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The conjugation classes of Tilapa Otomi: An approach from canonical typology

ENRIQUE L. PALANCAR

*A Thomas C. Smith-Stark[†]
en honor al noble vikingo en él
y a su pasión por Mesoamérica*

Abstract

From the seminal work by Aronoff (1994), the study of inflectional classes has become of interest in morphological theory. Most of our current knowledge of verb inflectional classes, also known as “conjugation classes”, remains circumscribed to European languages. On the other hand, the Oto-Manguean languages of Mexico have recently awoken interest because of their puzzling internal diversity and morphological abundance, but much of their morphological complexities remain poorly understood because of the lack of comprehensive materials. To increase our understanding of such classes, in this article I present an analysis of the three conjugation classes of Tilapa Otomi, an Otomian language close to extinction which belongs to the Oto-Pamean branch of Oto-Manguean. In the article, I also provide an example of how the canonicity of conjugation classes can be ranked following the approach advocated by Corbett (2009). The results of such an evaluation show that while two of the three classes of Tilapa Otomi are canonical to a certain extent, a third one is a very poor example of an inflectional class for the purposes of typological comparison.

1. Introduction¹

It is well known that languages vary in how they express the same inflectional information in different words. While in English, the phrases *shesings*, *she wants* or *sheopens* all involve the addition of the same ending *-s* to the verb to express that there is a third person singular subject, in Spanish there are two different endings in the corresponding forms, depending on which verb it is: *cant-a* ‘sings’ but *quier-e* ‘wants’ and *abr-e* ‘opens’. In some instances there are even three different endings; compare *cant-amos* ‘we sing’, *quer-emos* ‘we want’ and *abr-imos* ‘we open’. As Spanish verbs differ in the way they encode grammatical categories of tense and the person of the subject, these simple data illustrate the common knowledge that Spanish verbs fall into at least three different *inflectional classes*, defined in Aronoff (1994: 64) as “a set of lexemes whose members each select the same set of inflectional realizations”.

Although it is generally agreed that the function of inflectional morphology is to convey grammatical meaning (Anderson 1992), the existence of inflectional classes presents a challenge to this view, as they do not have any identifiable morphosyntactic function, that is, they are *morphomic* (Aronoff 1994). And while some languages do without them completely, inflectional classes are far from rare, and demonstrate a remarkable resilience over time (see Maiden 1992, 2005 for examples in Romance languages).

However, our knowledge of inflectional classes to date is largely based on European languages, and is consequently limited by their typological characteristics. A comprehensive theory of inflectional classes must expand its horizons beyond this, but to do so, there is a need for high quality linguistic materials on lesser known languages. The conjugation classes

of the Oto-Manguean languages from Mexico have recently received some attention in morphology because of their puzzling internal diversity and morphological abundance (see for example Finkel and Stump [2009] and Stump and Finkel [2007] for Comaltepec Chinantec, which are based on Pace [1990]), but all in all there are still very few studies that treat inflectional classes comprehensively, notable in this respect are the work by Angulo (1932) on Chichimeco and by Smith-Stark (2002) on Chichicapan Zapotec. With the goal in mind of expanding our knowledge and understanding of verb inflectional classes in Oto-Manguean, in this article I present a thorough analysis of the conjugation classes of Tilapa Otomi, an Otomian language of the Oto-Pamean branch which is on the verge of extinction.

The present article has three main goals: One goal is to present the inflectional properties of the three conjugation classes of Tilapa Otomi in detail because the classes are based on formal contrasts which are of interest for a theory of morphology. The interest lies in the fact that the contrasts go beyond the complexities posited by classes realized by inflectional endings (or thematic vowels) as in the well-known case of Indo-European languages (mainly Italic), also observed in Algic Yurok (Blevins 2005), while they keep some behavioral similarities with the *binyanim* of Semitic languages (Aronoff 1994: Chapter 5). A second goal is to advance generalizations concerning how class membership is assigned in the lexicon of Tilapa Otomi verbs. As I will show, the assignment displays unique characteristics not to be expected in inflectional classes. The third goal of the article is to introduce how the profile of a conjugation class can be evaluated following the canonical approach advocated by Corbett (2005, 2006, 2007). Such an approach serves as a useful *tertium comparationis* to understand the typological relevance of inflectional classes across languages against a theoretical space of structural possibilities. In this respect, I advance a simple way in which the qualitative criteria used in canonical typology can be measured in quantitative terms.

To achieve these goals, I have organized the article as follows. In the next section, I briefly introduce the basic notions of canonical typology together with the criteria introduced in Corbett (2009) to define canonical inflectional classes. This is intended as a way to introduce the theoretical background from which to achieve an evaluation of the canonicity of the conjugation classes of Tilapa Otomi. An introduction to the language and its different grammatical tenses is given in Section 3. Subsequently, in Section 4 I present the basic inflectional contrasts characterizing the three conjugation classes, and in Section 5 I discuss the full paradigms in greater detail. In Section 6, I study the various factors that contribute to the assignment of class membership, especially for two of the minor conjugation classes. The evaluation of the degree of canonicity of the three conjugation classes is given in Section 7. Final remarks follow in Section 8, along with a brief summary of the proposal.

2. Canonical inflectional classes

In this article, I evaluate the conjugation classes of Tilapa Otomi against the reference background provided by Corbett's (2009) approach to inflectional classes from a canonical typology perspective. Canonical typology has been previously applied to the syntax of agreement in Corbett (2006), Comrie (2003), Evans (2003), and Polinsky (2003), and in morphological studies in Baerman et al. (2005a:27–35), Spencer (2005), Stump (2005), and Thornton (2010, 2011).

A canonical approach to language phenomena creates a space of theoretical possibilities defined by principles and criteria. This space of possibilities forms an ideal category or an ideal process, which may be called the “canon”, against which the actual constructs of a language instantiating that particular phenomenon can be evaluated. The canon is a logical space, and as Corbett (2007: 9) puts it: “[t]he canonical instances, that is, the best, clearest, indisputable (the ones closely matching the canon), are unlikely to be frequent. Rather, they are likely to be rare or even nonexistent.” In this light, the canon is not something good or bad, or a prototype, for that matter, or something that one language lacks but the next has, it is just a logical space. Accordingly, if one structure is more canonical than another, this should be taken to mean just that, that is to say, it does not mean it is more common, more frequent, or more normal in any sense.

The logical space of the canon is defined by common sense principles that are based on our general understanding of what the best scenario for such a situation should be. In Corbett's (2009: 1) own words: “[t]his means that we extrapolate from what there is to what there might be, in order to define the theoretical space. Within that scheme of theoretical possibilities we can situate the real instances we find. An effect of this approach is to separate out coincidental overlaps in the examples that exist; we may then start to ask which characteristics *happen* to be the way they are and which *have* to be the way they are”. In this way, the canon becomes a useful *tertium comparationis* to understand the degree of divergence in natural languages, establishing a potential sound base for typological classification.

Corbett (2009) is a first approach to canonical inflectional classes. In this proposal, the canon is ruled by two principles: one maximizes its formal distinctiveness with respect to other classes; the other the independence of its members from the members of other classes. A number of criteria with different scope are postulated as manifestations of these principles. However, real linguistic instances are often far from the canon. Such instances can be accounted for as representing a weakening of the criteria in question.

The formal principle states that the “classes are fully comparable and are distinguished as clearly as is possible” (Corbett 2009: 3) and is manifested by the following four possible criteria in (1), (Corbett 2009: 3-4).

- (1) Criterion 1: “In the canonical situation, forms differ as consistently as possible across inflectional classes, cell by cell.”
- Criterion 2: “Canonical inflectional classes realize the same morphosyntactic or morphosemantic distinctions.”
- Criterion 3: “Within a canonical inflectional class each member behaves identically.”
- Criterion 4: “Within a canonical inflectional class each paradigm cell is of equal status.”

If we attend to criteria 1 and 4, an example of canonical inflectional classes is shown in Table 1 from Burmeso, a Papuan language of the East Bird’s Head-Sentani subgroup. Burmeso verbs fall into two classes according to what paradigm of gender prefixes they select to cross-reference its subject (there are six gender values), (Donohue 2001: 100, 102; in addition to Corbett 2009: 9).

Table 1. The two verbal classes of Burmeso.

