Olutec motion verbs: grammaticalization under Mayan contact[1]

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Olutec, a Mixe-Zoquean language from the Mixean subgroup spoken in southern Veracruz, Mexico, has a set of intransitive motion verbs that have followed three different paths of grammaticalization: (1) *auxiliaries of motion* originated from motion-cum-purpose clauses; (2) *directionals* developed from the grammaticalization of serialized verbs in second position; and (3) *associated motion suffixes* grammaticalized from archaic embedded structures. The goal of this work is to demonstrate that Olutec developed the paradigms of *auxiliaries of motion* and *directionals* due to areal contact with Mayan languages spoken in the adjacent region, i.e., languages of the Tzeltalan and Kanjobalan groups.[2] The semantics and morphosyntax of the paradigms of auxiliaries and directionals found in Mayan are remarkably similar to the ones found in Olutec. Historical, typological, and structural facts demonstrate that Olutec (and other Mixe-Zoquean languages) borrowed the directional and auxiliary grammatical patterns from Mayan. On the other hand, with respect to the associated motion paradigm, the evidence suggests that this set of suffixes is an internal development that only occurred in one of the two branches of Mixe-Zoquean languages. The analysis presented here is based on the comparison of grammatical patterns found in Olutec, and the Mayan languages Tzotzil (Tzeltalan), Jakaltek, and Akatek (Kanjobalan).

1. Pronominal marking with motion verbs

Olutec is a head-marking language. The rich inventory of verbal morphology includes pronominal proclitics and plural suffixes that cross-reference core argu-

[1] The Olutec and Akatek data come from fieldnotes and texts collected by the author. Field research was made possible through Universidad de Guadalajara, UNAM, CONACYT, National Geographic Society (#5319-94), National Science Foundation (SBR-9411247 and SBR-9511713) and The Max Planck Institute for Psycholinguistics. My thanks are due Antonio Asistente and many other Olutec speakers for their cooperation, and to Scott DeLancey, Connie Dickinson, Loretta O'Connor and Doris Payne for their valuable suggestions.

[2] See Wichmann (1995) and Kaufman (1997) for the classification of Mixe-Zoquean languages and Campbell and Kaufman (1985) for the classification of Mayan languages.

ments. The language follows an ergative-absolutive alignment.[3] The S and O are marked by absolutive proclitics, whereas the A is marked by ergative proclitics.[4] The simple clause in (1a) illustrates the 1st person absolutive proclitic preceding an intransitive motion verb *nükx* 'go.' In (1b), the 1st person ergative proclitic signals the A of the transitive verb *yak-nükx* 'take.' The pronominal proclitics are selected from three different sets: Set A, Set B and Set C. However, the conditions that trigger the use of each particular set are not relevant here. In the glosses, the specific function of each set is indicated in parenthesis.[5]

(1) a. **ta**=nükx-am-**a:t** tan=na:x-mü
OLU B1(ABS)=go-IRRI-PL.SAP A1(PSR)=land-LOC
'**We** will go to my homeland.' {rp2/256}

b. je˜ machi:ti **tan**=yak-nükx-am
that machete A1(ERG)=CAUS-go-IRRI
'**I** will take that machete.'

The suffix *-(V):t*, in (1a), marks plurality for 1st or 2nd person, whereas the suffix *-küx*, in (2), marks plurality for 3rd person core arguments.

(2) nimetzi ˜i=nükx-**küx**-i tu˜kutik
OLU pair A3(ABS)=go-PL3-INCD together
'**The two of them** go together.' {rspf1/336}

The examples (3a-b) are motion-cum-purpose constructions that contain two verbs: V1 and V2. V1 is a motion verb and V2 is an intransitive or transitive verb which represents the purpose for which the motion was undertaken. In this construction, V1 carries a pronominal proclitic coreferential with the subject of V2. The subject of V2 is marked by an absolutive proclitic when the verb is intransitive, as in (3a), and by an ergative proclitic when the verb is transitive, as in (3b).

