Derivations

As a consequence of the indeterminacy and the array of instantiations of U-roots there are no deverbal nouns.²⁶ Nominal uses are always achieved by instantiation. By contrast, there is a rich derivational morphology used to bring about changes to argument structure or provide an event reading (cf. Table 6). We have seen that voice changes for multivalent roots are obtained by phonological instantiation; intransitive roots, instead, need suffixes to transitivize. Actives use the applicative *-t* (55 to 57) and inactives the causative *-s* (58, 59). The applicative suffix allows one to express or add a patient object of different types: in 55, the object may be interpreted as the result or the material support of the action, in (56) the object of *tuu'* "spit" is the spitten entity (blood) whereas in (57) it is a maleficiary. By contrast the causative suffix always adds an agent subject (58, 59).

(Itz.55) k-in-ts'iib-t-ik-Ø (ju'um)
 HAB-A1-write-APP-ICP.TR-B3 (paper)
 "I write it (paper/letter/book)"

(Itz.56) a' k'oja'an-ej tan-u-tuu'-t-ik-Ø k'ik'
 DET sick-TD₄ PROG-A3-spit-APP-ICP.TR-B3 blood
 "the sick person was spitting blood"

(Itz.57) t-u-tuu'-t-aj-en
 CP.TR-A3-spit-APP-CP₁-B1
 "he spat at me"

(Itz.58) jaj k-u-kin-s-ik-Ø mak
 true HAB-A3-die-CAUS-ICP.TR-B3 people
 "it is true it (thunder) kills people"

(Yuk.59) ma' t-a-tu'b-s-aj-Ø a-pàak'-al-o'
 NEG CP.TR-A2-forget-CAUS-CP₁-B3 A2-sow-NOM₂-3PL
 "you did not forget your planting"

26 Indeterminacy is not enough to discard deverbal nouns. For example, in Distributed Morphology, undetermined roots get lexical categorization through syntax but a given form once determined as a verb can be changed to a noun through morphological devices, constituting a deverbal noun.

Table 6: Derivational morphology of roots in Yukatek and Itza'

derivations	Active roots	Inactive roots	N-roots, positionals
Transitivizer	-t (applicative)	-s (causative)	-kUn-s/-t (factive)
Intransitivizer: antipassive (active)		-s-aj (active)	-kUn-s/-t-aj (active)
Intransitivizer: passive (inactive)	-t-a'(ab) (Yuk) -b (Itz)	-s-a'(ab) (Yuk) -s-äb (Itz)	-kUn-s/-t-a'(ab) (Yuk) -kUn-s-äb (Itz.)

N-roots, either substantival or adjectival, may acquire event reading and argument structure by derivation with -kUn-t/s.²⁷

- (Yuk.60) a. jun-túul winik
 one-CLAS.ANIM man
 “one man”
- b. winik-en
 man-B1
 “I am a man”
- c. *táan-in-winik/táan-in-winik-il/*táan-in-winik-ik
- d. táan-in-winik-tal
 PROG-A3-man-INCH.ICP-B1
 “I am becoming a man/responsible”
- e. táan-in-winij-k(ú)un-s-ik-Ø
 PROG-A3-man-FACT-CAUS-ICP.TR-B3
 “I am making her/him a man/responsible”

27 The factive suffix shows vowel disharmony: *-kun* follows roots with /a/, /e/, /i/ vowels and *-kin* those with /o/ and /u/. This suffix is always followed by the transitivizer *-t*. In Yukatek, *-t* can alternate with *-s* without any apparent change of meaning. A small group of N-roots can also transitivize with *-(in)t* (see section 4.1). Yukatek also shows a productive nominal derivation with *-Vb* forming instrumental nouns from multivalent or active U-roots, e.g. PAK' “plant(ing), saw(ing)”, *x pak'-ab* “seeder”; CHUY “sew(ing)”, *x-chuy-ub* “sewing machine”; MÁAY “strain(ing), filter(ing)”, *x máay-ab* “strainer, sieve, colander” (examples from Bricker and al. 1998: 365).