ClassI	ClassII
--------	---------

Gender values	SG	PL	SG	PL
I male	<i>j-</i>	<i>s-</i>	<i>b-</i>	<i>t-</i>
II female, animate	<i>g-</i>	<i>s-</i>	<i>n-</i>	<i>t-</i>
III miscellaneous	<i>g-</i>	<i>j-</i>	<i>n-</i>	<i>b-</i>
IV mass nouns	<i>j-</i>	<i>j-</i>	<i>b-</i>	<i>b-</i>
V banana, sago tree	<i>j-</i>	<i>g-</i>	<i>b-</i>	<i>n-</i>
VI arrows, coconuts	<i>g-</i>	<i>g-</i>	<i>n-</i>	<i>n-</i>

As for criterion 1, all the prefixes in Table 1 differ in form consistently. Weakening of the criterion occurs when there are shared or default forms in some of the cells, but here the markers are all different, that is to say, no marker of class I is used for class II, and vice versa. Besides, although there is some degree of syncretism (for example, the prefix for gender classes I and II is the same in the plural), this syncretism follows a pattern that is mirrored in both classes. As for criterion 4, each paradigm cell in Table 1 appears to be of equal status too, and predictions can be made based on formal implications: e.g., if *g-* is used to cross-reference the singular value of a noun of gender class II, then *g-* will be also used for the singular of class III and VI, and the plural of V and VI. In exactly the same contexts, *n-* will also be used, but for class II verbs.

In the canonical situation, according to criterion 2, the classes should realize the same grammatical distinctions. This creates the expectation that the system would make it possible for all members of an inflectional class to have identical paradigm shapes. In reality, a number of members in a given class commonly end up having a reduced paradigm because of semantic restrictions or lexical defectivity. If the restrictions are not motivated because of their class membership, they should not be an ascribable property to the class. Criterion 3 dictates that within a canonical inflectional class each member behaves identically, that is there are no morphophonological alternations, and no stem alternations. If such alternations exist, but are predictable by other rules (i.e., regular), the instance is more canonical than when they should be listed. In reality, the actual instances of natural languages are far from being canonical in this respect, but this mere fact highlights precisely how interesting real types can be.

The independence principle rules class membership and provides that “the distribution of lexical items over canonical inflectional classes is synchronically unmotivated” (Corbett 2009: 5). This is justified because canonical inflectional classes are morphology internal, that is, they are not motivated by other principles, semantic or otherwise. If that were the case, there would be no motivation to treat them as inflectional classes. There are five criteria realizing this principle, which are given in (2), (Corbett 2009: 6–7).

- (2) Criterion 5: “The larger the number of members of an inflectional class (up to an equal ‘share’ of the available items) the more canonical that class.”
- Criterion 6: “In the canonical situation, the distribution of lexical items over inflectional classes is not phonologically motivated.”
- Criterion 7: “In the canonical situation, the distribution of lexical items over inflectional classes is not syntactically motivated.”
- Criterion 8: “In the canonical situation, the distribution of lexical items over inflectional classes is not motivated by Part of Speech”.
- Criterion 9: “In the canonical situation, the distribution of lexical items over inflectional classes is not motivated by pragmatics (including information structure).”

Criterion 5 provides the canonical profile of the lexical distribution of canonical classes. To be canonical, all classes should have the same number of members. There is no reason why this should not be the case in the logical definition. In reality, languages organize their lexicons far from the canon. The common case is that there is one major class that serves as the lexical default. On the other end, in a system with many inflectional classes, it is also common to find thinly populated ones.

In the canonical situation, the assignment of a particular lexeme to a particular class is unmotivated because, according to the canon, an inflectional class is a genuine morphological ontology. However, weakening of the criteria applies precisely when a given property associated with the lexeme (phonetic, syntactic, word class or pragmatic) serves as a token signaling its class membership. To Corbett's criteria in (2), I add the criterion in (3).

- (3) Criterion 10: In the canonical situation, the distribution of lexical items over inflectional classes is not semantically motivated.

In the canonical situation, the morphology involved in the making of inflectional classes is not assigned any semantic function. In other words, a canonical inflectional class is realized by means of morphological exponence that does not encode semantic categories such as agentivity, stativity, animacy, size, volume, shape, semantic gender, etc. The real instances of inflectional classes across the world's languages vary in their degree of canonicity with respect to criterion 10. Most commonly this degree varies according to the feature in question and to the type of word class. Typologically, noun classes are less canonical than verbs. In nouns, for example, an inflectional class with many members of a particular semantic gender would rank low in canonicity, as would one that includes only inanimate or only animate nouns. On the other hand, it is more common to find canonical inflectional classes of verbs, as it is often the case that there is no readily identifiable semantic property that all or most members share that can readily be used as a token of class membership. The typical example here is the conjugation classes of Latin and Romance languages.

Having introduced the general profile of a canonical inflectional class, I pass now to introduce the Otomi language whose complex conjugation I study in this article.

3. Tilapa Otomi

Otomi is a small language family spoken in Central Mexico which belongs to the Oto-Pamean branch of Oto-Manguean. While the internal linguistic diversity of Otomi is uncontroversial (summarized in Lastra [2001]), there is no established consensus as to which of the different linguistic subsystems identified so far as Otomi should be treated as independent languages and which as dialects of those languages. This is why Otomi has traditionally been talked about as forming a dialectal continuum rather than a family and why authors in Mexico avoid using terms such as “language” and “dialect” and instead use “variety” as a convenient cover term. In contrast to this tradition, the current official stance by the National Institute of Indigenous Languages (INALI) in the *CLIN* (2008) is to treat Otomi innovatively as forming a “linguistic group” with nine different “linguistic varieties”.² INALI's linguistic varieties are treated as genuine languages for official purposes, that is, for educational, administrative, judicial, social and informative purposes. This is also the stance I take in the present article.

One such language is Tilapa Otomi (henceforth T-Oto), which is spoken in the village of Santiago Tilapa, located within the municipality of the large town of Santiago Tianguistenco in the State of Mexico.³ The language has not been previously described and is currently on the verge of extinction as it is spoken by approximately a score of old people in their eighties, most of whom no longer use the language in daily life. Otomi has been spoken in this village from late prehispanic times. The old language developed there in complete isolation from other nearby variants, namely Atlapulco and Acapulco, and has emerged as a linguistic island with respect to other Otomi languages. It not only displays innovative sound changes but also a high degree of morphological conservatism, having preserved a great number of the inflectional exponents and categories found in Old Otomi; the common language spoken in the XVI century (see Palancar [2011] for a discussion).

The verbs of T-Oto fall into three conjugation classes. In principle, this morpholexical property is not entirely surprising because two other Otomi languages have been reported to have conjugation classes, for example Eastern Highlands Otomi (Voigtlander and Echevoyen 1979) and Ixtenco Otomi (Lastra 1997). Nevertheless, it constitutes an intriguing phenomenon when yet other Otomi languages are taken into consideration, such as Mezquital Otomi (Hess 1968; Bartholomew 2004), Santiago Mexquititlan Otomi (Hekking 1995), San Ildefonso Tultepec (Palancar 2009a), and Southwestern Otomi (Andrews 1993), which are spoken in the high plateau in the State of Mexico, Querétaro and Hidalgo. In such varieties, there is one major inflectional class to which the vast majority of the verbs in the lexicon belong, and another small class containing no more than forty intransitive verbs, called “activity verbs” in Palancar (2009a), which could in principle be treated as a second conjugation class, but with reservations. While the comparison of the conjugation classes in Otomi is a promising enterprise that may shed light onto the different ways verb conjugation classes can emerge and decay in a linguistic family, such an enterprise falls out of the scope of this article. In the next sections, I will present basic information about verb inflection in T-Oto, which is useful to understand the morphological structure of its conjugation classes, presented in Section 5.

3.1. *Verb inflection of Tilapa Otomi*

T-Oto is a VOS head-marking language (i.e., no case marking on nouns) with accusative alignment in monotransitive verbs, and an agentive/patientive split in intransitive verbs (see Section 6 for some examples). Like other Otomi languages, T-Oto is a tonal language with three tonal contrasts in lexical roots (only functional morphemes have a high tone *vs.* a low tone contrast). Like other Oto-Pamean languages, Otomi tones lack the important functional load they have in other branches of Oto-Manguen.

T-Oto verbs inflect for features of tense, aspect and mood (TAM) by means of a set of inflectional formatives. Many such formatives commonly cross-reference the subject NP in a cumulative fashion, and for this reason, they will be treated here as “P&TAM” formatives (P stands for person of subject). I use the term “inflectional formative” in the sense of Bickel and Nichols (2007), who use it as a cover term for any marker of inflectional information, regardless of its morphological type, that is, regardless of whether it is an affix, a clitic or a functional word.

The examples in (4) illustrate the use of three such P&TAM formatives for the inflection of the transitive verb *jUGti* ‘pay someone’ realizing grammatical person, past tense, and realis mood.⁴ In (4), it may be further noted that the object is cross-referenced by means of a suffix for the first and the second persons; the bare stem is instead used to encode reference to a third person object.