[3] The language also exhibits a direct vs. inverse alternation (cf. Zavala 1999).
[4] The labels S, O, and A are used in the sense of Dixon (1979).
[5] The following abbreviations are used: A Set A (ergative in independent clauses, absolutive in dependent clauses, and possessor of nouns); ABS absolutive; AKA Akatek; AN animate enclitic; ASP aspect; AUX auxiliary; B Set B (absolutive in independent clauses); BEN benefactive applicative; C Set C (ergative in dependent clauses); CAUS causative; CL clitic; COM completive for independent; COMD completive for dependent; DIM diminutive; DIR directional; ERG ergative; EV evidential; EXCL exclusive; INCD incompletive for dependent; INCI.I incompletive independent for intransitives; INCI.T incompletive independent for transitives; IRR irrealis; IRRI irrealis for independent; IRRD irrealis for dependent; JAK Jakaltek; LOC locative postposition; MIRAT mirative; NEG negative; NMZR nominalizer; OLU Olutec; PASS passive; PL plural; PL3 plural for third person; PL.SAP plural for a speech act participant; PSR possessor; SUBJ subjunctive; TZO Tzotzil; V1 first verb; V2 second verb; = clitic boundary.

(3) a. **ˇi=nükx**-i=xü=k **ˇi**=wit-i je ˇ=k koya
OLU A3(ABS)=go-INCD=EV=AN A3(ABS)=walk-INCD that=AN rabbit
'The rabbit was going walking.' {koya/93}

b. **ta=nükx**-am=ak **tax**=nüm-a/-e je/=k je:fe
B1(ABS)=go-IRRI=AN C1(ERG)=say-BEN-INCD that=AN boss
'I am going to tell that to the boss.' {Conejo/6}

When the coreferential subject of V1 and V2 has plural reference, both verbs are suffixed by a plural marker, as in (4).

(4) ˇi=nükx-**küx**-i ta=pük-**küx**-i je ˇ tzoy
OLU A3(ABS)=go-PL3-INCD C3(ERG)=grab-PL3-INCD that medicine
'**They** are going to get that medicine.' {sarnozo/63}

The pattern illustrated in (1a-b) to (4), where core arguments are explicitly signaled on the verb by pronominal proclitics and plural suffixes, is consistent throughout various types of simple and complex sentences. There are, however, two types of complex V1-V2 constructions in which this pattern for marking person and number is not attested: a) complex clauses with a nominalized V2, and b) auxiliary constructions. The V1 in both types of constructions is a motion verb. In what follows, only the second type will be discussed.

2. Olutec Auxiliary + V2 construction

Unlike the motion-cum-purpose construction that marks person and number in both V1 and V2, as shown in (3a-b) and (4), the auxiliary construction carries only one pronominal proclitic and one plural marker per clause. These two markers appear on V2. The motion verb (V1) carries only aspect (or mode). The argument structure of the whole clause is determined by V2. Intransitive V2's carry an absolutive proclitic expressing the S, as in (5a), whereas transitive V2's carry an ergative proclitic expressing the A, as in (5b).

(5) a. **nükx**-u tan=ma:jˇ-i
OLU go-COMI A1(ABS)=sleep-INCD
'I went to sleep.'

b. **nükx**-aˇn=ak tax=ˇe:p-e tan=majaw
go-IRRD=AN C1(ERG)=see-INCD A1(PSR)=woman
'I am going to see my wife.' {olu5/37}

Whereas the examples (5a-b) show that auxiliaries do not take absolutive proclitics, the ones in (6a-b) show that they also do not take plural suffixes when the mover and the entity that performs the action are coreferential and plural. The plural marker only appears on V2.

(6) a. **nükx**-am tax=yakpitzüm-i-**:t** je˜ ko:chi-nak
OLU go-IRRI C1(ERG)=pull_out-INCD-PL.SAP that car-DIM
'**We** are going to pull out that little car.' {lm2/306}

b. na˜kxej **nükx**-i=k ta=kep-**küx**-i ja:yaj-tük
when go-INCD=AN C3(ERG)=look_for-PL3-INCD other-PL
'When **the other ones** went to look for him.' {olu26/59}

In Olutec, the predicates in first position that follow the auxiliary pattern shown in (5a-b) and (6a-b) form a closed set of eight members. Three of the auxiliaries convey motion: *mi:n˜* 'come,' *nükx* 'go,' *˜oy* 'go and return (in completive aspect).' The other five auxiliaries convey aspect and mode: *po:x* 'delay,' *küx* 'finish,' *˜ix˜ i:y˜* 'begin,' *˜it* 'progressive,' and *jat* 'be able.'