- (Itz.61) a. jun-tul 'ayik'al
 one-CLAS.ANIM rich
 “one rich (person)”
- b. 'ayik'al-en
 rich-B1
 “I am rich”
- c. tan-in-'ayik'al-tal
 PROG-A1-rich-INCH.ICP
 “I am becoming rich”
- d. tan-in-'ayik'al-kun-t-ik-Ø
 PROG-A1-rich-FACT-APP-ICP.TR-B3
 “I am making her/him rich”

The derived forms behave like U-roots in that they can have a verbal or nominal use, through the same morphological profiles. This implies that the grammar allows N-roots to make use of a nominal morphosyntax either by instantiation or by derivation, the latter always having an action noun meaning.

- (Yuk.62) xáan-l-aj(-ij) u-sak-kúun-s-a'al u-pak'-il
 last-INCH.CP-INTR(-CP.B3) A3-white-FACT-CAUS-PAS.NOM A3-wall-NOM₃
 in-na(j)-il
 A1-house-NOM₃
 lit. “the whitening of my house lasted a long time”

The same occurs with U-roots when shifts in argument structure are achieved by derivation and not instantiation, for example the passive use of a transitivized inactive form as in (63) and (64).

- (Yuk.63) ko'ox cha'an-t u-kúin-s-a'al le' wàakax-o'
 let's watch-APP A3-kill-CAUS-PAS.NOM DET COW-TD₂
 “let's go and see the killing of the cow”

- (Itz.64) k-u-kun-tal u-k'aj-s-äb-äl u-tsikb'al-il u-P'i'ch
 HAB-A3-remain-POSIT A3-remember-CAUS-PAS-NOM A3-story-NOM₃ A3-P'i'ch'
 'Ayim
 'Ayim
 “the memory of the story 'P'ich' 'Ayim' remains (alive)”

3.7 Defining Root Classes

Summarizing, we derive our lexical classification for Yukatekan languages from the possible instantiations of roots. We make a fundamental distinction between two types of roots, U-roots and N-roots. N-roots have only nominal instantiations and cannot be directly associated with TAM particles. In contrast, U-roots may or may not be associated with TAM particles. Nominal instantiations, for U-roots, comprise action nouns (including the incompletive construction), concrete nouns, classifiers and some participles, depending on the root. Roots also differ according to their participant constellation, that is, their ability to be instantiated in different argument or relational structures. This yields two main root classes with internal subdivisions, detailed here only for U-roots:

- I. *Undetermined roots* (may or may not be directly associated with TAM depending on verbal or nominal use)
 - 1) *Multivalent roots* (transitive and intransitive instantiations)

argument structures by instantiation: [agent – patient], [agent], [patient]

lexical category by instantiation: verb, substantive, classifier, participle
 - 2) *Active roots* (only intransitive)

argument structure by instantiation: [agent]

lexical category by instantiation: verb, substantive, participle, and a few classifiers
 - 3) *Inactive roots* (only intransitive)

argument structure by instantiation: [patient]

lexical category by instantiation: verb, substantive (only action noun), participle
- II. *Nominal roots* (not directly associated with TAM, no verbal instantiation)

Substantives (inalienable, neutral, alienable), *adjectives*, *classifiers*

This root classification results from an analysis of phonological, morphological, and syntactic properties, combined with aspectual characterizations as well as participant configurations, especially argument structure. Some correspondences between classes and semantic fields are also observed. Although further research needs to be done on the subject, we will present here some remarks concerning intransitives.

Inactive roots (about 70) comprise various subclasses expressing (a) change of state (temporality and phases of it, stages of life, changes of consistence, texture or form, bodily and psychological processes), and (b) motion and general trajectory. The unique argument in most cases, which correspond to use of (a) uses, is an undergoer or patient whereas in (b) it is more often an executor or a controller of the action.

Active roots (about 250) include different subclasses expressing extraction and separation, surface contact, ways of hitting, ways of carrying, ways of cooking, manner of movement, bodily and physical processes and cognitive processes.²⁸ The unique argument can have different interpretations such as executor, experiencer, speaker, or observer, which can be conceived under the “agent” macro-role. At first glance, multivalent roots overlap with active roots in many of these semantic fields; further study should elucidate similarities and distinctions in the semantics of these two classes.