- (4) a. **tYP=jUGti-kKi**
 1.PST.R=pay-2OBJ
 ‘I paid you.’
- b. **gYP=jUGti**
 2.PST.R=pay[3OBJ]
 ‘You paid him/her/them.’
- c. **bi=kUGti-ki**
 3.PST.R=SS/pay-1OBJ
 ‘He/she/they paid me.’

The P&TAM formatives in (4) always precede the verbal stem, that is, they cannot occur in other positions in the syntax of the clause. On phonological grounds, they could be characterized as simple clitics (Zwicky 1977) because of their prosodic characteristics. For example, while they are commonly phonologically hosted on the stem, like in (5), they may be uttered before a pause like independent prosodic units in erratic or doubtful speech, as shown in (5), (suspension points indicate pause). Additionally, please notice that a plural value of person is encoded by means of enclitics. This marking is only available for the first and the second person. In (5), the number enclitic is *KmbeP* of first person plural exclusive.

- (5) *jaGkamba tYP... Bo=KmbeP*
 then 1.PST.R return=PL.EXCL
 ‘We came back then.’ (Txt)

Furthermore, these clitics can be associated with other clitics preceding them, as for example in (6), where the inflectional formative in (5) is now hosted as an enclitic on the form *hZPn*, itself a dependent alternant of the negative functional word *hZPngi*, resulting in the prosodically free word *hZPndYP* /'hZPntɪ̯-P/ [hZPndɪ̯-P]. Notice that the lenis consonant /t/ surfaces as a [d] in (6), instead of a [t].

- (6) *hZPn=dYP ndeP=gaP=KmbeP*
 NEG=1.PST.R want[3OBJ]=1(EMPH)=PL.EXCL
 ‘We didn't want it.’ (Txt)

Inflected verb forms in T-Oto may involve more than one inflectional formative. This happens, for example, when a grammatical tense is formed on another (more basic) tense by adding a formative extra to the ones already realizing the basic tense. This is shown in (7a) with the imperfect continuous realis, realized by associating the clitic *maP* to the exponents of present continuous realis; or in (7b), where the building of the past irrealis is carried out by associating the clitic *gi* to the markers of present irrealis. The tense value of the base markers is cancelled out by the co-occurrence of *maP* or *gi*, this is why it appears in parentheses.

- (7) a. *syaMkaPso NUP=gaP=Kmbep*
txaP=maP=KmbYM=Kmbep ndOMxi
just_in_case DEF=1=PL.EXCL 1(.PRES).CONT.R=IMPF=be.at.place=PL.EXCL Monday
 ‘We were there on Monday just in case.’ (Txt)
- b. *ti=gi=jwaM=i* *jCKni=gwaP*
3(.PRES).IRR=PST.IRR=kill[3OBJ].B=PL person=here
 ‘(So that) he was going to kill the people here.’ (Txt)

These inflectional formatives do not behave uniformly when hosted on the stem. An instance is given in (8), where the exponent for the first person *tYPC* can be either hosted as an enclitic on the preceding clitic cluster, like in (8a), or it may be hosted as a proclitic on the stem, like in (8b), (square brackets indicate junctures of phonological phrases; the main stress in the inflectional form falls on the first syllable of the verbal stem).

- (8) *para ga ta tYPCGpQPtKYhYP*
 a. *para [[ga=ta]=tYPC]=[GpQPtKY=hYP]*
 b. *para [ga=ta]=[tYPC=GpQPtKY=hYP]*
PURP 1.AMBU.IRR=AMBU=1=make.tortillas.AS=PL.INCL
 ‘So that we (you and me) go and make tortillas.’ (Txt)

The structure in examples like (8) call for the existence of subtle morphophonological rules that restrain the order in which the formatives may cluster together in the shaping of an inflectional form, which at times involve different outcomes in vowel harmonization processes (see Palancar 2009b for a discussion). Nevertheless, such rules are poorly understood, and because of this, the formatives will be represented as independent morphemes orthographically. Such a treatment is immaterial for the purpose of the present article.

3.2. *The tenses of Tilapa Otomi*

The grammatical tenses of T-Oto are organized around a realis/irrealis mood distinction. The paradigm of the transitive verb *Xeni* ‘wash (clothes)’ given in Table 2 instantiates the 15 tenses that I have been able to identify in the language, with approximate translations in English. For convenience, the inflected forms exemplifying each tense are given in the second person.

Table 2. *The grammatical tenses of T-Oto.*

Realis	Present	continuous	graP <i>Gpeni</i>	‘you’re washing it now’	
		habitual	grYP <i>Gpeni</i>	‘you commonly wash it’	
	Ambulative		gaP <i>Gpeni</i>	‘you wash it away (here and there)’	
		Imperfect	continuous	graP maP <i>Gpeni</i>	‘you were washing it’
			habitual	grYP mYP <i>Gpeni</i>	‘you used to wash it’
		ambulative	gaP maPtZP <i>Gpeni</i>	‘you were washing it away/long ago’	
	Past		gYP <i>Gpeni</i>	‘you washed it’	
	Perfect		xkYP <i>Gpeni</i>	‘you’ve already washed it’	
	Pluperfect		xkZP <i>Gpeni</i>	‘you’d already washed it’	
	Ir	Present		gi <i>Gpeni</i>	‘you’ll wash it’

Immediative	xta gi <i>Gpeni</i>	‘you're about to wash it’
Ambulative	gitZP <i>Gpeni</i>	‘you'll wash it away (here and there)’
Andative	gri <i>Gpeni</i>	‘you'll go wash it’
Past	gi gi <i>Gpeni</i>	‘you'd wash it’
Perfect	xki gi <i>Gpeni</i>	‘you'd have washed it’

In the realis mood, there is an aspectual distinction between continuous and habitual for the present and the imperfect. The present and imperfect habitual are also used in nominal predication. In addition, in Table 2 there are some tenses with local semantics that provide motion information about the subject: the *ambulative* (an alternative term for “perlocative”) portrays the subject as moving about and the *andative* depicts the subject as moving away from the speech act situation in order to perform the action.

In other tenses, local values may be realized in the inflected form by means of additional morphemes associated with a specific tense, as shown in Table 3. For example, an andative value can be encoded in the ambulative realis by means of the element *-r*. Similarly, a *cislocative* value that portrays the subject moving towards the speech act situation can be encoded in the ambulative realis by means of a labial affix, which surfaces as an infix, and which is at times complemented by the formative *tZP*. In other tenses, the same labial affix is used to express a *translocative* value. This value portrays the subject as either doing the action in a different place than the speech act situation or as moving away to such a place (i.e., it may convey andative semantics). This is shown in Table 3, where the labial affix appears as an infix.

Table 3. *Local values.*

Realis	Ambulative andative	<i>gaP-r Xeni</i>	‘you wash it away (here and there)’
	cisloc.	<i>g^{‘w’}aPtZPGpe ni</i>	‘you're washing it as you come’
	Past	<i>g^{‘w’}YP Gpeni</i>	‘you washed it somewhere else’
	Perfect	<i>xk^{‘w’}YP Gpeni</i>	‘you've already washed it somewhere else’
	Pluperfect	<i>xk^{‘w’}YP Gpeni</i>	‘you'd already washed it somewhere else’
Irr	Present	<i>g^{‘w’}Y Gpeni</i>	‘you'll (go and) wash it somewhere else’
	Past	<i>g^{‘w’}Y Gpeni</i> <i>g^{‘w’}</i>	‘you'd (go and) wash it somewhere else’

Conveying local information morphologically in the verb is an old grammatical property that is manifested in all Otomi languages in some way or another, but it is only in morphologically conservative languages like T-Oto and Eastern Highlands Otomi (Voigtlander and Echegoyen 1979) where it has kept the more inflectional contrasts, although with slight differences in usage. In general, while other languages have more limited inventories, the abundance of grammatical tenses in Otomi is typologically remarkable within a larger Oto-Manguean context where the average system has inflectional contrasts typically resolving around three main aspectual dimensions inherited from the proto-language, i.e., completive, incompletive and potential (see Kaufmann 1990).

4. The conjugation classes of Tilapa Otomi

In the previous section, I have briefly introduced a number of grammatical properties of verbs in T-Oto and have shown the different grammatical tenses that exist in the language. In this

section, I show that the verbs of T-Oto fall into three classes for inflectional purposes. This can be observed in a number of facts. Consider for this purpose the inflectional behavior of the three intransitive verbs *VCPgi* ‘fall’, *BYPni* ‘grind corn’, and *fQtKi* ‘shiver’ when they are inflected for the first person of present irrealis. The inflected forms are shown in (9).⁵

- (9) 1st person, present irrealis
- a. **gY** *GtCPgi* ‘I’ll fall’
 - b. **gY tYP** *GkYPni* ‘I’ll grind (corn)’
 - c. **gitZP** *fQtKi* ‘I’ll shiver’

The marking contrasts in (9) point to the existence of three inflectional classes. The verbs *VCPgi* ‘fall’ and *BYPni* ‘grind corn’ are inflected by means of the P&TAM clitic *gY*, while *fQtKi* selects *gi*. The morphological marking of the verb *VCPgi* ‘fall’ is the least marked of the three as it involves only one formative. In contrast, the inflected forms of both *BYPni* ‘grind corn’ and *fQtKi* ‘shiver’ receive other formatives: the formative *tYP* of first person, and the formative *tZP*, which as we will soon see, does not realize any specific morphosyntactic or morphosemantic feature, and does not have a derivational function.

