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Inflection class interactions and valency changes in Matlatzinca

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In this paper, we explore how changes in the inflection class membership of verbs in Matlatzinca (Oto-Pamean, Oto-Manguan, Mexico) lead to changes in both their valency and meaning. In Matlatzinca, verbs often exhibit multiple class membership so that a given verb may be inflected as transitive in one class but as intransitive in another. For instance, the verb CHUN+TA, when inflected in different classes, can encompass diverse meanings: the action of ‘waking someone up’; the result state of ‘being awake’; and the spontaneous event of ‘waking up’. This linguistic phenomenon is intriguing from both a typological and a theoretical perspective as it challenges our understanding of lexical representation by prompting the question of whether these meanings represent distinct lexical entries or various construals of the same verb (Spencer 2013).

Keywords: valency changes, inflection, inflection class, verbs, Matlatzinca

1 Introduction

In this paper, we study how changes in the inflection class membership of verbs in Matlatzinca (Atzincan; Otomian; Oto-Pamean; Oto-Manguan) allow for changes in their meaning and transitivity value, which are typical of valency changes. Our contention is that this phenomenon can be interpreted as an instance of a system exploiting inflection classes for derivational purposes.

Matlatzinca is a small indigenous language from Mexico, which is spoken by some 1,500 people, most of them residents of the village of San Francisco Oxtotilpan in the State of Mexico. Verbs in this language fall into five conjugations or inflection classes (see Palancar & Carranza 2022). The membership of verbs of these classes has two interesting properties:

On the one hand, class membership is strongly associated with the transitivity value of the verb. In this respect, three of the classes, which we note with roman numbers as Classes I, II and III, only contain transitive and ditransitive verbs. In contrast, all intransitive verbs in the language are inflected as members of the two remaining classes, which we note with capital letters as Classes A and B.¹

¹ We adopt Aronoff’s (1994) definition of an inflection class as “a set of lexemes whose members each select the same set of inflectional realizations”. Reviewer 1 raises the possibility that readers might perceive the inflectional split of verbs based on transitivity value as more relevant to the morphosyntax than to the morphology, but the issue is nuanced, as we cannot rely on a clear-cut functional threshold for determining a

On the other hand, verbs often exhibit multiple class membership. By this we mean that it is a common situation that a given verb, without having any stem changes, may be inflected as transitive in one class, but as intransitive in another. When this occurs, the verb in question shows slight differences in meaning. The semantics that verbs have when inflected as members of Classes A or B is typical of the type that result from valency reduction operations such as semantic antipassive or mediopassive voice, respectively (Dixon & Aikhenvald 2000). The case is illustrated in (1), which shows three different instances of the verb TÁNI ‘buy’ from natural speech, each one as a member of a different class. In (1a) the verb is used as a transitive accomplishment; in (1b) as an atelic activity; and in (1c) in the impersonal or passive reading. As we will see in the next section, Matlatzinca inflection is mainly periphrastic, so to facilitate the recognition of the verbal complex in the examples, we indicate the scope of the periphrase with curly brackets. We also indicate the class membership of a verb with a subscript.²

- (1) a. *xi' {tù táni_I}*
 NEG S3.CPL buy[O3SG]
 ‘He didn’t buy it.’ (Txt)
- b. *{kà' ho' táni_A}*
 S3SG.CPL VEN₁ buy
 ‘He was shopping as he came here.’³ (Txt)
 (Lit. ‘He bought as he came here.’)
- c. *{ré táni_B}* *n=to harina...*
 S3SG.CPL buy CLF=DIM flour
 ‘People bought flour.’/ ‘Flour was bought.’ (Txt)

The examples in (2) further illustrate pairings of verbs from each of the transitive classes and the possible readings obtained when the verbs are inflected as members of the intransitive classes.

verb’s class membership based on its transitivity value. Certainly, knowledge of a verb’s transitivity value informs its conjugational class membership; for instance, an intransitive verb belongs to Class A or B rather than Classes I, II, or III. However, as we elucidate in Sections 4 and 5, determining whether an intransitive verb belongs to Class A or B is not predetermined. Moreover, when a verb is transitive, it can potentially belong to any class except for Class A. This underscores the crucial role of arbitrariness in assigning class membership for Matlatzinca verbs.

² Orthography. Deviations from the IPA are as follows: ‘ /ʔ/; *ch* /tʃ/; *chh* /tʃʰ/; *ë* /ə/; *i* /i/; *kh* /kʰ/; *mh* /mʰ/ [m̥]; *nh* /nʰ/ [n̥]; *th* /tʰ/; *x* /ʃ/; and *y* /j/. Low tone is left unmarked in lexical items, and high tone is marked with an acute accent over a vowel.

³ The selection of the phrase “go shopping” in the English translation of (1b) is intended to evoke a parallel concept in English for the semantics of the Matlatzinca construction while adhering to idiomatic usage. The distinction in English, where expressions like *he went shopping* convey the atelic interpretation of purchasing instead of *he was buying* holds significance in English, but not in Matlatzinca.

(2)

a.	XE'PI	I	(tr)	'harvest a field'	A	(intr)	'harvest'
	'İWI	II	(tr)	'put sb. to sleep'	A	(intr)	'sleep'
	CHA'+NA	III	(tr)	'shout at sb.'	A	(intr)	'shout'
b.	KANCHI	I	(tr)	'hit sth./sb.'	B	(intr)	'hit oneself'
	HATS'I	II	(tr)	'cover sth./sb.'	B	(intr)	'cover oneself (blanket)'
	BÁ'TI	III	(tr)	'lose sth./sb.'	B	(intr)	'get lost'

Examples in (1) and (2) show that the change of meaning (most often accompanied by a change of transitivity, though not always) is made possible by shifting the inflection class membership of the verb (i.e., by shifting its paradigm). Viewed in this way, it involves a morphological mechanism of valency change which is qualitatively very different from mechanisms involving derivational affixation targeting the root of a verb, which are more common in valency change operations (Haspelmath 1993).⁴ In order to place the phenomenon in Matlatzinca in typological perspective, in Section 6.2 we discuss correlates in other Mesoamerican language families and in Romance languages like French.

The phenomenon we study here poses the interesting theoretical problem addressed in Spencer (2013), which concerns the two ways how we may conceptualize it: do the different meanings in (1) and (2) instantiate different (but related) senses of the same verbal lexeme? or do they instantiate different lexical entries (i.e., different (but related) verbal lexemes)? We discuss the consequences of these two different approaches in Section 6.1 in more detail, but for expository convenience we have taken the descriptive decision of talking about the phenomenon as representing networks of related verbs (e.g., TÁNI_I-TÁNI_A-TÁNI_B), which, displaying different properties of form, syntax and semantics (the three features FORM, SYN et SEM in Spencer 2013), share the same core lexical semantics, reified as an abstract unit of vocabulary or 'archilexeme' that we represent with small caps (e.g., TÁNI 'buy'). We will leave the question for now of whether the different units in such networks represent different verbs, that is, whether in Spencer's (2013) own terms, the verbs in such networks are independent lexical entries representing each a different 'lexical key'.

The paper has the following structure. In the next section we discuss the morphology of the five verbal inflection classes of Matlatzinca. In Section 3 we set out the methodology

⁴ Reviewer 3 has suggested an alternative analysis to us where the inflection class changes we observe would first involve a process of morphological conversion. In this analysis, a stem X associated with one class would undergo conversion into a phonologically identical stem X', perceived in turn as a member of another class. This perspective draws on studies highlighting the efficacy of zero-derivation as a derivational morphological operation, as evidenced in works by Bauer & Valera Hernández (2005), Mel'čuk (2013), and Valera Hernández (2023). The Matlatzinca case would share similarities with operations entailing gender change to achieve semantic change, as in Spanish feminine nouns denoting fruits which convert into masculine nouns to designate corresponding fruit-bearing trees (e.g., *manzana* 'apple' > *manzano* 'apple-tree'). From this viewpoint, to account for the phenomena illustrated in (1) and (2), one initially recognizes the existence of distinct inflection classes, and then, one conceptualizes lexemes as derived from one class to another through conversion. In this perspective, conversion is presented as a convenient mechanism to circumvent viewing paradigm change as the primary factor responsible for valency changes. However, beyond this conceptualization, the conversion process itself holds limited interest. At the core of the matter is the need to grasp how the different paradigms interact in Matlatzinca, giving rise to the distinct contrasts we observe in valency changes. Regardless of the role of conversion in the process, the central focus of the paper is on the interaction of such inflection classes.

we used to compile our corpus, showing that a convenient way to study the networks is by way of treating verbs as organized in pairs. Sections 4 and 5 are devoted to the interactions of Class A and B verbs. In Section 6 we discuss the phenomenon under various perspectives: theoretically, typologically and diachronically. Section 7 concludes.

2 Morphological properties of the classes

Matlatzinca verbs are inflected in tense-aspect-mood (TAM) and person/number of the subject. There are at least nine subparadigms of TAM distributed in two moods (realis and irrealis) and there are three persons (1st, 2nd and 3rd), three numbers (singular, dual and plural) and a distinction of clusivity involving the 1st person dual and plural. All this information is for the most part realized cumulatively by intricate series of grammatical markers that precede the verbal stem. We call such markers ‘inflectional formatives’. Inflectional formatives are prosodically and syntactically independent of the stem (i.e. they are not prefixes) (see Palancar & Carranza Martínez 2022). Since the inflectional construction (in the sense in Booij 2010) involves (at least) two words, Matlatzinca verbal inflection can be characterized as periphrastic in composition, although the formatives cannot in any way be analyzed as inflected forms of auxiliary verbs. The verbal complex can be very simple, as in (3a), or more complex, as in (3b). The formative in (3b) has internal structure as it consists of more than one element (indicated by the plus signs), but it is difficult to ascribe a particular meaning to these individual bits, so we have opted to gloss the formative cumulatively as a whole.

- (3) a. {*tù* *nawi_I*}
 S3SG.CPL want[O3SG]
 ‘S/he wanted it.’ (Txt)
- b. {*tá’+ho’+rú* *nen=tú* *huhti_m*}
 S3SG.CPL.IRR VEN=STF_{TR} blow_up[O3SG]
 ‘He’ll blow it up as he comes down.’ (elicitation)

Example (3b) further shows two other features: (i) that a set of adverbials, namely encoding notions of associated motion, may intervene between the inflectional formative and the stem, such as the ventive *ne(n)*; and (ii) that the inflection of certain classes, like Class III, may involve a marker *tú* preceding the stem, which we treat as a ‘stem formative’ although it commonly associates phonologically to a previous word as an enclitic.

Verbs in Matlatzinca fall into five inflection classes. We can determine the classes (a) by the different inflectional formatives that verbs select and (b) by whether or not the verbs require stem formatives. The contrasts making up for the five classes are shown in Tables 1 and 2. First consider Table 1, where we show the forms for the singular of the completeive realis.

