

Albert Álvarez González and Zarina Estrada-Fernández

16 Applicative constructions in Uto-Aztecán languages from Northwestern Mexico

Abstract: This chapter proposes a description of applicative constructions in five Uto-Aztecán (UA) languages (Pima Bajo, Northern Tepehuan, Tarahumara, Guarijío and Yaqui) spoken in Northwestern (NW) Mexico. Two main types of applicative can be distinguished in each language. The first type is an optional peripheral applicative, in which the applied phrase refers to a non-core participant (usually, a beneficiary) that has been promoted to the object position comparing to the base construction, in which it can be encoded as an oblique (usually, introduced by a benefactive postposition). The second type is an obligatory central applicative, in which the applied phrase refers to a central (essential) non-patient participant in the event denoted by the verb (recipient/goal, stimulus, source, etc.); this participant cannot be encoded at all in the construction with the underived form of the same verb. In both types, the applied object is usually a human participant. After exploring some aspects of the syntax, the semantics and the pragmatics of applicativization in these languages, the study also presents the causative/applicative syncretism found in the data, and discusses some cases of applicative lookalikes (lexicalized applicatives, applicative deponents).

1 Introduction

This chapter proposes a description of applicative constructions in five Uto-Aztecán (UA) languages (Pima Bajo, Northern Tepehuan, Tarahumara, Guarijío and Yaqui) spoken in the states of Sonora and Chihuahua in Northwestern (NW) Mexico. These languages belong to the Sonoran sub-group of Southern Uto-Aztecán languages (Miller 1984); two are from the Tepiman branch (Pima Bajo and Northern Tepehuan) and three from the Taracahitan branch (the two closely related Tarahumara and Guarijío, and Yaqui). According to INEGI (2020), there are approximately 1,037 speakers of Pima Bajo (PB), 9,855 of Northern Tepehuan (NT), 91,554 of Tarahumara (TA), 2,139 of Guarijío (GU), and 19,376 of Yaqui (YQ).

The data for this study come from reference grammars (Brambila 1953 for Norogachi TA, Burgess 1984 for Western TA, Dedrick and Casad 1999 for YQ, Miller 1996 for Mountain GU, Félix 2005 for River GU, Bascom 1982, 2003 for NT, Estrada 2014 for PB) and dictionaries (Brambila 1976 for Norogachi TA and Estrada et al. 2004 for YQ), as well as from previous studies directly or indirectly related to the study of applicative constructions in the UA languages considered here (Caballero 2008 for Choguita TA, Félix 2007, Medina 2002, Ávila 2012, Casas 2018 for GU, Álvarez 2007, Guerrero 2007,

Harley et al. 2009, Estrada-Fernández et al. 2015, Álvarez 2019, and Guerrero 2022 for YQ, Estrada 2007, Ramírez 2010 for PB, Ramos 2010, and Carrillo 2013 for NT).¹

Following the definition proposed in the position paper (Zúñiga and Creissels, this volume), applicative constructions are regarded here as constructions in which a morphologically derived verb form assigns a syntactic role other than S and A—usually, a role as direct object or P (DIRECT/PRIMARY APPLICATIVES or P-APPLICATIVES), but also, although less frequently, as indirect object or D (INDIRECT/SECONDARY APPLICATIVES or D-APPLICATIVES) and as oblique role or X (OBLIQUE APPLICATIVES or X-APPLICATIVES)—to a participant (the APPLIED PHRASE), which in the base construction either requires a non-core coding different from its coding in the applicative construction (OPTIONAL APPLICATIVES) or cannot be expressed at all (OBLIGATORY APPLICATIVES).

Since the applied object is usually an additional participant towards which the activity of the referent A is directed, P-applicativization is a way to encode a type of functional alternation named the undirected/directed alternation (Creissels, forthcoming), which is represented by an undirected/directed verb pair in which the subject of the undirected verb form and the directed verb form is the same, but the directed form has an additional object.

P-applicativization represents only one of the possible strategies for encoding the undirected/directed alternation, namely a morphologically oriented way with the use of a privative marking on the undirected base verb. The other possibilities are ANTIPASSIVIZATION (another morphologically oriented alternation with a privative marking this time on the directed base verb), the use of an EQUIPOLLENT marking (both undirected/directed verb forms are formally related but they have the same degree of complexity, which implies a non-oriented alternation), the use of LABILE verb forms (another non-oriented alternation in which the same form is used for expressing the undirected and the directed verbs), and the use of SUPPLETIVE verb forms (another non-oriented alternation in which two different lexical verbs are used for expressing the undirected and the directed verbs).²

Two main types of applicative constructions can be found in the five Uto-Aztecan languages under study. The first type is an optional peripheral applicative, in which the applied phrase is referring to a non-core participant (usually, a beneficiary) that has

¹ As the data come from different sources and authors, some discrepancies in the glosses and transcriptions may appear between examples of the same language. We have decided to homogenize the gloss when strictly necessary and to keep the original transcription as long as it does not affect the interpretation of the data.

² The same formal possibilities are found for the non-causal/causal alternation (Haspelmath 1993; Creissels, forthcoming), which is represented by a non-causal/causal verb pair in which the subject of the non-causal verb form is the object of the causal verb form, and the causal form has a new agentive (causer) subject. In addition to the equipollent, labile, and suppletive possibilities, the two morphologically-oriented alternations are, in this case, causativization (characterized by a privative marking on the non-causal base verb) and decausativization (characterized by a privative marking on the causal base verb).

been promoted to the object position comparing to the base construction in which it can be encoded as an oblique (usually, introduced by a benefactive postposition). The second type is an obligatory central applicative, in which the applied phrase is referring to a central (essential) non-patient participant in the event denoted by the verb (recipient/goal, stimulus, source, etc.) and this participant cannot be encoded at all in the construction with the underived form of the same verb. One important feature shared by both types is that the applied phrase has to usually refer to an animate (mostly human) participant.

The five Uto-Aztecan languages considered in this study present both types of applicative constructions but while some languages use the same marker for encoding both types, other languages have dedicated markers for benefactive applicatives. A pervasive overlap between transitivization, causativization and applicativization is also present in these languages. In addition to applicativization, another productive strategy is possible for encoding the undirected/directed alternation in TA and GU, since the presence of a verbal pattern involving the change of the final vowel of the verb stem implies the possibility to have an undirected/directed alternation encoded via an equipollent marking.

The structure of this chapter is as follows. Section 2 presents the main aspects of the morphosyntax in the UA languages of NW Mexico. Section 3 describes the different constructions and suffixes used in these languages for applicativization, and also presents the final stem vowel alternation corresponding to the equipollent marking of the undirected/directed alternation found in TA and GU. Section 4 highlights some aspects of the syntax, the semantics and the pragmatics of applicativization in the languages under study. Section 5 is focused on the causative-applicative syncretism found in the data. Section 6 discusses some cases of applicative lookalikes (lexicalized applicatives, applicative deponents). Lastly, Section 7 provides a summary of the main conclusions.

2 The basics of morphosyntax in UA languages from NW Mexico

UA languages from NW Mexico are agglutinative languages, with an important use of suffixes. The alignment system is nominative-accusative, but while YQ presents a case marking distinction for core noun phrases (NOM: zero, ACC: *-ta*, with the exception of plural object NPs that are not case-marked, as in [1b]), in the other four UA languages, core NPs are not case-marked.

Regarding the word order in neutral declarative sentences, YQ is probably the only language with a strong tendency for an SOV word order; PB and TA show a tendency for free word order highly motivated by discourse factors, but still keep a preference for an SOV order; and GU and NT can also be considered as free word order languages, with a strong preference, however, for a VSO order.

The examples below illustrate these NP case-marking systems and these preferred word orders in the 5 languages.

(1) YQ: SOV

a. *U yoeme-Ø u-ka kari-ta jinu-k.*
 DET man-NOM DET-ACC house-ACC buy-PFV
 ‘The man bought the house.’

b. *U yoeme-Ø u-me kari-m jinu-k.*
 DET man-NOM DET-PL house-PL buy-PFV
 ‘The man bought the houses.’

(Álvarez 2021: 316)

(2) PB: SOV

Huaan a-kompaal mua.
 John 3NNTR.NSBJ-compadre kill.SG.OBJ.PFV
 ‘John killed his compadre.’

(Estrada 2014: 171)

(3) TA: SOV

Échi rejói saapá sikiré-ri.
 DET man meat cut-PFV
 ‘The man cut the meat.’

(Brambila 1976: 519)

(4) NT: VSO

Tí Mañúiri imó suiimáli.
 find.PFV Manuel DET deer
 ‘Manuel saw a deer.’

(Bascom 2003: 6)

(5) GU: VSO

Paápiarí tetewá-ru hustína waní.
 early.morning see-PFV.EV Agustina John
 ‘Agustina saw John this morning.’

(Félix 2005:124)

In contrast to YQ, nominal core arguments are not case-marked in TA, GU, PB, and NT, thus showing a neutral alignment for core NPs. The nominative-accusative alignment is, however, clear in the pronominal system, but while YQ distinguishes between the accusative, the dative/oblique and the possessive marking, the other four UA languages use the same pronominal markers for these non-subject functions.

Examples in (6) illustrate that object pronouns in YQ are used for direct object (6a), and for indirect object with a few underived ditransitive verbs (as with *maka* ‘give’ in [6b], resulting in a double object construction). In other cases of trivalent verbs such as *nenka* ‘sell’ (6c) or *mabeta* ‘receive’ (6d), the indirect object is marked by the oblique pronoun plus the directional suffix *-u* or another postpositional marker, and these postpositional complements can be omitted.

- (6) a. *Inepo Bikam-me-u am toja-k.*
 1SG.NOM Vicam-PL-DIR 3PL.ACC take-PFV
 ‘I took them to Vicam.’
 b. *Inepo tomi-ta am maka-k.*
 1SG.NOM money-ACC 3PL.ACC give-PFV
 ‘I gave them money.’
 c. *Inepo ame-u tajo'o-ta nenka-k.*
 1SG.NOM 3PL.OBL-DIR clothes-ACC sell-PFV
 ‘I sold clothes to them.’
 d. *Inepo tomi-ta ame-betana mabeta-k.*
 1SG.NOM money-ACC 3PL.OBL-from receive-PFV
 ‘I received money from them.’
 (Estrada et al. 2004)

Examples from GU in (7) and from PB in (8) serve to illustrate how, contrary to YQ, the same non-subject pronouns are used in these languages (the same occurs in TA and NT) for direct object, indirect object, possessor and postpositional object.

- (7) a. *no'ó no'nó no'ó wewé-ru.*
 1SG.NSBJ father 1SG.NSBJ hit-PFV.EV
 ‘My father hit me.’
 b. *waní no'ó itoćá-re muní.*
 John 1SG.NSBJ send-PFV beans
 ‘John sent me beans.’
 (Félix 2007: 111)
 c. *tara-rú=ne muuní.*
 buy-PFV=1SG.SBJ beans
 ‘I bought beans.’
 (Félix 2005: 57)
- (8) a. *aan timitim am-niar.*
 1SG.SBJ tortillas 2SG.NSBJ-buy.PFV
 ‘I bought you tortillas.’

- b. *aan am-viin him tieend-am.*
 1SG.SBJ 2SG.NSBJ-COM go.CONT store-LOC
 'I go with you to the store.'
 (Estrada 2007: 88)
- c. *am-obi-ga-r*
 2SG.NSBJ-needle-AL-POSS
 'your needle'
 (Estrada 2014: 128)
- d. *aap tu'ut piees-tam.*
 2SG.SBJ dance.PFV party-LOC
 'You danced in the party.'
 (Estrada 2014: 188)

Another important difference between YQ and the other four languages is that third person object pronouns are not omitted in YQ, as can be observed in (6), contrary to what happens in the other 4 languages, in which third person object pronouns are usually dropped. In fact, in natural discourse, not only third person object pronouns in TA, GU, PB, and NT are commonly not overtly expressed, but also first and second persons, as exemplified in (9) with data from Norogachi TA, implying that much information has to be activated from the context in order to correctly identify core arguments.³

- (9) *kepi ne muku-mea; éruka mi'ri-méa-we?*
 NEG I die-FUT who kill-FUT-or
 'I won't die; or who is going to kill (me)?'
 (Brambila 1953: 571)

As for verbal morphology, tense/aspect/mood/valency information is usually marked by verbal suffixes. Of special interest for applicativization, is the presence of verb classes in TA and Tepiman languages, depending on some morphophonological changes in verbal stems.

According to the presence or absence of stress and final stem vowel alternation, three classes of verbal roots can be distinguished in TA (Caballero 2008), as shown in Table 1. Class I is represented by stressed roots with no morphophonological changes, class II by roots with morphophonological changes: class IIa corresponds to unstressed roots with no final root vowel alternation and with stress shift one syllable to the right when combined with stress-shifting suffixes, and class IIb to unstressed roots with final root vowel alternation and stress shift one syllable to the right when combined with stress-shifting suffixes.

³ As we will see below, this dropping can also be associated with the presence of the applicative marking on the verb (Brambila 1953: 53).