Both inactives and actives express motion. Interestingly, whereas the former express general trajectory (*bin/bel* “go(ing)”, *na’ak/nak’* “ascend(ing)”, *(’)ém/ (’)em* “descend(ing)”, *(’)ok* “come(ing) in”, *jóok’/jok’* “come(ing) out”, etc.) the latter are specialized for manner of motion (*siit’/siit’* “jump(ing)”, [Yuk.] *baab* “swim(ming)”, *jiil’/jiil’* “drag(ing)”, *(’)óok’ot/(’)ok’ot* “dance(ing)”, [Itz.] *mu’uk* “dive(ing)” etc.). Like other languages, Yukatekan languages may use both classes to signal this distinction to the detriment of argumental properties.

Roots expressing bodily processes are also found in the two intransitive classes. Among the bodily processes expressed by active roots, we mainly find physiological activities implying emission of a material substance from the body (solid, liquid or gaseous) such as *ta’* “defecate(ing)”, *wix* “urinate(ing)”, *kèeb/keeb* “burp(ing)”, [Yuk.] *p’u’uk* “rinse(ing) mouth”, [Itz.] *kis* “fart(ing)”. This substance seems to play the role of an implicit object; it is not found among the inactive roots (*je’ell/je’l* “rest(ing)”, *wen* “sleep(ing)”, [Yuk.] *(’)aj* “wake(ing) up”, [Itz.] *ch’an*

28 A small group of basic cognitive processes are expressed by N-roots such as Yuk. *óojel*, *k’ajóol* “knowledge”, *k’áat* “desire”. To express an incompletive meaning, a regular possessive expression, bearing neither TAM nor suffix marking transitivity, is used: *ya’ab ba’al aw-óojel-Ø* “you know many things (lit. “your knowledge is many things”), *in-k’ajóol-ech* “I know you (lit. you are (of) my knowledge”. But, significantly, these roots have to be derived into transitive verbs to be used in the completive aspect: *ya’ab ba’al tinw-óojel-t-aj* “I have known many things”, *t-in-k’ajóol-t-aj-ech* “I have known you”. The transitive derivation involved here is the applicative suffix *-t*; it is characteristic of transitivizations from active roots but is also used by some other inalienable nouns (see section 4.1).

“heal(ing)”, etc.). We can conclude from this that in the subgroup of active bodily processes the criterion of affiliation is relative to the object rather than to the subject, although the subject may be considered to be an executor.

Verbs borrowed from Spanish are systematically integrated into the active class, independently of their argument structure (for example *byàajar* > *viajar*, a Spanish intransitive verb of general movement illustrated in 65; and *selebraar* > *celebrar*, a Spanish transitive verb, in 66). This is also true for some Spanish nouns with event reading, such as *guerra* (67), in line with the resistance of Mayan substantive N-roots to denote processes. Non-nominal compounds are also most typically assimilated to the active class (68 for a nominal instantiation, 69 in completive and 70 showing transitive derivation). These data show that active roots constitute the open class of the system.

(Yuk.65) te' wàaj Beliise' kun byàajar wa máak-o'
 LOC HYP Belize PROS.A3 SP.travel HYP people-TD₂
 “perhaps people will travel to Belize”

(Itz.66) k-u-selebraar-t-ik-Ø a' biye(e)joj-o' a' 'ekli(i)psej
 HAB-A3-SP.celebrate-APP-ICP.TR-B3 DET SP.old-3PL DET SP.eclipse
 “the old people celebrated the eclipse”

(Yuk.67) yo'osa(l) le' 'abwelos-o' kíim-o' ma' t-u-gèera-t(-aj)-o'
 because of DET SP.grandparents-TD₂ die-B3PL NEG CP.TR-A3-SP.war-APP
 (-CP)-3PL
 “because of the grandparents who died, they didn't make war on them”

(Yuk.68) ka j bin-Ø bin te' tsen+kàax-o'
 CONJ CP.INTR go-B3 QUOT LOC feed+hen-TD₂
 “and he went to feed hens”

(Itz.69) ka' bin t-u-xit'(-aj)-Ø u-xiik' ka'
 CONJ QUOT CP.TR-A3-extend(-CP₁)-B3 A3-wing CONJ
 po-pok+xiik'-n-aj-ij
 RED-flap+wing-AP-INTR-CP₂-CP.B3
 “then it extended its wings and flew (away)”

(Itz.70) aj xooch' tan-u-tämäl+chi'-t-ik-ech
 MASC owl PROG-A3-announce(ing)+mouth-APP-ICP.TR-B2
 “the owl is (a sign of) auguring you ill/death”

These brief semantic considerations show that more analysis is needed to understand the relation between morphosyntactic classes and semantic and argumental values. This is crucial for the evaluation of the relevant criteria for defining lexical categories.