All the Olutec auxiliaries have intransitive lexical counterparts that take absolutive proclitics when functioning as main verbs. The form *mi:n˜* 'come' appears in its lexical use in (7a-b), and in its auxiliary use in (7c). (7a) is an intransitive simple clause. (7b) illustrates a motion-cum-purpose clause in which both verbs carry a pronominal proclitic identifying the coreferential subject (S of V1 and A of V2). (7c) is an auxiliary construction with only one pronominal proclitic, identifying the coreferential argument, attached to V2.

(7) a. **min**=ka:=ja:=**mi:n˜**-a˜n
OLU A2(ABS)=NEG=MIRAT=come-IRRD
'You shouldn't have come.' {com/213}

b. **min**=ka:=ja:=**mi:n˜**-a˜n **mix**=to:k-e
A2(ABS)=NEG=MIRAT=come-IRRD C2(ERG)=sell-INCD
'You shouldn't have come to sell it.' {olu4/200}

c. ti: ya˜aj **mi:n˜**-u **mix**=tun-i
what this come-COMI C2(ERG)=do-INCD
'What did you come to do?' {viaj3/106}

Out of a set of fourteen intransitive verbs that conflate motion, deixis and orientation, only three have become auxiliaries: *mi:n˜* 'come,' *nükx* 'go,' and *˜oy* 'go and return.' The rest of the motion verbs, such as *pitzüm* 'exit,' *jamat* 'arrive there,' *tük˜i:y˜* 'enter,' require the absolutive proclitic and the plural suffix in morphosyntactic contexts in which the true auxiliaries do not.

Thus, auxiliaries may be defined as a closed set of grammaticalized verbs with a defective argument structure.

An additional piece of evidence that supports this view comes from a construction in which the auxiliary is followed by a passivized V2. Olutec passives are intransitive clauses with the patient functioning as the only core argument (marked by the absolutive). The agent in passives may not be expressed.

(8) na˜kxej **tan=yak-kep**-e
OLU when A1(ABS)=PASS-look_for-INCD
'When I am being looked for [...]' {viaj2/55}

Auxiliaries can occur before a passivized V2. The only syntactic argument of this complex construction refers to the semantic patient of V2. The entity that moves, which in the active version is coreferential with the semantic agent of V2, cannot be expressed in the passive version of AUX+V2, not even as an oblique phrase. English does not have this type of passive, making the translation awkward. In the translation, I use the pronoun 'they,' which identifies the moving entity coreferential with the agent of V2; even though in the Olutec clauses the understood 'they' is not an argument of the clause and cannot be expressed.

(9) ˜**oy**-u=k ˜i=**yak**-kep-e ˜alwanyil
OLU go_and_return-COMI=AN A3(ABS)=PASS-look_for-INCD mason
'(They) went (and came back) to look for the mason.' {café/6}

The fact that the only core argument in examples such as (9) does not correspond to the mover clearly demonstrates that the auxiliary does not contribute to the argument structure of the AUX+V2 clauses.

3. Auxiliaries as an areal feature

The type of AUX+V2 construction found in Olutec is also attested in the two branches of Mixe-Zoquean languages (Himes 1997; Johnson 2000), and in the Tzeltalan and Kanjobalan groups of the Mayan family. Mayan auxiliary constructions have been amply studied (Aissen 1994; Haviland 1991, 1993; Zavala 1993). In what follows, I will discuss only the Tzotzil auxiliary construction as a representative of the phenomenon found in Tzeltalan and Kanjobalan languages.

Tzotzil, similar to Olutec, is a head-marking language that follows an ergative-absolutive alignment. The absolutive pronominals indicate the S and O, whereas ergative pronominals indicate the A.

Tzotzil motion-cum-purpose and auxiliary constructions are formally equivalent to the corresponding Olutec constructions. Compare the Olutec motion-cum-purpose construction, (3a-b) and (4), with its Tzotzil equivalent, (10).