Table 1: Verb classes in Choguita TA (adapted from Caballero 2008: 99).

| | | CLASS I | CLASS IIA | CLASS IIB |
|--------------------------|--------|---------------------|-----------------------|-------------------|
| Stress-neutral suffixes | | <i>bené</i> ‘learn’ | <i>suku</i> ‘scratch’ | <i>rara</i> ‘buy’ |
| | PFV | <i>bené-ri</i> | <i>sukú-ri</i> | <i>rará-ri</i> |
| | PROG | <i>bené-a</i> | <i>sukú-a</i> | <i>rará-a</i> |
| | IPFV | <i>bené-i</i> | <i>sukú-i</i> | <i>rará-i</i> |
| Stress-shifting suffixes | FUT.SG | <i>bené-ma</i> | <i>suku-méa</i> | <i>rari-méa</i> |
| | COND | <i>bené-sa</i> | <i>suku-sá</i> | <i>rari-sá</i> |
| | DES | <i>bené-nare</i> | <i>suku-náre</i> | <i>rari-náre</i> |

As for Tepiman languages, they are known for having different verb stem forms associated with the imperfective/perfective distinction, with a reduced form usually being used for the perfective verb stem. For instance, in NT, the verb stem can present three different alternating forms (Bascom 2003: 67). The basic verb stem is found with imperatives, a second stem form with the final vowel of the basic form changing to *i* is usually found in present tense. Both verb stems are used in imperfective forms. The third verb stem, which is used for perfective aspects, is a reduced form of the basic stem in which the last syllable has usually been dropped. This truncated form ends with two identical vowels or with a combination of the last vowel of the root and an *i*. According to this stem alternation, three verb classes are distinguished as illustrated in Table 2: a) verbs that do not present stem alternation, b) verbs that have only two alternating stems, and c) verbs that present three stem alternants.

Table 2: Verb classes in Northern Tepehuan (adapted from Bascom 2003).

| | | |
|-----------------|-------------------------|-----------------------|
| Verb class I: | <i>aráava-</i> ‘repeat’ | |
| Verb class II: | <i>ááxta-</i> ‘throw’ | only for imperfective |
| | <i>ááxti-</i> ‘throw’ | only for perfective |
| Verb class III: | <i>isáá-</i> ‘plant’ | only for imperatives |
| | <i>ixíi-</i> ‘plant’ | only for imperfective |
| | <i>íi-</i> ‘plant’ | only for perfective |

In PB, the basic verb form is more unpredictable, although six different verb classes have been proposed (Estrada 2014: 66–75). Again, the perfective verb form is usually a truncated form without any suffixes.⁴

⁴ In Tepecano, another now extinct Tepiman language, the preterit stem of action verbs most frequently undergoes the dropping of the final consonant or syllable (Mason 1917: 351).

3 Applicativization in UA languages of NW Mexico

3.1 Pima Bajo

In PB, the suffix *-di/-id*⁵ can be attached to a base verb in order to promote to the object position a benefactive participant (10b) that can be encoded in the base construction as an oblique complement introduced by the benefactive postposition *vuika* ‘for’ (10a). This participant is thus peripheral, since it is not required by the argument structure of the base verb, and the applicative construction is optional, since the same semantic content is alternatively expressed in the base construction through a benefactive postpositional phrase.

- (10) a. *Marii ik mo’ovil soom Hosip vuika.*
 María DET.OBJ blouse sew.PFV Josefina for
 ‘María sewed a blouse for Josefina.’
 b. *Marii Hosip som-di ik mo’ovil.*
 María Josefina sew.PFV-APPL DET.OBJ blouse
 ‘María sewed a blouse for Josefina.’
 (Estrada 2007)

The applied object can receive a malefactive interpretation according to the negative meaning of the base construction, as can be observed in (11b). This example also illustrates a construction in which the applied object can be interpreted as the possessor of the original object participant (external possessor). Interestingly, the possessive relationship is here also overtly marked as an internal possession (*in-iipar* ‘my skirt’).

- (11) a. *irvin vaitit-kar hikt-in!*
 rope knife-INS cut-IMP
 ‘Cut the rope with the knife!’
 (Estrada 2014: 132)
 b. *Marii in-hik-id-im in-iipar*
 María 1SG.NSBJ-cut-APPL-CONT 1SG.NSBJ-skirt
 ‘Maria cut off (me) my skirt.’
 (Estrada 2014: 178)

This benefactive/malefactive applicativization via *-di/-id* suffixation is restricted in PB to transitive base constructions (Estrada 2007: 91). However, this suffix can also be used in this language for licensing a human recipient as object. This is possible not only with

5 In some cases, this applicative suffix appears as *-ti*, *-ir*; or *-li* (as, for example, in narrative texts found in Ramírez 2010).

active intransitive verbs like in (12), but also with some transitive verbs of movement, like in (13).

- (12) a. *lii sɨ̃ hink.*
 DIM.SG wolf shout
 'The little wolf shouted.'
 (Estrada 2014: 166)
- b. *higam tit-hink-id.*
 3PL.SBJ 1PL.NSBJ-shout-APPL
 'They shouted at us.'
 (Estrada 2014: 122)
- (13) a. *tomin hih-hodav.*
 money OBJ.INDF-throw.PFV
 'The money was thrown away.'
 (Estrada 2014: 231)
- b. *in-hodav-id-an.*
 1SG.NSBJ-throw-APPL-IMP
 'Throw them to me!'
 (Estrada 2014: 179)

In both examples, the applied object is a human recipient. The derived verb indicates that the action denoted by the base verb is directed towards the human participant encoded as an applied object. Other active intransitive verbs that function as applicative verbs with the same suffix in PB are *gig* 'gesticulate, wave hands' (applicative: *gig-id* 'greet someone') and *tii* 'talk' (applicative: *tii-di* 'say to someone').

The suffix *-di/-id* can also be used in PB for causativization depending on the base verb class (Estrada 2007). As can be observed in (14), when attached to inactive (stative and inchoative) intransitives, the suffix *-di/-id* derives causative transitives, while it derives applicatives when combined with active intransitives and transitives.

- | | |
|--------------------------|---|
| (14) Intransitives | Causative transitives |
| <i>onmag</i> 'be salty' | <i>onama-d(i)</i> 'salt' |
| <i>doa</i> 'be cured' | <i>doa-li, doa-r < doa-di</i> 'cure' |
| <i>tuuk</i> 'be dark' | <i>tuk-id</i> 'darken' |
| <i>tipilik</i> 'be flat' | <i>tipilik-id</i> 'flatten' |
| <i>toahk</i> 'be white' | <i>toah-id</i> 'whiten' |
| <i>i'ov</i> 'be sweet' | <i>i'ov-id</i> 'sweeten' |
| <i>tig</i> 'be named' | <i>tig-di</i> 'name' |
| <i>bid</i> 'turn around' | <i>bib-id/bib-di</i> 'flip' |
| <i>hoin</i> 'rock' | <i>hoin-id</i> 'rock' |
| <i>tuk</i> 'remember' | <i>tuk-id</i> 'recall' |

These data clearly illustrate a causative-applicative syncretism, in which the same verbal suffixation corresponds to applicativization if the base verb is a transitive verb or an active intransitive verb implying no change of state, and to causativization if the base verb is a stative/inchoative intransitive.

3.2 Northern Tepehuan

The same type of transitivizing suffix is present in NT, as the suffix $-d^{(y)}a/-d^{(y)}i$ (Bascom 1982: 359–360, 2003: 83–90). Again, attached to stative and inchoative intransitives, it derives causative transitives (15), and applicative transitives (16) when attached to active intransitives.

- | | | |
|------|---------------------------|--------------------------------|
| (15) | Intransitives | Causative transitives |
| | <i>dapáka</i> ‘be smooth’ | <i>dapáka-da</i> ‘make smooth’ |
| | <i>totópikii</i> ‘boil’ | <i>totópish-d’a</i> ‘boil’ |
| | <i>mimíjii</i> ‘burn’ | <i>mimí-di</i> ‘burn’ |
| | <i>úkai</i> ‘warm’ | <i>úka-da</i> ‘warm’ |

- | | | |
|------|---------------------------|------------------------------|
| (16) | Intransitives | Applicative transitives |
| | <i>didívia</i> ‘come’ | <i>didívi-di</i> ‘visit’ |
| | <i>ninínai</i> ‘see’ | <i>niní-di</i> ‘look at’ |
| | <i>axiógai</i> ‘smile’ | <i>axiógi-di</i> ‘smile at’ |
| | <i>ásii</i> ‘laugh’ | <i>axí-di</i> ‘laugh at’ |
| | <i>aatágai</i> ‘converse’ | <i>aatági-d’a</i> ‘converse’ |

Both uses as causativizer and applicativizer are exemplified with their base constructions in (17) and (18), respectively. If the base construction is an inchoative intransitive, the derived transitive construction includes a new subject participant (a causer) as in (17), while it includes a new object participant if the base construction is an active intransitive, as in (18).

- (17) a. *mi~míji-i* *go-váso-i*
 RDP~burn-IPFV DET-grass-ABS
 ‘The grass is burning.’
- b. *mi~míi-di* *igai* *go-váso-i*
 RDP~burn-CAUS DEM DET-grass-ABS
 ‘He is burning the grass.’
 (Bascom 2003: 87)

- (18) a. *axióga-i*
smile-IPFV
'He/she smiles.'
- b. *axiógi-**di***
smile-APPL
'He/she smiles at him/her.'
(Bascom 2003: 84)

The applicative transitive verbs resulting from the *-di* suffixation take as their applied object a human participant interpretable not always as a recipient, but also, for instance, as a stimulus.

With transitive base verbs, this suffix functions as an applicativizer, and the new object participant can be a human recipient or a human beneficiary, depending on the meaning of the transitive base verb.

- (19) a. *áága-i*
tell-IPFV
'He/she tells it.'
- b. *áági-**di***
tell-APPL
'He/she tells it to him/her.'
(Bascom 2003: 86)
- (20) a. *bái búkai go-doad^yi-ga-mi*
this_way bring ET-cure-ADJR-NMLZ
'Bring the medicine here!'
- b. *bái im-bii-**d^ya** go-so~sóna-karoi*
this_way me-bring-APPL DET-RDP~tap-INS
'Bring me the hammer!'
(Bascom 1982: 294)

- (21) a. *ga-isa-i aáni úúnu-i*
PART-plant-IPFV I corn-ABS
'I am planting corn.'
- b. *ga-ixíi-**di** aáni úúnu-i*
PART-plant-APPL I corn-ABS
'I planted corn for him/her.'
(Bascom 2003: 87)

As can be observed in (19b) and (21b), the applied object can be left unexpressed in the applicative construction. In (19b), both objects (the original object and the applied object) are omitted and the only indication of the presence of a human recipient in the

situation denoted by the verb is the applicative suffix *-di*. The omission of the applied object can also be observed in (18b).

Interestingly, the *-di* suffixation illustrated in the previous examples seems to always be associated with morphophonological modifications in the base verb stem implying the change of the final stem vowel to *i*.⁶

Besides the possible benefactive meaning conveyed by the suffix *-d^(y)a/-d^(y)i* with transitive verbs (exemplified in [21b]), NT also has a dedicated construction for benefactive applicatives in which the transitivizing suffix is combined with the suffix *-tul(i)*. Example (22a) shows the benefactive participant encoded as the pronominal object of the benefactive postposition *vītari* ‘for’. In the derived construction (22b), this same participant has been promoted to a pronominal object prefixed to the applicativized verb.

- (22) a. *saví-da-ñi aápi go-vasááraga-i aáni iñ-viitári.*
 buy-TR-IMP you DET-shirt-ABS you me-for
 ‘Buy this shirt for me.’
 b. *giñ-savíl-tul-da-ñi aápi go-vasááraga-i.*
 me-buy-BEN-TR-IMP you DET-shirt-ABS
 ‘Buy me this shirt.’
 (Bascom 2003: 88)

This benefactive applicative suffix is always combined with the transitivizing suffix *-d^(y)a/-d^(y)i*,⁷ except in the truncated perfective form in which it appears as *-tuli*, as shown in (23).

- (23) a. *iñ-savíl-tul-da=ñi!*
 me-buy-BEN-TR=IMP
 ‘Buy it for me!’
 b. *iñ-savíl-tul-di.*
 me-buy-BEN-TR
 ‘He/she is buying it for me.’
 c. *iñ-savíl-tuli.*
 me-buy-BEN
 ‘He/she bought it for me.’
 (Bascom 2003: 69)

⁶ Interestingly, the forms of the applicative suffixes in historical varieties of Tepiman languages include the change of the final stem vowel to *i*: *-(i)d/-(i)t* for Tepecano (Mason 1917), *-(i)da* for Nevome or Lower Pima (Smith 1862, cited in Mason 1917: 365), *-(i)de*, *-(i)di* for NT (Rinaldini 1743, cited in Mason 1917: 365).

⁷ As shown in (23) and following the rule for verb class III in NT (see § 2), the form *-d^(y)a* is used in the imperative, *-d^(y)i* in the imperfective, and *-tuli* in the perfective (Bascom 2003: 68). This distribution is not so systematic when the transitivizing suffix *d^(y)a/-d^(y)i* is used without the benefactive suffix.

Unlike the suffix *-di/-id* in PB, whose benefactive meaning seems to be exclusive to transitive verb bases (Estrada 2007: 91), the benefactive suffix can also be attached in NT to active intransitive verbs with the same benefactive meaning. An example is given in (24).

- (24) *i-ñiíóoki-tul-dʷa-ñi áapi!*
 me-speak-BEN-TR-IMP you
 You, speak for me!
 (Ramos 2010: 141)

This example shows the use of two applicative markers for rendering the benefactive meaning. The differences in the implication of a human participant associated with the suffixes *-dʷa/-dʷi* and *-tul(i)* can be seen with this verb *ñiíóokai* ‘speak’, as shown in (25). The *-dʷi* suffixation to this intransitive base verb implies the presence of a human recipient as object and the addition of the benefactive suffix *-tul* implies the presence of a human beneficiary.