4. Ambivalence, Fluctuation and Opposing Tendencies of Active Roots

We have seen that, unlike inactive roots, active roots often have a concrete noun interpretation when used as nominals. Other properties of active roots also show their intimate ties with N-roots, which partly explains why actives have often been considered to be nominals. These properties concern root affiliation, ergativity, semantics, derivational morphology and phonology. At the same time, however, another tendency drives the active root class in an apparently opposite direction: transitivity and multivalence. In this last section, we will give a rapid overview of the properties that ground both tendencies.

4.1 Correspondences between Actives and Nominals

First, a variation in root affiliation is observed in Yucatekan languages between the active and the nominal class. Some active roots in Itza' correspond to N-roots in Yukatek, for example *se'en* “a cough”, “cough(ing)”, *jum* “noise”, “make noise”. Conversely, some N-roots in Itza' correspond to roots of the active class in Yukatek, for example *p'u'uk* “cheek”, “rinse(ing) mouth”, *sáap* “stretch”, “fathom”, “measure by fathom.” Interestingly, there is no case where a given root belongs to the active class in one language and its cognate in the sister languages belongs to the inactive class.

With respect to ergativity, data from Danziger (1996) show that Mopan ergativity presents a lexical split, in addition to the aspectual split common to the Yucatekan branch: the argument of Mopan active roots is invariably coindexed with set A whereas inactive roots exhibit the aspectual split. Thus, from a morphosyntactic perspective, Mopan active roots have a more nominal

character, since they never take the typical verbal inflectional suffixes except in derived forms. Correlatively, Mopan lacks the antipassive morpheme *-n*, characteristic of the verbal uses of actives (Danziger *ibid.*).

From a semantic viewpoint, although all intransitive roots have an action noun reading, only the active class can also have other interpretations such as instrument, resulting object, and cognate object (cf. section 3.4.2).

Another illustrative aspect of the relation between active and N-roots is observed in the derivational morphology. Some active roots may be transitivized with the factitive suffix *-kUn* typical of N-roots, besides their expected applicative derivation with *-t* (cf. 71, 72). Conversely, an important group of N-roots may use the transitive derivation with *-t* typical of active roots, for example (73) and (74).

(Yuk.71) k-u-*míis-kun-t-ik-Ø*

HAB-A3-sweep/broom-FACT-APP-ICP.TR-B3

“he makes a broom out of it” (MÍIS “sweep(ing), broom”)

(Itz.72) tun-*waay-kun-t-ik-en*

PROG.A3-bewitch/sorcerer-FACT-APP-ICP.TR-B1

“he is making a sorcerer out of me” (WAAY “sorcery, do sorcery”)

(Yuk.73) k-uy-*atan-t-ik-Ø*

HAB-A3-wife-APP-ICP.TR-B3

“he marries her/he takes her as wife” (ATAN “wife”)

(Itz.74) k-u-*sastun-t-ik-Ø* k-uy-*il-ik-Ø* max u-ts'on-aj-Ø

HAB-A3-talisman-APP-ICP.TR-B3 HAB-A3-see-ICP.TR-B3 whoA3-shoot-CP₁-B3

“she uses the talisman and sees who shot him” (SASTUN “talisman”)

In these cases, the different derivations allow semantic distinctions that exploit the functions typically associated with these suffixes. Only some active roots that can have a non process interpretation in their nominal instantiation (e.g. *míis* “broom”, *waay* “sorcerer”) may transitivize with the factive suffix *-kUn*. Correlatively, transitivization of nominal roots with *-t* implies a relation between two entities, in particular a social or familiar relation.

Lastly, the active class is also more heterogeneous phonologically than the class of inactive roots in that it includes some bisyllabic members. This makes the class of active roots closer to N-roots, which, besides having a majority of CVC, include some bisyllabic members as well.

