A Head-Marking Grammar for Applicative Constructions

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Head-marking languages take opposite strategies from dependent-marking languages. The former mark grammatical relations on the head while the latter on the dependent. In a head-marking language the head of a sentence is the verb so that grammatical relations are marked on the verb. Applicative constructions seem to be strategies characteristic of head-marking languages but have been studied mainly from the viewpoint of dependent-marking languages. In this paper, therefore, I will discuss them from a head-marking perspective.

Key words: applicative, head-marking, Uto-Aztecan, Mayan

1. Introduction

Rincon (1595) may be the first person who used the term "applicative verbs (verbos aplicativos)", although Peterson (2007: 2) notes that the term appears first in the Nahuatl grammar by Carochi (1645). Rincon's grammar is one of the three early grammars known before Carochi's famous grammar. However, his treatment is very simple. He only gives

three examples, *ni-c-cui-lia in Pedro i-tilma* 'I take his clothes from Pedro', *ni-c-uetzqui-lia in Pedro* 'I laugh with Pedro', and *ni-c-cotoni-lia i-mapil Pedro* 'I cut the finger of Pedro', though he explains in detail how applicative verbs are derived (Rincon 1885: 44–45).

The first grammar of Nahuatl was written by Olmos (1547). He does not mention applicative verbs but discusses "reverential" verbs which have the same suffixes as applicatives. The second Nahuatl grammar is Molina's (1571), in which we cannot find the term *verbos aplicativos* but applicative constructions are treated in detail.

According to the definition by Andrews, who writes an excellent primer grammar, applicative verbs are those that relate or apply an action indirectly to a patient, either to his benefit or to his harm (Andrews 1975: 102). Peterson (2007: 1) defines applicative constructions as the means some languages have for structuring clauses that allow the coding of a thematically peripheral argument or adjunct as a core-object argument. To put it simply, from the viewpoint of head-marking languages, a peripheral argument is encoded on the verb through applicative affixation. These constructions are also called "preposition incorporation" (Baker 1988) or "relational preverbs" (Craig 1978; Craig and Hale 1988).

Direct or core arguments are subject and direct object, while indirect arguments or adjuncts, peripheral or oblique arguments are related to benefactive, additional benefactive, malefactive, instrumental, comitative, prioritive, relinquitive, locative, etc.

In this paper I will treat applicatives of native Middle American languages. I begin with Classical Nahuatl in which the term "applicative" is first used.

2. Classical Nahuatl

The applicative marker in Classical Nahuatl has three allophomes, *-ia/-lia/-huia*. The morphological difference among these suffixes depends on the verb morphology and there are no differences functionally or semantically. Applicative stems in Classical Nahuatl are derived stems, formed by means of a suffix which, depending on the meaning of the source stem, may be glossed as 'to', 'for', 'from', 'about', 'in relation to', 'on behalf of', 'for the sake of', etc. Single-object applicatives come from intransitive stems; double-object applicatives come from single-object transitive stems; and triple-object applicatives come from double-object transitive stems. Therefore applicatives seem to be valence-increasing suffixes.

To better understand Nahuatl sentences, I will first describe the pronominal system (Table 1). Nahuatl is an accusative language. In the third person, the subject pronominal is zero and only the object pronominal is marked on the verb. Indefinite accusative and posses-

Table 1   Nahuatl Pronominal System

	Subject		Object		Possessive		Reflexive	
	SG	PL	SG	PL	SG	PL	SG	PL
1	ni-	ti-	nēch-	tēch-	no-	to-	no-	to-
2	ti-	am-*	mitz-	amēch-	mo-	amo-	mo-	mo-
3	Ø-	Ø-	c-/qu-/qui-	quim-*	ī-	īm-*	mo-	mo-
INDF			tē-/tla-		tē-/tla-/ne-		ne-	

* *am*, *īm*, *quim* become *an*, *īn*, *quin* before *n*.

sive and reflexive are marked by *tē-/tla-, tē-/tla-/ne-, ne-*, respectively.

2.1. One argument verbs

An intransitive verb is transformed into a two-argument verb by adding an applicative suffix. At first glance the resulting verb seems to be transitive formally but the applicative suffix does not affect the meaning of the verb.