Table 1. Singular forms for the completive realis

	TAM+P/N	ADV	STEM	TAM+P/N	ADV	STF	STEM	TAM+P/N	ADV	STF	STEM
	CLASS I			CLASS II			CLASS III				
	'buy sth.' (tr.)			'leave sth.' (tr.)			'blow sth. up' (tr.)				
1sg	to'	nen	táni	to'	nen		habi	to'	nen		huhti
2sg	'o'	nen	táni	'o'	nen		habi	'o'	nen		huhti
3sg	tù	nen	táni	tù	nen		habi	tù	nen		huhti
	CLASS A			CLASS B							
	'jump' (intr.)			'get lost' (intr.)							
1sg	tà'	nen	chapi	tà'+té	nen	=té	bá'ti				
2sg	'í'	nen	chapi	'é'	nen	=té	bá'ti				
3sg	kà'/tà'	nen	chapi	ré	nen	=té	bá'ti				

As we see in Table 1, all transitive verbs receive the same inflectional formatives in the completive realis. This means that for this subparadigm the three classes are neutralized into one. This large transitive class contrasts with the intransitive verbs, where the different inflectional formatives justify the existence of two classes: Class A and Class B. Class B is further characterized by the stem formative *té*. Interestingly, in the completive realis the formative *té* only occurs if an adverbial is used between the formative and the stem. Here we have the adverbial *ne(n)*, which is a directional ventive that depicts the action of the verb as being carried out from a higher place all the way down to the speech-act situation. If the adverbial were not used, the stem formative would not appear either (e.g. *ré bá'ti* 's/he got lost', but not **ré té bá'ti*).

The morphological contrasts in the completive realis in Table 1 serve to establish Classes A and B as two different classes. Now compare the forms in Table 1 with those in Table 2 for the completive irrealis.

Table 2. Singular forms for the completive irrealis

	CLASS I			CLASS II			CLASS III				
	'buy sth.' (tr.)			'leave sth.' (tr.)			'blow sth. up' (tr.)				
1sg	rú+ho'	nen	táni	rú+ho'+rú	nen		habi	rú+ho'+rú	nen	=tú	huhti
2sg	ri+'o'	nen	táni	ri+'o'+rú	nen		habi	ri+'o'+rú	nen	=tú	huhti
3sg	tá'+ho'	nen	táni	tá'+ho'+rú	nen		habi	tá'+ho'+rú	nen	=tú	huhti
	CLASS A			CLASS B							
	'jump' (intr.)			'get lost' (intr.)							
1sg	rú+ho'	nen	chapi	rú+ho'	nen	=té	bá'ti				
2sg	ri+'o'	nen	chapi	ri+'o'	nen	=té	bá'ti				
3sg	tá'+ho'	nen	chapi	tá'+ho'	nen	=té	bá'ti				

In Table 2, we have the marking contrasts in the completive irrealis that justify the split of transitive verbs into three classes. While Class I verbs select the same formatives as Classes A and B (here the Class B stem formative *té* is obligatory, with or without the adverbial, e.g.

tá'ho' té bá'ti 's/he's going to get lost', but not **tá'ho' bá'ti*), Classes II and III contrast with Class I in that they require a more complex formative exhibiting the element +*rú* (originally a phonological variant of the stem formative *tú* after a glottal which was reanalyzed as part of the inflectional formative). Finally, Class III differs from Class II by the fact that it requires the stem formative *tú* when there is an intervening adverbial (e.g., *tá'ho'rú huhti* 's/he is going to blow it up', but not **tá'ho'rú tú huhti*).

Matlatzinca verbal inflection is productive, in the sense that it can incorporate borrowings from Spanish. Despite the fact that Class III is more marked than Classes I or II, Spanish active transitive verbs are only borrowed into Matlatzinca as members of Class III. This means that Classes I and II are closed classes. Intransitive verbs, on the other hand, are borrowed as members of Class A or Class B, depending on their semantics: middle verbs from Spanish become Class B (see Section 4); others Class A.

Novel Matlatzinca verbs commonly come from Spanish verbs, but also from adjectives. When the borrowed word comes from a Spanish verb, the verb stem in Matlatzinca is from the past participle of the Spanish verb in its regular default form (i.e., masculine singular). Spanish participial forms ending in /Xdo#/ are adapted to /Xdu#/. When the stem ends in /Xru#/, the loanword is well established. Some examples are given in Table 3.⁵

⁵ Reviewer 1 raises an interesting point regarding the potential reason for choosing participles or adjectives from Spanish as reflecting the fact that inflectional formatives were perhaps perceived as copulas and that the forms are not verbs. We take that the selection of a participial form from Spanish is primarily driven by its character as a non-finite form, offering convenience, together with the fact that it occurs in a periphrastic form in Spanish, which may have been perceived as equivalent to Matlatzinca. If there is a semantic calque of the Spanish construction, we believe it must lean towards its use in the perfect, so that expressions like *tù meskladu* or *ré reidu* align more closely with forms such as *lo ha mezclado* 's/he has mixed it' or *se ha reído* 's/he has laughed' rather than passive forms.

Table 3. Productivity of the classes in borrowings from Spanish

	Class III			S3SG.CPL	Spanish PST.PTPL/ADJ	
/Xdu#/	MESKLADU	(tr.)	‘mix’	tù meskladu	<i>mezclado</i>	← MEZCLAR _V
	KAMBIADU	(tr.)	‘change’	tù kambiadu	<i>cambiado</i>	← CAMBIAR _V
	FREIDU	(tr.)	‘fry’	tù freidu	<i>freído</i> ⁶	← FREIR _V
/Xru#/	RESIBIRU	(tr.)	‘receive’	tù resibiru	<i>recibir</i>	← RECIBIR _V
	KASTARU	(tr.)	‘spend’	tù kastaru	<i>gastado</i>	← GASTAR _V
/X#/	MANXU	(tr.)	‘tame’	tù manxu	<i>manso</i>	← MANSO _{ADJ}
Class A						
/Xdu#/	MADRUKADU	(intr.)	‘get up early’	kà’ madrुकadu	<i>madrugado</i>	← MADRUGAR _V
/Xru#/	SUFIRIRU	(intr.)	‘suffer’	kà’ surfriru	<i>sufrido</i>	← SUFRIR _V
	SERBIRU	(intr.)	‘be useful’	kà’ serbiru	<i>servido</i>	← SERVIR _V
Class B						
/Xdu#/	REIDU	(intr.)	‘laugh’	ré reidu	<i>reído</i>	← REÍR(=SE) _V
	FIHADU	(intr.)	‘be picky’	ré fihadu	<i>fijado</i>	← FIJADO _{ADJ}
/Xru#/	MANTENERU	(intr.)	‘support oneself’	ré manteneru	<i>mantenido</i>	← MANTENER(=SE) _V
	APURARU	(intr.)	‘be hurried’	ré apuraru	<i>apurado</i>	← APURAR(=SE) _V

3 Data and methodology

The goal of this paper is to enrich our understanding of the phenomenon involving class membership change as a means to change the valency and diathesis of verbs. We do this by studying the Matlatzinca case in depth, and for that we first needed to study the semantic properties of as many networks of Matlatzinca verbs as it was possible for us, as well as the distribution and productivity of certain patterns in such networks.

To carry the study of Matlatzinca verbs, we compiled a corpus of 624 different verbal stems that occur in a sample of 10 hours of natural text that we recorded and annotated under the auspices of the documentation project funded by the ELDP from 2017-2021.⁷ But as the inflectional contrasts amongst the verb classes are heavily neutralized in Matlatzinca, the situation made it very difficult to determine the class membership of a given verb from its instantiations in natural speech discourse; impossible when the verb in question was only instantiated once and exhibited a formative that could be selected by verbs of other classes. For the most part, to determine class membership one has to rely on elicitation and/or introspection methods.⁸

Similarly, it is also extremely rare for two verbs forming part of a network to appear in our natural texts, so that we also had to rely on elicitation and introspection to establish the

⁶ Note that *freído* is the regular form for the past participle in Spanish, which alternates with irregular *frito*, in the same way that *imprimido* ‘printed’ alternates with *impreso*.

⁷ Handle: <https://www.elararchive.org/dk0455/> (last access 30 March 2024).

⁸ One of the authors, Leonardo Carranza Martínez, is a native speaker of Matlatzinca.

inflectional properties associated with these 624 stems, as well as the type of semantic changes induced by inflecting them in the different grammatical frames of the classes.⁹

When we compiled our corpus, we only registered instances of verbs that share the same stem and the same core lexical semantics. In the process, when the senses were too apart from each other semantically, we have registered them as instances of stem homophony. There weren't many such cases. The ones we found are given in Table 4.

Table 4. Verbs with homophonous stems

HÁRI _{II-B}	'heat (with fire)'	~	HÁRI _{II}	'set in route'
HÉ _A	'arrive'	~	HÉ _{II-A-B}	'see'
HĒTS' _{II-B}	'cook in broth'	~	HĒTS' _{I-B}	'fly'
HOWI _A	'pass this way'	~	HOWI _A	'come'
KĪXI _{III-B}	'spin to plait'	~	KĪXI _{III}	'pull towards one'
SÒ'PI _{I-B}	'call'	~	SÒ'PI _{III}	'try'
XĪIKI _{I-B}	'kill'	~	XĪIKI _{III-B}	'peel'
YĒ _{I-A-B}	'exist/make'	~	YĒ _A	'speak'
YÒ _{I-B}	'lit up'	~	YÒ _{I-A-B}	'develop'

Almost half of the verbs in our sample (288/46%) can only be inflected in one class. As these verbs do not seem to lend themselves participate into any valency-change network, the verbs have “unique” senses. We treat such verbs as “unpaired”. The distribution of class membership of unpaired verbs is given in Table 5, where we see that the vast majority of them (240/84%) are intransitive verbs, mostly of Class A.

Table 5. Distribution of the 288 unpaired verbs in the sample

tr	48	16%	I	12	4%
			II	21	7%
			III	15	5%
intr	240	84%	A	155	54%
			B	85	30%
Total	288	100%		288	100%

The rest of the stems in our sample (336/54%) represent verbs that can be inflected as members of more than one class. This means that these verbs participate in some type of inflection class network. In Table 6, we have spread out the 26 logical possibilities of class-membership combinations that could be obtained. As shown by the zeros (in dark shading), not all of them are attested.

⁹ We have actually done the exercise twice: once in 2014 applied to only 400 stems from the total of 624, and then again in a fieldtrip to San Francisco Oxtotilpan in May 2022, where we studied all 624 stems from scratch. Searching for accuracy, we compared the results obtained in 2014 and 2022 and we report that, except for a few cases, the results from 2022 were practically the same as those obtained the first time in 2014.