- (25) *ñiokai* ‘speak.INTR’
ñiíóoki-dʷi ‘speak to someone’
ñiíóoki-tul-dʷi ‘speak for someone’
 (Carrillo 2013: 64)

3.3 Yaqui

In YQ, it is the suffix *-ria* that conveys the benefactive applicative function, as exemplified in (26).

- (26) a. *Aurelia-Ø u-ka wakabak-ta joa-k Goyo-ta-betchi’ibo.*
 Aurelia-NOM DET-ACC wakabaki-ACC make-PFV Goyo-ACC-for
 ‘Aurelia cooked wakabaki for Goyo.’
 b. *Aurelia-Ø Goyo-ta u-ka wakabak-ta joa-ria-k.*
 Aurelia-NOM Goyo-ACC DET-ACC wakabaki-ACC make-APPL-PFV
 ‘Aurelia cooked wakabaki for Goyo.’
 (Guerrero 2007: 182–183)

This benefactive applicative suffix is very productive. It is usually attached to transitive base verbs, but active intransitive verbs like *ye’e* ‘dance’ can also receive this marking in order to promote a human beneficiary to object position.

- (27) *María-Ø Goyo-ta yi’i-ria-k.*
 María-NOM Goyo-ACC dance-APPL-PFV
 ‘María danced for Goyo’.

In some cases, the applied object introduced by the suffix *-ria* is a human participant that cannot really be interpreted as a beneficiary. This is the case for instance with the stative intransitive verb *alle'a* 'be happy', in which the applied object seems to be more an object of empathy.

- (28) a. *María-Ø alle'a-Ø.*
 María-NOM be_happy-PRS
 'María is happy.'
 (Estrada et al. 2004)
- b. *María-Ø Kajlo-ta alle'a-ria-Ø.*
 María-NOM Carlos-ACC be_happy-APPL-PRS
 'María is happy for Carlos.'
 (Guerrero 2007: 187)

Another case is represented by the intransitive base verb *gojana* 'run away', in which the applied object corresponds more to a human source than to a beneficiary.

- (29) a. *Mario gojana.*
 Mario run_away
 'Mario runs away.'
 (Estrada et al. 2004: 31)
- b. *U ili uusi mala-wa gojan-ria.*
 DET little boy mother-POSS run_away-APPL
 'The child runs away from his mother.'
 (Estrada et al. 2004: 31)

This possibility to have a non-benefactive applicative is also found with the verb *etejo* 'tell, talk', in which the suffix *-ria* is used to promote to object position a human participant that can be encoded as a comitative (Example [30a]) or a directional (Example [30b]) complement in the base construction. In this case, as can be observed in (30c), in addition to the human participant marked as accusative, the derived applicative construction also licenses the presence of the topic of conversation as object (here the nominalization *káa túa á'a alléa'u* 'his not truly happiness'), something that is not possible in the base construction.

- (30) a. *in jala'i-mak né etéjo.*
 my friend-with I talk
 'I am talking with my friend.'
 (Dedrick and Casad 1999: 190)

- b. *emo-u ne etejo-bae.*
 you.PL-DIR I tell-DES
 'I want to tell you.'
 (Estrada et al. 2004)
- c. *káa túa á'a alléa-'u née etejó-ria-k.*
 NEG truly his be_happy-OBJ.NMLZ me tell-APPL-PFV
 'He told me he was a bit sad.'
 (Lit. 'He told me his not truly happiness.')

(Dedrick and Casad 1999: 374)

In the case of the transitive verb *be'a* 'set aside' in (31), the human participant who is benefited by the action is encoded as the object of the directional postposition (31a), while its applicative derivate licenses the beneficiary as an accusative object (31b).

- (31) a. *Peo bwa'am-ta ne-u be'a-k be'eri-ta.*
 Peter food-ACC 1SG.NOM-DIR set_aside-PFV leftover-ACC
 'Peter left me the leftover food.'
- b. *Joana-ta ne paan-im be'e-ria-k.*
 Joana-ACC 1SG.NOM bread-PL set_aside-APPL-PFV
 'I left bread for Juana.'

(Estrada et al. 2004)

The examples in (32) can be used to illustrate the applicativization of trivalent verbs, i.e. verbs that require three semantic participants, regardless of whether these participants are encoded as A, R and T according to the prototype verb GIVE in the language. Like the verb *be'a* 'set aside', the verbs *nenka* 'sell' in (32) and *teuwa* 'tell' in (33) require the suffix *-ria* in order to promote the human recipient encoded as a directional oblique in the base construction, to the object position in which it receives the accusative marking, without the postposition.

- (32) a. *bempo kowi-ta u-e jamut-ta-u nenki-ne.*
 3PL.NOM pig-ACC DET-OBL woman-ACC-DIR sell-POT
 'They will sell the pig to the woman.'
- b. *bempo kowi-ta u-ka jamut-ta nenka-ria-ne.*
 3PL.NOM pig-ACC DET-ACC woman-ACC sell-APPL-POT
 'They will sell the pig (to) the woman.'

(Guerrero 2022: 33)

- (33) a. *Maria-Ø Luisa-ta-u lutu'uria-ta teuwa-k.*
 Mary-NOM Luisa-ACC-DIR truth-ACC tell-PFV
 'Mary told the truth to Luisa.'

- b. *Maria-Ø Luisa-ta lutu'uria-ta teuwa-ria-k.*
 Mary-NOM Luisa-ACC truth-ACC tell-APPL-PFV
 'Mary told the truth (to) Luisa.'
 (Guerrero 2022: 33)

With the verb *mabeta* 'receive', it is the human source that is promoted to object in the applicative construction.

- (34) a. *inepo u-ka bwa'am-ta mabeta-k kobanao-ta-betana.*
 1SG.NOM DET-ACC food-ACC receive-PFV governor-ACC-from
 'I received the food from the governor.'
 b. *u-Ø kobanao-Ø tomi-ta kaa ne mabeti-ria-k.*
 DET-NOM governor-NOM money-ACC NEG 1SG.ACC receive-APPL-PFV
 'The governor didn't receive the money (from) me.'
 (Guerrero 2022: 34)

With the verb *benta* 'smear, spread', it is the human locus that is promoted to object in the applicative construction.

- (35) a. *Inepo techoa-ta e-t benta-k pujba-chi.*
 1SG.NOM mud-ACC 2SG.OBL-LOC smear-PFV face-LOC
 'I smeared mud on your face.'
 b. *Inepo enchi techoa-ta benta-ria-k pujba-chi.*
 1SG.NOM 2SG.ACC mud-ACC smear-APPL-PFV face-LOC
 'I smeared you mud on your face.'
 (Álvarez's fieldnotes)

Interestingly, with this same verb, when the locus of spreading is inanimate, the applicative suffix serves to introduce a human beneficiary.

- (36) a. *Goyo-Ø pann-im-met mantekia-ta benta-k.*
 Goyo-NOM bread-PL-PL.LOC butter-ACC spread-PFV
 'Goyo spread butter on the bread.'
 b. *Goyo-Ø Iban-ta pann-im-met mantekia-ta benta-ria-k.*
 Goyo-NOM Ivan-ACC bread-PL-PL.LOC butter-ACC spread-APPL-PFV
 'Goyo spread butter on the bread for Ivan.'
 (Guerrero 2007: 191)

As can be observed in all these examples of applicativization of trivalent verbs, the resulting applicative construction is a double object construction. A three-object construction is also possible with the verb *u'ura* 'take from someone', in which the applicativization adds a beneficiary to the situation denoted by the base verb.

- (37) a. *Carmen-Ø Lupe-ta tomi-ta u'ura-k.*
 Carmen-NOM Lupe-ACC money-ACC take-PFV
 'Carmen took the money (from) Lupe.'
- b. *Carmen-Ø Joana-ta Lupe-ta tomi-ta u'ura-ria-k.*
 Carmen-NOM Juana-ACC Lupe-ACC money-ACC take-APPL-PFV
 'Carmen took the money (for) Juana (from) Lupe.'
 (Guerrero 2022: 33)

This verb *u'ura* can be considered a ditransitive verb in YQ, since it licenses the same double object construction as the prototypical verb of transfer *miika* 'give'. Note that this verb *miika* does not admit the applicative suffix, since the base construction already contains a human participant acting as recipient/beneficiary and encoded as an accusative object.

- (38) a. *Joana-Ø Lupe-ta soto'i-ta miika-k.*
 Juana-NOM Lupe-ACC pot-ACC give-PFV
 'Juana gave Lupe the pot.'
- b. **Joana-Ø Maria-ta soto'i-ta Lupe-ta miik-ria-k.*
 Juana-NOM Mary-ACC pot-ACC Lupe-ACC give-APPL-PFV
 Intended: 'Juana gave Lupe the pot for Mary.'
 (Guerrero 2022: 33)

Additionally, YQ has three verbs that seem to illustrate the grammaticalization of an old verb *iyaa* 'to pretend, to wish' into an applicative marker. This verb is no longer used nowadays in YQ as a lexical verb, but it has been documented for Tehueco, a Cahitan variety from the beginning of the XVII century (Buelna 1890: 39). The use of this verb in Tehueco is exemplified in (39). Interestingly, like in its applicative use, these examples show a use of the form *iyaa* in which it does not head its own clause, but it is already involved in a two-verb construction (39a) or in a converbal construction (39b).

- (39) a. *emchi ne sim-yia.*
 2SG.ACC 1SG.NOM go-pretend
 'I intend for you to leave.'
 (Buelna 1890: 39)
- b. *emchi ne ieuatua emchi netz eria iyaa-cari.*
 2SG.ACC 1SG.NOM correct 2SG.ACC 1SG.ACC love pretend-GER
 'I correct you to love me.'
 (Lit. 'I correct you, pretending that you love me.')
 (Buelna 1890: 74)

Two mental intransitive verbs in YQ seem to show the presence of this old verb in order to obtain their transitive counterparts. The first case is represented by the intransitive

verb *'ea* 'to think, to wish' and its transitive related form *'eiyaa*, which can both be used to express the notion of trust in someone. While the source of trust is encoded as a locative oblique with *'ea*, it receives the object marking with *'eiyaa*, as shown in (40).

- (40) a. *Hóan-ta-t ne yoem-'ea-n.*
 John-ACC-on I person-think-PCN
 'I had been trusting in John.'
 b. *Lióh-ta ne yoem-'eiyaa.*
 God-ACC I person-think
 'I am trusting God.'
 (Dedrick and Casad 1999: 368)

In other uses of *'eiyaa*, the introduction of a human stimulus as an object is accompanied by a less predictable meaning change, as in its use with the meaning 'to judge, to think highly of, to esteem' exemplified in (41b).

- (41) a. *née hunen 'ea.*
 I thus wish
 'That is how I think.'
 b. *tu'isi n=a'a 'eiyaa.*
 much I=him esteem
 I esteem him very much.
 (Dedrick and Casad 1999: 263)

Morphologically similar is the pair *hu'unea* 'to know, to know about X' with its transitive counterpart *hu'uneiyyaa* 'to know X' given in (42).

- (42) a. *kan=nee hu'unea-k.*
 not=I know.INTR-PFV
 'I didn't know.'
 (Dedrick and Casad 1999: 282)
 b. *haibu=ne 'ae-t hu'unea.*
 now=I it-on know.INTR
 I already know about it.'
 (Dedrick and Casad 1999: 368)
 c. *nehpo ket hunuen 'a'a hú'uneiyyaa.*
 I also thus it know.TR
 'I also know it that way.'
 (Dedrick and Casad 1999: 338)

The third case involves the motion verb *weye* ‘to go’ and its transitive counterpart *weiyaa* ‘carry’. Here again an idiosyncratic change of meaning seems to be involved to some extent.

- (43) a. *Aapo a'abo weye.*
 3SG.NOM here go
 ‘He is coming here.’
 b. *U jamut ba'am soto'o-po weiyaa.*
 DET woman water pot-LOC carry
 ‘The woman is carrying water in the pot.’
 (Lit. ‘The woman is intending for the water to come in the pot.’)
 (Estrada et al. 2004)

No other cases of *iyaa* applicative verbs have been identified. These few cases could perhaps be analyzed as the vestiges of an applicative periphrasis, that is a biverbal construction comparable to a monoverbal applicative. In this biverbal applicative construction, one of the verbs (the lexical verb) determines the type of event encoded by the applicative periphrasis, while the other verb (in our case, *iyaa*) acts as a valency increasing marker that licenses the expression as object of an additional participant in the event encoded by the lexical verb, without modifying the morphosyntactic treatment of the other participants (Creissels, forthcoming).

However, the form *iyaa* does not correspond currently to a lexical verb, it is only found attached to a few verbs, acting synchronically as an idiosyncratic unproductive applicative suffix. Therefore, these transitive verb forms could only be cases of applicative periphrases from a diachronic point of view. These cases also show that the original meaning of *iyaa* has been lost, with the possible presence of some idiosyncratic semantic change.

3.4 Tarahumara and Guarijío

The situation in the two closely related TA and GU is more complex, since in these two languages several suffixes can be used for adding a new participant encoded as an object to the situation denoted by the base construction, and applicative suffixation can also be combined with vowel alternation and stress shift.

In TA and GU, different markers can be suffixed to the base verb for introducing in the situation denoted by the base verb, a new participant encoded as an object. According to sources, these markers are: the suffixes *-e*, *-ri/-ti/-ki/-gi*, *-ši*, *-ne*, *-i*, *-mi*, *-tze/-che* in Norogachi TA (Brambila 1953, 1976), the suffixes *-i*, *-ni*, *-chi*, *-wi*, *-ki* in Choguita TA (Caballero 2008), and the suffixes *-é/-ie*, *-ke/-ge/-kie/-gie*, *-ne/-nie/-ini*, *-che*, *-tze* in Mountain GU (Miller 1996: 160–163).