(1)   *ni-tlaōcoya*   (Andrews 1975: 107)
      s1-be sad
      'I am sad.'

(1a)   *ni-tē-tlaōco-lia*   (Andrews 1975: 107)
      s1-INDF-be sad-APPL
      'I am sad in regard to someone; I feel pity for someone.'

(1b)   *ni-mitz-tlaōco-lia*   (Andrews 1975: 107)
      s1-o2-be sad-APPL
      'I am sad in regard to you; I feel pity for you.'

(1c)   *ni-no-tlaōco-lia*   (Andrews 1975: 107)
      s1-REF-be sad-APPL
      'I am sad in regard to myself; I feel self-pity.'

2.2. Two argument verbs

As shown in the following examples (2a)–(3a), only indirect object occurs and direct object becomes null after the applicative transformation. The reason may be that there is incompatibility of the same set of affixes on the verb.

(2)   *ni-c-xeloa*   (Andrews 1975: 108)
      s1-o3-divide
      'I divide it'

(2a)   *ni-mitz-xel-huia*   (Andrews 1975: 108)
      s1-o2-divide-APPL
      'I divide it with you.' (c-→Ø)

(3)   *ni-quin-nāmoya*   (Andrews 1975: 108)
      s1-o3PL-kidnap
      'I kidnap them.'

(3a)   *ni-quin-nāmoya-lia*   (Andrews 1975: 108)
      s1-o3PL-kidnap-APPL
      'I kidnap them from them.' (*quin-*→Ø)

However, indefinite *tē-/tla-* and reflexive markers co-occur with an object marker, resulting in three argument verbs.

(4)   *ni-tla-pāca*   (Andrews 1975: 107)
      s1-INDF-wash
      'I wash things.'

(4a) *ni-tē-tla-pāqui-lia*   (Andrews 1975: 107)
     s1-INDF-INDF-wash-APPL
     'I wash things for people.'

(4b) *ni-c-tla-pāqui-lia*   (Andrews 1975: 107)
     s1-o3-INDF-wash-APPL
     'I wash things for him.'

(4c) *ni-no-tla-pāqui-lia*   (Andrews 1975: 107)
     s1-REF-INDF-wash-APPL
     'I wash things for myself.'

2.3. Three argument verbs

Three argument verbs include indefinite markers. Four argument verbs are created by adding the applicative suffix.

(5) *ni-mitz-tla-pāca-ltia*   (Andrews 1975: 108)
     s1-o2-INDF-wash-CAUS
     'I have you wash something.'

(5a) *ni-mitz-tē-tla-pāca-lti-lia*   (Andrews 1975: 108)
     s1-o2-INDF-INDF-wash-CAUS-APPL
     'I have you wash something for someone.'

(5b) *ni-mitz-no-tla-pāca-lti-lia*   (Andrews 1975: 108)
     s1-o2-REF-INDF-wash-CAUS-APPL
     'I have you wash something for me.'

2.4. Passive and impersonal

Applicative verbs may undergo passive and impersonal transformations. Indirect object becomes subject.

(6) *Ø-tēch-quiahu-ī-z*   (Andrews 1975: 111)
     s3-o1PL-rain-APPL-FUT
     'It will rain on us.'

(6a) *ti-quiahu-ī-lō-z-queh*   (Andrews 1975: 111)
     s1PL-rain-APPL-PASS-FUT-PL
     'We will be rained on.'

(7) *Ø-nēch-tla-cuī-lia-h*   (Andrews 1975: 111)
     s3PL-o1-INDF-take-APPL-PL
     'They take something from me.'

(7a) *ni-tla-cuī-li-lo* (Andrews 1975: 111)
     s1-INDF-take-APPL-PASS
     'I am being deprived of something.'

Formally indirect objects promote to subject and so indirect objects are primary objects and direct objects are secondary objects, according to the definition by Dryer (1986) who

distinguishes between Primary object, consisting of the indirect object of a ditransitive clause or the direct object of a monotransitive clause, and Secondary object, consisting of the direct object of a ditransitive clause.