Table 6. Logical possibilities of class-membership combinations

		Only tr.		One intr				Two intr.'s	
Only intr. 253		A		155	B		85	A+B	13
tr (+ intr) 371	One tr.	I	12	I+A	8	I+B	64	I+A+B	12
		II	21	II+A	2	II+B	27	II+A+B	4
		III	15	III+A	27	III+B	158	III+A+B	13
	Two tr.'s	I+II	0	I+II+A	0	I+II+B	0	I+II+A+B	0
		I+III	0	I+III+A	0	I+III+B	7	I+III+A+B	0
		II+III	0	II+III+A	0	II+III+B	1	II+III+A+B	0
	Three tr.'s	I+II+III	0	I+II+III+A	0	I+II+III+B	0	I+II+III+A+B	0

The distribution of the combinations, both attested and unattested, is informative of the dynamics of class membership shifting. On the one hand, there are only eight cases in our sample involving more than one transitive verb. The verbs in question are given in Table 7. They involve a verb of Class I or II and a verb of Class III, (we leave for now the fact that they also have an extension as Class B).

Table 7. The eight pairs of transitive verbs in the sample

	I/II		III	
a) Animacy	KO'TI _I	'close sth.'	KO'TI _{III}	'lock sb. up'
b) Role	'URI _{II}	'sell sth.'	'URI _{III}	'sell to sb.'
c) Valency change: tr>dt	KANCHI _I	'hit sb./sth.'	KANCHI _{III}	'hit sth. of sb.'
	PEWI _I	'steal sth.'	PEWI _{III}	'rob sb. of sth.'
	SANĪTA _I	'greet sb.'	SANĪTA _{III}	'greet sb. for sb.'
	YĒHPI _I	'dress sb.'	YĒHPI _{III}	'put sth. on sb.'
d) Synonyms	CHOOBI _I	'put sth.'	CHOOBI _{III}	'put sth.'
	TO'CHI _I	'break sth.'	TO'CHI _{III}	'break sth.'

Due to their rarity – only eight pairs in total – and the heterogeneous patterns they exhibit, we regard the class-membership pairings presented in Table 7 as lexical idiosyncrasies. These pairings undoubtedly represent remnants of a historical rule that is no longer applicable, involving some obscure valency-changing morphology that subsequently led to the differentiation of Class III as an independent inflection class from Class I (see Section 6.3 for a discussion on the origin of Class III stem formative *tú* as a causative).

The pair in (a) seems to contrast in the animacy of the object. The verb 'URI 'sell' in (b) involves a change in the semantic role of the object: when Class I, the object is patient (i.e., the merchandise); when Class III, the object is the receptor (and by default, animate). The verbs in (c) differ in valency. The Class III verb adds a beneficiary which is treated as the primary object. The objects of most Class III verbs in Table 7 are animate, but we also find the verbs in (d), which are synonymous, and have an inanimate object. The case in (c) is another instance of valency change by shifting inflection class, but as the stems involved represent only 0.2% of the combinations we have studied, we consider that its incidence in the system is minimal as a grammatical or lexical mechanism.

The rarity of the instances in Table 7 is largely due to the fact that there is another morphological construction in Matlatzinca to produce ditransitive verbs as a valency increase mechanism [tr > dtr]. Examples of this construction are given in Table 8. The construction involves stem changes on the verb. As it is common in Oto-Pamean languages, most verbal stems in Matlatzinca consist of a monosyllabic root plus a stem formative, indicated by the percentage sign %. Note how the ditransitive stems have a different formative. At times, the verbs also involve the applicative affix *pi* (sometimes realized as a suffix, sometimes as an infix). Crucially for our purposes, the verbs that undergo the mechanism in Table 8 do not change inflection class membership.¹⁰

Table 8. Derivation of ditransitive verbs from transitive verbs

	tr.		dtr.		tr. stem		dtr. stem
stem	HOKI _{III}	‘clean sth.’	HOHCHI _{III}	‘wipe sth. for sb.’	<i>ho%ki</i>	→	<i>hoh%chi</i>
change	’ÁARI _{III}	‘cut sth. with knife’	’AHCHI _{III}	‘cut sth. for sb.’	’ <i>aa%ori</i>	→	’ <i>ah%chi</i>
	HUHTI _{III}	‘blow sth. up’	HUHCHI _{III}	‘blow sth. to sb.’	<i>huh%ti</i>	→	<i>huh%chi</i>
	WAARI _{III}	‘wrap sth. up’	WANCHI _{III}	‘wrap sth. for sb.’	<i>waa%ori</i>	→	<i>wan%chi</i>
	’URI _{II-III}	‘sell to sb.’	’UNDI _{III}	‘sell sb. sth.’	’ <i>u%ori</i>	→	’ <i>un%di</i>
stem	TO’CHI _{I-III}	‘break sth.’	TO’RIHCHI _{III}	‘break sth. on sb.’	<i>to’%chi</i>	→	<i>to’<pi>h%chi</i> <i>to’<ri>h%chi</i>
change	PA’CHI _I	‘wash sth.’	PA’RIHCHI _I	‘wash sth. for sb.’	<i>pa’%chi</i>	→	<i>pa’<pi>h%chi</i> <i>pa’<ri>h%chi</i>
+aff	HORI _{II}	‘search for sth.’	HOPI’RI _{II}	‘search for sth. for sb.’	<i>ho%ori</i>	→	<i>ho<pi>%ori</i>
	YĒ _I	‘do sth.’	YĒHPI _I	‘do sth. to sb.’	<i>yĕ%</i>	→	<i>yĕh-pi</i>
	CHOObI _{I-III}	‘put sth.’	CHO’BIPI _{III}	‘put sth. for sb.’	<i>choo%bi</i>	→	<i>cho’%bi-pi</i>
	KOXI _{III}	‘spread sth.’	KOXIHTS’IPI _{III}	‘rub sth. on sb.’	<i>ko%xi</i>	→	<i>ko%xih%ts’i-pi</i>

All this suggests that the system does not encourage combinations of more than one transitive verb, but, interestingly, neither does it encourage combinations of two intransitive verbs only, as the pairs involving a Class A and a Class B verb just amount to 13 stems (See Tables 14 and 15 in Section 5). Because combinations of two transitive verbs or two intransitive verbs are not encouraged as pairings, the best way to look at attested patterns involving three classes is by way of treating them as really involving pairings of a transitive verb and an intransitive verb. For example, the way we treat networks like (4a) with three members is to split them into pairs involving two members, like in (4b).

¹⁰ This means that for verbs such as ’URI ‘sell to sb.’, TO’CHI ‘break sth.’ or CHOObI ‘put sth.’ in Table 8, the ditransitive verb comes from the verbs inflected as Class III.

- (4) a. I+III+B → I+B¹¹ / I+III
 I+A+B → I+A / I+B

The approach outlined in (4b) offers a valuable entry point for the study of data through binary combinations, specifically those involving pairs of [tr+A] or [tr+B]. This perspective allows us to concentrate on examining how intransitive verbs, inflected as either Class A or Class B, form associations with transitive verbs in terms of valency changes. We can compare their distribution in Table 9.

Table 9. Pairings of Class A and Class B

	Total	Unpaired	Paired		
			Total	A+B	tr+intr
A	234 100%	155 70%	79 30%	13 20%	66 80%
					20 I+A 30% 6 II+A 10% 40 III+A 60%
B	384 100%	85 20%	299 80%	13 5%	286 95%
					83 I+B 30% 32 II+B 10% 171 III+B 60%

Table 9 reveals an intriguing pattern regarding the distribution of intransitive verbs in the pairs. Specifically, 70% of Class A verbs show no inclination towards forming pairs, whereas an opposing trend is observed for Class B verbs, with 80% engaging in paired relationships. Consequently, the 13 instances of pairs [A+B] hold greater significance for Class A verbs (20%) compared to Class B verbs (only 5%). It is also noteworthy that the distribution of the transitive classes remains consistent across the classes of the intransitive verbs in the pairs. This implies that one cannot predict the class of the transitive verb from the class of the intransitive verb, further suggesting that the assignment of class membership of transitive verbs is lexically determined and operates independently of valency-change processes.

The situation further suggests that, in the context of valency changes, the starting point is the transitive verb within the pair, so that class shifting reveals a process of valency reduction [i.e., tr>intr] rather than valency increase [i.e., intr>tr] (although in Section 6.3, we

¹¹ In cases like (4b), we have only studied instances where the Class B extension was based on the transitive reading of I or II.

pursue a historical analysis of the data in terms of valency increase). In Table 10, we provide insights into how transitive verbs respond within pairs (our focus here is solely on the 363 instances involving just one transitive verb).

Table 10. Pairings of the transitive classes

	Total	Unpaired	Paired		
			Total	A	B
I	108 100%	12 11%	96 89%	20 21%	76 79%
II	58 100%	21 36%	37 64%	6 16%	31 84%
III	225 100%	15 6%	210 94%	40 19%	171 81%

The data in Table 10 highlights a notable trend: the overwhelming majority of verbs from Classes I and III exhibit an intransitive counterpart, but the pattern is considerably less pronounced for Class II verbs, where the percentage is noticeably lower (64% compared to 89% and 94%). The reasons behind this discrepancy remain unclear. Contrastingly, there is no significant difference in the distribution of the intransitive classes across Classes I-III. As the majority of valency pairs involve a Class B verb (around 80%), we will concentrate on those verbs first.

4 Class B verbs

We treat Class B as a class that contains middle verbs. We base our analysis on various observations. On the one hand, the class is a productive class for borrowing middle verbs from Spanish (i.e., verbs inflected with the reflexive pronominal paradigm, Maldonado 2006). On the other hand, and as we have seen in the previous section, 80% of Class B verbs in our sample occur in a pair with a corresponding transitive verb. In this respect in Section 4.2, we show that a Class B verb modulates the semantics of its transitive correlate by adding notions typically associated with middle voice. In this light, the 85 unpaired verbs of Class B in our sample can be seen as *media tantum* verbs. We will treat these verbs first, since they are verbs unique to Class B and serve as best examples of the semantic profile of the class.

4.1 Unpaired verbs of Class B as *media tantum* verbs

Almost 70% (57/85) of unpaired verbs of Class B convey semantic notions which can be readily classified in the semantic domains that Kemmer (1993) proposed as associated with

middle voice from a typological point of view. Such domains include self-oriented actions (commonly expressed by reflexive pronouns in other languages), body actions including postural and motive actions, psychological actions, as well as reciprocal actions and spontaneous changes affecting inanimate entities. Examples of verbs from the different domains are given in Table 11.