The first applicative suffixes to be discussed are three unproductive transitivity suffixes ending in *e*, which correspond to the applicative alternants of transitivity suffixes ending in *a*. In Norogachi TA, Brambila (1953: 193) identified three different suffixes (*-na*, *-tza*, *-wa*) that can be combined with a few intransitive base verbs in order to obtain the corresponding causative transitive verbs:

- | | | |
|------|--------------------------|-----------------------------|
| (44) | Intransitives | Causative transitives |
| a. | <i>ko</i> 'eat' | <i>kó-na</i> 'make eat' |
| | <i>go'so</i> 'choke' | <i>go'so-na</i> 'choke' |
| | <i>baji</i> 'drink' | <i>baji-na</i> 'make drink' |
| | <i>buwe</i> 'wait' | <i>buwe-na</i> 'make wait' |
| b. | <i>guri</i> 'turn' | <i>guri-tza</i> 'spin' |
| | <i>weka</i> 'get wrong' | <i>weka-tza</i> 'mislead' |
| | <i>rishi</i> 'get tired' | <i>reshe-tza</i> 'tire' |
| c. | <i>nayu</i> 'get sick' | <i>nayú-wa</i> 'make sick' |
| | <i>muku</i> 'die' | <i>muku-wa</i> 'make die' |

A few intransitive verbs can take the three unproductive suffixes *-ne*, *-tze*, *-we* for applicativization. As shown in (45), (46) and (47), the base verb is an active intransitive verb and the applied object is a human participant that can be acting as a recipient, a stimulus or a beneficiary.

- (45) a. *we nawaji-re rarámuri baji-sa.*
 a_lot sing-PFV tarahumara drink-GER
 'The Tarahumaras drank and sang a lot.'
 (Lit. 'The Tarahumaras sang a lot, drinking.')
- (Brambila 1976: 370)
- b. *má nawa-re tata pari picharo, má*
 already arrive-PFV father father Pichardo already
nawaji-ne-a kuchi.
 sing-APPL-ANT girl
 'Father Pichardo has arrived, and the girls are already singing to/for him.'
- (Brambila 1953: 183)
- (46) a. *ne che'reba-re nara-ga.*
 I wake_up-PFV crying-GER
 'I woke up crying.'
- (Brambila 1976: 360)
- b. *nawika ta nara-tze-bo ke oneruame.*
 together only cry-APPL-IMP.1PL EXPL God
 'Together let us cry to God.'
- (Brambila 1976: 361)

- (47) a. *ketza mu maja-re bowi-chi?*
 INTER.NEG you be_afraid-PFV road-LOC
 ‘Weren’t you afraid on the road?’
 (Brambila 1976: 295)
- b. *ké ne tasi Martin maja-we.*
 NEG I NEG Martin be_afraid-APPL
 ‘I am not afraid of Martin.’
 (Brambila 1976: 293)

In Choguita TA, the corresponding suffixes are *-ni*, *-chi*, *-wi*, since unstressed *e* changes to *i* in pre-tonic and post-tonic syllables in this variety (Caballero 2008: 55).

In GU, the suffixes *-na*, *-cha*, *-wa* are also used as causative markers with a few intransitive base verbs, but only the suffixes *-ne* and *-che* are found for applicativization (Miller 1996; Ávila 2012; Casas 2018). As shown in (48), (49) and (50), the base verb can also be transitive in GU. Attached to the verb of speaking *ihta* ‘to ask for’ or to the verb of movement *mahtó* ‘to bring’, these suffixes license the presence of a human recipient as an object argument.

- (48) a. *ihta-má.*
 ask-FUT
 ‘He will ask for it.’
 (Medina 2002:174)
- b. *maría no’ó ihta-né-na takári.*
 María 1SG.NSBJ ask-APPL-PRS tortillas
 ‘María asks me for tortillas’.
 (Ávila 2012: 139)
- (49) a. *puu-á mahtó-ré kuhú.*
 3SG.S-EMPH bring-PFV firewood
 ‘She brought firewood.’
- b. *puu-á ahpo ye’yé mahtó-ne-ré kuhú.*
 3SG.SBJ-EMPH 3SG.NSBJ mother bring-APPL-PFV firewood
 ‘She brought firewood to her mother.’
 (Ávila 2012: 137)
- (50) *muú tamó muké-če-mapo naaráso.*
 2SG.SBJ 1PL.NSBJ load-APPL-FUT orange
 ‘You are going to load us with oranges.’
 (Ávila 2012: 140)

The applicative suffix can be reduced to *-e* (with the possibility to have an epenthetic *y* or *w*). In Examples (51), (52) and (53) presented below, the base verb is an active intransitive or a transitive verb, and the applied object is a recipient or a beneficiary.

(51) Choguita TA

ru-é, ru-yé, ru-wé 'tell-APPL'
bu-é, bu-yé, bu-wé 'wait-APPL'
 (Caballero 2008: 78)

(52) Norogachi TA

a. *jipe nepa-re erasmo*
 today call-PFV Erasmo
 'Erasmo called today.'
 (Brambila 1976: 376)

b. *ké ne ka nepá-e-re*
 NEG 1SG.NOM NEG call-APPL-PFV
 'I did not call him.'
 (Brambila 1976: 376)

(53) GU

ča'pi 'grab something' *ča'pi-e* 'grab for someone'
wi'ko 'whistle' *wiko-é* 'whistle at someone'
 (Medina 2002)

Although the benefactive meaning can be expressed in some cases by these different suffixes, the most productive benefactive suffixes are, in fact, suffixes *-ke* in GU, *-ki* in Choguita TA, and *-i* in Norogachi TA. These productive benefactive applicative suffixes are exemplified in (54), (55) and (56), respectively.

(54) GU

a. *hustína pasu-ré muní no'ó ičió.*
 Agustina cook-PFV beans 1SG.NSBJ BEN
 'Agustina cooked beans for me.'

b. *hustína no'ó pasú-ke-re muní.*
 Agustina 1SG.NSBJ cook-BEN-PFV beans
 'Agustina cooked beans for me.'
 (Félix 2007: 115)

(55) Choguita TA

a. *ma=n rata-bá-či-ki ko'wá-ami.*
 already=1SG.NOM heat-INCH-TR-PT:1 eat-PTCP
 'I already heated up the food.'

- b. *ne mi ba'wí rata-bá-č-ki-ra?*
 1SG.NOM 2SG.ACC water heat-INCH-TR-**APPL**-POT
 'Shall I heat the water for you?'
 (Caballero 2008: 417)

(56) Norogachi TA

- a. *mi ne mi'ri-mea ena ata wi-gá*
 2SG.ACC 1SG.NOM kill-FUT this bow take-GER
 'I take this bow and I kill you.'
 (Lit. I will kill you, taking this bow.)
 (Brambila 1976: 320)
- b. *owétza-ka ne ka bayé-nura.*
 healer-EXPL 1SG.NOM EMPH call-send
 'I've already sent for the healer.
Píri be mu mi'rí-i-ma?
 what and 2SG.NOM kill-APPL-FUT
 —And what are you going to kill for him?'
 (Brambila 1953: 184)

Examples in (56) and (57) show how morphophonology can be involved in applicativization in Norogachi TA, with the case of the benefactive suffix *-i* that triggers the change of the final verb stem vowel to stressed *i*. Additionally, the verbs listed in (57) indicate that, although transitive base verbs are more frequent, some intransitive base verbs are also possible (such as *ripi* 'be left, remain' and *nawa* 'arrive').

(57) Applicative verbs marked by the suffix *-i*:

- | | |
|-------------------------------|-------------------------------------|
| <i>ripi</i> 'be left, remain' | <i>ripi-i</i> 'be left for someone' |
| <i>mi'ri</i> 'kill' | <i>mi'ri-i</i> 'kill for someone' |
| <i>newa</i> 'do' | <i>newi-i</i> 'do for someone' |
| <i>nawa</i> 'arrive' | <i>nawi-i</i> 'arrive for someone' |
| <i>ora</i> 'do' | <i>ori-i</i> 'do for someone' |
| <i>cha'pi</i> 'catch' | <i>cha'pi-i</i> 'catch for someone' |
| <i>acha</i> 'put' | <i>achi-i</i> 'put for someone' |
- (Brambila 1953: 184)

With some verbs belonging to class IIb (see § 2) and allowing two different types of human participant as object, applicative suffixation is accompanied by vowel alternation and stress shift in TA. As shown in (58) and (59), the verbal stems ending in a stressed front vowel *é* (probably resulting from the fusion of the applicative suffix *-é* to the verb base) are used for introducing the human source or recipient, while the stem ending in a stressed high front vowel *í* is combined with *-i* suffixation in order to introduce a human beneficiary.

- (58) a. *rari-* ‘buy something’ (stem form with stress shifting suffixes)
 b. *rará-* ‘buy something’ (stem form with stress neutral suffixes)
 c. *raré-* ‘buy from someone’
 d. *rarí-i* ‘buy for someone’
 (Caballero 2008: 106–107)
- (59) a. *osí-* ‘write something’ (stem form with stress shifting suffixes)
 b. *osá-* ‘write something’ (stem form with stress neutral suffixes)
 c. *osé-* ‘write to someone’
 d. *osí-i-* ‘write for someone’
 (Brambila 1953: 182–184)

The use of a final vowel stem alternation from *a/i* to *e* for encoding the undirected/directed alternation is, in fact, frequent in TA and GU. Brambila (1953: 177–179) indicates that the *-e* suffixation usually implies in Norogachi TA the loss of the final vowel of the undirected verb stem (for instance, final *i* is usually replaced by *e*), thus resulting in a final vowel stem alternation in which the verb stem ending in *e* is the directed stem. In Choguita TA, Caballero (2008) identifies the possibility to have two different types of “applicative stems”:⁸ the directed stem ending in *é* as in (58c) and (59c), and the directed stem ending in *í*, which is usually followed by an applicative suffix as in (58d) and (59d). In GU, Miller (1996: 160) also mentions that the suffix *-é* can, in some cases, replace the final vowel of the verbal stem. This situation thus implies that, strictly speaking, we can consider that we no longer have an undirected/directed alternation marked by a privative marking as in applicativization, but we have an equipollent marking,⁹ in which the directed stem is obtained by changing the final vowel of the undirected stem to *e*.

Like the applicative suffixes, the final stem vowel alternation from *a/i* to *e* is used in TA for introducing a non-patient participant, usually human, as a syntactic object. This strategy is available not only for some intransitive verbs but also for some transitive verbs, as exemplified in (60), (61) and (62) from Norogachi TA, and (63) from Choguita TA.

- (60) a. *notza-riwa echi.*
 work.INTR-PASS there
 ‘There is working over there.’
 (Brambila 1976: 391)

⁸ “Applicative stem” is the term used by Caballero (2008). As the applicative construction by definition implies the presence of an affix (the applicative morpheme attached to the undirected verb form), we prefer to use the term “directed stem”.

⁹ The equipollent marking for the undirected/directed alternation is considered a typological rarity by Creissels (forthcoming).

- b. *antresi ne notze.*
 Andres 1SG.NOM work.TR
 'I work for Andres.'
 (Brambila 1976: 392)
- (61) a. *echi bera ne gite achi-é.*
 that for 1SG.NOM for laugh.INTR-PST.IPFV
 'That's why I was laughing.'
 (Brambila 1976: 4)
- b. *nejé nimí aché.*
 1SG.NOM 2SG.ACC laugh.TR
 'I am laughing at you'
 (Brambila 1976: 4)
- (62) a. *kumí a'tará echi?*
 where use_to_buy.TR DEM
 'Where do you usually buy these things?'
 (Brambila 1976: 35)
- b. *Pe róbrica a'ataré ne sunú pa.*
 still Rodrigo use_to_buy.TR I corn EXPL
 'I still use to buy corn from Rodrigo.'
 (Brambila 1976: 35)
- (63) a. *naparí noká-ri ronochí=ni okó.*
 when move.INTR-PST legs=1SG.NOM hurt
 'When I moved, my legs hurt.'
- b. *noké-ri ré=n má-o.*
 move.TR-PST DUB=1SG.NOM maybe-EMPH
 'Maybe I moved him.'
 (Caballero 2008: 166)
- c. *nihé mi troka noké-ri.*
 1SG.NOM 2SG.ACC truck move.TR-PST
 'I will move the truck for you.'
 (Caballero 2008: 107)

As shown in these examples, the new object of the directed construction marked by the *é* verbal stem is a human participant referring to a diversity of semantic roles, such as a recipient, a beneficiary, a stimulus, a source or even a theme, as in (63b). The examples in (63) from Choguita TA are interesting, since they show that the verb form ending in *é* can be used as a causal transitive (63b) or as a directed ditransitive (63c) verb, but, in both cases, we can notice the presence of a human participant as an object (as P in [63b], as R in [63c]).