(10) l-**i-muy**-otikotik **j**-k'el-tikotik
TZO COM-B1(ABS)-ascend-1PL.EXCL A1(ERG)-see-1PL.EXCL
'We went up to see it.' {Aissen 1994: 683}

The Tzotzil auxiliary construction shares most of the structural properties of the Olutec equivalent discussed above. Tzotzil auxiliaries are grammaticalized verbs with defective argument structure. They are not marked for person and number. These markers only appear on the V2, as illustrated in (11).

(11) **muy** **j**-k'el-tikotik
TZO ascend A1(ERG)-see-1PL.EXCL
'We climbed up to see it.' {Aissen 1994: 683}

Tzotzil auxiliaries form a paradigm of 14 members (Haviland 1991, Aissen 1994). The list includes twelve motion auxiliaries whose etymological sources are intransitive motion verbs: *b'a(t)* 'go,' *k'ot* 'arrive there,' *tal* 'come,' *yul* 'return here,' *a(y)* 'go and return,' *och* 'enter,' *lok'* 'exit,' *muy* 'ascend,' *yal* 'descend,' *sut* 'return,' *kom* 'remain,' and *ech'* 'pass.' Tzotzil also has two aspectual auxiliaries whose etymological sources are intransitive phase verbs: *lik* 'arise, start,' *laj* 'finish.'

The Tzotzil passive auxiliary construction is highly similar to the one found in Olutec. When an auxiliary combines with a passivized V2, the 'mover,' which is semantically coreferential with the semantic agent of V2, is omitted or expressed as oblique. Thus, the only core argument involved in (12) is what otherwise is the primary object of V2, i.e., 1st person absolutive (Aissen 1994: 665-75).

(12) **ech'** ak'-b-**at**-ik-**on** j-moton
TZO pass give-BEN-PASS-SUBJ-B1(ABS) A1(PSR)-gift
'They passed by to give me my gift.' {Aissen 1987: 666}

Therefore, cases such as (12) clearly demonstrate that the argument structure of the whole construction depends entirely on the argument structure of the V2.

3.1. AUX+V2: Grammatical borrowing from Mayan to Mixe-Zoque

There are four noticeable features of the auxiliary construction that are shared by Olutec and Tzotzil. First, the members of the auxiliary paradigm were recruited from similar sets of intransitive motion and aspectual verbs. Second, the auxiliaries are not marked for person and number. Third, the auxiliary occurs before the main verb. And fourth, in the passive alternation of the auxiliary construction, the auxiliary maintains its motion semantics, although the moving entity is not conveyed as a core argument of the clause. The first two features are cross-linguistically very common in the process of grammaticalization of lexical intransitive verbs into auxiliaries. The third feature is commonly attested in verb-initial languages. The fourth feature is rarely found in auxiliary constructions cross-linguistically. All the features together, but particularly the last one, indicate that the auxiliary construction must be regarded as an areal feature that has spread through the two branches of the Mixe-Zoquean family and the neighboring Mayan languages of the Kanjobalan and Tzeltalan groups.

We can conclude that we are dealing with a clear case of "indirect diffusion" under language contact, i.e., diffusion of a grammatical pattern without the morphemes that express it (Heath 1978:125). But since what is shared by both language families is a grammatical pattern and not a set of lexical or morphological items, there is the problem of identifying the direction of the diffusion.

At least three facts indicate that the direction of borrowing was from Mayan to Mixe-Zoquean. First, the paradigms of auxiliaries found in Kanjobalan (Akatek, Q'anjob'al and Jakaltek) and Tzeltalan (Tzotzil and Tzeltal) share approximately the same number of items (between 11 to 13 motion auxiliaries and between 2 to 4 phase auxiliaries). No Mixe-Zoquean language has more than 3 motion auxiliaries. Thus, since the auxiliary system in Mayan is semantically much more elaborated than the Mixe-Zoquean, I assume that the Mayan pattern is an earlier development.

Second, the pattern AUX+V2, where V2 is an embedded verb, is typically attested in verb-initial languages. Mayan languages exhibit all the major typological traits that are common to verb-initial languages: prepositions; noun-genitive order; AUX-verb; and LightV-verb. In contrast, Mixe-Zoquean languages have postpositions, genitive-noun order, V-AUX, and verb-LightV patterns associated with verb-final languages. Therefore it is evident that the AUX+V2 pattern found in Mixe-Zoquean was borrowed from languages with verb initial characteristics.