Nevertheless, the type of formal contrasts in (9), where the inflectional realizations of the three classes is different in each case, is not at all common in T-Oto. What one commonly finds instead is a situation where a given marker is used in the paradigm of more than one class at a time. For example, the verbs *VCPgi* ‘fall’ and *BYPni* ‘grind corn’ are both inflected for the first person present continuous realis by means of the same exponent, the P&TAM clitic *txaP*, as shown in (10a) and (10b). The verb *fQtKi* ‘shiver’ selects the same clitic plus the formative *tZP* in (9c) above. This is illustrated in (10c).

- (10) 1st person, present continuous realis
- a. **txaP** *GtCPgi* ‘I’m falling’
 - b. **txaP** *GkYPni* ‘I’m grinding (corn)’
 - c. **txaPtZP** *fQtKi* ‘I’m shivering’

Similarly, for the encoding of the past realis, the verbs *VCPgi* ‘fall’ and *fQtKi* ‘shiver’ are now the ones treated alike for inflectional purposes, as shown in (11a) and (11c), while *BYPni* ‘grind corn’ selects the same clitic plus the formative *tYP* of first person in (9b) above. This is illustrated in (11b), where the person formative *tYP* /~~t~~-~~P~~/ surfaces as [~~d~~-~~P~~].⁶

- (11) 1st person, past realis
- a. **tYP** *GtCPgi* ‘I fell’
 - b. **tYP dYP** *GkYPni* ‘I ground (corn)’
 - c. **tYP** *fQtKi* ‘I shivered’

The class to which verbs like *VCPgi* ‘fall’ belong is a default lexical class with the greatest number of members, and I will treat it as conjugation “classI”. The inflectional class to which the verb *BYPni* ‘grind corn’ belongs has a number of formal properties that relate it to classI, as we will see in Section 6.1 I will label this class conjugation “classII”. Finally, verbs that behave like *fQtKi* ‘shiver’ will be called conjugation “classIII”.

In Examples (10) and (11), classes IIandIII have the same P&TAM clitics as classI. This is a common pattern, as we will see in the next section. Nevertheless, there are also cells in the paradigms of classes IIandIII which are realized by the same markers, but such markers contrast with the ones that realize the equivalent feature value for the verbs of classI. The case is often observed in the cells of the third person, although not always, and is illustrated in the present irrealis by the contrast between (12a) with respect to (12b) and (12c).⁷

(12) 3rd person, present irrealis

- | | | |
|----|-------------------------------|------------------------------|
| a. | ta <i>tCPgi</i> (I) | [3.PRES.IRR(I) ss/fall] |
| | ‘He/she/they’ll fall’ | |
| b. | ti <i>kYPni</i> (II) | [3.PRES.IRR(II/III) ss/walk] |
| | ‘He/she/they’ll grind (corn)’ | |
| c. | ti <i>fQtKi</i> (III) | [3.PRES.IRR(II/III) shiver] |
| | ‘He/she/they’ll shiver’ | |

A summary of the possible contrasts are given in Table 4.

Table 4. *Marking contrasts among the conjugation classes.*

Contrasts	Ex.	Person and TAM
I≠IIand≠III	(9)	1 st person, present irrealis
I = IIbut≠ III	(10)	1 st person, present continuous realis
I = IIIbut≠II	(11)	1 st person, past realis
II = IIIbut≠I	(12)	3 rd person, present irrealis

Myanalysis of the inflection of T-Oto verbs is based on the study of a small sample of 630 verbs. This sample was collected by me in collaboration with Néstor H. Green and Selene Hernández. The lexemes in the sample were collected from both their occurrence in natural texts and from elicitation sessions with native speakers.⁸ The distribution of the verbs in the sample attending to the different inflectional classes to which they belong is shown in Table 5, where it is further shown that classI is the class with the largest number of members.

Table 5. *Distribution of verbsper conjugation in the sample.*

	verbs	%
I	395	62.5%
II	72	11.6%
III	163	25.8%
Total	630	100%

If we also attend to the transitivity of the verbs, the sample is balanced because the ratio between transitive and intransitive verbs is almost 1:1 (actually 1:1.1, calculated by dividing the 339 intransitive verbs by the 291 transitive verbs).⁹ In principle, this ratio could be taken to be an artifice of this specific sample, and thus not representative of the lexicon, but two larger samples of other distant Otomi languages happen to reveal a similar ratio: 1:1 in Eastern Highlands Otomi from 2,000 verbs from Echegoyen and Voigtlander (2007) (967 transitive/1,033 intransitive) and 1:1.3 in Mezquital Otomi from 2,181 verbs from Hernández Cruz et al. (2004) (942 transitive/1,239 intransitive). Whether this coincidence should be taken to be an indicator of how the Otomi verbal lexicon is organized according to the transitivity of a verb remains an open question. The relevant figures for T-Oto are given in Table 6.

Table 6. *Ratio of transitive and intransitive verbs per class.*

class	transitive	intransitive	ratio
I	204	191	1:1
II	0	72	-
III	87	76	1:1.1
Total	291	339	1:1.6

More importantly, Table 6 shows that conjugation class II includes intransitive verbs only, revealing significant tendencies of how transitivity is mapped as a property into the conjugation classes. 70 percent of transitive verbs are found in conjugation class I, the rest in class III. Intransitive verbs are found in all classes, half of them in class I (56%) and the rest distributed evenly between II and III (21.5% and 22.5%, respectively).

In this section, I have shown the basic formal contrasts on which the three conjugation classes are based. In the next section, I first give an overview of the paradigms of each of the classes and then comment on each of the relevant subparadigms in greater detail.

5. The paradigms of the three conjugation classes.

In this section, I study the morphology involved in the inflectional paradigms of each of the three conjugation classes in T-Oto. The entire paradigms for the tenses of the realis mood are given for convenience in Table 7; while those of the tenses of the irrealis appear in Table 8. In following sections, I comment on each subparadigm in further detail. In the tables, shading is used to indicate that the inflectional exponents of a given class are also used in another class. I refer to such a phenomenon as “paradigmatic neutralization”, which I interpret to be the outcome of a morphological leveling affecting classes II and III in the direction of class I, but not in all cases (see Section 4.3 for a discussion). Similarly, cells in boldface indicate the few spaces in the paradigm where the marking contrasts across the classes are maximally differentiated.¹⁰

Table 7. *Paradigms of realis*

Realis mood		I	II	III
Present continuous	1st	<i>txaP</i>	<i>txaP</i>	<i>txaP tZP</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	2nd	<i>graP</i>	<i>graP</i>	<i>graP tZP</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	3rd	<i>ra GtCPgi</i>	<i>ra GkYPni</i>	<i>ra tZP</i>
				<i>fQtKi</i>
Present habitual	1st	<i>txYP</i>	<i>txYP</i>	<i>txYP tYP</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	2nd	<i>grYP</i>	<i>grYP</i>	<i>grYP tYP</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	3rd	<i>(rY)</i>	<i>(rY)</i>	<i>rY tYP</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
Transloc. 3rd	<i>brYP</i>	<i>brYP</i>	<i>brYP tYP</i>	
		<i>GkYPni</i>	<i>fQtKi</i>	
Ambulative	1st	<i>taP GtCPgi</i>	<i>taP GkYPni</i>	<i>taP tZP</i>
				<i>fQtKi</i>