Applicative affixes are marked on the verb, irrespective of whether it is intransitive, monotransitive or ditransitive. At first glance applicative affixes function as valence-increasing affixes, that is, inherently intransitive verbs seem to become transitive, and inherently transitive verbs become ditransitive. But some questions arise, because applicative affixes do not affect the status of the verb. Can the same grammatical affix be attached to a different verb class? Is this a view from head-marking grammar? Is it enough to say that an applicative affix only codes the indirect argument on the verb? Is the concept that indirect object promotes to subject true also for a dependent-marking grammar?

Applicatives are common in Uto-Aztecan languages, and their normal effect is to add an argument to the verb, but Southeastern Tepehuan provides evidence that the applicative affix functions as an index of the indirect argument on the verb.

3. Southeastern Tepehuan

In southeastern Tepehuan, one of the Uto-Aztecan languages, spoken in Northern Mexico, some transitive verbs inflect according to the number of the object, while some intransitive verbs are pluralized in agreement with the number of the subject. We say, therefore, that verbs inflect ergatively.

The intransitive verb *cos* is pluralized by means of reduplication of the first syllable when the subject is plural.

(8) *va-cos-Ø*   *gu-'ahlí*   (Willett 1981: 66)
   CMP-sleep-S3   ART-child
   'The child is sleeping [*sic*].'
(9) *va-có-cos-'am*   *gu-'a'ahl*   (Willett 1981: 67)
   CMP-RDP-sleep-S3   ART-children
   'The children are sleeping [*sic*].'

In (10) the object *gu-jannuhl* is singular and so the verb takes a singular form. In (11) the object is plural and so the transitive verb is pluralized. In (12) the verb is plural in agreement with the plural object. In the verbal phrase, however, the indirect object *ñ* occurs instead of the direct object marker *ja*. If the first person indirect object functions as object, the verb

Table 2 Southeastern Tepehuan Pronominal System

	Subject		Object		Possessive		Reflexive	
	SG	PL	SG	PL	SG	PL	SG	PL
1	-ñ	-ch	(ji)ñ-	(ji)ch-	(ji)ñ-	(ji)ch-	(ji)ñ-	(ji)ch-
2	-p	-pim	(ju)m-	jam-	(ju)m-	jam-	(ju)m-	
3	-Ø	-m	Ø-	ja-	-d	ja-	(ju)m-	

should take a singular form, but the verb is plural, agreeing with the initial direct object *gu-ja-jannuhl*. Willet analyzes the indirect object as primary object and the direct object as secondary object.

(10) *ma'n-am   tu-vacuan   gu-jannuhl*   (Willett 1981: 67)
       one-S3PL   DUR-wash   ART-cloth
       'They are washing (out) a (piece of) cloth.'

(11) *tu-vopcon-'ap   gu-ja-jannuhl*   (Willett 1981: 67)
       DUR-wash+RDP-S2   ART-RDP-cloth
       'You are washing clothes.'

(12) *tu-ñ-vopcoñ-i'ñ-'ap   gu-ja-jannuhl*   (Willett 1981: 67)
       DUR-O1-wash+RDP-APPL-S2   ART-RDP-cloth
       'You are washing clothes for me.'

It is very interesting to note the agreement system in the verbal phrases. In (13) the object *gu-tacárui'* is singular and so the verb is singular, even though the object marker *jam* on the verb is plural. In (14)–(15) the object *gu-tatcarui'* is plural and so the verb is plural. The verb of (14) is transitive and the plural object prefix *ja* on the verbal phrase cross-references the object *gu-tatcarui'*. In contrast, the sentences (13) and (15) are applicative constructions and the second person *jam* and *jum* occur, which are initial indirect object. In (15) the verbal form is plural, agreeing with the plural object, but the third person *ja* does not occur on the verb. Instead of *ja*, the second person singular *jum* associating with the applicative *dy* occurs. If the distinction between primary object and secondary object is effective, the pluralization of the transitive verb violates this distinction, because the verb is pluralized in agreement with the primary object in (14), but with the secondary object in (15). The verb is pluralized in agreement with the direct object. According to relational grammar, indirect object advances to the direct object. If so, the verb should agree in number with the initial indirect and final direct object. Therefore, it is sufficient to say that the applicative *dy* registers the presence of the indirect object, although Aissen (1983: 281) criticizes this registration analysis.