Table 11. Verbs exclusively belonging to Class B (Part 1)

body	self-oriented:	KAS+KRUSI	‘cross oneself’	2
	grooming:	HĒ’+NU	‘cover one’s head’	1
	corporal:	BEYE	‘fast’	13
		PI’TS’I	‘urinate’	
		XENA	‘yawn’	
	postural:	BAATI	‘sit down’	2
		SAHTS’I	‘be sick in bed’	
	motion:	KURI	‘drag oneself’	14
		PHETS’I	‘stumble’	
		SOTS’I	‘ride’	
psychological:	SURI	‘be shy’	7	
	PHITI	‘make an effort’		
reciprocal :	PÀAWI	‘fight’	7	
	TĒNYE	‘get married’		
	TĒĒTI	‘meet’		
spontaneous:	KITS’I	‘for a plant to break by being pulled’	11	
	WEXBI	‘for a thread to get tangled’		

The remaining 28 unpaired verbs of Class B in our sample can be classified as “agentive activities”, mostly performed by human actors, but also including situations involving the weather (i.e., atmospheric situations). Examples are given in Table 12. The semantic profile of these verbs does not fit the typological profile of a middle verb in Kemmer (1993), but they have also been reported as middle verbs in the related Otomi languages (see Palancar 2004, 2006), because like in Matlatzinca, they are grammatically treated like other canonical middle verbs. This treatment does not only suggest that the semantic scope of middle voice in Otomian languages is somewhat typologically idiosyncratic, but also, that it is an old feature inherited from Proto-Otomian, which lives on in the different languages of the family.

Table 12. Verbs exclusively belonging to Class B (Part 2)

agentive activities: human	’ĒPI	‘lit fire’	26
	HĒTS’I	‘fly’	
	TI+TAWI	‘carry water’	
	KWA’CHI	‘grind corn’	
	XUHCHI	‘wash up dishes’	
	atmospheric	HUTI-NINHUPI	
	TIITS’I	‘for the sky to cloud over’	

4.2 Pairs involving a Class B verb and a transitive verb

In pairings with transitive verbs, a Class B verb functions as a middle voice correlate, giving rise to a variety of semantic readings proper of the middle semantics in Matlatzinca. The notions include an **agentive activity** reading which is atelic and customary, like in the pair in (5) illustrated by the verb NĒ'CHI_{III} 'prepare lunch for sb.' ~ NĒ'CHI_B 'have lunch'. Other pairs include YOXI_{III} 'prepare dinner for sb.' ~ YOXI_B 'have dinner'; KWEHCHI_{III} 'sweep sth.' ~ KWEHCHI_B 'sweep'; XI'TS'_{III} 'water (plants, a field)' ~ XI'TS'_B 'water'; or KUBI_{III} 'make sb. go away' ~ KUBI_B 'run'.

- (5) a. pero *ga* {*to*' *nĕ'chi_{III}-hĕ*}
but PRTCL S1SG.CPL prepare.lunch[O3]-PL[O]
'But I prepared lunch for them.' (Txt)
- b. {*khwen=té* *nĕ'chi_B*}
S1PL.EXCL.INCPL=STF_{MIDD} have.lunch
'We had lunch.' (Txt)

The verb of Class B may also render an **autonomously performed action**, mostly self-oriented, as shown in the pair in (6) by the verb KWAHCHI_I 'hurt sb.' ~ KWAHCHI_B 'hurt oneself' and by MEWI_{III} 'change sth.' ~ MEWI_B 'move (change address)' in (7). Other pairs include KANCHI_I 'hit sth./sb.' ~ KANCHI_B 'hit oneself'; 'ÁARI_{III} 'cut sth. with a blade' ~ 'ÁARI_B 'cut oneself with a blade'; or SITI_{III} 'grab' ~ SITI_B 'hold onto sth.'

- (6) a. {*tú kwahchi_I*} *ni*' *n ye n sa*
S3[SG].CPL hurt POSS3SG CLF hand CLF tree
'He (accidentally) hurt his hand on the tree.' (Txt)
- b. *pe* {*gá ho'=té kwahchi_B*}
already S1SG.CPL MANN=STF_{MIDD} hurt
'I hurt myself that way.' (Txt)
- (7) a. {*ro'ma mewi_{III}*}
S3PL.IMPV change[O3SG]
'They were changing it.' (Txt)
- b. *ka* {*ron=té mewi_B*}
PRTCL S3PL.INCPL=STF_{MIDD} change
'They're moving.' (Txt)

But just in the same way, a Class B verb in the pair may express the anticausative reading of the transitive verb by rendering its action as a **spontaneous** state of affairs which happens without the subject exerting control. For this reading, the intransitive subject of the Class B verb may be inanimate, as shown with the verb MEWI 'change' in (8). Other pairs include CHUNTA_{III} 'wake sb. up' ~ CHUNTA_B 'wake up'; CHOXI_{III} 'tire sb.' ~ CHOXI_B 'get tired'; or PHIXTI_{III} 'spill sth.' ~ PHIXTI_B 'get spilled'.

- (8) a. {*ro'ma' mewi_{III}*}
 S3PL.IMP change[O3SG]
 'They were changing it.' (Txt)
- b. *t'i ka {ré mewi_B}*
 DEM PRTCL S3SG.CPL_{MIDD} change
 'And it (the weather) changed altogether.' (Txt)

Likewise, a Class B verb renders a **reciprocal action**, like with the verbs RA'RO 'split sth.' and SANĪTA 'greet' in (9) and (10), respectively. Other verbs include SE'KI_{III} 'scold sb.' ~ SE'KI_B 'scold each other'; 'UXI_{II} 'push sth./sb.' ~ 'UXI_B 'push each other'; and PE'PI_I 'hug sb.' ~ PE'PI_B 'hug each other'.

- (9) a. {*khwén=tú ra'ro_{III}*} *puyahkha*
 S1PL.EXCL.INCPL=STF_{TR} split[O3SG] sometimes
o yahkha {ré mhe=té nonts'i_B} te'so
 or at_times S3SG.CPL time=STF_{MIDD} shake all
 'Sometimes we're splitting it (the corn by color), or at times it gets all mixed up at some point'. (Txt)
- b. {*rú+khwe'be ra'ro_B*}
 S1PL.EXCL.CPL.IRR split
 'Let's split up.' (Txt)
- (10) a. *chhi ren ga {khwen=tú sanĭta_{III}}*
 but 3_{PRO} COP S1PL.INCPL=STF_{TR} greet[O3SG]
 'But it's him we're greeting.' (Txt)
- b. {*ká' handi_A*} *'ix ka {kwe'be sanĭta_B}*
 S3SG.CPL get.closer and PRTCL S1DU.EXCL.CPL greet
 'He got closer and then we greeted each other.' (Txt)

But the most productive and easiest reading to obtain in a pair is when the Class B verb renders an **impersonal/passive** reading, by portraying the action of the transitive verb as happening due to some unspecified agent. The case is illustrated in the contrast in the examples in (11). Other examples include: 'URI_{II} 'toast sth.' ~ 'URI_B 'be toasted'; KĪNCHI_I 'crash, grind (seeds)' ~ KĪNCHI_B 'for a seed to get crashed'; TO'TS'_I 'pluck (fruit)' ~ TO'TS'_B 'for fruits to get collected'; NONI_{III} 'plough (a field)' ~ NONI_B 'be ploughed (field)'; and HUTI_{III} 'bury sth./sb.' ~ HUTI_B 'be buried'.

- (11) a. *ahá, n to sa ho' {ri wats'i_{III}}*
 ahah CLF DIM wood PRTCL S2[SG].POT roll_up[O3SG]
 'Ahah, on the wood you roll it (the thread) up.' (Txt)
- b. *por_eso {kú'=ré wats'i_B}* *n mhewi*
 because_of_that S3SG.INCPL=STF_{MIDD} roll_up CLF tortilla
 'Because of that, it's eaten (it's rolled up) with a tortilla.' (Txt)

4.3 A transitive extension of Class B

Speakers may inflect a given transitive verb as a Class B verb to express that the agent performed the action with the interest to be affected by it. The verbs in question commonly have acquisition semantics and the affectedness is usually portrayed as beneficial for the subject (i.e., auto-benefactive). The (b) examples in (12) and (13) illustrate this with the verbs PĒNTI ‘find’ and HORI ‘search’.

(12) a. *'ix* {*ko'bu* *'ari_n*}: *nt'ani* {*'o'* *pĕnti_i*}?
 and S1DU.EXCL.CPL ask[O3SG] what S2SG.CPL find
 ‘And we asked her: “what did you find?”.’ (Txt)

b. *pero ne ma' yo'xi, xa' _yahkha* {*tú'=ré* *pĕnti_B-hĕ*}
 but PL big viper never S1SG.INCPL=STF_{MIDD} find-[O3]PL
tit'i
 DEM
 ‘But the big vipers, I have never come across those.’ (Txt)

(13) a. *ta ga* {*rúh* *t-hori_n*} *n sa*
 PRTCL PRTCL S1SG.INCPL.IRR STF-search CLF wood
 ‘And I’d be looking for a stick.’ (Txt)

b. *pĕchhi ren ga ret'ĕ* {*tá'tú* *ta_i-hĕ*} *n sanĭta*
 now 3_{PRO} COP 3_{PRO} S3.POT do-PL[O3] CLF effort
gi {*ro+man=té* *hori_B*} *n to mandaru*
 SUB S3PL.IMPF=STF_{MIDD} search CLF DIM work
 ‘And now it’s them who’d do the effort by looking for a job (for themselves).’ (Txt)

This extension, which falls nonetheless among the possible realizations of middle voice, is however, not found in related Otomi-Mazahua languages, suggesting that it is a Matlatzincan innovation, possibly from a calque of the construction in Spanish due to language contact, (e.g. *se ha comprado un coche* ‘S/he has bought herself a car’).

4.4 Productivity of pairs involving a Class B verb and a transitive verb

As a general principle, all transitive verbs can also be inflected as Class B verbs to convey middle voice nuances in their meaning. This means that the derivation of middle readings from the semantics of transitive verbs by a change to membership of Class B is for the most part a semantically motivated and productive mechanism; a mechanism allowed as long as the derivation makes sense in semantic terms. Evidence for the productivity of class membership shifting as a mechanism for valency change comes from the treatment of loans, as shown by the two loan verbs ‘AKOMPAÑARU ‘accompany’ (Sp. *acompañar*) and ‘ENTREKARU ‘deliver’ (Sp. *entregar*) in the pairs in (14) and (15), respectively.