Interestingly, these equipollent verbs have the same distributional pattern as in the applicative/causative uses of transitivity suffixes in PB and NT (see §§ 3.1 and 3.2): Final stem *a/i* to *e* alternation in TA serves to encode the undirected/directed alternation, if the *a/i* counterpart is a transitive verb (as in [62]) or an active intransitive verb (as in [60]), and it serves to encode the non-causal/causal alternation, if the *a/i* counterpart is inchoative intransitive as in (64).

| (64) Intransitives ending in <i>i</i> | Causal transitives ending in <i>e</i> |
|---------------------------------------|---|
| <i>raji</i> 'burn' | <i>raje</i> 'light (a fire)' CAUSE to burn |
| <i>noki</i> 'move' | <i>noke</i> 'move' CAUSE to move |
| <i>sa'wi</i> 'heal' | <i>sa'we</i> 'heal' CAUSE to heal |
| <i>lowi</i> 'go crazy' | <i>lowe</i> 'drive crazy' CAUSE to go crazy |
| <i>waki</i> 'dry' | <i>wake</i> 'dry' CAUSE to dry |
| <i>wasi</i> 'cook' | <i>wase</i> 'cook' CAUSE to cook |

The same is found in GU, although the alternation is almost always from *a* to *e*, since most intransitive and transitive verbs tend to end in *a* in this language. Examples in (65) show the use of *a* to *e* alternation for non-causal/causal alternation with both inchoative and stative intransitives. In these cases, the change of the final vowel to *e* serves to create a transitive verb in which the object corresponds to the subject, usually animate (mostly human), of the *a* verb form.

| (65) Intransitives ending in <i>a</i> | Causal transitives ending in <i>e</i> |
|---------------------------------------|---------------------------------------|
| <i>i'óa</i> 'cure' | <i>i'óe</i> 'cure' |
| <i>kema-/kemi</i> 'tuck in' | <i>kemé</i> 'tuck' |
| <i>taha-/tahi</i> 'burn' | <i>tahé</i> 'burn' |
| <i>upá</i> 'bathe' | <i>upé</i> 'bathe' |
| <i>yeloába</i> 'be poisoned' | <i>yeloé</i> 'poison' |
| <i>pi'wá</i> 'be cleaned' | <i>pi'wé</i> 'clean someone' |

Verb pairs in (66) exemplify in GU the *a* to *e* alternation changing active intransitive verbs to directed transitive verbs. In these cases, the object of the final *e* stem has been added in comparison with the clause in which the predicative nucleus is the active intransitive verb. Again, we can observe that the additional object is a human participant, usually acting as a recipient.

| (66) Intransitives ending in <i>a</i> | Directed transitives ending in <i>e</i> |
|---------------------------------------|---|
| <i>tepóra</i> 'greet' | <i>tepóre</i> 'greet' |
| <i>wikóa</i> 'whistle' | <i>wikoé</i> 'whistle at' |
| <i>naósa</i> 'talk' | <i>naóse</i> 'talk to' |
| <i>pahkóra</i> 'keep vigil' | <i>pahkóre</i> 'keep vigil over' |

With transitive verbs, the final vowel change to *e* is used for the undirected/directed alternation, and the animate (mostly human) participant added as object in the final *e* verb form can be a beneficiary/maleficiary but also a recipient or a source, as can be seen in (67).

| | |
|---|--|
| (67) Transitives | Directed transitives ending in <i>e</i> |
| <i>olá</i> - ‘do something’ | <i>oríe</i> - ‘do something for someone’ |
| <i>werá</i> -. ‘put something on stand’ | <i>weré</i> - ‘put for someone’ |
| <i>tainía</i> - ‘sell something’ | <i>tainié</i> - ‘sell something to someone’ |
| <i>puha</i> -/puhi- ‘remove something’ | <i>puhé</i> - ‘remove from someone’ (e.g. the load from an animal) |
| <i>nulá</i> - ‘ask something’ | <i>nuré</i> - ‘ask to someone’ |
| <i>u’i</i> - ‘bring something’ | <i>u’é</i> - ‘bring to someone (SBJ.SG)’ |
| <i>po’á</i> ‘take something away’ | <i>po’é</i> ‘take away from someone’ |

That the additional object associated with the final *e* verb form is an animate (mostly human) participant, is obvious in (68), where two forms of the verb of believing are provided. In this case, the vowel alternation is not associated with transitivity, but with the (in)animacy of the object participant. Both verb forms are transitive, but, as can be observed in (68), the final *e* verb form is for a human object, and the final *a* verb form is for an inanimate object.

- (68) a. *pichiká*- ‘believe in something’
 b. *pichiké*- ‘believe in someone’

In this example, the *a/e* alternation does not cause a valency increase, it just changes the type of object participant involved in the situation, being the *e* verb form the one associated with human participant.

Regarding the optional or obligatory type of constructions encoded via final stem vowel alternation, there is a strong tendency for these constructions to be obligatory. However, some cases of optional constructions encoded via final stem vowel alternation are possible. This possibility is found in TA and GU, only when the additional object is a beneficiary. In this case, the verb stem ending in *a/i* can be used with the benefactive human participant marked with a benefactive postposition. This possibility to have an optional construction encoded via final stem vowel alternation is exemplified in (69) from Norogachi TA.

- (69) a. *pe tami gite newa pa gema-ka.*
 only us for make.TR PART.EXPL blanket-EXPL
 ‘He makes a blanket only for us.’
 (Brambila 1976: 547)

- b. *raberi ne newe-ke.*
 violin I make.APPL-PFV
 'I made a violin for him.'
 (Brambila 1976: 379)

Double suffixation is also found in TA for encoding applicative constructions. In Chogu-ita TA, the second suffix is always the benefactive *-ki*, while in Norogachi TA, this is the suffix *-ri*.¹⁰ According to Caballero (2008: 245–247), this double applicative that implies the loss of the final vowel of the first applicative suffix (*-n-ki*, *-w-ki*, *-š-ki*), is redundant in Chogu-ita TA, since there is no semantic change in comparison with the simple suffixation, as illustrated in (70).

- (70) a. *ne mi pakó-ni-ra plato.*
 1SG.NOM 2SG.ACC wash-APPL-POT plate
 'I'll wash the plates for you.'
 b. *ne mi pakó-n-ki-ra plato.*
 1SG.NOM 2SG.ACC wash-APPL-APPL-POT plate
 'I'll wash the plates for you.'
 (Caballero 2008: 247)

In Norogachi TA, according to Brambila (1953: 187), the double applicative is mainly used with transitive verbs in order to indicate the presence of both direct and indirect objects, without the necessity to overtly mark these two complements outside the verb as arguments. Recall that in TA, GU, PB, and NT, 3rd person direct and indirect object pronouns are usually dropped. Two examples of this use are given in (71). Interestingly, in this double applicativization, the first applicative suffix licenses as object an inanimate patient participant, and the second one, a human recipient/beneficiary participant.

- (71) *rikibu*- 'download' *natabu*- 'drill'
rikibú-ne 'download (it)' *natabú-ne* 'drill (it)'
rikibú-ne-ri 'download (it to someone)' *natabú-ne-ri* 'drill (it for someone)'

The double marking can also be the result of the combination of the directed verb stem ending in *é* and an applicative suffix (*-ki* in Chogu-ita TA, *-ri* in Norogachi TA), as exemplified in (72) from Chogu-ita TA.

¹⁰ Brambila (1953: 180) regards the forms *-ki*, *-gi*, *-ti*, *-ri* as allomorphs, since in Norogachi TA, /r/ can freely alternate with /k/, /g/, and /t/ in intervocalic contexts (Brambila 1953: 6). This allomorphy can cause some potential ambiguities between both causative and applicative meanings, since in this variety the suffix *-ri* is also a causative suffix.

- (72) a. *ma=ni mi suwé-ri remé.*
 already=1SG.NOM 2SG.ACC finish.up.APPL-PST tortillas
 'I already finished (ate) up your tortillas.'
- b. *ma=ni mi suwé-ki-ri remé.*
 already=1SG.NOM 2SG.ACC finish.up.APPL-APPL-PST tortillas
 'I already finished (ate) up your tortillas.'
- (Caballero 2008: 239)

Again, these cases of double marking always involve the productive benefactive suffix *-ki*, and they do not imply in Choguita TA a semantic difference in comparison with the simple marking. Caballero (2008) explains this situation by the morphological opacity caused by the fusion of the applicative marker *-é* to the verb base, which triggers the double marking.

In Norogachi TA (Brambila 1953: 187), the same combination is also possible, as shown in (73), with the same discursive function as the one mentioned for the double applicative suffixation (see Example [71]).

- (73) *achá-* 'put' *bujá-* 'take away'
aché- 'put (it)' *bujé-* 'take (it) away'
aché-ri 'put (it to someone)' *bujé-ri* 'take (it) away (from someone)'

Probably triggered by this double marking, Norogachi TA shows some cases in which the vowel alternation to *é* and the applicative suffixes *-e*, *-ne* are used to refer to an inanimate patient, as shown in (74), not to a human non-patient participant as usual, as well as some other cases in which the suffix *-ri*, the most productive causative marker in the language, is used alone as an applicative marker (75b).

- (74) *ro'á* 'pour something' *ro'é* 'pour (it)'
ku ro'á ba'wi-ki! *chokirá tsa ro'é-ma ne?*
 again pour water-EXPL near INTER pour-FUT 1SG.NOM
 'Pour the water again!—Do I pour (it) near (the cross)?'
- (Brambila 1953: 179)

- (75) a. *ne kobi-ka ariché-re ke rapako.*
 1SG.NOM make_pinole-GER spend_the_day-PFV EXPL yesterday
 'Yesterday I spent the day making pinole.'
- b. *ketza tamí kóbí-ri-ma pe tá?*
 not_true 1SG.ACC make_pinole-APPL-FUT NEG little
 'Won't you make me some pinole?'
- (Brambila 1976: 257)

In GU, double applicatives are infrequent but still possible. An example is given in (76) in which the two applicative suffixes are associated with the expected semantic values. The first applicative suffix is used to introduce an animate recipient, the second one is used to introduce a human beneficiary.

- (76) *čuh-* ‘be hung’
 čuh-čá ‘hang something’
 čuh-čé ‘hang something on an animal’
 čuh-čé-nie ‘hang something on an animal for someone’
 (Medina 2002)

This example also serves to illustrate the allomorphy involved in the applicative suffixes in GU. Miller (1996: 160) identifies different allomorphs for the applicative suffixes (*-ne/-nie/-íni*; *-é/-ie*; *-ké/-ge*, *kie/-gie*), and this allomorphy seems to be lexically conditioned.

Miller (1996: 161) points out that, with some verb bases, two different applicative suffixes can be used with a semantic contrast: suffix *-ne/-nie* for benefactive, *-ke/-kie/-gie* for surrogate.¹¹ Some examples are presented in (77).

- (77) *četé-gie* play a musical instrument instead of another person
 četé-nie play a musical instrument for another person
 toe-ké run with the ball instead of another person
 toe-né run with the ball for helping another person
 yahča-kie put the load (on a donkey) instead of another person
 yahča-nie put the load (on a donkey) for helping another person

Other minor and unproductive applicative suffixes used for applicativization in Norogachi TA are the suffix *-ši* exemplified in (78) (usually associated with a few motion verbs, also present in Choguíta TA (79) and in GU as *-se*¹²), and the suffix *-mi*, exemplified in (80), which is only found with two verbs in Norogachi TA and with a benefactive meaning.

- (78) *e* ‘remove’ *é-ši* ‘remove from someone’
 pa ‘throw’ *pá-ši* ‘throw to someone’
 ropa ‘outperform (SG)’ *ropá-ši* ‘outperform someone’
 toba ‘outperform (PL)’ *tobá-ši* ‘outperform someone’
 wichi ‘fall (SG)’ *wichí-ši* ‘fall to someone (SG)’
 ruji ‘fall (PL)’ *rují-ši* ‘fall to someone (PL)’

¹¹ Zúñiga (2014) proposes the notion of surrogation for a particular subtype of benefaction in which the beneficiary “benefits from the fact that s/he does not have to perform a particular action thanks to the intervention of the surrogate”.

¹² Miller (1996: 162) mentions only one case: the verb *ihpába-se* ‘throw-APPL’.

- (79) a. *pá-ka!*
 throw-IMP.SG
 'Throw it!'
- b. *tamí ku pá-ši-ri pelóta!*
 me REV throw-APPL-IMP.SG ball
 'Throw the ball back at me!'
 (Caballero 2008: 415)
- (80) a 'search' *á-mi* 'search for someone'
nakare 'cut off ears' *nakaré-mi* 'cut off ears for someone'

Finally, in River GU, Félix (2007: 126–128) has identified locative, instrumental and comitative applicativizations, in which the corresponding postposition of the base construction is attached to the base verb stem in the derived construction in order to license the applied object. No mention of these applicative constructions is made by Miller (1996) for Mountain GU and, according to subsequent studies on applicativization in River GU (Ávila 2012; Casas 2018), these non-benefactive optional applicatives in GU are not really accepted, at least for some native speakers of River GU (Casas 2018: 167). These cases are presented below.

- (81) a. *waní simi-ré tiendá-čl.*
 John go-PFV store-LOC
 'John went to the store.'
- b. *waní simi-ri-áčl tiendá.*
 John go-PFV-APPL store
 'Juan went-to the store.'
- (82) a. *hustína wičo-na wakirá haóni-e /ooná-e.*
 Agustina wash-PRS shirt soap-INS salt-INS
 'Agustina washes the shirts with soap/salt.'
- b. *hustína wičo-ná-e wakirá haóni /ooná.*
 Agustina wash-PRS-APPL shirt soap salt
 'Agustina washes the shirts with soap/salt.'
- (83) a. *maría simi-ré obregón ahpó ye'yé-ma.*
 Mary go-PFV Obregón 3SG.NSBJ mother-COM
 'María went to Obregón with her mother.'
- b. *maría simi-ré-ma obregón ahpó ye'yé-ma.*
 Mary go-PFV-APPL Obregón 3SG.NSBJ mother-COM
 'Did Mary go to Obregón with her mother?'