(13) *xiv-añ   jam-bi-idy-ica-'*   *gu-tacárui'*   (Willett 1981: 67)
       now-S1   O2PL-go to-APPL-TRNSF-FUT   ART-chicken
       'I'll bring the chicken to you (PL) right now.'

(14) *xiv-añ   ja-'ui'-ca-'*   *gu-tatcarui'*   (Willett 1981: 68)
       now-S1   O3PL-go to+PL-TRNSF-FUT   ART-chickens
       'I'll take the chickens away right now.'

(15) *xiv-añ   jum-'ui'-dy-ica-'*   *gu-tatcarui'*   (Willett 1981: 68)
       now-S1   O2-go to-APPL-TRNSF-FUT   ART-chickens
       'I'll bring the chickens to you (SG) right now.'

In (16) the postposition *-javɨm* is attached to the noun *gu-m-'a'mi'*. In (17) the applicative affix *-idya* is suffixed to the verb and the postposition disappears. In place of the post-

position *-javɨm* the applicative *-idya* appears on the verb. Therefore we may say that the function of the applicative *-idya* corresponds to the postposition *-javɨm* and the affix *ja* cross-references the noun *gu-m-'a'mi'*.

(16) *tu-'a'ga-'-iñ*   *gu-m-'a'mi'-javɨm*   (Willett 1981: 68)
      DUR-talk-FUT-S1   ART-POSS2-friends-with
      'I'll talk with your friends (about it).'

(17) *tu-ja-'a'gu-idya-'-iñ*   *gu-m-'a'mi'*   (Willett 1981: 68)
      DUR-O3PL-talk-appl-FUT-S1   ART-POSS2-friends
      'I'll talk with/to(?) your friends (about it).'

4. Tepehua

Tepehua is a Totonacan language spoken in the state of Veracruz. Affixes that function as applicatives are comitative *t'a-*, beneficiary *-ni*, and instrumental *pu:-*. When applicatives are used with intransitive verbs, the verbs have both subject and object arguments. Transitive verbs suffixed with applicatives have three direct arguments. It is impossible for a verb to take four arguments in Tepehua.

(18) *tapaatzaa-ni-l*   *kin-kuku*   (Watters 1988: 80)
      work-APPL-PER   POSS1-uncle
      'X worked for my uncle.'

(19) *ki-st'aa-ni-yee-'i*   (Watters 1988: 83)
      O1-sell-APPL-FUT-S2
      'You will sell her to me.' or 'You will sell me to him.'

(20) *Pedro*   *t'aa-laqtz'in-aa-n*   *ni*   *Juan*   (Watters 1988: 83)
      Pedro   APPL-see-IMPF-O2   ART   Juan
      'Pedro with Juan sees you.' or 'Pedro with you sees Juan.'

(21) is an intransitive construction with a prepositional phrase. In (21a) the preposition *laka:* is replaced by *pu:*, which is marked on the verb. In (21b) both *pu:* and *laka:* occur redundantly.

(21) *mi-ł*   *laka:=hu:li*   (Watters 1988: 474)
      come-PER   PREP=horse
      'He came on a horse.'

(21a) *pu:-mi-ł*   *hu:ki*   (Watters 1988: 474)
      APPL-come-PER   horse
      'He came on a horse.'

(21b) *pu:-mi-ł*   *laka:*   *hu:ki*   (Watters 1988: 474)
      APPL-come-PER   PREP   horse
      'X came on a horse.'

The languages treated so far are nominative/accusative and there is no person marker distinction between intransitive and transitive subjects. To search the distinction it is appropriate to test ergative languages where the distinction between an intransitive and transitive subject is clearly marked by person markers.

5. Sierra Popoluca

Sierra Popoluca is a Mixe-Zoquean language, spoken in Veracruz, Mexico. Sierra Popoluca is an ergative language and has two sets of person markers. Person agreement marker Set A is used to indicate transitive subject and the possessor on nouns, while Set B is used for intransitive subject and transitive object. The valence of the verb increases when the instrumental applicative *-ka* is used. *kim-* in (22) and *mɨːch-* (23) are intransives and take Set B absolutive as subject. When the instrumental applicative *-ka* is suffixed to these verbs in (22a)–(23a), the verbs take Set A ergative, which means the verbs are transitives, even though the meaning of the verbs does not change.