- (14) a. *gaki ga {rú 'akompañaru_{III}-hë}*
 1SG_{PRO} PRTCL S1[SG].POT accompany-PL[O3]
 'I will accompany them.' (Txt)
- b. *{chhen=té 'akompañaru_{B}}}*?
 S2PL.INCPL=STF_{MIDD} accompany
 'Do you accompany each other?' (Txt)
- (15) a. *para_que_así mu ga {rúkho+'ru 'entrekaru_{III}}}*
 so_that_thus when PRTCL S1PL.INCL.CPL.IRR deliver[O3SG]
 'So that when we're going to deliver it...' (Txt)
- b. *chhi pëchhi para be' choyata, ka {tá'+ré 'entrekaru_{B}}}*?
 and now for P ritual_speech PRTCL S3SG.POT deliver
 'And now with respect to the ritual speech, when is the exchange of
 positions carried out?' (Lit. '...when is it delivered?') (Txt)

However, in some of the pairs, the reading obtained by the verb inflected as a Class B verb cannot be compositional: it is fixed and has lexical idiosyncrasies. For example PENSARU 'think of sth.' is a Class III verb from Spanish *pensar* with the same meaning, but as a Class B verb, despite the possibility of having productive middle readings from its Class III verb, it also means to 'be a believer in Christ' as shown in (16b), which is a Matlatzinca-only extension (i.e., a meaning that cannot be derived from the semantics of the transitive verb and which does not exist in Spanish). Likewise, the verb KUBRARU 'charge money for sth.' from the Spanish transitive verb *cobrar* can only be inflected as a Class B verb, as shown by the infelicity of (17b).

- (16) a. *cuando {rú pensar_{III}-hë-bi}*
 when S1.POT think-PL-EXCL
cuando ga {rú+khwé' na hitë_{n}}}
 when PRTCL S1PL.EXCL.INCPL.IRR down have_steam_bath
 'When we're thinking of when we're going to have a steam bath.' (Txt)
- b. *{tú'=té pensar_{B}}}*
 S1SG.INCPL=STF_{MIDD} be_a_believer
 'I'm a believer (in god).' (Txt)
- (17) a. *{ku'=té kubraru_{B}}} ne canción?*
 S3SG.INCPL=STF_{MIDD} charge PL song
 'Is he (i.e., the musician) charging money for the songs?' (Txt)
- b. **{ku'=rú kubraru_{III}}} ne canción?*
 S3SG.INCPL=STF_{TR} charge PL song
 Intended reading: *idem* (16a)

5 Class A verbs

Non-middle verbs in Spanish are borrowed into Matlatzinca as members of Class A, which is also the class with the greater number of unpaired verbs (155 in our sample). The class contains verbs with a great miscellany of meanings, and it serves as a default class for basic intransitive verbs. In Table 13 we give a few representative examples of the class, organized in sundry semantic fields.¹²

Table 13. Some verbs exclusively belonging to Class A

states of affairs	HA'CHI	'be/get cold'	corporal	NHIXCHI	'be/get hungry'
involving	TĒ	'be/get cooked'	experiences:	SO	'feel'
inanimates:	T'I	'be/get chilli hot'		YAKI	'shiver'
	CHE'KI	'drip'		K'WE'E	'cry'
	KONI	'be/get slippery'		NI'NI	'be/get full'
	TĪNIRI	'tremble (ground)'		HA'XA	'breathe'
	HUBI	'for plants to fall'		KĪS+YA	'sigh'
	XABI+SE	'freeze'		NA+TAWI	'be/get thirsty'
agentive	YUWI	'buzz'		SON+KĪNI	'dribble'
activities	SISI	'eat'	cognitive	SOWI	'moan'
	TĒ'CHI	'scrub clothes'	or psychological	NHĒTS'I	'be/get conscious'
	XU	'make firewood'	experiences:	YĒ'+NU	'be/get dizzy'
	TÁATI	'laugh'		YU+NU	'be/get crazy'
	T'U+NA	'speak'	motion or manner	PHĒTS'I	'go up'
	XIN+SIBI	'growl'	of motion:	TĪTI	'go down'
	YA'+TRIKU	'sow wheat'		NI'I	'pass'
	PĒN+RIBAWI	'read'		TRU	'walk'
	BE'+HIN-TA	'be a teacher'		YĒNDI	'totter'
atmospheric:	MAABI	'rain'		NEWI	'come'
	YA'BI+NTO	'hail'		HĒKI	'get away'
	XITS'I+YEBI	'drizzle'		CHAPI	'jump'
	XA'+XICHHI	'snow'	posture	CHHORI	'sit down'

The semantic fields we have used in Table 13 to group the sample of Class A verbs also correspond to several typical semantic fields of the middle voice in Matlatzinca. One may then wonder why Class A verbs are not middle verbs too. There are several reasons why such an analysis would not work; the most important being that Class A verbs do not express typical self-oriented situations, reciprocal or impersonal/passive. Such areas are neuralgic to middle voice. Also, no Spanish middle verb is borrowed as a Class A verb in Matlatzinca. On the marking side of things, the paradigm of Class B is already an independent morphological construct from Class A (see the contrast involving inflectional formatives in

¹² Table 13 comprises a substantial number of compound verbs (V+N). Within our corpus, there are a total of 109 compound verbs, with 28 ambitransitive, three exclusively transitive, and 78 solely intransitive. Notably, 57 of these compounds are inflected as members of Class A, and among them, 44 exclusively belong to Class A.

Table 1 for the realization of the completive realis between the two classes)¹³, but it is nonetheless largely an elaboration on Class A by means of the stem formative *té*; a formative that we have glossed as ‘middle’, given the middle semantics of Class B.

But even if we conclude that Class B verbs are middle verbs and Class A verbs are not, the fact remains that both classes have many verbs with similar semantics, to a point that we cannot thus predict the membership of a given verb of Class A or B based solely on its meaning. We assume that membership of these classes is lexically determined when it does not involve a clear diathetic change. This means it has to be learned rather than inferred. In other words, Matlatzinca speakers have to know the class membership of unpaired verbs as a fact of their language. This would be so in such a way that for verbs like the ones in (18), which could be in principle characterized as semantically middle because they depict involuntary situations involving the body, only the ones in (18b) belonging to Class B would be true middle verbs.

- (18) a. Class A: CHIYU ‘weep’; NO’SI ‘limp’; YAKI ‘tremble’; YĒNDI ‘stagger’; YĒ’+NU ‘be/get dizzy’; KOH+CHI’+TAWI ‘sweat’; etc.
 b. Class B: KHĒTS’I ‘cough’; K’ONTI ‘stutter’; SOTI ‘vomit’; PHETS’I ‘stumble’; HON-TA+PI ‘go to the toilet’; K’E+NU ‘snore’; etc.

In our sample, there are 13 verbs which form a pair A+B. Retaining a lexical core in common, the five verbs in Table 14 could be said to display lexicalized idiosyncrasies, while the Class B verbs in the pairs in Table 15 could be seen as related to the ones in Class A by changes of meaning proper of middle voice.

Table 14. Pairs of Class A and Class B

	Class A	Class B
KOXBI	‘slide’	‘slip’
KABI	‘lie’	‘lay eggs’
NUTS’I	‘germinate’	‘grow’
PA-N+BUH+TIRI	‘be afraid’	‘get frightened’
PĒTI	‘for a body part to get numb regularly’	‘for a body part to get numb punctually’

Table 15. Other pairs of Class A and Class B

	Class A	Class B
NO’+NASARU	‘plow with hoe’	‘be/get plowed’
HON+TÉ’PATS’I	‘search for relays’	‘for relays to have been searched’
HĒ+ROSARIO	‘pray the rosary’	‘for a rosary to have been ‘prayed’
HĒS-THETI	‘cook tamales’	‘for tamales to have been cooked’
TOS+CHICHARO	‘shell peas’	‘for peas to have been shelled’
HOH+PIONESI	‘hire oneself out as laborer’	‘for someone to be available as a laborer’
PIMBI	‘make bed’	‘for the bed to be made’
TE’+NU	‘gore’	‘gore each other’

¹³ The same happens in the potential and the imperative, see Palancar & Carranza Martínez (2022).

In contrast, in the 66 pairings with transitive verbs in our sample, an intransitive verb of Class A may present the action of its transitive correlate as an agentive activity. When this happens (38 cases), the class shift reminds one of a semantic antipassive that defocuses the O-argument of the transitive verb (Chamoreau 2015). However, in the remainder of cases (28 cases), the Class A verb in the pair represents the inchoative reading in couplets of the inchoative-causative type, where the O-argument of the transitive verb becomes the S-argument of the Class A verb; an anticausative. In the pairs where this happens, the state of affairs expressed by the Class A verb is of an autonomous event (22 cases) or a resultative state (5 cases). Some examples of these situations are given in Table 16.

Table 16. Table 16. Pairings of transitive verbs with Class A

Antipassive	agentive activity	TÁNI	I	‘buy sth.’	A	‘go shopping’
		XE’PI	I	‘harvest (corn)’	A	‘do the harvest’
		HÉ	II	‘see sth./sb.’	A	‘see, have sight’
		NĒBI	III	‘dance (a dance)’	A	‘dance, kick’
		CHA’+NA	III	‘shout at sb.’	A	‘shout’
Anticausative	autonomous event	TÁCHI	I	‘drop (button, coin)’	A	‘fall (button)’
		HĒNCHI	II	‘leave sb.’	A	‘stay’
		BA’RI	III	‘lay sb. down’	A	‘lie down’
		YĒ	I	‘make sth. ‘	A	‘exist’
	resultative state	CHIPITU	III	‘make sth. smaller’	A	‘get/be small’
		WĒTI	III	‘tie sth. up’	A	‘get/be tied up’
		YOWI	III	‘dry sth. ‘	A	‘get/be dry’
		CHĪMPI	III	‘undress sb. ‘	A	‘get/be naked’

The antipassive readings and the anticausative readings in the pairs in Table 16 represent two opposite outcomes. Viewed in isolation, one might think that the shift of inflection class could be productive as a mechanism of valency change. In reality, it is not. This means that speakers learn about the two verbs in a pair as two separate lexical items, just as speakers of English would learn verbs such as *seat* and *sit* as two semantically related, but independent lexical entries. For example, if one were to follow the logic behind the pairs in Table 16, one could expect that the pairings in Table 17, which consist of a Class A verb plus a transitive verb, are possible. In reality, they are not.

Table 17. Impossible pairings of transitive verbs with Class A

*Antipassive	CH’ĪK’ĪRU	*I/*III	‘flirt with sb.’	A	‘flirt’
	CHOYA+TA	*I/*III	‘convince sb.’	A	‘be convincing’
	SON-TA	*I/*III	‘invite sb.’	A	‘invite’
*Anticausative	HĪ’Ī	*II/*III	‘get sth. in’	A	‘get in’
	CHIYU	*I/*III	‘make sb. cry’	A	‘cry’
	CHAHMU	*I/*III	‘make sb. walk fast’	A	‘walk fast’
	HA’CHI	*II/*III	‘cool sth. up’	A	‘get/be cold’
	MĪRI	*I/*III	‘kill sb.’	A	‘die’

6 Discussion

6.1 How to interpret the pairings?

In the previous section, we have shown that there are many pairings of verbs in Matlatzinca that are realized by the same stem and share a lexical core meaning. The verbs in such pairings inflect as members of different inflection classes. In the default case, the pairings involve members with different transitivity values. The verbs involved differ in aspects of their shared lexical meaning. The differences in meaning are associated with their change in class. Typically, a verb of Class A presents the action of its transitive correlate as an atelic activity or as a spontaneous event, while a verb of Class B has senses typically associated with middle voice. The semantic relation existing between a verb of Class A and its transitive correlate, while still transparent, is no longer productive. In contrast, for the majority of the cases, a transitive verb can have a middle correlate in a Class B verb, where the most productive reading is that of an impersonal/passive.