	2nd	<i>gaP GtCPgi</i>	<i>gaP GkYPni</i>	<i>gaP tZP</i> <i>fQtKi</i>
	3rd	<i>a GtCPgi</i>	<i>a GkYPni</i>	<i>a tZP</i> <i>fQtKi</i>
Cisloc.	1st	<i>taP GtCPgi</i> <i>taP tZP</i> <i>GtCPgi</i>	<i>taP GkYPni</i>	<i>taP tZP</i> <i>fQtKi</i>
	2nd	<i>gWaP</i> <i>GtCPgi</i> <i>gWaP</i> <i>tZPGtCPgi</i>	<i>gWaP</i> <i>GkYPni</i>	<i>gWaP tZP</i> <i>fQtKi</i>
	3rd	<i>baP tCPgi</i>	<i>baP kYPni</i>	<i>baP tZP</i> <i>fQtKi</i>
	1st	<i>taPr VCPgi</i>	<i>taPr BYPni</i>	<i>taPr tZP</i> <i>fQtKi</i>
	2nd	<i>gaPr VCPgi</i>	<i>gaPr BYPni</i>	<i>gaPr tZP</i> <i>fQtKi</i>
	3rd	<i>aPr VCPgi</i>	<i>aPr BYPni</i>	<i>aPr tZP</i> <i>fQtKi</i>
Imperfect continuous	1st	<i>txaP maP</i> <i>GtCPgi</i>	<i>txaP maP</i> <i>GkYPni</i>	<i>txaP maP</i> <i>tZP fQtKi</i>
	2nd	<i>graP maP</i> <i>GtCPgi</i>	<i>graP maP</i> <i>GkYPni</i>	<i>graP maP</i> <i>tZP fQtKi</i>
	3rd	<i>maP GtCPgi</i>	<i>maP GkYPni</i>	<i>ma tZP</i> <i>fQtKi</i>
Imperfect habitual	1st	<i>txYP mYP</i> <i>GtCPgi</i>	<i>txYP mYP</i> <i>GkYPni</i>	<i>txYP mYP</i> <i>tYP fQtKi</i>
	2nd	<i>grYP mYP</i> <i>GtCPgi</i>	<i>grYP mYP</i> <i>GkYPni</i>	<i>grYP mYP</i> <i>tYP fQtKi</i>
	3rd	<i>mYP rYP</i> <i>GtCPgi</i>	<i>mYP rYP</i> <i>GkYPni</i>	<i>mYP rYP</i> <i>tYP fQtKi</i>
Imperfect ambulative	1st	<i>taP maP</i> <i>tZP GtCPgi</i>	<i>taP maP</i> <i>dZP GkYPni</i>	<i>taP maP</i> <i>tZP fQtKi</i>
	2nd	<i>gaP maP</i> <i>tZP GtCPgi</i>	<i>gaP maP</i> <i>dZP GkYPni</i>	<i>gaP maP</i> <i>tZP fQtKi</i>
	3rd	<i>maP dZP</i> <i>tCPgi</i>	<i>maP dZP</i> <i>kYPni</i>	<i>maP tZP</i> <i>fQtKi</i>
Past	1st	<i>tYP GtCPgi</i>	<i>tYP dYP</i> <i>GkYPni</i>	<i>tYP fQtKi</i>
	2nd	<i>gYP GtCPgi</i>	<i>gYP gYP</i> <i>GkYPni</i>	<i>gYP fQtKi</i>
	3rd	<i>bi tCPgi</i>	<i>bi kYPni</i>	<i>bi fQtKi</i>
Transloc.	2nd	<i>gWYP</i> <i>GtCPgi</i>	<i>gWYP</i> <i>GkYPni</i>	<i>gWYP fQtKi</i>
	3rd	<i>bWY GtCPgi</i>	<i>bWY GkYPni</i>	<i>bWY fQtKi</i>
Perfect	1st	<i>xtYP</i> <i>GtCPgi</i>	<i>xtYP dYP</i> <i>GkYPni</i>	<i>xtYP fQtKi</i>
	2nd	<i>xkYP</i> <i>GtCPgi</i>	<i>xkYP gYP</i> <i>GkYPni</i>	<i>xkYP fQtKi</i>

	3rd	<i>xY ntCPgi</i>	<i>xpi nkYPni</i>	<i>xpi fQt'i</i>
Transloc.	2nd	<i>xkWYP</i> <i>GtCPgi</i>	<i>xkWYP</i> <i>GkYPni</i>	<i>xkWYP</i> <i>fQtKi</i>
	3rd	<i>xpaP</i> <i>ntCPgi</i>	<i>xpWYP</i> <i>nkYPni</i>	<i>xpWYP</i> <i>fQtKi</i>
	1st	<i>xtaP</i> <i>GtCPgi</i>	<i>xVaP VYP</i> <i>GkYPni</i>	<i>xVaP fQtKi</i>
Pluperfect	2nd	<i>xkZP</i> <i>GtCPgi</i>	<i>xkaP gYP</i> <i>GkYPni</i>	<i>xkZP fQtKi</i>
	3rd	<i>xka</i> <i>(n)tCPgi</i>	<i>xka</i> <i>(n)kYPni</i>	<i>xki fQtKi</i>
	Transloc. 2nd	<i>xkWYP</i> <i>GtCPgi</i>	<i>xkWaP gYP</i> <i>GkYPni</i>	<i>xkWYP</i> <i>fQtKi</i>
	3rd	<i>xkWa tCPgi</i>	<i>xkWa kYPni</i>	<i>xkWY fQtKi</i>

Table 8. *Paradigms of irrealis*

Irrealis mood		I	II	III
Present	1st	<i>gY GtCPgi</i>	<i>gY tYP</i> <i>GkYPni</i>	<i>gi tZP</i> <i>fQtKi</i>
	2nd	<i>gi GtCPgi</i>	<i>gY gYP</i> <i>GkYPni</i>	<i>gi tZP</i> <i>fQtKi</i>
	3rd	<i>ta tCPgi</i>	<i>ti kYPni</i>	<i>ti fQtKi</i>
	Transloc. 1st	<i>gWY GtCPgi</i>	<i>gWY GkYPni</i>	<i>gWY fQtKi</i>
	2nd	<i>gWY GtCPgi</i>	<i>gWY GkYPni</i>	<i>gWY fQtKi</i>
	3rd	<i>t^(w)Y</i> <i>GtCPgi</i>	<i>t^(w)Y</i> <i>GkYPni</i>	<i>t^(w)Y</i> <i>fQtKi</i>
Ambulative	1st	<i>ga taP</i> <i>GtCPgi</i>	<i>ga taP tYP</i> <i>GkYPni</i>	<i>ga taP</i> <i>fQtKi</i>
	2nd	<i>gi tZP</i> <i>GtCPgi</i>	<i>ga gYP</i> <i>GkYPni</i>	<i>gi tZPP</i> <i>fQtKi</i>
	3rd	<i>ta ga</i> <i>ntCPgi</i>	<i>ta ga</i> <i>nkYPni</i>	<i>ti gi</i> <i>fQtKi</i>
Immediative	1st	<i>xta gY</i> <i>GtCPgi</i>	<i>xta gY tYP</i> <i>GkYPni</i>	<i>xta gY</i> <i>fQtKi</i>
	2nd	<i>xta gi</i> <i>GtCPgi</i>	<i>xta gi</i> <i>GkYPni</i>	<i>xta gi</i> <i>fQtKi</i>
	3rd	<i>xta tCPgi</i>	<i>xta gi</i> <i>GkYPni</i>	<i>xta gi</i> <i>fQtKi</i>
Andative	1st	<i>gri GtCPgi</i>	<i>gri GkYPni</i>	<i>gri fQtKi</i>
	2nd	<i>gri GtCPgi</i>	<i>gri GkYPni</i>	<i>gri fQtKi</i>
	3rd	<i>ti tCPgi</i>	<i>ti kYPni</i>	<i>ti fQtKi</i>
Past	1st	<i>gY gY</i> <i>GtCPgi</i>	<i>gY gY</i> <i>GkYPni</i> <i>gY tYP</i> <i>GkYPni</i> <i>gY gY tYP</i> <i>GkYPni</i>	<i>gY gY</i> <i>fQtKi</i>
	2nd	<i>gi gi</i> <i>GtCPgi</i>	<i>gi gi</i> <i>GkYPni</i>	<i>gi gi</i> <i>fQtKi</i>

			<i>gY gYP</i>	
			<i>GkYPni</i>	
	3rd	<i>ti gi</i>	<i>ti gi</i>	<i>ti gi</i>
		<i>tCPgi</i>	<i>kYPni</i>	<i>fQtKi</i>
Transloc.	1st	<i>gWY gWY</i>	<i>gWY gWY</i>	<i>gWY gWY</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	2nd	<i>gWY gWY</i>	<i>gWY gWY</i>	<i>gWY gWY</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	3rd	<i>tY gWY</i>	<i>tY gWY</i>	<i>tY gWY</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
Perfect	1st	<i>xkY gY</i>	<i>xti gY tYP</i>	<i>xkY gY</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	2nd	<i>xki gi</i>	<i>xti gY gYP</i>	<i>xki gi</i>
		<i>GtCPgi</i>	<i>GkYPni</i>	<i>fQtKi</i>
	3rd	<i>xti gi</i>	<i>xti gi</i>	<i>xti gi</i>
		<i>tCPgi</i>	<i>kYPni</i>	<i>fQtKi</i>

We may see in Tables 7 and 8 that there is a high degree of neutralization across the paradigms of each class. The highest degree, with complete neutralization across the three classes, happens in many of the cells realizing the translocative value, but also in the present andative irrealis. However, it is more commonly the case that a given form is either shared by verbs of class I and II or by verbs of class I and III. In general, neutralization between class I and II happens in most of the present and the imperfect tenses of the realis mood, while between classes I and III, it occurs in most of the past tenses. There is also a certain tendency in the inflectional system of T-Oto to treat the first and the second persons in a block, independently of the morphology realizing the third person. For the third person, we also have special patterns of neutralization. For instance, while the three classes select the same marker in complete neutralization in the past realis, partial neutralization only involves either class I and II (e.g., the imperfect ambulative or the pluperfect realis) or class II and III (e.g., the perfect realis, the present irrealis, the immediative irrealis). In this respect, it should be noted that classes II and III show neutralization when the third person is involved, whereas classes I and III never do.