Table 3   Sierra Popoluca Pronominal System

	Set A	Set B
1	an-	a-
1 DUAL	tan-	ta-
2	iñ-	mi-
3	i-	Ø-

(22) *jem   tzɨːxi   Ø-kim-pa   kuy   yukmɨ*   (Elson 1999: 100)
DEF   child   B3-climb-INC   tree   on
'The child climbs up a tree.'

(22a) *an-kím-ka-pa* (> *aŋkí'ŋká':ba*)   (Elson 1960: 66; Elson 1999: 182)
A1-climb-APPL-INC
'I climb it.'

(23) *jem   tzɨːx-tam   Ø-mɨːch-yaj-pa   aŋsɨːkmɨ*   (Elson 1999: 83)
DEF   child-PL   B3-play-PL-INC   outside
'The children play outside.'

(23a) *i-mɨːch-ka-pa   tun   tɨpxi*   (Marlett 1986: 372)
A3-play-APPL-INC   one   lariat
'He plays with a lariat.'

The subject of an intransitive construction is treated differently from the subject of a transitive construction in ergative langauges. Sierra Popoluca examples clearly show that adding an applicative suffix has a valence-increasing effect, even though the meaning seems to be the same. It is not clear, but I guess the focal point moves to indirect arguments when the applicative is used.

6. The applicative suffix *-b'e* in Mayan languages

Mayan languages are ergative and have two sets of person markers, just as Sierra Popoluca. Set A (ergative) person markers reference the agents of transitive verbs and nominal possessors. Set B (absolutive) person markers indicate direct objects when affixed to transitive verbs and subjects when affixed to intransitive verbs. Since Mayan languages are head-marking, an indirect object may be marked on the verb. From the viewpoint of head-marking grammar, the suffix *-b'e* marks a peripheral element on the head verb. This marker *-b'e* is observed only in the southern lowland Mayan languages except Tojolabal and Chorti', and eastern highland Mayan except Q'eqchi (Craig 1978, Mora-Marín 2003, Norman 1978). *-b'e* in eastern highland Mayan functions mainly as an instrumental applicative suffix.

6.1. Tzotzil

(24) *i-Ø-h-chon-b'e-Ø*   *chitom*   *li*   *Xun-e*   (Aissen 1983: 272)
      CMP-B3-A1-sell-APPL-B3   pig   DEF   Xun-TER
      'I sold (the) pigs to Xun.'

The third person absolutive is Ø in all Mayan languages and we postulate that the second Ø in (24) that occurs after *-b'e* functions like the first person absolutive *-on* in the following example (25), where the indirect object *-on* is marked on the verb.

(25) *ti*   *mi*   *ch-av-ak'-b'-on*   *ep*   *tak'in-e*   (Aissen 1983: 282)
      if   Q   INC-A2-give-APPL-B1   much   money-TER
      'if you will give me plenty of money'

We analyze the second -Ø in (24) as cross-referencing *li Xune,* though the actual form is *ihchonb'e* and the indirect object *li Xune* is unmarked.

The initial indirect object advances to subject in passive sentences.

(26) *ch-i-ak'-b'-at*   *hun*   *tzeb'*   (Aissen 1983: 283)
      INC-B1-give-APPL-PASS   one   girl
      'I am being given a girl'
(27) *i-Ø-ak'-b'-at*   *libro*   *li*   *Xun-e*   (Aissen 1983: 283)
      CMP-B3-give-APPL-PASS   book   DEF   Xun-TER
      'Xun was given the book'

Sentence (27) is ambiguous and may be translated as 'The book was give to Xun'. If this interpretation is not correct, there must be a restriction that only an animate subject is permitted and the order of V-IO-DO is ungrammatical, as is shown in (28).

(28) **mi   i-Ø-ak'-b'-at*   *Xun   li   chitom-e* (Aissen 1983: 284)
      Q   CMP-B3-give-APPL-PASS   Xun   DEF   pig-TER
      'Was Xun given the pig?'