One way to regard the pairings is to think that the transitive and the intransitive occurrences are instances of the same lexical entry. Under this view, one would need to explain how a unified verbal lexeme can be a member of more than one inflection class simultaneously. For that one needs to address the question of how different information (semantic, syntactic and inflectional) are stored in a unified lexical entry. An alternative way is to think that typical inchoative/causative alternations of the type treated in Haspelmath (1993), exemplified in (18) for Spanish and English, instantiate two different, although obviously related, verbs. Under such a view, one needs to spell out the ways in which they are related. Given the reflexive pronoun in the Spanish intransitive verb in (18b), one could talk of the syntactic derivation of the intransitive verb from the transitive one. The phenomenon in English involves an instance of a ‘labile’ or ambitransitive verb, and what type of derivation they instantiate remains a matter of debate, because it is less clear whether the two instances in (19c) and (19d) involve two verbs or just one.

- | | | |
|------|-----------------------------|-----------------------------|
| (19) | (tr) | (intr) |
| | a. <i>rompí el vaso</i> | b. <i>el vaso se rompió</i> |
| | c. <i>I broke the glass</i> | d. <i>the glass broke</i> |

Examples like (19) instantiate a situation where there is a valency change. But there are plenty of other cases involving the middle voice construction in Spanish that do not involve an alternation in the transitivity value of the verbs involved, such as the active/middle alternations in (20). In these examples, the middle version of the transitive active verb conveys the subject’s self-interest in performing the action, while the middle version of the intransitive verb conveys the unexpectedness of the event (Maldonado 1988).

- | | | |
|------|---------------------------|------------------------------------|
| (20) | a. <i>compré un coche</i> | b. <i>me compré un coche</i> |
| | ‘I bought a car.’ | ‘I bought a car for myself.’ |
| | c. <i>cayó un árbol</i> | d. <i>se cayó un árbol</i> |
| | ‘A tree fell down.’ | ‘A tree fell down (unexpectedly).’ |

In alternations like these, the inflectional properties of the verbal base remain unaltered, so that in languages like Spanish or English the phenomenon involved falls outside the scope of the inflectional morphology. In contrast, it is well known that in other Indo-European languages such as Greek or Latin (also observed in non Indo-European languages like Mari (Finno-Ugric), Salo 2006), mediopassive diathesis is achieved by means of inflectional contrasts, and one wonders whether we are dealing with one verb with two paradigms, or two verbs, each one with its own paradigm. Class B in Matlatzinca would be equivalent to these mediopassive paradigms.

In the traditional view, the active paradigm and the mediopassive paradigm have been treated as two inflectional alternatives for the same lexeme. But whether passivization should be seen as an inflectional or a derivational phenomenon remains a matter of debate, mainly because it does not fall within the prototypical properties associated to either domain, spelled out in Dressler (1989). Stump (2006) argues for its inflectional character, while Anderson (1992), Sadler & Spencer (1998), and more recently Walther (2011a, 2011b, 2013) are all in favor of a derivational approach. Other authors, like Keenan (1985), prefer to split the functions and keep middle morphology within the inflectional domain, while passive goes to the derivational end. However, for the grammar of languages like Latin, Modern Greek, or Sorani Kurdish there is no morphological distinction between the mechanisms used to produce middle meanings and those used for passive meanings; a fact which turns Keenan's proposal untenable.

In the light of this discussion, there could be two main views on the status of the paradigm of Class B in Matlatzinca. In one view, which we can call the “inflectional view”, transitive verbs in Matlatzinca would be seen as having at least two paradigms: one paradigm would be used when the verb is in the active voice, and the other paradigm would be used when the verb is used with mediopassive readings, which commonly further involve a change in transitivity value. Under this view, the selection of the active paradigm for a given transitive verb is stored in the lexicon, while the paradigm of Class B would be seen as the only existing mediopassive paradigm for a transitive verb.

In an alternative view, which we can call the “derivational view”, the paradigm of Class B would be seen as functioning as an independent inflection class. The membership of active verbs is then translocated (via conversion) to membership of Class B to encode middle semantics. A similar analysis has been advanced for the *binyanim* of Hebrew grammar by Aronoff (1994). The *binyanim* are traditionally regarded as a set of phonological templates that operate as inflection classes which carry the function of modulating the core lexical meaning of a given verb to produce the typical changes observed in valency changing mechanisms, but not all verbs can be inflected in all *binyanim*. Aronoff's analysis of such structures is in terms of a network of interconnected inflection classes.

The inflectional view has its advantages. It would account for the pairings of transitive verbs with Class B verbs as resulting from a transparent morphosyntactic and morphosemantic operation: active to mediopassive. Such a view has certain elegance to it. However, the inflectional approach would also have to account for the reason why some transitive verbs and some verbs of Class B do not have a corresponding active or mediopassive paradigm. Such verbs would need to be seen as defective; deponent in the case of the 85 unpaired verbs of Class B in our sample. The approach would also encounter problems at explaining why the paradigm of Class B is actually morphologically based on

the paradigm of Class A, the primary intransitive class, and not on any of the transitive classes.

If one takes a derivational view instead, the one that we advocate here in consonance with Aronoff's (1994) proposal, the changes in meaning and the changes in valency are accounted for more naturally as lexical operations that target the core of a lexeme. In Matlatzinca, acquiring middle semantics by a given verb would be seen as attained from a change in the class membership of that verb into Class B; a derivational mechanism. We propose that one can produce a middle verb in Matlatzinca from an active one in a productive way. The restrictions upon the type of meaning that such a middle verb will have are of semantic nature. In other words, speakers convert a given active verb into a Class B verb if the outcome makes sense to them both semantically and pragmatically. The relation is bidirectional only in the case of Class III verbs, which is the only productive class for transitive verbs (i.e., speakers make natural pairings of Class III and Class B for loanwords, no matter the transitivity value that the new verb has when it is borrowed). In this light, we view changing membership of Class B as a productive grammatical mechanism to produce middle verbs in Matlatzinca. Such a view would account for the lexical idiosyncrasies of Class B in some of the pairings, and would certainly account for all the unpaired verbs in Class B. While all this happens to Class B, the derivation between transitive verbs and Class A verbs is no longer productive. In the pairings, while most verbs of Class A have antipassive semantics, one must learn them independently as different verbs (i.e., one does not use a Class A verb in spontaneous speech to produce an activity meaning of a transitive verb).

6.2 Typological correlates to Matlatzinca

In this section we review typological correlates to the phenomenon we have studied in Matlatzinca. We first start with two Mesoamerican language families and we then relate Matlatzinca to a phenomenon involving treating mediopassive verbs in French as members of a special inflection class.

In Mesoamerica, the Zapotecan and the Amuzgan languages also exhibit verb pairs with a contrast in valency, which involve contrasts in verbal inflection in some way or another. These languages are traditionally seen as related to the Oto-Pamean languages as part of the large Oto-Manguean stock, but in reality, their inflectional systems have nothing in common, and they are so disparate morphologically from one another that one cannot consider the commonalities as inherited, but rather as typological analogues which involve stretching of the possibilities of inflection to encode differences in meaning. Verbal morphology in the Zapotecan and Amuzgan languages is complex. Here we will only revisit the most relevant facts to illustrate the case at hand. To do that, we follow the description in Smith-Stark (2002) and Apóstol Polanco (2014) of two representative languages of these families: Chichicapan Zapotec and Xochistlahuacan Amuzgo. We start with Zapotecan.

Verbs in Zapotecan languages have been described as falling into different inflection classes attending to the allomorphy they select for building the habitual, the potential and the completive forms. In Chichicapan Zapotec, as it is the case in other Zapotec languages (Operstein 2015a), most transitive verbs are inflected as members of a large inflection class

that for expository convenience we could call Class I.¹⁴ The class also contains some intransitives. Historically related to Class I, there is another smaller class that we will call Class II, which mostly contains intransitive verbs, but also some transitive verbs. The two classes are illustrated in Table 18.

Table 18. Two classes of verbs from Chichicapan Zapotec

		HAB	POT	CPL
I	‘defend’ (tr)	ru-la	gú-la	ba-la
	‘sneeze’ (intr)	ru-sházhí	gú-sházhí	ba-sházhí
II	‘find’ (tr)	r-dzhěla	gí-dzhěla	bi-dzhěla
	‘stink’ (intr)	r-txa’a	gí-txa’a	bi-txa’a

Zapotecan languages have an interesting lexical organization, because “(t)he majority of Zapotec verbs come in morphologically related pairs of opposite valency” (Operstein & Sonnenschein, 2015: 17). There are unpaired verbs, like the ones in Table 18, but valency pairs are the norm. To give an indication, in Smith-Stark’s (2002) sample of 388 verbs, 118 are unpaired and 270 occur in pairs (30% vs. 70%). A few pairs belong to the same class, like the one in Table 19. This happens when the transitive exhibits a causative prefix.

Table 19. Causative alternation in Class I

		HAB	POT	CPL
I	‘chase’ (tr)	ru-sa+zhuʔn	gú-sa+zhuʔn	ba-sa+zhuʔn
	‘run’ (intr)	ru-zhuʔn	gú-zhuʔn	ba-zhuʔn

However, class change is the norm. The most common situation by far is that a Class I verb represents the causative version of a Class II intransitive verb, like in Table 20, (not vice versa, since Class II is mainly an intransitive class).

Table 20. Valency alternations involving Class I and II

		HAB	POT	CPL
I	‘soften’	(tr) ru-kuʔudzí	gú-kuʔudzí	ba-kuʔudzí
II	‘be/get soft’	(intr) r-guʔudzí	gí-guʔudzí	bi-guʔudzí
I	‘sweep’	(tr) ru-toʔoba	gú-toʔoba	ba-toʔoba
II	‘be/get swept’	(intr) r-yoʔoba	gí-yoʔoba	bi-yoʔoba

Class I verbs also include the causative correlates of verbs belonging to other classes, for example one that we can call Class III, while intransitive verbs of Class II may also have their causative correlates in verbs of yet another class that we can call Class IV.