In the tables, there are also a great number of shaded cells throughout the paradigms. In other words, there is a high degree of paradigmatic neutralization. This makes the relatively few cells left unshaded stand out significantly as morphologically distinctive forms of a specific class. Similarly, while the cells in boldface are even fewer, they point to very specific areas in the paradigms where the marking of the three classes remains maximally distinctive. In reality, this only occurs in two tenses of the irrealis mood. Apart from encoding morphosyntactic and morphosemantic information, all such inflected forms, the ones left unshaded and the ones in boldface, also inform us about the class membership of the inflected lexeme, i.e., they serve as indexes for an inflectional class feature, which is purely morphological, in the sense of Corbett and Baerman (2006).

5.1. *Inflectional contrasts in the realis mood*

In this section, I study the forms involved in the inflection of the tenses in the realis mood in more detail. There is complete paradigmatic neutralization between class I and class II in the present and imperfect tenses of the realis mood.¹¹ The cells of class III verbs in these

subparadigms are all characterized, in turn, by the presence of the formative *tZP*, which occurs in first position, closest to the stem.¹² In the paradigms, the P&TAM clitic in these tenses consists of a series of affixes. Consider for example the subparadigms of the present continuous and the present habitual illustrated in Table 9.

Table 9. *The present tenses of the realis*

Realis mood			
Present continuous		Person	TAM
	1st	<i>t-</i>	<i>raP</i>
	2nd	<i>g-</i>	<i>raP</i>
	3rd	<i>T</i>	<i>ra</i>
Present habitual	1st	<i>t-</i>	<i>rYP</i>
	2nd	<i>g-</i>	<i>rYP</i>
	3rd	<i>T</i>	<i>(rY)</i>

The cluster /tʁ/ resulting from the sequences *t-raP* and *t-rYP* for the first person is realized as a lenis palatal affricate *tx* [tʃ], i.e., *txaP* and *txYP*. The first and the second person are further realized by an additional high tone that lands on the segmental marker of the TAM marker *ra* and *rY*. Under this analysis, the value of the third person in forms such as *rY GtCPgi* ‘he/she/they fall’ is realized by the bare stem, or by means of a zero morph. The marker *rY* of present habitual is also omissible, so the value of this tense can again be realized just by the bare stem.

The imperfect continuous is realized by the TAM clitic *maP*; the habitual by *mYP*. These clitics occur in two different positions, which are conditioned by person, as shown in Table 10.

Table 10. *The imperfect tenses of the realis*

Realis mood					
Imperfect continuous		IMP.	Person	TAM	IMP.
	1st		<i>t-</i>	<i>raP</i>	<i>maP</i>
	2nd		<i>g-</i>	<i>raP</i>	<i>maP</i>
	3rd	<i>maP</i>	<i>T</i>		
Imperfect habitual	1st		<i>t-</i>	<i>rYP</i>	<i>mYP</i>
	2nd		<i>g-</i>	<i>rYP</i>	<i>mYP</i>
	3rd	<i>mYP</i>	<i>T</i>	<i>rYP</i>	

IMP. stands for “imperfect”.

The TAM clitic *mYP* occurs closer to the stem for the first and the second persons, but precedes the P&TAM in the third person, i.e., the form for the third person is *mYP rYP GtCPgi* ‘he/she/they used to fall’, and not **rY mYP GtCPgi*. This suggests that the same happens to the clitic *maP*, although this is not obvious because the marker *raP* does not co-occur with *maP* in T-Oto. In contrast, the marker *rY*, which can be elided in the present habitual, is obligatory in the imperfect. Notice that *rY* further assimilates to the high tone of the clitic *mYP*.

The morphology of the subparadigm of the ambulative appears in Table 11. Associated to this tense, one may have the suffix *-r* to encode an additional andative value. A cislocative sense is expressed in more complex ways. The labial prefix expressing a local value

(indicated here as *B*) is associated to the forms of the second and the third persons.¹³ This labial prefix further undergoes metathesis with the onset consonant of the P&TAM clitic, and it surfaces as a labialization feature, i.e., /B-CV/ > /C-B-V/ > /C^wV/.¹⁴ For verbs of class I, there are two encoding options for the first and the second persons, which are given as A and B, respectively. These two options are in free variation (see Section 5.2, for a discussion about this coding phenomenon). In option A, the subparadigms of class I and II are neutralized, while in option B, which involves the use of the formative *tZP* of class III, there is neutralization between I and III. Neutralization is again indicated by shading. For convenience, in Table 11 I have treated the formative *tZP*, characteristic of the inflection of class III, as being a flag of this inflectional class.¹⁵

Table 11. *The ambulative realis*

Realis mood		I				II				III				
Ambulative		L.	P.	TAM	A.	L.	L.	L.	P.	TAM	A.	III		
1st	A	<i>t</i>		<i>aP</i>		<i>t</i>		<i>aP</i>		<i>t</i>		<i>aP</i>	<i>tZ</i>	
	B	-				-				-			<i>P</i>	
		<i>g</i>		<i>aP</i>		<i>g</i>		<i>aP</i>		<i>g</i>		<i>aP</i>	<i>tZ</i>	
2nd	A	<i>g</i>		<i>aP</i>		<i>g</i>		<i>aP</i>		<i>g</i>		<i>aP</i>	<i>tZ</i>	
	B	-				-				-			<i>P</i>	
		<i>T</i>		<i>a</i>		<i>T</i>		<i>a</i>		<i>T</i>		<i>a</i>	<i>tZ</i>	
3rd	A	<i>T</i>		<i>a</i>		<i>T</i>		<i>a</i>		<i>T</i>		<i>a</i>	<i>tZ</i>	
	B	-				-				-			<i>P</i>	
Andative	1st	<i>t</i>		<i>aP</i>	<i>-r</i>	<i>t</i>		<i>aP</i>	<i>-r</i>	<i>t</i>		<i>aP</i>	<i>-r</i>	<i>tZ</i>
	B	-				-				-			<i>P</i>	
		<i>g</i>		<i>aP</i>	<i>-r</i>	<i>g</i>		<i>aP</i>	<i>-r</i>	<i>g</i>		<i>aP</i>	<i>-r</i>	<i>tZ</i>
2nd	A	<i>g</i>		<i>aP</i>	<i>-r</i>	<i>g</i>		<i>aP</i>	<i>-r</i>	<i>g</i>		<i>aP</i>	<i>-r</i>	<i>tZ</i>
	B	-				-				-			<i>P</i>	
		<i>T</i>		<i>aP</i>	<i>-r</i>	<i>T</i>		<i>aP</i>	<i>-r</i>	<i>T</i>		<i>aP</i>	<i>-r</i>	<i>tZ</i>
3rd	A	<i>T</i>		<i>aP</i>	<i>-r</i>	<i>T</i>		<i>aP</i>	<i>-r</i>	<i>T</i>		<i>aP</i>	<i>-r</i>	<i>tZ</i>
	B	-				-				-			<i>P</i>	
Cislocative	A 1st	<i>t</i>		<i>aP</i>		<i>t</i>		<i>aP</i>						
	B	-				-				<i>t</i>		<i>aP</i>	<i>tZ</i>	
		<i>t</i>		<i>aP</i>	<i>tZ</i>					-			<i>P</i>	
A 2nd	A	⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>	⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>					
	B	-				-								
		⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>	<i>tZ</i>				⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>	<i>tZ</i>
B 2nd	A	⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>	<i>tZ</i>				⟨ <i>B</i> ⟩		<i>g</i>	<i>aP</i>	<i>tZ</i>
	B	-				-				-			<i>P</i>	
3rd	A	<i>B-</i>		<i>T</i>	<i>aP</i>	<i>B-</i>		<i>T</i>	<i>aP</i>	<i>B-</i>		<i>T</i>	<i>aP</i>	<i>tZ</i>
	B	-				-				-			<i>P</i>	

L. stands for a “local” value, which has a cislocative meaning in this tense, P. for “person”, and A. for “andative”.

The pattern of option B for class I is also found in the imperfect ambulative, as shown in Table 12. This tense is mainly used as an imperfective distant past, and is partly built on the ambulative cislocative. There is some variation in the forms, but the subparadigm in this table appears to be the most stable one across speakers. Notice that this is the only realis tense which has inflectional contrasts across the three classes, but oddly distributed by the occurrence of the formatives *tZP* and *dZP*.