However, the following sentence takes the order of V-IO-DO. This *-b'e* is used as an instrumental applicative.

(29) *ta-Ø-s-hech'-b'e   machita   li   krem-otik-e* (Aissen 1983)
      FUT-B3-A3-hit-APPL   machete   ART   child-PL-TER
      'He is hitting the boys with a machete.'

In Tzotzil intransitive verbs do not involve an indirect argument as is shown in (30). This means intransitives remains intransitives and do not promote to transitives by means of suffixing the applicative *-b'e*.

(30) *a   li   petul-e   i-Ø-tal   y-u'un   li   maruche* (Aissen 1983)
      TOP   DEF   Petul-SUF   CMP-B3-come   A3-RN   DEF   Maruch
      'Petul came for/on account of Maruch.'
(30a) **a   li   petul-e   i-Ø-s-tal-b'e   li   maruche* (Aissen 1983)
      TOP   DEF   Petul-SUF   CMP-B3-A3-come-APPL   DEF   Maruch
      'Petul came for/on account of Maruch.'

6.2. Ixil

Ixil is spoken in the rugged northeastern highlands of Guatemala and consists of three dialects, Nebaj, Cotzal and Chajul.

(31) *n-in-tzok'-Ø   tze'   ta'n   machit* (Ayres 1991: 159)
      PROG-A1-cut-B3   tree   PREP   machete
      'I am cutting the tree with a machete.'
(32) *machit   n-in-tzok'-b'e-Ø   tze'* (Ayres 1991: 160)
      machete   PROG-A1-cut-APPL-B3   tree
      'With a machete I am cutting the tree.'

(31) is a transitive sentence and the instrumental *machete* is marked with the preposition *ta'n*. In (32) the *machete* is highlighted and precedes the verb phrase. The preposition disappears and instead *-b'e* is marked on the verb.

(33) *kat   ja'-in   ta'n   iqvil* (Ayres 1991: 159)
      CMP   climb-B1   PREP   rope
      'I climbed with a rope.'
(34) *iqvil   kat   in-ja'-e-b'e* (Ayres 1991: 160)
      rope   CMP   A1-climb-EPEN-APPL
      'With a rope I climbed.'

(33) is an intransitive sentence and the instrumental is marked with preposition *ta'n*. In (34) *iqvil* 'rope' is preposed and *-b'e* is marked on the verb. The prefix *in-* 'I' in (34) is a Set A (ergative) subject marker and so the sentence may be a transitive construction because the ergative is used. If so, *iqvil* is treated as an object. However, since the third person of Set B is -Ø, sentence (34) could be an intransitive construction, because in some cases a split ergative alignment is used. In sentences with progressive aspect and some adverb-initial constructions, for example, Set A (ergative) is used as a subject marker.

(35) *nik   v-i'l-e'*   (Ayres 1991: 107)
      PROG   A1-rest-TER
      'I am resting'

(35b) *antel   t-aq'onv-e'*   (Ayres 1991: 107)
      still   A3-work-TER
      'He is still working.'

To know whether sentence (34) is intransitive or transitive, it is necessary to show an example with an instrumental that is not a Set B third person pronoun. The following is the preferred expression where *axh* is not Set B but is an independent pronoun. Since the second person is not expressed by Set B, the structure remains ambiguous.

(36) *axh   in-ja'-a-b'e*   (Ayres 1991: 160)
      IP2   A1-climb-EPEN-APPL
      'I climbed for you.'

In the following passive and antipassive sentences, a Set B (absolutive) marker is used and the verbs are analyzed as intransitive and thus (34) may be transitive.

(37) *u   machit   kat   tzok'-ox-b'e-Ø   u   tze'   (s   v-a'n)*   (Ayres 1991: 161)
      DEF machete CMP cut-PASS-APPL-B3 DEF tree (PREP A1-RN)
      'With the machete the tree was cut (by me).'

(38) *kat   q'os-on-axh   (s   v-i')*   (Ayres 1991: 129)
      CMP hit-ANTI-B2   (PREP A1-RN)
      'You hit (me).'