¹⁴ Linguists working on Zapotecan languages commonly employ a taxonomy of inflection classes based on Kaufman’s (1994) reconstruction from Proto-Zapotec. Here Class I corresponds to an emergent subclass of Kaufman’s Class A, which Smith-Stark (2002) calls Class A-Causative, the /u/ in the prefixes for habitual and potential being the reflex of an old causative prefix; Class II: Class A; Class III: Class C; Class IV: Class B.

Table 21. Valency alternations involving other classes

		HAB	POT	CPL
I	‘cook’	(tr) ru-g+uu ² yi	gú-uu ² yi	ba-uu ² yi
III	‘be/get cooked’	(intr) r-aa ² yi	g-âa ² yi	gu-aa ² yi
IV	‘pull up’	(tr) r-ta ² adzhu	gí-ta ² adzhu	gu-ta ² adzhu
II	‘be/get pulled up’	(intr) r-ya ² adzhu	gí-ya ² adzhu	bi-ya ² adzhu

In the pairs in Tables 20 and 21, there is a co-occurring change of inflection class – in this, Chichicapan Zapotec is like Matlatzinca – but there is also a co-occurring change of stem in the pairs, which we take to be a fundamental difference with Matlatzinca. The change may involve the presence of old causative prefixes (nowadays not productive), as the prefix *g+* in the habitual of the verb for ‘cook’. Similarly, the stem change may involve an alternation in the consonantal onset of the root, sometimes ablaut and sometimes tonal changes in the potential. All of these changes, affixal or otherwise, suggest that the causative verb is (or was) derived first in a canonical affixal manner, and then the derived transitive verb was ascribed membership of a different inflection class, usually of Class I. Regardless of how predictable the stem change in the pairings may be end up being in relation to the rules one may want to postulate (none of them productive), the fact remains that the verbs in the pairs have different stems. As a general principle, one can conclude that valency changes in Chichicapan Zapotec are not achieved by inflectional changes. And yet, given in Table 22, there are two pairs where this happens (the same situation has been reported in other Zapotec languages too, see Operstein 2015b: 47 for references),¹⁵ however, the situation in Table 22 is as rare as having fully suppletive stems.

Table 22. Valency alternations by inflection class only

		HAB	POT	CPL
III	‘wash’	(tr) r-dxi ² ibi	txi ² ibi (←*g ² -dxi ² ibi)	gu-dxi ² ibi
II	‘be/get washed’	(intr) r-dxi ² ibi	gí-dxi ² ibi	bi-dxi ² ibi
III	‘paint’	(tr) r-dxa?	txâ? (←*g ² -dxa?)	gu-dxa?
II	‘be/get painted’	(intr) r-dxa?	gí-dxa?	bi-dxa?

We now move to Amuzgo. Following Apostol Polanco’s (2014) analysis, in Xochistlahuacan Amuzgo there are two inflection classes of verbs that contrast in person/number exponents and which for expository convenience we can call Class I and II. Class I verbs are inflected in person/number through tonal and suffix changes. In contrast, Class II verbs have an invariant root and receive a stem extension that is inflected in person/number. Both classes contain transitive and intransitive verbs. Examples are given in Table 23 for the progressive subparadigm. The stem extension characteristic of Class II is what remains of the inflectional forms of an old (now untraceable) auxiliary verb, which, having lost its lexical transparency and its phonological independence, now functions as a grammatical suffix (NB: many verbs in Amuzgo have a stem split between singular and plural, which operates independently from

¹⁵ Operstein (2015b) gives a third pair (*bagu* ‘cultivate’ vs. *ba’agú* ‘be cultivated’). However, as the verbs in this pair exhibit stem changes, we prefer to treat it as other verbs.

valency changes, see Palancar & Feist, 2015), (tone in the examples is represented by numbers).

Table 23. Classes I and II in Xochistlahuacan Amuzgo

	Class I	Class II
(tr)	‘push’	‘pull’
1SG	maa ² -ntykië ³¹ -ya ²	maa ² -ntyjaa ² +ndyö ²
2SG	maa ² -ntykie ¹ -’	maa ² -ntyjaa ² +ndyu ²
3SG	maa ² -ntykie ¹	maa ² -ntyjaa ² +ñe ³
1PL.INCL	kwii ² -ntykië ² -yaa ³	kwii ² -ntyjaa ² +ndyö ³
1PL.EXCL	kwii ² -ntykië ² -ya ³¹	kwii ² -ntyjaa ² +ndyö ³¹
2PL	kwii ² -ntykie ² -’-yo ²	kwii ² -ntyjaa ² +ndyo ²
3PL	kwii ² -ntykie ¹	kwii ² -ntyjaa ² +ndye ²
(intr)	‘stumble’	‘slip’
1SG	maa ² -wii ² +tywi ³ -ya ²	maa ² -lei ² +noom ¹² +ndyö ²
2SG	maa ² -wii ² +tywi ³ -’	maa ² -lei ² +noom ¹² +ndyu ²
3SG	maa ² -wii ² +tywii ²³	maa ² -lei ² +noom ¹² +ñe ³
1PL.INCL	kwii ² -tei ¹ +tywi ² -yaa ³	kwii ² -lei ² +noom ¹² +ndyö ³
1PL.EXCL	kwii ² -tei ¹ +tywi ² -ya ³¹	kwii ² -lei ² +noom ¹² +ndyö ³¹
2PL	kwii ² -tei ¹ +tywi ³ -’-yo ²	kwii ² -lei ² +noom ¹² +ndyo ²
3PL	kwii ² -tei ¹ +tywii ²³	kwii ² -lei ² +noom ¹² +ndye ²

What is crucial for our purposes is that Class II verbs serve as the middle voice semantic correlates to many transitive verbs of Class I. An example of this is given in (21), (Apóstol Polanco, 2014: 137, our translation).

- (21) a. maa²-’ndy’iaa² Ma²ria³¹ ’u²
 PROG.SG-see[3SG] M. 2SG_{PRO}
 ‘Mary is seeing you.’
- b. maa²-’ndy’iaa²+ñe³ Ma²ria³¹
 PROG.SG-SEE+SFT[3SG] M.
 ‘Mary is seeing herself.’

The situation in Amuzgo in (21) is typologically similar to Matlatzinca, but there are differences. Class II also has transitive verbs. For such verbs, there is no possible correlate in another class to express the typical contrasts of valency changes, and the change is obtained by syntactic means eliding the object. Some have semantic antipassive readings like in (22); some middle readings, like (23). The readings in question are conventional and lexicalized, (Apóstol Polanco, 2014: 142-142, our translation).

- (22) a. maa²-kaa²+ñe³ tyo²-chjoo³ lkeiiⁿ³
 PROG.SG-pinch+SFT[3SG] person-small rice
 ‘The boy is sweeping the rice.’

- b. *maa²-kaa²+ñe³* *tyo²-chjoo³*
 PROG.SG-pinch+SFT[3SG] person-small
 ‘The boy is sweeping.’
- (23) a. *maa²-’ndyee¹+ñe³* *Ma²ria³¹* *’u²*
 PROG.SG-pinch+SFT[3SG] M. 2SG_{PRO}
 ‘Mary is pinching you.’
- b. *maa²-’ndyee¹+ñe³* *Ma²ria³¹*
 PROG.SG-pinch+SFT[3SG] M.
 ‘Mary is pinching herself.’

Finally, we also find a typological parallel for Matlatzinca in the inflectional treatment of mediopassive verbs in European languages like French (also for example in Standard Italian).¹⁶ If we divide the French verbal lexicon into inflection classes depending on what auxiliary verbs select to form the periphrastic past tense, we end up with two classes: one would be characterized by the selection of AVOIR ‘have’ and the other by ÊTRE ‘be’. Under this view a number of situations emerge regarding the way verbal lexemes would relate to these two classes. These are shown in Table 24. Shading represents intransitive verbs.

Table 24. The *avoir* and the *être* class from French compared

	AVOIR class		ÊTRE class	
i.a	COURIR ‘run’ ÊTRE ‘be’ <i>etc.</i> —	<i>j’ai couru</i> ‘I ran’ <i>j’ai été là-bas</i> ‘I was there’	—	—
i.b	DEVENIR ‘become’	<i>j’ai devenu une vedette</i> ¹⁷ ‘I became a vedette’	ALLER ‘go’ DEVENIR ‘become’	<i>je suis allé là-bas</i> ‘I went there’ <i>je suis devenu membre</i> ‘I became a member’
ii.	DESCENDRE ‘take sth. down’	<i>j’ai descendu le bagage</i> ‘I took the luggage down’	DESCENDRE ‘go down’	<i>je suis descendu</i> ‘I went down’
iii.	LAVER ‘wash sth.’	<i>je l’ai lavé</i> ‘I washed it’	SE LAVER ‘wash’	<i>je me suis lavé</i> ‘I washed’
iv.	CASSER ‘break sth.’	<i>j’ai cassé le verre</i> ‘I broke the glass’	SE CASSER ‘break sth. on self’	<i>je me suis cassé une dent</i> ‘I broke a tooth’

¹⁶ We thank Grev Corbett for this observation.

¹⁷ The phrase “J’ai devenu une vedette,” where the verb DEVENIR is inflected as an avoir-class verb, originates from the 1996 show presented by the popular French comedic duo “Les Chevaliers du Fiel,” portrayed by Éric Carrière and Francis Ginibre. In this performance, one of the characters declares the statement that he has become a star of the stage (<https://www.youtube.com/watch?v=kJ44cFKhUGs>, last access 30 March 2024). The use of AVOIR in this context carries a robust pragmatic nuance of mocking a simplistic mode of speaking, proper of someone lacking formal education. This, in turn, underscores the fact that the choice of ÊTRE as an auxiliary with DEVENIR is indicative of a certain level of formal education.

The situation outlined in (i) pertains to the classification of basic intransitive verbs. In this context, the AVOIR class functions as a widely employed default, while the ÊTRE class constitutes a more restricted set, comprising only nine (high-frequency) intransitive verbs (ALLER ‘go’; VENIR ‘come’; ARRIVER ‘arrive’; PARTIR ‘leave’; DÉCÉDER ‘pass away’; MOURIR ‘die’; NAÎTRE ‘be born’; RESTER ‘stay’; and TOMBER ‘fall’). The scenario in (i.b) involves verbs of the ÊTRE class, which, in informal registers, are occasionally inflected by speakers as if they belonged to the default class. Moving on to (ii), this scenario involves six motion verbs that exhibit a labile nature, manifesting an inchoative/causative alternation (ENTRER ‘enter/put sth. in’; DESCENDRE ‘go down/take sth. down’; MONTER ‘go up/lift sth.’; PASSER ‘pass by/pass sth.’; RETOURNER ‘return/return sth.’; SORTIR ‘go out/get sth. out’). In this alternation, the verb is inflected as a member of the AVOIR class when used transitively, but as a member of the ÊTRE class when employed intransitively. Similarly, situation (iii) entails a distinction in transitivity values, where transitive active verbs align with the AVOIR class, while derived middle verbs align with the ÊTRE class. In French, like in a typical European language, middle verbs are initially formed through a productive syntactic mechanism involving reflexive pronouns. Once a middle verb is derived (e.g., LAVÉ > SE LAVÉ), it is subsequently inflected as a member of the ÊTRE class, rendering the ÊTRE class an open and productive category. Lastly, situation (iv) also revolves around the derivation of middle verbs. However, in this case, the transitivity of the base is maintained, illustrating a unique scenario where members of the ÊTRE class can also function as transitive verbs.