And third, auxiliaries in Kanjobalan languages appear before a V2 following two different patterns. In the first pattern, auxiliaries are not marked for person or number, (13a), similarly to the Tzotzil and Olutec construction discussed above. In the second pattern, the auxiliary takes an absolutive marker cross-referencing the patient of V2, (13b). The construction in (13b), shows an advanced stage of reanalysis of the auxiliary verb into a verbal proclitic.

(13) a. oj-jul **in-y**-a'-kan naj=an
AKA IRR-arrive_here B1(ABS)-A3(ERG)-put-DIR:stay PRO/he=CL1
'He will come (here with me) and then abandon me.' {Zavala 1993: 99}

b. tumi man **in**-jul **s**-chi'-ey-toj eb'
perhaps NEG/IRR B1(ABS)-arrive_here A3(ERG)-bite-DIR-DIR they
'They might come to eat me.' {Zavala 1993: 100}

Since the reanalysis shown in (13b) has not been attested in either of the Mixe-Zoquean languages, but is widespread in three Mayan groups (Kanjobalan, Quichean and Mamean (Zavala 1993)), I conclude that the type of auxiliary construction in (13a) is older in Mayan and that the Mixe-Zoquean languages borrowed from them.

4. Grammaticalized motion verbs as directionals

Olutec exhibits a serial verb construction whose second member is a verb of motion that grammaticalized as a directional. Directionals describe the trajectory of a figure conveyed by the main verb. The meaning of a directional is usually associated with the absolutive argument of the first verb. When the first verb is intransitive, the directional describes the trajectory of the S, but when the first verb is transitive, the directional describes the trajectory of the O. For instance, in (14a) the directional *ka* ˜ 'down' describes the trajectory of the S of the intransitive verb

ma ˜tz 'fell,' whereas in (14b) the same directional describes the trajectory of the O (*te:jana ˜w* 'big tiles') of the transitive verb *yopop* 'pile.'

(14) a. ø=ma˜tz-**ka**˜-u jo:yan
OLU B3(ABS)=fell-DIR:down-COMI nest
'The (wasp's) nest fell down.' {id2/139}

b. te:jana˜w ta=yopop-**ka**˜-i
big_tile C3(ERG)=pile-DIR:down-INCD
'They are piling big tiles down there.' {lm3/486}

There are three reasons for considering directionals as grammaticalized morphemes. First, directionals form a closed paradigm of thirteen members: *-mi:n* ˜ 'hither,' *-nükx* 'thither,' *-ya ˜t* 'arriving here,' *-jamat* 'arriving there,' *-pet* 'up,' *-ka* ˜ 'down,' *-tük ˜i:y* ˜ 'in,' *-pitzüm* 'out,' *-yü ˜k* 'out,' *-wimpit* 'back,' *-nax* 'across,' *-tuk* 'across,' *-tij* 'staying.'

Second, directionals are verbal suffixes that do not contribute to the argument structure of the clause. And third, unlike their source verbs, directionals do not convey motion. This is clearly appreciated when directionals co-occur with verbs of locution and perception whose semantics do not conflate motion, as in (15)

(15) ja˜=k ˜i=˜ix-**nax**-pe peryo:diko
OLU he=AN A3(ERG)=see-DIR:across-INCI.T newspaper
'He is reading the newspaper.' {rsch1/338}

In the above example neither the agent nor the patient moves. Directionals are used with locution and perception verbs to convey the fact that the sound or range of vision of an entity is directed towards a location fixed in space.

5. Directionals as an areal feature

Comparable directional systems that grammaticalized from motion verbs are found in both branches of the Mixe-Zoquean family and all Mayan languages with the exception of languages of the Yucatecan and Huastecan groups (Kaufman 1997). The most elaborated systems of directionals within the Mayan family are found in the Kanjobalan and Tzeltalan groups (Haviland 1991, 1993; Craig 1993; Zavala 1993). I will use data from Jakaltek to illustrate the pattern found in the languages geographically adjacent to Mixe-Zoquean.

In Jakaltek, directionals are enclitics that appear following non-verbal predicates and verbs. Unlike Olutec, Jakaltek directionals may form chains, i.e., a sequence of up to three directionals may be cliticized to a predicate, as in (16).