Table 12. *The imperfect ambulative realis*

Realis mood		I				II				III			
Impf. ambulative	IMP.	P.	TAM	IMP.	IMP.	P.	TAM	IMP.	IMP.	P.	TAM	IMP.	III

1st	<i>t aP maP tZ</i> - P	<i>t aP maP d</i> - Z P	<i>t aP maP tZ</i> - P
2nd	<i>g aP maP tZ</i> - P	<i>g aP maP d</i> - Z P	<i>g aP maP tZ</i> - P
3rd	<i>maP T ___ dZ</i> P	<i>maP T ___ d</i> Z P	<i>maP T ___ tZ</i> P

In the subparadigm of the past realis, there is a complete neutralization between class I and III, as shown in Table 13. In contrast to the present tenses, I treat the markers in past paradigms as cumulative exponents of both TAM values and person values. Class II has the person formatives *tYP* and *gYP*. On the other hand, with a local value, which has a translocative sense with this tense, the paradigm shows complete neutralization across the classes.¹⁶

Table 13. *The past realis*

Realis mood		I		II			III	
Past		L.	P&TAM	L.	P&TAM	P.	L.	P&TAM
	1st		<i>tYP</i>		<i>tYP</i>	<i>tY</i> <i>P</i> ¹⁷		<i>tYP</i>
	2nd		<i>gYP</i>		<i>gYP</i>	<i>gY</i> <i>P</i>		<i>gYP</i>
	3rd		<i>bi</i>		<i>bi</i>			<i>bi</i>
Translocative	2nd	⟨B⟩	<i>gYP</i>	⟨B⟩	<i>gYP</i>		⟨B⟩	<i>gYP</i>
	3rd	⟨B⟩	<i>bi</i>	⟨B⟩	<i>bi</i>		⟨B⟩	<i>bi</i>

The inflection of the perfect tenses is more complex because there are more marking contrasts involved. This is shown in Table 14. In the perfect, verbs of class I and class III are inflected identically for the first and the second person. For the third person, classes II and III select the same marker in the perfect, while in the pluperfect, it is classes I and III which do.

Table 14. *The perfect tenses of the realis*

Realis mood		I			II				III		
Perfect		PF.	L.	P&TAM	PF.	L.	P&TAM	P.	PF.	L.	P&TAM
	1st	x		<i>tYP</i>	x		<i>tYP</i>	<i>tY</i> <i>P</i>	x		<i>tYP</i>
	2nd	x		<i>gYP</i>	x		<i>gYP</i>	<i>gYP</i>	x		<i>gYP</i>
	3rd			<i>xY</i>	x		<i>bi</i>		x		<i>bi</i>
Translocative	2nd	x	⟨B⟩	<i>gYP</i>	x	⟨B⟩	<i>gYP</i>		x	⟨B⟩	<i>gYP</i>
	3rd	x	[<i>T-aP</i>]	x	⟨B⟩	<i>bi</i>		x	⟨B⟩	<i>bi</i>
				<i>B-</i>							
Pluperfect	1st	x		<i>taP</i>	x		<i>taP</i>	<i>tY</i> <i>P</i>	x		<i>taP</i>
	2nd	x		<i>gZP</i>	x		<i>gaP</i>	<i>gYP</i>	x		<i>gZP</i>
	3rd	x		<i>ga</i>	x		<i>ga</i>		x		<i>gi</i>
Translocative	2nd	x	⟨B⟩	<i>gZP</i>	x	⟨B⟩	<i>gaP</i>	<i>gYP</i>	x	⟨B⟩	<i>gZP</i>

3rd	<i>x</i>	⟨ <i>B</i> ⟩	<i>ga</i>	<i>x</i>	⟨ <i>B</i> ⟩	<i>ga</i>	<i>x</i>	⟨ <i>B</i> ⟩	<i>gi</i>
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PF. stands for “perfect”.

The perfect tenses in Table 14 appear to be of late emergence. Here the perfect marker *x* results from the grammaticalization of the adverb **x*C [ʃɔ] ‘already’, written as *xo* in Cárceres (1907 [1580]), a colonial grammar that is the earliest attestation of the common language.¹⁸ The resulting perfect tenses are hybrids but managed to maintain paradigmatic contrasts. For example, in the perfect, the forms are based on the past tense (synchronically, there is always devoicing of /g/ and /b/ before /ʃ/, whose outcome is represented here as a lenis, e.g., *x=gYP>x=kYP*; *x=bi>x=pi*).¹⁹ For the third person, class I has the specific marker *xY*.²⁰ The local values are regularly built on non-local ones (e.g., *x=B-gYP>x=g⟨B⟩YP >x=g^wYP > x=k^wYP*),²¹ but the form for the third person of class I is based on the ambulative cislocative in Table 11. At this point, however, my understanding of the inner structure of the pluperfect remains poor.

5.2. Inflectional contrasts in the irrealis mood

The irrealis mood comprises six tenses in T-Oto. In other Otomi languages, this mood has fewer tenses. For example, in Eastern Highlands Otomi there are only two. One of these two tenses is a cognate of the present irrealis of T-Oto, which Voigtlander and Echegoyen (1979) treat as a “future”. The other one is called “potential mood”, itself a unique survival of the imperfect irrealis tense of Old Otomi, called ‘future perfect’ in Cárceres (1907 [1580]).

In T-Oto, the irrealis is justified as a mood on semantic and formal grounds. Semantically, all the tenses are used to convey nonfactive situations, typical of irrealis moods across languages, whether the speaker is talking about future or potential state of affairs that have not happened or had not happened at a specific point in the past, or to encode the narrative of nonfactive situations like dreams or instructions.²² Formally, the inflectional system enhances the syncretism of the first and the second person in the tenses of the irrealis mood. Similarly, it is in the irrealis where we find maximal marking contrasts across the three verb classes. This is shown in boldface in Table 15, involving cells of the present.²³ Finally, both the present translocative and the andative have complete paradigmatic neutralization; in the realis mood, this also happens in the past translocative.²⁴

Table 15. *Non-past tenses of the irrealis*

Irrealis mood		I				II					III				III
		IMM	L.	P&TAM	L.	IMM	L.	P&TAM	L.	P.	IMM	L.	P&TAM	L.	III
Present	1st			<i>gY</i>				<i>gY</i>		<i>t</i>			<i>gi</i>		<i>t</i>
										<i>Y</i>					<i>Z</i>
										<i>P</i>					<i>P</i>
	2nd			<i>gi</i>				<i>gY</i>		<i>gYP</i>			<i>gi</i>		<i>t</i>
															<i>Z</i>
															<i>P</i>
	3rd			<i>ta</i>				<i>ti</i>					<i>ti</i>		
Translocative	1st		⟨ <i>B</i> ⟩	<i>gY</i>			⟨ <i>B</i> ⟩	<i>gY</i>				⟨ <i>B</i> ⟩	<i>gY</i>		
	2nd		⟨ <i>B</i> ⟩	<i>gi</i>			⟨ <i>B</i> ⟩	<i>gi</i>				⟨ <i>B</i> ⟩	<i>gi</i>		
	3rd		⟨ <i>B</i> ⟩	<i>ta</i>			⟨ <i>B</i> ⟩	<i>ta</i>				⟨ <i>B</i> ⟩	<i>ta</i>		
Ambulative	1st			<i>ga</i>	<i>t</i>			<i>ga</i>	<i>t</i>	<i>t</i>			<i>ga</i>	<i>ta</i>	
					<i>a</i>				<i>a</i>	<i>Y</i>					<i>P</i>

			<i>P</i>		<i>P</i>	<i>P</i>	
	2nd		<i>gi</i>	<i>t</i>		<i>ga</i>	<i>gYP</i>
				<i>Z</i>			<i>gi</i>
				<i>P</i>			<i>tZ</i>
	3rd		<i>ta</i>	<i>g</i>		<i>ta</i>	<i>g</i>
				<i>a</i>			<i>a</i>
							<i>ti</i>
							<i>gi</i>
Immediate	1st	<i>xt</i>	<i>gY</i>		<i>xt</i>	<i>gY</i>	<i>t</i>
		<i>a</i>			<i>a</i>		<i>Y</i>
							<i>P</i>
	2nd	<i>xt</i>	<i>gi</i>		<i>xt</i>	<i>gi</i>	
		<i>a</i>			<i>a</i>		
	3rd	<i>x</i>	<i>ta</i>		<i>x</i>	<i>ta</i>	<i>gi</i>
Andative	1st		<i>gri</i>			<i>gri</i>	
	2nd		<i>gri</i>			<i>gri</i>	
	3rd		<i>ti</i>			<i>ti</i>	

IMM. stands for “immediative”.