The functional parallels between French and Matlatzinca are the following: the situation in (i) in Table 24 mirrors the contrast between Class A and Class B. This would correspond in Matlatzinca to a situation like (i.a) in Table 25. The situation (i.b) corresponds to the few verbs given in Tables 14 and 15 above, which can be inflected in both classes. The rest of the situations in French in Table 24 mirror the contrasts between Classes I/II/III and Class B. The formation of middle verbs in French involving the addition of reflexive pronouns – a syntactic derivation – is inconsequential in this context. What holds significance is the treatment of middle verbs in both French and Matlatzinca as members of a distinct inflection class for inflectional purposes. The case of (ii-iii) corresponds to (ii.a) in Matlatzinca. The situation in (ii.b) further involves a Class A verb (this would be the labile verbs of French such as COURIR ‘run’ as in *je cours* ‘I run’ vs. *je cours un risque* ‘I run a risk’). Finally, the situation in French in (iv) in Table 24 corresponds to the Matlatzinca situation in (iii) in Table 25.

Table 25. The Matlatzinca verb classes

	Classes I/II/III	Class B	Class A
i.a		— XENA <i>ré xena</i> ‘yawn’ ‘s/he yawned’ HĒTS’I <i>ré hĕts’i</i> ‘fly’ ‘s/he flew’	CHAPI <i>ká’ chapi</i> ‘jump’ ‘s/he jumped’ KUXTA <i>ká’ kuxta</i> ‘blink’ ‘s/he blinked’
i.b		KOXBI <i>ré koxbi</i> ‘slip’ ‘s/he slipped’	KOXBI <i>ká’ koxbi</i> ‘slide’ ‘s/he slid’
ii.a	TOCHI (I) <i>tú tochi</i> ‘break’ ‘s/he broke it’ sth.’ HATI (II) <i>tú hati</i> ‘cover’ ‘s/he covered sth./sb.’ him/her/it’	TOCHI <i>ré tochi</i> ‘break’ ‘it broke’ HATI <i>ré hati</i> ‘cover’ ‘s/he covered oneself’ himself/herself (with blanket)’	—
	SANĪTA (III) <i>tú sanĭtahĕ</i> ‘greet sb.’ him/her’	SANĪTA <i>ro’ re sanĭta</i> ‘greet each other’ ‘they greeted each other’	—
ii.b	CHUNTA (III) <i>tú chunta</i> ‘wake sb.’ ‘s/he woke him/her’ TANI (I) <i>tú tani</i> ‘buy sth.’ ‘s/he bought it’	CHUNTA <i>ré chunta</i> ‘wake up’ ‘s/he woke up’ TANI <i>ré tani</i> ‘get bought’ ‘it was bought’	CHUNTA <i>ká’ chunta</i> ‘be awake’ ‘s/he was awake’ TANI <i>ká’ tani</i> ‘go shopping’ ‘s/he went shopping’
iii.	PĒNTI (I) <i>tú pĕnti</i> ‘find sth.’ ‘s/he found it’	PĒNTI <i>ré pĕnti</i> ‘come across’ ‘s/he came across’ him/her/it’ sth./sb.’	—

6.3 The diachrony of Class III and Class B

The typological similarities we observed in French and Matlatzinca are striking and one wonders whether they may be due to the fact that the verbal complex is periphrastic in composition.¹⁸ In the case of French, this is obvious, because the ancillary element (in the sense of Bonami 2015), which expresses the morphosyntactic information in the periphrase is an auxiliary verb. In Matlatzinca, the periphrastic construction is more complex from a morphological point of view, because of the character of the ancillary elements it comprises. On the one hand, we have the inflectional formative, which is an independent grammatical word, but at least synchronically we cannot think of it as an inflected form of a verbal lexeme serving as an auxiliary (see Palancar & Carranza Martínez, 2022). On the other hand, as we recall in the examples in (24), in the construction, depending on the subparadigm, we may

¹⁸ Note that Class II verbs in Amuzgo in Table 23 were also periphrastic in composition historically.

(Palancar 2011), there is an inflection class of verbs whose inflection is still characterized by the fact that verbs require the stem formative *tí* (or variants of it). The class has heterogeneous membership from a semantic and a grammatical point of view. In Tilapa Otomi, for example, the class contains the miscellanea of verbs in Table 26 (forms given in the first person incomplete realis). Here we have some ditransitive verbs like in (a), many transitive verbs (b), labile or ambitransitives (c), and many intransitives, of which a substantial part is unmarked (d), while others exhibit the middle prefix *N-* (e).

Table 26. Some verbs of the *tí*-class from Tilapa Otomi

a.	trá tí	'üni	(dtr)	'give sth. to a sb.'
b.	trá tí	k'wáni	(tr)	'boil sth.'
	trá tí	'mbēdi	(tr)	'lose sth.'
	trá tí	'ot'i	(tr)	'dry sth.'
c.	trá tí	k'ats'i	(tr/intr)	'gather cattle'
	trá tí	münts'i	(tr/intr)	'gather, harvest'
	trá tí	mūndo	(tr/intr)	'gather, heap up'
d.	trá tí	nehki	(intr)	'be dawn'
	trá tí	khü't'i	(intr)	'drip, leak'
	trá tí	phët'i	(intr)	'tremble'
	trá tí	ñü	(intr)	'see each other'
	trá tí	zópho	(intr)	'talk to each other'
	trá tí	k'ént'i	(intr)	'get an ankle twisted'
e.	trá tí	n-khüni	(intr)	'get cloudy'
	trá tí	m-phëts'i	(intr)	'swim'
	trá tí	n-tx'öni	(intr)	'hide'
	trá tí	m-pödi	(intr)	'get to know each other'
	trá tí	n-hufi	(intr)	'hug each other'
	trá tí	n-thëts'i	(intr)	'hug each other (sexually)'
	trá tí	m-páhki	(intr)	'get something twisted'

It is generally agreed that Proto-Otomi split from Proto-Mazahua around the VI c. AD, possibly a little later as a result of the disintegration of the Teotihuacan culture in the VII c. AD (Wright Carr 1997). Cazes (1971) proposes about the same time frame for the separation of Matlatzinca and Tlahuica from Proto-Atzincan. Although it is more difficult to posit a comparably accurate time frame for the separation of Proto-Atzincan and Proto-Otomi-Mazahua, the degree of lexical and grammatical divergences between the two groups makes it certain that the separation happened before the Christian era. The facts from Otomi suggest that the class of verbs bearing the stem formative *tí* resulted from a merger of the two classes which survived in Atzincan and which exhibit the formatives *tú* and *té*. For the merger to happen, the markers in question must have already ceased to function as morphosyntactically transparent auxiliary constructions in Proto-Otomian, at least by the time of the separation of Proto-Otomi-Mazahua. This gives an idea of how old the Matlatzinca formatives are. However their function lived on. The periphrastic construction that gave rise to Matlatzinca Class III must have also served as a mechanism to produce new

verbs. This function does not only still survive in Matlatzinca, but was preserved in the merger in Proto-Otomi-Mazahua, because the verb class bearing the formative *tí* in Otomi languages is also the productive class to incorporate loan verbs from Spanish. In the case of Otomi, this happens regardless of the transitivity value of the verb, as shown in the three examples in Table 27 from Tilapa Otomi.

Table 27. Loans from Spanish in Tilapa Otomi

		Spanish INF			
trá tí hórbá	‘annoy’ (tr)	<i>jorobar</i>	←	JOROBAR _v	
trá tí gósá	‘enjoy’ (tr/intr)	<i>gozar</i>	←	GOZAR _v	
trá tí suhfri	‘suffer’ (intr)	<i>sufrir</i>	←	SUFRIR _v	

7 Conclusions

In this paper, we have shown that verbs in Matlatzinca fall into five classes whose membership is first mainly decided on transitivity values. There are three main properties that make Matlatzinca remarkable: one is that the classes are inflection classes with periphrastic composition. Another is that the transitive class that is the most marked is also the only one productive to incorporate new transitive verbs. A third one has to do with the fact that changes in the meaning and in the transitivity value of verbs, which in other languages are commonly attained by valency changing mechanisms that involve affixation or stem changes, are attained in Matlatzinca by changes in the inflection class membership of verbs. For example the verb XUK’A is a transitive verb meaning ‘burn sth.’ inflected as a member of Class III, but as a member of Class A it is an intransitive verb meaning ‘catch fire’ and as a member of Class B it means ‘get burned (unintentionally)’. We have argued that such membership changes are more productive than others.

We have suggested that a possible way to talk about the phenomenon of multiple class membership is to think that a given lexical entry would come with an associated network of different paired senses bearing different inflectional properties. As a consequence of the latter, the verbs are then inflected differently depending on the sense in which they are used. Another alternative view that we have proposed is to treat the diathetic changes observed as involving derivation. This implies that the phenomenon of multiple class membership is accounted for if we think of the inflectional paradigms as bearing particular semantics and that verbs gain such semantics by shifting inflection class. For Matlatzinca, this would be particularly the case of the intransitive classes, where Class A contains typical activity verbs proper of semantic antipassives (“buy sth.” > “go shopping”), but more particularly so to Class B, which we have treated as a mediopassive paradigm with verbs that convey typical middle voice semantics (“scratch something” > “scratch”). We have studied the behavior of 624 stems and we can conclude that switching the class membership of a transitive verb to Class B to obtain middle voice readings is a productive grammatical operation in Matlatzinca, while existing pairs between transitive verbs and Class A verbs are now lexicalized.

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Abbreviations

1, 2, 3	persons	MIDD	middle
CLF	classifier	NEG	neg
COP	copula	O	object
CPL	completive (when the gloss CPL stands alone it refers to “completive realis”)	P	preposition
		PL	plural
		POSS	possessive
DEM	demonstrative	POT	potential
DIM	diminutive	PRO	pronoun
DU	dual	PROG	progressive
EXCL	exclusive	PRTCL	particle
IMPF	imperfect	S	subject
INCL	inclusive	SG	singular
INCPL	incompletive	STF	stem formative
INF	infinitive	SUB	subordinator
INTR	intransitive	TR	transitive
IRR	irrealis	VEN	ventive.
MANN	manner		

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