(16) x-ø-s-muj-**kan-ay-toj**
JAK COM-B3(ABS)-A3(ERG)-bury-DIR:stay-DIR:down-DIR:thither
'They buried him for good.' {Craig 1993: 25}

The Jakaltek directional paradigm contains 12 elements, most of them related to a verbal lexical form. There are three different subsets that are recognized by the position they occupy after the predicate and by their shared semantic traits. The first set of directionals carries deictic meaning: *-toj* 'thither,' *-tij* 'hither,' *-apnoj* 'arriving there,' and *-ol* 'arriving here.' The second set of directionals encodes path and orientation: *-(a)h* 'up,' *-(a)y* 'down,' *-(o/e/i)k* 'in,' *-(e/i)l* 'out,' and *-(e/i)k'* 'passing, through.' The third set of directionals conveys aspectual meaning: *-pax* 'back, again,' *-kan* 'remaining, still,' and *-kanh* 'up, suddenly.'

5.1. Directionals: Grammatical borrowing from Mayan to Mixe-Zoque

The paradigms of directionals found in Mixe-Zoquean and the adjacent Mayan languages are remarkably similar in terms of the number of forms, their semantics, and their morphosyntactic slot within the verb. Several facts indicate that Olutec and the rest of the Mixe-Zoquean languages acquired the verb-plus-directional pattern from the neighboring Mayan languages. Thus, this is also a case of indirect diffusion in which Olutec borrowed a morphosyntactic pattern without borrowing the lexicon.

There are four traits that indicate that Mayan directionals form a much more elaborated and older system than the one found in Mixe-Zoquean. First, some of the Mayan directionals have undergone phonological erosion, whereas all the directionals in Olutec are formally identical to their lexical source.[6] Second, Mayan predicates take strings of up to three directionals, (16), whereas no Mixe-Zoquean language allows strings of directionals. Third, the kind of root that hosts a directional in Mayan is less restricted than in Olutec. Directionals in Olutec cannot be suffixed to non-verbal predicates, adpositions, or copulas, while this restriction is not found in Mayan. And fourth, in addition to the purely directional meaning, some of the directionals in Mayan languages have become aspectual markers (Craig 1993). No similar development has occurred in Olutec.

I am assuming that a directional system that shows the four features discussed above is in a more advanced stage of grammaticalization than a directional system that lacks them. Therefore, when comparing the various features attested in Kanjobalan and Tzeltalan, but absent in Olutec and other Mixe-Zoquean languages, it is safe to maintain that Mayan languages have had directionals for a longer period of time than Mixe-Zoquean languages, since one would expect that an older system would exhibit characteristics that are usually attested in later stages of a grammaticalized cline. In addition, a comparison of the text frequency of predicate tokens followed by directionals in Jakaltek and Olutec discourse reveals that the use of directionals in Olutec is very limited: 30 % of predicates in Jakaltek Maya (Craig 1993) as compared to only 1% in Olutec.

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[6] I am aware that some other explanation may account for the difference in the degree of phonological erosion among the different language families. However, since the phonological erosion is found only in Mayan, and this aligns with the rest of the evidence presented here, I consider it legitimate to proceed with the interpretation I am suggesting.

(17) a. *Frequency of directionals in Jakaltek discourse*

Total with directionals	=	159 tokens =	**35%**
Total without directionals	=	301 tokens =	65%
TOTAL NUMBER OF PREDICATES=		460	= 100%

b. *Frequency of directionals in Olutec discourse*

Total with directionals	=	204 tokens =	**1%**
Total without directionals	=	19,948 tokens =	99%
TOTAL NUMBER OF PREDICATES=		20,152	=100%

Finally, there is further historical evidence indicating that directionals in Olutec are an innovation that is replacing an older directional system that can be traced back to Proto-Mixe-Zoque (PMZ). Olutec and the rest of the Mixe-Zoquean languages inherited from PMZ a system of lexical affixes that convey directional meaning. The etymology of the majority of these affixes is obscure, although some clearly evolved from body-part nouns or locational adverbs. The Olutec paradigm includes the prefixes *yuk-* 'upwards', *ko:-* (in combination with the suffix *-ta:k˜*) 'downwards'; and the suffixes: *-ta:k˜* 'downwards', *-˜i:y˜* 'inwards', and *-tzo:y˜* 'lack of motion'. Out of these five Olutec affixes, the only one that can be traced back to its etymological source is *yuk-*, originally a locational adverb meaning 'up there.' Both of these uses are illustrated in (18).