In the case of the comitative applicativization in (83b), the presence of the postposition as a verbal suffix is not accompanied by the encoding of the original postpositional complement as a direct object. This participant still has the postpositional marking. No valency-increasing is present here. Additionally, as indicated by the translations in (82) and (83), these constructions would imply a change in the communicative function from indicative to interrogative.

In sum, two main mechanisms can be identified in TA and GU for the marking of the undirected/directed alternation. The first one is morphological and it corresponds to the applicative suffixes illustrated in this section. The second one is morphophonological and it refers to the final vowel alternation in which the verbal stem ending in *e* is used to encode the directed verb. It is clear that both marking strategies are historically related. According to Brambila (1953), Miller (1996) and Caballero (2008), the vowel alternation seems to be the consequence of the *e*-suffixation but it is also possible that the final vowel alternation is the oldest system¹³ and that new markers have been created by combining the final vowel alternation and different types of transitivizing suffixes, as suggested by the examples of *-na*, *-tza*, *-wa* 'CAUS' vs. *-ne*, *-tze*, *-we* 'APPL'.¹⁴ Independently of the chronological relations between both strategies, they are clearly interconnected and they illustrate how morphology and phonology can be related in the encoding of the undirected/directed alternation.

Another example of how morphophonology is used for marking the undirected/directed alternation is exemplified in (84) from Choguita TA. In (84b), the benefactive applicative suffix *-i* seems to have fused to the verbal stem, with the consequence that the encoding strategy for the undirected/directed alternation is now reduced to the single stress shift of the final vowel *i*. The alternation is in this case between a final unstressed *i*, which is associated with the transitive stem and a final stressed *i* associated with the directed transitive stem.

- (84) a. *nihé ba'arí iči-méa muni.*
 1SG.NOM tomorrow plant-FUT.SG beans
 'I will plant beans tomorrow.'
- b. *nihé ba'arí ne yé-ra iči-ma.*
 1SG.NOM tomorrow 1SG.NOM mother-POSS plant.APPL-FUT.SG
 'I will plant for my mom tomorrow.'
- (Caballero 2008: 238–9)

¹³ The presence of an old verbal pattern involving the change of the final vowel of the stem for distinguishing between intransitive and transitive verbs has been proposed for the PUA by Langacker (1977: 132). In his reconstruction, this non-affixal variation corresponds to a general UA *i/a* distinction, with *a* for transitives and *i* for intransitives.

¹⁴ Regarding the suffix *-é*, Miller (1996: 160) considers it to be the most basic applicative suffix and to be probably included in the other GU applicative markers.

This possibility to encode the undirected/directed alternation via stress shift is also found in GU with the verb *nahté* ‘pay’, which is the lexicalized directed version of *nahte* ‘cost’ (Miller 1996: 362).

4 Syntax, semantics and pragmatics of applicativization

4.1 The status of the object in applicative constructions from transitive verbs

Although applicative constructions from transitive base verbs in YQ, PB, NT, TA and GU are double object constructions, the original object tends to become a low prominence object, since the only object that can be passivized is usually the applied object, showing cases of asymmetric applicatives (Pylkänen 2008). This asymmetry is exemplified in (85) with data from YQ.

- (85) a. *María-Ø u-ka toto'i-ta jinu-ria-wa-k.*
 Mary-NOM DET-ACC hen-ACC buy-APPL-PASS-PFV
 ‘Mary was bought the hen.’
 b. **U toto'i-Ø María-ta jinu-ria-wa-k.*
 DET hen-NOM Mary-ACC buy-APPL-PASS-PFV
 Intended: ‘The hen was bought for Mary.’
 (Guerrero 2007: 198)

The only language in which symmetric applicatives have been found is GU. Example (86b) from River GU show the passivization of a benefactive applicative transitive marked by the suffix *-ke*, in which the subject is the applied object (*ne* ‘1SG.NOM’), while the subject is the original object (*muní* ‘beans’) in (86c).

- (86) a. *Hustína no'ó pasú-ke-re muní.*
 Agustina 1SG.NSBJ cook-APPL-PFV beans
 ‘Agustina cooked beans for me.’
 b. *pasu-ke-ré-tu=ne muní (Hustína-e).*
 cook-APPL-PFV-PASS=1SG.S beans Agustina-INS
 ‘I was cooked beans (by Agustina).’
 c. *muní no'ó pasu-ke-ré-tu (Hustína-e).*
 beans 1SG.NSBJ cook-APPL-PFV-PASS Agustina-INS
 ‘Beans were cooked for me (by Agustina).’
 (Félix 2005: 259)

The same possibility is present in Mountain GU. In (87a), the verb *wera* ‘put’ that has been applicativized by the suffix *-ié*, and passivized by the suffix *-ru*, has as subject the original object (the theme *sigori* ‘pot’), while this subject is the applied object (the recipient *remé* ‘1PL.SBJ’) in (87b).

- (87) a. *Pié sigori wer-ié-ba-ru=ra isuki wa’a.*
 one pot put-APPL-INCH-PASS.PST=RPT tesgüino over_there
 ‘They put him (the coyote) a pot of tesguino over there.’
 (Miller 1996: 97)
 (Lit. They say that a pot was put (to him), tesgüino over there.)
- b. *Pa=remé yomá to’-é-reru pa?wi.*
 already=1PL.SBJ all put-APPL-PASS.PST water
 ‘We’ve already been watered.’
 (Miller 1996: 98)

4.2 Applicativization, valency and discourse

Applicativization in UA languages of NW Mexico always implies a valency increase, in which a non-agent and usually non-patient animate (mostly human) participant has been added to the situation denoted by the base construction, encoded as object. The only rare and dubious exception that has been found is the comitative applicativization in GU exemplified in (83b), in which the expected valency increase is not present since the comitative participant retains its oblique marking in the applicative version. As for the undirected/directed alternation encoded by the equipollent marking, the absence of valency increase is also observed in only one case, that is the final stem vowel alternation involved in the verb pair of GU *pichiká* ‘believe in something’ / *pichiké* ‘believe in someone’ (see Example [68]).

In cases of optional applicatives, the applied participant is promoted from an oblique to a core function, implying the acquisition of more topicality and more pragmatic prominence in comparison with its original position in the base construction. This explains why in discourse, applicativization can be used as a topicalization device for referential discourse continuity. This is the case for instance in YQ with Example (88), taken from Álvarez (2019).

- (88) *Es ké=nee a=tá’aru-ria-k*
 the_fact_is_that=1SG.ACC 3SG.ACC=lose-APPL-PFV
úme ilí jaámuch-im áma’a.
 DET.PL little woman-PL there
 ‘The fact is that my daughters lost it.’

This example is extracted from a conversation in which the speaker is talking about himself. After a few clauses in which the speaker is referring to himself as the subject of the clauses, comes the exemplified clause in which the applicativization is accompanied by the right-dislocation of a different subject (*ume ilí jaámuchim* ‘the girls’), which allows the applied object (referring to the speaker: *nee* ‘1SG.ACC’) to occupy the first position after the focus structure borrowed from Spanish *es ké* ‘the fact/reason is that’. In (88), the speaker is thus using simultaneously a focus structure, applicativization, and right-dislocation to topicalize himself and to maintain referential discourse continuity.

Applicativization can also be used as a focalization device. This possibility is illustrated in (89) from Norogachi TA, with the verb *rara* ‘to buy’. In (89a), the subject is in initial position, followed by the benefactive oblique complement, and by the predicate with the base verb and the object complement in final position. The applicativization in (89b) serves to focalize the benefactive participant, which appears in the initial position and marked by the emphatic particle *ka* (the subject pronoun between the applied object and the emphatic *ka* is a second position clitic pronoun).

- (89) a. *mujé ko pe kúruí gite rara-re bera kawa.*
 2SG.NOM CONJ only children for buy-PFV CONJ eggs
 ‘But you bought eggs just for the kids.’
 (Brambila 1976: 180)
- b. *tewé ne ka súkaro rarí-i-ma.*
 daughter 1SG.NOM EMPH sugar buy-APPL-FUT
 ‘I will buy sugar for my daughter.’
 (Lit. ‘For my daughter, I will buy sugar.’)
 (Brambila 1953: 183)

The focalization of the directed participant can also be expressed by the equipollent marking of the undirected/directed alternation. The examples in (90) from GU (Miller 1996: 101) illustrate this possibility with the grooming verb *u’upa* ‘to bathe’.

- (90) a. *u’upa-ma=ne.*
 bathe.INTR-FUT=1SG.NOM
 ‘I am going to bathe.’
- b. *no’ó u’upé-ma=ne (wa’ábi).*
 1SG.NSBJ bathe.APPL-FUT=1SG.NOM self
 ‘I am going to bathe.’
 (Lit. To me, I am going to bathe.)

In (90a) and (90b), two different constructions (intransitive-reflexive in [90a] and transitive-directed in [90b]) are used for denoting the same reflexive situation. The difference lies of course in the discourse and pragmatic functions associated with these constructions. While (90a) is the unmarked construction, (90b) is used to indicate information

that is contrary to the presupposition of the interlocutor, that is a contrastive focus. Note again that, like in applicativization in (89b), the directed participant appears as the first and most topical element of the clause, here as an example of focus fronting (Krifka 2008; Neeleman and Vermeulen 2012).

4.3 The semantic contrast in optional applicatives

In optional applicatives, the applicative construction with the applied object and the base construction with the same participant encoded as a postpositional object can present some subtle semantic differences. For instance, in YQ, the activity denoted by the base verb *bwika* ‘sing’ is carried out on behalf of someone if this human participant is encoded as a postpositional object (91a), and for the benefit of someone if the human participant is an applied object (91b).

- (91) a. *aapo bwika-k e-betchi'ibo.*
 3SG.NOM sing-PFV 2SG.OBL-for
 ‘He/she sang on behalf of / instead of you.’
 b. *aapo enchi bwika-ria-k.*
 3SG.NOM 2SG.ACC sing-APPL-PFV
 ‘He/she sang for you.’
 (Guerrero 2022: 30)

Another example involves the verb *jima* ‘throw’. In the base construction in (92a), the human participant marked by the directional postposition *-u* is a human goal/recipient and the clause is understood as Peter and the child are playing ball together. In the applicative construction in (92b) the reading is malefactive and the clause is understood as Peter threw the ball at the child in order to hurt him or hit him.

- (92) a. *Peo-Ø ili usi-ta-u pelotam jima-k.*
 Peter-NOM little child-ACC-DIR ball.PL throw-PFV
 ‘Peter threw a ball to the boy.’ (goal/recipient reading)
 b. *Peo-Ø ili usi-ta pelotam jima-ria-k.*
 Peter-NOM little child-ACC ball.PL throw-APPL-PFV
 ‘Peter threw a ball (at) the boy.’ (malefactive reading)
 (Guerrero 2022: 34)

With the verb *etbwa* ‘steal’, the applied object is associated with a source/malefactive meaning (93a), while the postpositional object introduced by *betchi'ibo* triggers the benefactive meaning (93b).

- (93) a. *Goyo-Ø Aurelia-ta u-ka toto'i-ta etbwa-ria-k.*
 Goyo-NOM Aurelia-ACC DET-ACC hen-ACC steal-APPL-PFV
 'Goyo stole the hen from Aurelia.'
- b. *Goyo-Ø u-ka toto'i-ta etbwa-k Aurelia-ta-betchibo.*
 Goyo-NOM DET-ACC hen-ACC steal-PFV Aurelia-ACC-for
 'Goyo stole the hen for Aurelia.'
- (Guerrero 2007: 189)

In the cases of locative, instrumental and comitative applicatives in GU, Félix (2007) points out the existence of a semantic contrast (not always very clear) between the applied and the postpositional versions. The locative applicative implies that John remained in the store for a longer period of time in (81b), while instrumental and comitative applicatives in (82b) and (83b), respectively, provide unexpected information and are therefore perceived by the native consultant as a question (Félix 2007: 130).

4.4 The use of applicativization for discourse coherence

As mentioned in Section 2, third person object pronouns in TA, GU, PB, and NT are usually dropped in discourse, when context is clear enough to identify these object arguments. This dropping is frequently associated with the applicative marking in these languages.

As Brambila (1953: 53) pointed out, in Norogachi TA accusative and dative pronouns of applicative verbs are often dropped in discourse because "they are included in the verb". The applicative suffixes express the relation between a verb form and its directed complements, without the necessity to express this complement in the clause,¹⁵ and the presence of the applicative suffix (or the directed verb stem ending in *e*) is often the unique indicator of the presence of this additional (most commonly, human) participant, thus functioning as an important device for referential continuity.

In Norogachi TA discourse, it is thus frequent to have no (pro)nominal mention of the applied object. The applied object is left implicit, being anaphorically present and, therefore, contextually retrievable. In this case, only the verb form implies the presence of the applied object. Although the semantic valency has been increased (a new participant has been added to the situation denoted by the base construction), the syntactic expression of this increasing is not always present.

Estrada (2007: 97–101, 2014: 213) also mentions the same phenomenon in PB, which also allows the non-specification of applied arguments. The presence of the applicative marker is sufficient to indicate that the situation denoted by the base verb is applied

¹⁵ The applicative verb is named by Brambila (1953: 176) a "relative verb", since "it includes the relation to its complements" (our translation).

to an animate third person participant, even though this non-specification may cause sometimes some ambiguities. For GU, Miller (1996: 97) also mentions that, in discourse, it is common to omit the applied object when the context is clear. Félix (2005: 259–260) also states that all third person participants can be omitted, like in the transitive construction (94a), in the applicative construction (94b) or even in its passivized version (94c).