(39) *u   entoho   il-on-b'e-in   (s-e-ti')*   (Ayres 1991: 161)
      DEF glasses see-ANTI-APPL-B1 (PREP-A2PL-RN)
      'Using the glasses I see (you).'

However, in (40), the two slots on the verb for subject and object markers are filled with *a-* and *-in,* respectively. The instrument *uula* has no corresponding marker without *-b'e*. In (41), Ø on the verb cross-references *u ispeeh* and the instrument is not treated as an object. Set B (absolutive) markers cross-reference the object, and the instrument is not cross-referenced on the verb. Thus we can say that *-b'e* does not affect the subject and object of the verb but functions as an indication of the presence of a pre-verbal instrumental.

(40) *uula a-k'on-i-b'e-in*   (Ayres 1991: 160)
      sling A2-hit-EPEN-APPL-B1
      'With a sling you hit me.'

(41) *axh   la'   in-pax-i-b'e-Ø*   *u   ispeeha* (Ayres 1991: 160)
      IP2   FUT   A1-break-EPEN-APPL-B3   DEF   mirror
      'Using you like an instrument I will break the mirror.'

Sentences (40) and (41) are examples from the Chajul dialect but in the Nebaj dialect the object *u ixoj* becomes an indirect object by means of the preposition *ti'*, as in (42). Then what is cross-referenced by -Ø? If we were to consider that -Ø cross-references *ma'l u tze'*, we would need to treat the instrumental phrase, in which the preposition *ma'l* occurs, as having been promoted to direct object. It is more appropriate to think that the verb phrase is intransitive and that the instrumental phrase *ma'l u tze'* triggers split ergativity.

(42) *ma'l u   tze'   i-q'os-b'e-Ø   u   naj   ti'   u   ixoj* (Ayres 1991: 161)
      with   DEF stick A3-hit-APPL-B3 DEF man PREP DEF woman
      'With a stick the man hit the woman.'

The phenomena are very similar to the examples of preposed indirect arguments in Classical Yucatec, shown in (43)–(44), where the first/second person is marked with nominative/accusative but the third person is marked with ergative/absolutive (Yasugi 2005: 67, 82–84).

(43) *mach-bil*   *in kab in tal-ic*   *vaye* (Yasugi 2005: 83)
      grasp forcefully-PP   A1 hand A1 come-MCMP   here
      'With my hand being grasped I came here.'

(44) *ximbal   bin-ci-Ø*   (Yasugi 2005: 67)
      walk   go-MCMP-B3
      'He went by walking.'

6.3. K'ichean

The K'ichean group also has an instrumental applicative *-b'e(e)* but its treatment varies from language to language. We mention three languages that have a close genetic relationship.

When the instrumental *ab'aj* is preposed to the verb in K'iche' (Lopez Ixcoy 1997: 374), the preposition *r-uuk'* is lost and the object is demoted to indirect object through the preposition *k-eech*. This means that *ab'aj* is promoted to direct object and is cross-referenced by the absolutive third person plural *e'*.

(45) *x-e'-u-paxii-j*   *ri   b'o'j r-uuk' ab'aj   ri   ali*
      CMP-B3PL-A3-break-SUF   DEF vase   A3-RN   stone   DEF child
      'The child broke the vase with the stone.'

(45a) *ab'aj   x-e'-u-paxi-b'ee-j*   *k-eech   ri   b'o'j ri   ali*
      stone   CMP-B3PL-A3-break-APPL-SUF   A3PL-RN   DEF vase DEF child
      'The child broke the vase with the stone.'

The same process is observed in Tzutujiil (García Ixmatá 1997: 378) where the direct object *b'ojo'y* is demoted to indirect object by means of the preposition *r-ixiin*, when *aaba'j* without the preposition *r-e* is fronted. The presence of *aaba'j* is indexed by *-b'ee* on the verb.

(46) *x-Ø-u-pax-ii-j*   *ja*   *b'ojo'y*   *chi*   *r-e*   *aab'aj*   *jar*   *ixoq*
      CMP-B3-A3-break-THV-SUF   DEF   vase   PREP   A3-RN   stone   DEF   woman
      'The woman broke the vase with a stone.'