(18) ja˜=k tzu:k ˜asta **yuk**-pi ˜i=**yuk**-yokx-e
OLU DEF=AN mouse very up_there-LOC A3(ABS)=upwards-jump-INCD
'The mouse is jumping way up there.' {rsch2/493}

The paradigm of lexical affixes is no longer productive; i.e., these affixes only attach to a few roots. In contrast, the directionals that grammaticalized from verbs may occur with a wide range of verbal roots. This may be an indication that the directional system, whose etymology is still very transparent, was a later development and is in the process of replacing the older lexical affix system.

6. The associated motion construction

Olutec and the rest of the Mixean languages have developed a particular construction to convey complex events with the meaning 'X moves in a particular direction while doing something else.' Similar constructions reported for Australian languages are known as 'associated motion constructions' (Wilkins 1991). In this construction, the two verbs share a single set of pronominal and aspectual markers. V1 determines the argument structure of the clause, while V2 is an intransitive motion verb. The Olutec example in (19a) is intransitive, whereas the example in (19b) is transitive.

(19) a. ø=**piyü˜k-tak-pitzüm**-u ja˜
OLU B3(ABS)=run-LNKR-exit-COMI he
'He went out running.' {id2/175}

b. siga:rru=k ˜i=**ju˜k-tak-mi:n˜**-u
cigarette=AN A3(ERG)=smoke-LNKR-come-COMI
'He came smoking a cigarette.' {rsch1/9}

Note that the two verbs are linked by the suffix *-tak* 'linker'. The etymology of *-tak* is unknown, but it is likely that this suffix was originally a non-finite marker. If this hypothesis is correct, this would mean that what synchronically is a complex verb, originally was a construction containing a subordinated adverbial clause followed by a main clause containing a motion verb. The order of the two verbs is consistent with the verb-final features of Olutec. This word order pattern is also attested when adverbial clauses, participial clauses, and secondary predicates form complex sentences with a matrix verb in second position.

Thirteen Olutec motion verbs participate in the associated motion construction: *mi:n˜* 'come,' *nükx* 'go,' *ya˜t* 'arrive here,' *jamat* 'arrive there,' *tük˜i:y˜* 'enter,' *pitzüm* 'exit,' *pet* 'ascend,' *ka˜* 'descend,' *yü˜k* 'leave,' *nax* 'cross,' *wimpit* 'return,' *wit* 'go about, walk,' and *piyü˜k* 'run.' Note that the last two verbs of this list conflate motion and manner. None of the verbs conflating motion and manner have grammaticalized as auxiliaries or directionals in any of the Mixe-Zoquean or Mayan languages.

Neither Mayan nor Zoquean languages show the type of co-lexicalized construction found in Olutec. Thus, it seems likely that the associated motion construction is a Mixean internal development.

7. Conclusion

Based on the structural and semantic similarities and differences of Olutec and Mayan auxiliaries and directional constructions, I have argued that Olutec and the rest of the Mixe-Zoquean languages developed paradigms of auxiliaries and directionals through areal contact with the adjacent Mayan languages of the Tzeltalan and Kanjobalan groups. The borrowing of syntactic patterns that contain grammaticalized elements inside the construction has received insufficient attention both in grammaticalization theory and historical linguistics. When a language borrows syntactic patterns of this sort, the immediate assumption is that this type of borrowing necessarily implies intense contact and one would expect that in situations of intense contact the target language would show evidence of extensive lexical borrowing (cf. Thomason and Kaufman 1988). However, this prediction is not fulfilled in any of the Mixe-Zoquean languages, which have borrowed Mayan grammatical patterns, but not Mayan grammatical or lexical morphemes.

What is common to find in this linguistic area are morphological and syntactic calques that are translated using the lexicon of the particular language. For instance, in addition to the patterns examined in this paper, some of the Tzeltalan languages and many of the Mixe-Zoquean languages use the grammaticalized form of the verb 'finish' as a 3rd person plural marker. Since this type of development is rare cross-linguistically, it is clear that this is another case of grammatical diffusion under language contact whose direction should be investigated.

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