- (94) a. *pasu-ré.*
 cook-PFV
 ‘She/he cooked it/them.’
 b. *pasú-ke-re.*
 cook-APPL-PFV
 ‘She/he cooked it/them for him/her/them.’
 c. *pasu-ké-re-tu.*
 cook-APPL-PFV-PASS
 ‘She /he was cooked something.’ /
 ‘Something was cooked for him/her/them.’

The use of the applicativized verb to indicate the presence of an object complement without the need to overtly encode it outside the verb as a (pro)nominal argument, is obviously favored by the fact that 3rd person object pronouns are dropped, but this object omission is also possible with 1st and 2nd person pronouns, as exemplified in (95b) from Norogachi TA. In this case, since the object is not expressed but only implied, the function is alike a pragmatic antipassivization, when compared with the construction without the applicative suffix in (95a).

- (95) a. *tasi chi ku’wi karlo.*
 NEG me help Carlos
 ‘Carlos does not help me.’
 (Brambila 1976: 280)
 b. *bineri tza mu gayena? képi-o, bonirá ku’wi-ri-re.*
 alone perhaps 2SG.NOM do NEG-EMPH brother help-APPL-PFV
 ‘Did you do it alone?—No, my brother helped (me).’
 (Brambila 1953: 182)

In this use, the implied object complement is not always a human participant, it can also be an inanimate patient (this possibility is usually found with the directed verb stem ending in *e* as in (74) or with the applicative suffixes *-e* or *-ne*).¹⁶ However, Brambila

¹⁶ The examples proposed by Brambila (1953) for exemplifying the uses of the different applicative suffixes in Norogachi TA show that the suffixes *-(C)i* (*-i*, *-ri*, *-ki*, *-gi*, *-mi*) have a strong tendency to combine with transitive base verbs in order to add an animate participant as a beneficiary, while the suffixes *-(C)e* (*-e*, *-ne*, *-tze*, *-we*) are usually combined with transitive and intransitive verbs in order to add an object

(1953: 188) pointed out that, in this case, the relative form is more often substituted by the verb form ending in *i/a*. In the same vein, when the directed verb form is used, the absence of the object complement is obviously not mandatory, and the object complement can thus be overtly encoded.¹⁷

As mentioned above (Example [74]), this use in discourse could have favored the need for a double suffixation in cases of ditransitive verbs, since two objects are involved with these verbs. The use of the double marking of the directed relation could also have opened up the possibility to have inanimate participants added as implicit applied objects, something that can be found with the directed verb stems and some applicative suffixes in Norogachi TA but that is very infrequent in applicative constructions of the other UA languages of NW Mexico.

5 Causative-applicative syncretism

The causative-applicative syncretism is pervasive in UA languages from NW Mexico. It appears with the suffix *-di/-id* in PB and the suffix *-d^(y)i/-d^(y)a* in NT, which act as causativizers if the base verb is an inactive intransitive verb, and as applicativizers if the base verb is an active intransitive or a transitive verb.

Additionally, in PB, the use of the suffix *-di/-id* with some active intransitive verbs triggers a sociative causative reading. This is the case for example with the verbs *hi'a* ‘urinate’ (96a) and *tikpan* ‘work’ (96b).

- (96) a. *Marii lii oob hiaa-di.*
 María DIM.SG person urinate-APPL
 ‘Mary took the child to urinate.’
 (Estrada 2014: 215)
- b. *ig di'ir ilbaah tikpan-di-a.*
 DET.SBJ mother girl work-APPL-PROS
 ‘The mother will take the girl to work.’
 (Estrada 2014: 215)

complement that can be a human participant with a diversity of semantic roles or even an inanimate patient. The directed verb stem ending in *e* has a behavior similar to the suffixes *-(C)e*.

17 As Brambila (1953: 188) also acknowledged, the use of the relative verb forms is not always consistent. The directed verb form can be used with the object complement expressed as a pronoun or as a noun phrase, and some transitive verbs ending in *i/a* can be used intransitively, that is, without an object complement, although in the context, it is clear that the situation includes an object participant, as in (i).

- (i) *má ne kašina.* instead of *má ne kašine.*
 already 1SG.NOM break.INTR already 1SG.NOM break.APPL
 ‘I have already broken.’ ‘I have already broken (it).’

In GU, the suffix *-če*, which has been exemplified in its applicative use in (50), can also have a causative function with stative or inchoative intransitive base verbs.

- (97) *čeha-*, *cehi-*, *če-* ‘be stung’ *če-če-* ‘sting, vaccinate’
tahtá- ‘be warm’ *táhta-pa-* ‘be hot-INCH ‘get warm’ *táhta-pa-če* ‘heat’

The causative-applicative syncretism is also present in Norogachi TA with the causative suffix *-ri* that acts as an applicative marker when used as the second element in double applicatives (see Examples [71]). In some cases, it can even serve as an applicative marker in simple suffixation (see Example [75b]). As mentioned before (see Footnote 10), this situation may cause cases of ambiguity between causativization and applicativization (Brambila 1953: 180).

The derivational uses of applicative suffixes in UA languages from NW Mexico also illustrate the causative-applicative syncretism, since these suffixes also serve to create causative verbs usually out of adjectives and/or nominals. For instance, the suffix *-di/-id* in PB can be used as a denominal factitive verbalizer, that is, a derivational marker creating active verbs out of nouns with the general meaning ‘to exert on a patient an action related with N’ (Estrada 2007: 92–93).

- (98) *suusk* ‘shoes’ *suusuk-id* ‘to shoe (horse)’
hivil ‘wind’ *hivil-di* ‘to fan, to air’
kubis ‘smoke’ *kubis-di* ‘to smoke’
si’i ‘breast’ *si’i-di* ‘to feed’

It can also be attached to adjectives/stative verbs in order to create a causative verb with the general meaning ‘to cause the state denoted by the base’.

- (99) *onmag* ‘be salty’ *onama-d(i)* ‘salt’
kaplik ‘be small’ *kap-id-ir* ‘shrink’
doa ‘be cured’ *doali*, *doar* < *doadi* ‘cure’
tuuk ‘be dark’ *tuk-id* ‘darken’
tipilik ‘be flat’ *tipilik-id* ‘flatten’
toahk ‘be white’ *toah-id* ‘whiten’
i’ov ‘be sweet’ *i’ov-id* ‘sweeten’
u’uv ‘be odorous’ *uuvag-id* ‘sniff’

The suffix *-d^(v)i/d^(v)a* in NT can also be used with this same verbalizing effect (Bascom 1982: 299–300), as exemplified in (100) and (101).

- (100) *kukúrus-d^va-ni!*
 cross-VBZR-IMP
 ‘Make the sign of the cross!’

- (101) *viiš tása-i vaamí-óma to~tóíñ-d'a-ri-i.*
 all day-ABS more-COMPAR RDP~CONT-hot-VBZR-become-PRS
 'Every day it keeps getting hotter.'

The same type of verb formation is also found in YQ with the applicative suffix *-ria* (Dedrick and Casad 1999; Álvarez and Estrada 2009; Guerrero 2007: 185), as shown in (102) from nominal bases and in (103) from adjectival bases.

- (102) *bwichopia* 'smut' *bwichop-ria* 'smoke'
pajko 'party' *papajko-ria* 'celebrate'

- (103) *suka* 'hot' *suka-ria* 'heat'
awi 'fat' *awi-ria* 'fatten'
bali 'cold' *bali-ria* 'cold, freeze'

This formation of active transitive verbs is also possible with at least one adverbial base and one intransitive base verb.

- (104) *bu'u* 'too, a lot' *bu'u-ria* 'increase, accumulate'
yo'otu 'grow' *yo'otu-ria* 'raise, cultivate, make grow'

Some examples of active verbs created out of nouns via applicative suffixation in (105), and via equipollent marking in (106), can also be found in Norogachi TA.

- (105) *nakí* 'addendum' *naki-we* 'add'
wesó 'mud' *weso-ge* 'mire'
- (106) *niwí* 'nostalgia' *newe* 'long for someone'
sawí 'coal' *sawe* 'carbonize'

Additionally, the causative-applicative overlap can also be illustrated with the verb *weiyaa* 'carry', which has been analyzed above as probably involving an applicative periphrasis. However, the meaning of this verb can also be rendered by a causative periphrasis from the base verb *weye* 'go', and Example (43b) could be thus interpreted as a causative construction, with the meaning 'The woman is making the water go in the pot.'

Lastly, the same polyfunctionality found with the suffixes used in applicativization and causativization can also be observed in the equipollent marking in which the change of the final verb stem vowel from *i/a* to *e* in TA and GU, is associated with the non-causal/causal alternation if the verb stem ending in *i/a* is an inactive intransitive, and with the undirected/directed alternation if the stem ending in *i/a* is an active intransitive or a transitive verb.

6 Applicative lookalikes

6.1 Lexicalized applicatives

Several verbs in the UA languages from NW Mexico end in the form found in applicative constructions but, in a strictly synchronic perspective, they are not clearly analyzable as applicative derivatives, since the meaning of the base verb has changed in such a way that the derived construction cannot be interpreted as the same situation denoted by the base verb but with the addition of a new object participant. However, a semantically plausible relationship between the meanings of the base construction and of the derived construction can usually be identified, justifying the use of the applicative marker at least in diachrony and via a semantic shift (usually, a metonymy). In these cases, exemplified in (107) for GU, YQ and NT, it is possible to consider these verbs as lexicalized applicatives, or pseudo-applicatives.

- | | | | |
|-------|----|---|--|
| (107) | GU | <i>ihpa-</i> ‘throw something (SG.OBJ)’ | <i>ihpá-ge, ipa-ké</i> ‘milk (the cow)’ |
| | | <i>tui-</i> ‘say’ | <i>tu-ké</i> ‘ask’ |
| | | <i>tari</i> ‘buy’ | <i>tari-ké</i> ‘sell something to someone’ |
| | YQ | <i>wike</i> ‘drag, pull’ | <i>wiki-ria</i> ‘owe’ |
| | | <i>siime</i> ‘go (SG.SUBJ)’ | <i>sim-ria</i> ‘abandon someone’ |
| | NT | <i>gáágai</i> ‘look for’ | <i>gaagí-d’a</i> ‘provide for’ |

As expected, the same lexicalization is possible with equipollently-marked verb pairs, as shown in (108) from GU.

- | | | | |
|-------|----|---------------------------------------|---|
| (108) | GU | <i>po’táča-</i> ‘tie’ | <i>po’tačé</i> ‘close with lid’ |
| | | <i>yahčá-</i> ‘seat, put’ | <i>yahčé-</i> ‘serve someone (food)’ |
| | | <i>sipa</i> ‘scrape’ | <i>sipé</i> ‘do harm, bewitch’ |
| | | <i>peni</i> ‘learn’ | <i>pené</i> ‘know how to do, have the habit of’ |
| | | <i>u’natá</i> ‘think about, remember’ | <i>u’naté</i> ‘care’ |

6.2 Applicative deponents

Several verbs in the UA languages from NW Mexico only occur with an ending that could be the marker that distinguishes base and applicativized versions of other verbs, but only the seemingly applicativized verb is existing, and the expected base verb does not exist in the language. These cases exemplified in (109) with data from YQ and GU can be viewed as cases of *applicativa tantum* or applicative deponents (Zúñiga and Creissels, this volume).

- | | | | |
|-------|----|--|----------------|
| (109) | YQ | <i>e'e-ria</i> 'keep' | <i>*e'e-</i> |
| | | <i>nanaj-ria</i> 'avoid someone' | <i>*nanaj-</i> |
| | | <i>koo-ria</i> 'rock someone' | <i>*koo-</i> |
| | | <i>ku-ria</i> 'turn, tangle' | <i>*ku-</i> |
| | | <i>jijja'ria</i> 'scare' | <i>*jijja'</i> |
| | GU | <i>inatu-ké</i> 'ask' | <i>*inatu-</i> |
| | | <i>ihkó-ke</i> 'offer something to one person' | <i>*ihkó-</i> |
| | | <i>ihkó-ge</i> 'distribute, offer' | |
| | | <i>ihkó-nie</i> 'offer something to several persons' | |
| | | <i>nate-ké</i> 'forget' | <i>*nate-</i> |

Estrada (2014: 178) points out that many ditransitive verbs in PB are diachronically derived with the applicative suffix *-id/-ir*, although in synchrony, the base verb is no longer present in the language. Some examples are:

- (110) PB *bid* 'serve something to someone'
ho'ir 'offer something to someone'

7 Conclusions

In this chapter, the applicative constructions attested in UA languages of NW Mexico have been described, as well as the pervasive causative-applicative syncretism found in the data. Following the questionnaire proposed as a guideline for the contributions to this volume, the main aspects of applicative constructions in UA languages of NW Mexico are as follows:

Morphology

- Applicativization is made via suffixation in all these languages (§ 3), but some languages use only one suffix (PB, YQ), while others have several applicative suffixes (NT, TA, GU). The marking of the undirected/directed alternation by means of equipollent marking or stress shift, found in TA and GU, probably resulted historically from the fusion of a suffix with the base (§ 3.4).
- The possible vestiges of an applicative periphrasis have been found in YQ (§ 3.3). This unproductive strategy involves a functional verb *iyaa* 'to pretend, to wish'.
- The only applicative suffix that does not show allomorphy is the suffix *-ria* in YQ. In the other cases, the allomorphy seems to show different kinds of conditioning: phonological (suffix *-di/-id* in PB), morphological (suffix *-d^(v)a* is used for imperative, *-d^(v)i* for imperfective, and *-tuli* for perfective in NT, Footnote 7) or lexical (applicative suffixes in TA and GU).