(46a) *aab'aj*   *x-Ø-u-pax-i-b'ee-j*   *r-ixiin*   *ja*   *b'ojo'y*   *jar*   *ixoq*
      stone   CMP-B3-A3-break-THV-APPL-SUF   A3-RN   DEF   vase   DEF   woman
      'The woman broke the vase with a stone.'

However, when the two pronominal slots are filled with Set A and Set B, respectively, the instrument is not indexed on the verb, except by *-b'ee*.

(47) *tz'uum*   *x-in-r-che'ey-b'ee-j*   (Dayley 1985: 355)
      whip   CMP-B1-A3-hit-APPL-TER
      'It was a whip that he hit me with.'

However, a Set B object can be demoted with the relational noun in K'ichee'.

(48) *ch'iich'*   *x-Ø-in-sok-b'e-j*   *aw-eech*   (Dayley 1981: 27)
      machete   CMP-B3-A1-hit-APPL-TER   A2-RN
      'It was a machete that I wounded you with.'

In Kaqchikel (García Matzar 1997: 383–5), a prepositional phrase occurs before a verb which carries the applicatve suffix *-be'* and its original position is filled with the gap filler *wi*.

(49) *chi*   *ikäj*   *x-Ø-u-choy-o-b'e-j*   *wi*   *ri*   *che'*   *ri*   *achi*
      PREP   axe   CMP-B3-A3-cut-THV-APPL-SUF   GF   DEF   tree   DEF   man
      'With an axe the man cut the tree.'

When the applicative *-b'e* is attached to the intransitive verb *pal*, the verb takes Set A as subject. Structurally (50a) is a transitive construction, though it is difficult to understand the true meaning of the sentence.

(50) *x-Ø-pa'-e'*   *pa*   *ru-wi'*   *jun*   *pop*   *ri*   *ixtän*
      CMP-B3-stand-SUF   PREP   A3-RN   one   mat   DEF   woman
      'The woman stood on a mat.'

(50a) *x-Ø-u-pal-b'e-j*   *jun*   *pop*   *ri*   *ixtän*
      CMP-B3-A3-stand-APPL-SUF   one   mat   DEF   woman
      'The woman stood on a mat.'

7.   Conclusion

From the viewpoint of head-marking languages, the original and fundamental function of applicatives is to mark peripheral arguments on the verb. However, in the verb phrase only two slots are allotted for personal markers except for indefinite pronominals in Nahuatl. If the base verb is intransitive and the applicative affix is added, the resulting applicative verb is structurally transitive and two slots are filled with person markers, even though the meaning of the verb remains intransitive and the object marker on the verb is semantically peripheral. This discrepancy leads to much variation among languages. For example, Tzotzil does not have intransitive applicatives and Ixil hesitates to produce applicative transitive verbs from intransitives and uses a second person independent pronoun instead of Set B as is shown (36). In Kaqchikel, on the other hand, the applied intransitive verb is transitive, as in (50a), and the applicative construction seems to be a valence-increasing operation. In the case of a transitive verb, an indirect benefactive object is usually animate and tends to be taken into the verb as a pronominal object marker. In such a case an indirect object is promoted to direct object. But the instrument is almost invariably inanimate and third person is cross-referenced. When two slots are filled with first and second person markers, there is no cross-referencing slot for the instrument. This structural restriction may prove the function of applicatives which mark a peripheral argument on the verb.

Abbreviations

A	Set A ergative pronominal	ANTI	antipassive
APPL	applicative suffix	ART	article
B	Set B absolute pronominal	CAUS	causative
CMP	completive	DEF	definitive
DUR	durative	EPEN	epenthetic consonant or vowel
FUT	future	GF	gap filler
IMPF	imperfect	INDF	indefinite
INC	incompletive	IP	independent pronoun
MCMP	marked completive	O	object
PASS	passive	PER	perfective
PL	plural	POSS	possessive
PP	past participle	PREP	preposition
PROG	progressive	Q	question particle
RDP	reduplication	REF	reflexive
RN	relational noun	S	subject
SG	singular	SUF	suffix
TER	terminal suffix	THV	thematic vowel
TOP	topical	TRNSF	transfer suffix

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