4.2 Actives with Transitive Instantiations: A Step towards Multivalence

The data just presented show some links and variations between active and N-roots. Yukatek also exhibits an ambivalence in the active class, this time with respect to multivalent roots. A group of active roots in Yukatek (about 40 identified) may be directly instantiated in a transitive morphological profile (75), instead of being derived (with the *-t* suffix, as in Itza', 76). For example *léets'* “lick(ing)”, *síuus* “peel(ing)”, *kóol* “pull(ing)”, *tug(ging)*”, *chá'ach* “chew(ing), masticate”.

(Yuk.75) tun-*síuus-ik-Ø* uy-o'och chíina
 PROG.A3-peel(ing)-ICP.TR-B3 A3-NOM.CLAS(food) orange
 “she is peeling her orange”

(Itz.76) tun-*suus-t-ik-Ø* uy-ix ch'uuk naraanjaj
 PROG.A3-peel(ing)-ICP.TR-B3 A3-FEM sweet orange
 “she is peeling her orange”

The phonological instantiation of these roots, however, corresponds to that of the active class, as shown by their high-tone long vowel. Related to this phonological feature, this group presents derivational properties akin to active roots: contrary to multivalents, their passives are formed by derivation and not by glottalization of the root vowel as (77) illustrates. These properties lead us to treat the members of this group as active roots, and not as multivalent roots as their Itza' cognates.

(Yuk.77) a. tun-*síuus-a'al*
 PROG.A3-PEEL(ing)-PAS.NOM
 “it is being peeled”

b. *tun-*su'us-ul*

The ambivalence and opposing tendencies of active intransitive roots towards nominality and transitivity may be partly due to their semantics. This behaviour is presumably also linked to the fact that, among U-roots, the active class is the open one where loans and compounds are systematically integrated.

Interestingly, cognates of Yukatekan active roots in other Mayan languages are distributed between transitives and nominals, for example in Tzotzil, judging from data in Haviland (1994), revealing the same ambivalent tendency.

Conclusion

We have proposed an analysis of Yucatekan Mayan roots according to which roots can show polyvalence in two respects: (a) in regard to lexical category (verbal, and nominal of different kinds -substantives, adjectives, participles, classifiers), and (b) with respect to argumental/relational structure. In these languages, different kinds and degrees of polyvalence exist: some roots, namely multivalent roots, show ambivalence from the categorial and argumental point of view. By contrast, intransitive roots show only categorial ambivalence, since their argument structure can only be changed by derivation. Furthermore, there is another important group whose members are purely nominal. To account for root polyvalence, we have proposed a new morphophonological process, instantiation, which narrows the domain of derivation.

Another new aspect of our analysis concerns the role given to phonology in Yucatekan languages. Vowel variation may establish different grammatical distinctions in languages, for example aspectual specifications in Semitic languages. In Yucatekan languages, the root vowel, which is initially undetermined in some aspects (length, tone, height), can vary according to different argumental or relational structures that a root can have. Previous accounts have given a derivational interpretation to vowel variation; we interpret it instead as rather inflectional in nature. This grounds our analysis of multivalent roots, which have traditionally been considered transitive, as inherently allowing different argument structures (transitive and different types of intransitive). According to our proposal, no argument structure is more basic than the others. In particular, the two-slot argument structure is not primitive and “voice” changes are not derivational. Contrary to multivalents, intransitive roots are basically associated with one argument structure where either agent or patient is salient, depending on the root.

Active roots are closer to N-roots in several respects; at the same time, they show a tendency towards multivalence by presenting a richer array of instantiations. A further comparative analysis of cognate roots in Mayan languages should shed new light on the issue of ambivalence of lexical classes. Furthermore, from a more general typological and theoretical perspective, it should be clear that, for us, polyvalence is not specific to Yucatekan languages. Rather it could be conceived as a universal linguistic parameter realized in different

ways and to varying degrees cross-linguistically. This hypothesis, including the applicability of the notion of instantiation in other languages, needs to be evaluated within a broader comparative research crucially taking into account its semantic implications such as predictability of meaning as well as nature and content of the mental lexicon.

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