- Except for the above case of morphologically-conditioned allomorphy in NT, inflectional verb morphology does not seem to be affected by applicative suffixation in UA languages of NW Mexico.

Syntax

- Applicativization in UA languages of NW Mexico is generally not allowed for inactive intransitive base verbs, and benefactive applicativization shows a strong preference for transitive base verbs.
- UA languages of NW Mexico only have P-applicativization, in which the applied phrase is a noun phrase showing all the properties that characterize objects in non-applicative constructions. The only case of X-applicativization exemplified in (83b) is problematic.
- Applicatives in UA languages of NW Mexico are always valency-increasing constructions, in which the syntactic status of the applied phrase's companion arguments/adjuncts does not change in comparison with the base construction.
- Double marking is found in NT, TA and GU, and it can be the result of double applicative suffixation or the combination of a directed verb stem and the benefactive applicative suffixation. This double marking is redundant in Choguila TA (§ 3.4), it is the main form to express benefactive applicatives in NT (§ 3.2), while in Norogachi TA, it is mainly used for referential discourse coherence (§§ 3.4 and 4.4).
- There is no difference between applicative constructions and constructions with underived predicates belonging to the same valency class.
- Optional applicatives in UA languages of NW Mexico are not conditioned by limited access of obliques to some syntactic operations.

Semantics

- The applicative suffixes found in UA languages of NW Mexico are usually markers that can license, depending on the meaning of the verb base, all the different non-agent and non-patient semantic roles that can usually be associated with animate (mostly human) participants (recipient, beneficiary/maleficiary, stimulus, source, concerne, etc.). Their semantic under-specification is thus restricted by animacy (mostly humanness). However, TA, GU and NT have developed dedicated applicative markers for the benefactive meaning.
- With the exception of Norogachi TA in which the applied object can refer to an inanimate patient, the semantic roles expressed by the applied phrase in UA languages of NW Mexico are those that can be associated with non-agent and non-patient animate (mostly human) participants. These participants can be peripheral (such as a beneficiary) but they can also be central participants required by the lexical meaning of the base verb. In this case, the applicative construction tends to be an obligatory applicative construction in those languages in which no marking

difference is made between direct and indirect object (TA, GU, PB, and NT). By contrast, benefactive applicatives are always optional applicatives.

- Some semantic contrasts between the base construction and the applicative construction have been pointed out in Section 4.3. These differences are sometimes quite subtle and no clear semantic pattern has been detected, except in YQ in which the applied object in applicative constructions from active intransitive verbs tends to be associated with benefaction, while its counterparts encoded as a benefactive postpositional object in the base construction is associated with surrogation (see Examples in [91])
- Some cases of topicalization and focalization via applicativization have been mentioned in Section 4.2. Interestingly, they tend to involve the promotion of a speech act participant (the speaker) to the object function and to the first position of the applicative clause, suggesting that discourse referential continuity, topicalization/focalization and speech act participants are motivating factors for the use of applicative constructions.
- The distribution of applicativized verbs in UA languages of NW Mexico with the dropping of object pronouns (TA, GU, PB and NT) is strongly dependent on their uses as referential coherence markers in discourse (§ 4.4).

Lookalikes and others

- Non-applicative functions of the applicative markers are mainly associated with the pervasive causative-applicative syncretism found in UA languages of NW Mexico (§ 6).
- Lexicalized applicatives and applicative deponents are not rare in UA languages of NW Mexico (§ 7).

Abbreviations

| | |
|--------|--------------|
| ABS | absolute |
| ACC | accusative |
| ADJR | adjectivizer |
| AL | alienable |
| ANT | anterior |
| APPL | applicative |
| BEN | benefactive |
| CAUS | causative |
| COM | comitative |
| COMPAR | comparative |
| COMPL | completive |
| COND | conditional |
| CONJ | conjunction |
| CONT | continuative |

| | |
|-------|-------------------|
| DEM | demonstrative |
| DES | desiderative |
| DET | determiner |
| DIM | diminutive |
| DIR | directional |
| DUB | dubitative |
| EMPH | emphatic |
| EXPL | expletive |
| EV | evidential |
| FUT | future |
| GER | gerund |
| HAB | habitual |
| IMP | imperative |
| IPFV | imperfective |
| INCH | inchoative |
| INS | instrumental |
| INTER | interrogative |
| INTR | intransitive |
| IT | iterative |
| LOC | locative |
| NEG | negative |
| NMLZ | nominalizer |
| NNTR | neutral number |
| NSBJ | non-subject |
| NOM | nominative |
| OBJ | object |
| INDF | indefinite |
| OBL | oblique |
| PART | particle |
| PASS | passive |
| PCN | past continuative |
| PST | past |
| PFV | perfective |
| PL | plural |
| POSS | possessive |
| POT | potential |
| PROG | progressive |
| PROS | prospective |
| PRS | present |
| PTCP | participle |
| RDP | reduplication |
| RPT | reportative |
| SG | singular |
| SBJ | subject |
| TR | transitive |
| VBZR | verbalizer |

References

- Álvarez González, Albert. 2007. Construcciones de aspecto resultativo en yaqui. In Zarina Estrada Fernández, Albert Álvarez González, Lilián Guerrero & Belén Carpio (eds.), *Mecanismos de voz y formación de palabra*, 17–43. México & Hermosillo: Plaza y Valdez & Universidad de Sonora.
- Álvarez González, Albert & Estrada Fernández, Zarina. 2009. Mecanismos de creación de palabras en lengua yaqui. In Arzápalo Marín, Ramón (ed), *Lingüística amerindia: contribuciones recientes*, 147–168. México DF: UNAM-IIA.
- Álvarez González, Albert. 2019. Discourse coherence in narratives and conversations: A case study in Yaqui (Uto-Aztecan). *Anthropological Linguistics*, 61(2), 250–309.
- Álvarez González, Albert. 2021. The rise of cause/reason adverbial markers in Yaqui. In Alexander Haselow & Sylvie Hancil (eds.), *Studies at the grammar-discourse interface: Discourse markers and discourse-related grammatical phenomena*, 313–351. Amsterdam: John Benjamins.
- Ávila Enríquez, Diana Amelia. 2012. *Construcciones aplicativas en guarijío de Sonora*. Hermosillo: Universidad de Sonora MA thesis.
- Bascom, Burton. 1982. Northern Tepehuan. In Ronald W. Langacker (ed.), *Studies in Uto-Aztecan grammar, Vol. 3: Uto-Aztecan grammatical sketches*, 267–393. Dallas, TX: Summer Institute of Linguistics and the University of Texas at Arlington.
- Bascom, Burton. 2003. *Gramática del Tepehuán de Norte*. México: SIL International
- Brambila, David. 1953. *Gramática Raramuri*. México: Editorial Buena Prensa.
- Brambila, David. 1976. *Diccionario Raramuri-Castellano*. México: La Obra de la Buena Press.
- Buelna, Eustaquio. 1890. *Arte de la lengua Cahita por un padre de la Compañía de Jesus*, México: Imprenta del Gobierno Federal
- Burgess, Donald. 1984. Western Tarahumara. In Ronald W. Langacker (ed.), *Studies in Uto-Aztecan grammar, Vol. 4: Southern Uto-Aztecan grammatical sketches*, 1–149. Dallas: Summer Institute of Linguistics.
- Caballero, Gabriela. 2008. *Choguira (Rarámuri) phonology and morphology*. Berkeley: University of California dissertation.
- Carrillo Carrillo, Araceli. 2013. *Formación de palabras en tepehuano del norte (odami)*. Hermosillo: Universidad de Sonora MA thesis.
- Casas Salido, Luis Ramiro. 2018. *Mecanismos de aumento de valencia en guarijío*. Hermosillo: Universidad de Sonora MA thesis.
- Creissels, Denis. Forthcoming. *Transitivity, valency, and voice*. Oxford: Oxford University Press.
- Dedrick, John M. & Eugene H. Casad. 1999. *Sonora Yaqui language structures*. Tucson: University of Arizona Press.
- Estrada Fernández, Zarina, Crescencio Buitimea Valenzuela, Adriana E. Gurrola Camacho, María Elena Castillo Celaya & Anabela Carlón Flores. 2004. *Diccionario yaqui-español y textos: obra de preservación lingüística*. México: Plaza y Valdés.
- Estrada Fernández, Zarina. 2007. Aspectos semántico-sintácticos de las construcciones aplicativas y su manifestación en pima bajo. In Zarina Estrada Fernández, Albert Álvarez González, Lilián Guerrero & Belén Carpio (eds.), *Mecanismos de voz y formación de palabra*, 85–105. México & Hermosillo: Plaza y Valdez & Universidad de Sonora.
- Estrada Fernández, Zarina. 2014. *Gramática de referencia del pima bajo. Volumen I*. Hermosillo: Universidad de Sonora.
- Estrada-Fernández, Zarina, Mercedes Tubino Blanco & Jesús Villalpando. 2015. Valency classes in Yaqui. In Andrej Malchukov & Bernard Comrie (eds.), *Valency classes in the world's languages, Vol. 2: Case studies from Austronesia, the Pacific, the Americas, and theoretical outlook*, 1359–1390. Berlin: De Gruyter Mouton.
- Félix Armendáriz, Rolando Gpe. 2005. *A grammar of River Warihío*. Houston, TX: Rice University dissertation.

- Félix Armendáriz, Rolando. 2007. Los aplicativos en warihío. In Zarina Estrada Fernández, Albert Álvarez González, Lilián Guerrero & Belén Carpio (eds.), *Mecanismos de voz y formación de palabra*, 107–132. México & Hermosillo: Plaza y Valdez & Universidad de Sonora.
- Guerrero, Lilián. 2007. Estructuras argumentales alternativas: las cláusulas aplicativos en yaqui. In Zarina Estrada Fernández, Albert Álvarez González, Lilián Guerrero & Belén Carpio (eds.), *Mecanismos de voz y formación de palabra*, 177–204. México & Hermosillo: Plaza y Valdez & Universidad de Sonora.
- Guerrero, Lilián. 2022. Typical and atypical applicative constructions in Yaqui. In Sara Pacchiarotti & Fernando Zúñiga (eds.), *Applicative morphology: Neglected syntactic and non-syntactic functions*, 21–50. Berlin: De Gruyter Mouton.
- Harley, Heidi, Mercedes Tubino Blanco & Jason D. Haugen. 2009. Applicative constructions and suppletive verbs in Hiaki (Yaqui). *Rice Working Papers in Linguistics* 1. 42–52.
- Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In Bernard Comrie & Maria Polinsky (eds.), *Causatives and transitivity*, 87–121. Amsterdam: John Benjamins.
- Jelinek, Eloise & Fernando Escalante. 2000. Unaccusative and unergative Verbs in Yaqui. In Eugene Casad & Thomas Willett (eds.), *Uto-Aztecan: Structural, temporal and geographic perspectives. Papers in memory of Wick R. Miller by the friends of Uto-Aztecan*, 171–182. México: Universidad de Sonora.
- Krifka, Manfred. 2008. Basic notions of information structure. *Acta Linguistica Hungarica*, 55(3). 243–276.
- Langacker, Ronald W. 1977. *Studies in Uto-Aztecan grammar, Volume 1: An overview of Uto-Aztecan grammar*. Dallas: Summer Institute of Linguistics & University of Texas at Arlington.
- Mason, J. Alden. 1917. Tepecano, a Piman language of Western Mexico. *Annals of the New York Academy of Sciences* XXV. 309–416.
- Medina Murillo, Ana Aurora. 2002. *Diccionario morfológico: formación de palabras en el guarijío*. Hermosillo: Universidad de Sonora MA thesis.
- Miller, Wick R. 1984. The classification of the Uto-Aztecan languages based on lexical evidence. *International Journal of American Linguistics* 50(1). 1–24.
- Miller, Wick R. 1996. *Guarijío: Gramática, textos y vocabulario*. México, D.F.: Universidad Nacional Autónoma de México.
- Neeleman, Ad, & Reiko Vermeulen. 2012. The syntactic expression of information structure. In Ad Neeleman & Reiko Vermeulen (eds.), *The syntax of topic, focus, and contrast*, 1–38. Berlin & Boston: Mouton de Gruyter.
- Pylkkänen, Liina. 2008. *Introducing arguments*. Cambridge, MA: MIT Press.
- Ramírez Barceló, Ana María. 2010. *Seguimiento de referencia: tópico discursivo en textos narrativos en pima bajo*. Hermosillo: Universidad de Sonora MA thesis.
- Ramos Bierge, Stefanie. 2010. *Tipos de cláusulas completivas en tepehuano del norte: un continuo de complejidad*. Hermosillo: Universidad de Sonora MA thesis.
- Rinaldini, Benito. 1743. *Arte de la lengua tepeguana con vocabulario, confesionario y catechismo*. México: Viuda de Hogal [Facsimile edition. 1994. México: Conaculta, Gobierno del Estado de Durango].
- Smith Buckingham. 1862. *Grammar of the Pima or Névome, a Language of Sonora, from a Manuscript of the XVIII Century*. [Facsimile edition. 1970. New York: AMS Press, Cramoisy Press].
- Zúñiga, Fernando. 2014. Benefaction proper and surrogation. *Studies in Language* 38(3). 543–565.
- Zúñiga, Fernando & Denis Creissels. This volume. Applicative constructions: An introductory overview.