The inflection of the present irrealis is complex. For the first person, conjugation class II verbs have the same P&TAM clitic as class I plus the first person marker *tYP*. The verbs of conjugation class III, select a different P&TAM clitic plus the formative *tZP*, characteristic of this class. For the second person, the sequence *gY gYP* of class II consists of the same clitic *gY* found for the first person and the second person marker *gYP*. In contrast, class III verbs use the same P&TAM clitic as conjugation class I plus the formative *tZP*. These cells are relevant because they represent one of the very few areas in the inflectional system where the marking of the three classes remains maximally differentiated. Because of this, it is worth exploring these markings historically.

The historical paradigm of the present irrealis found in Cárceres (1907 [1580]) is shown in Table 16, extracted from the paradigms in Palancar (2011: 14).²⁵

Table 16. *The present irrealis in Old Otomi*

		I	II	III
		P&TAM	P&TAM P.	P&TAM III
1st		<i>ka</i>	<i>ka</i> <i>t</i>	<i>ka</i> <i>t</i>
			<i>a</i>	<i>Z</i>
			<i>P</i>	<i>P</i>
2nd	A	<i>ka</i>	<i>ka</i> <i>kaP</i>	<i>ka</i> <i>t</i>
				<i>Z</i>
	B	<i>ki</i>		<i>P</i>
3rd		<i>ta</i>	<i>ti</i>	<i>ti</i>

In Table 16, we can see that for the second person of class I verbs, there was already two encoding options, marked as A and B, which involved choosing between the P&TAM clitic *ka* or *ki*. Choosing *ka* preserves the syncretic pattern of first and second person proper of the irrealis mood, on which the marking of the other two classes is cleared based. Through time, option B won over A, giving rise to the modern markers: *ka* > *gY* (with raising of /a/ to /i/) and *ki* > *gi*. The marking of class II remained almost intact: *ka* = *taP* > *gY* = *tYP* and *ka* = *kaP* > *gY* = *gYP*. What happened to the marking of class III is a little more interesting.

The historical *ka* was not preserved, if it had been, the result would have been *ka=tZP>*gY=tYP*.²⁶ What appears to have happened is that the marker of second person of class I was first extended to class III by leveling while retaining the formative *tZP*, and was then extended to encode first person, preserving the characteristic syncretism between the first and the second person (see for example the translocative).²⁷ The path taken for the marking of class III suggests it is an instance of analogical leveling sensitive to inflectional class as discussed for example in Maiden (1992), who gives examples of leveling affecting the conjugation classes of Romance, especially of Italian. Such leveling involved the creation of new stem alternations to maximize the inflectional contrasts among the existing classes.

On the other hand, the immediative tense is morphologically based on the markers of the present irrealis. This tense appears to have emerged by associating the adverbial clitic *x* (the same marker of the perfect tenses in Table 14) to an irrealis marker *ta*, which later become the marker of third person present irrealis of class I. The sequence *xta* was then associated to the markers for the first and the second person, *gY* and *gi*, respectively. The markers of conjugation class I were then extended to conjugation class III. Here, like in the present irrealis, classes II and III have a distinct marker for the third person.

Finally, the internal structure of the subparadigms of the past and perfect of the irrealis is given in Table 17.

Table 17. *The past tenses of the irrealis*

Irrealis mood		I					II					III					
Past		PF.	L.	P&TAM	L.	PST	PF.	L.	P&TAM	L.	PST	P.	PF.	L.	P&TAM	L.	PST
Past	1st	<i>gY</i>					<i>gY</i>					<i>gY</i>					
		<i>gY</i>					A	<i>gY</i>				<i>g</i>	<i>gY</i>				
		<i>gY</i>					B	<i>gY</i>				<i>tYP</i>	<i>gY</i>				
	2nd	<i>gi</i>					<i>gi</i>					<i>gi</i>					
		<i>gi</i>					A	<i>gi</i>				<i>g</i>	<i>gi</i>				
		<i>gi</i>					B	<i>gY</i>				<i>gYP</i>	<i>gi</i>				
3rd	<i>ti</i>					<i>ti</i>					<i>ti</i>						
Translocative	1st	⟨B⟩	<i>gY</i>	⟨B⟩	<i>gY</i>	⟨B⟩ <i>gY</i> ⟨B⟩ <i>g</i>					⟨B⟩ <i>gY</i> ⟨B⟩ <i>gY</i>						
	2nd	⟨B⟩	<i>gi</i>	⟨B⟩	<i>gi</i>	⟨B⟩ <i>gi</i> ⟨B⟩ <i>g</i>					⟨B⟩ <i>gi</i> ⟨B⟩ <i>gi</i>						
	3rd	⟨B⟩	<i>ti</i> ²⁸	⟨B⟩	<i>gi</i>	⟨B⟩ <i>ti</i> ⟨B⟩ <i>g</i>					⟨B⟩ <i>ti</i> ⟨B⟩ <i>gi</i>						
Perfect	1st	<i>x</i>	<i>gY</i>				<i>x</i> <i>gY</i> <i>tYP</i>					<i>x</i> <i>gY</i> <i>gY</i>					
	2nd	<i>x</i>	<i>gi</i>				<i>x</i> <i>gY</i> <i>gYP</i>					<i>x</i> <i>gi</i> <i>gi</i>					
	3rd	<i>x</i>	<i>ti</i>				<i>x</i> <i>ti</i> <i>g</i>					<i>x</i> <i>ti</i> <i>gi</i>					

Speakers have various encoding options available for the past irrealis of the first and the second person of conjugation classII verbs. This is indicated in Table 17 by the use of the capital letters A, B and C. This phenomenon is called “overabundance” in Thornton (2010, 2011), where the different encoding options available for a given cell in a paradigm are called “cell-mates”.²⁹ Morphologically speaking, cell-mates under option A are produced out of leveling from conjugation classI, while cell-mates of option B result from a rule of referral to the present irrealis. Option C, which is only available for the first person, is built on option A plus the person formative *tYP*.³⁰

The subparadigm of the perfect for conjugation classes I and III is based on the present irrealis plus the anterior clitic *x*. For classII, speakers have reanalyzed the form *x*t*i* of the third person as an exponent of perfect irrealis, and have thus associated such a marker to the markers of the present irrealis. A similar process happened in the immediative in Table 15.

In this section, I have commented on relevant subparadigms in detail. Before moving into some of the principles ruling class membership for each inflectional class in Section 6, in the next section, I make a number of observations concerning the morphological status of classI as a morphological default.

5.3. *Morphological defaults*

When compared to class I, the amount of marking involved in the realization of certain tenses is often greater in classII and III. Unique to classII are the person formatives *tYP* and *gYP* for the first and the second person, respectively, while uniquely characteristic of classIII is the formative *tZP*. The occurrence of these formatives in a given inflectional form has a morphomic function, in the sense given by Aronoff (1994), in that they serve a purely morphological function, and indicate that the inflected lexeme in question either belongs to inflectional classesII or III (see further below for exceptions in four cells of the paradigm of a classI verb).

In the sequence of inflectional markers, the markers *tYP* and *gYP* and *tZP* always occur at the position closest to the verb, while all other elements preceding them are for the most part the same P&TAM clitics that realize the inflected forms of classI verbs. This could be taken as a piece of evidence in favor of treating conjugation classI as a morphological default in building the inflection of the other two classes.

I take “morphological default” here in the sense it has in Baerman et al. (2005a), among others, where a certain structure is seen as a morphological default if it serves as a base to derive other possible structures. A morphological default is the structure that remains when all other rules fail, so that a default typically surfaces in grammatical mistakes, but it is also the structure towards which the direction of leveling is oriented. In other words, a default is the structure whose occurrence is not predictable by any other principles, and because of this, it often has an erratic distribution across the paradigms. Such a structure can in principle be the most frequent in some systems, but not necessarily.³¹ On the phonological side, on the other hand, a default often correlates with the least marked option.

The shading in Tables 7 and 8 above pointed to the existence of a high degree of neutralization across the paradigms of the three inflectional classes. The degree of overlap between the markers involved in the paradigms is given in Table 18. The figures include cell-

mates too.³² For the paradigm of class I verbs, there are 66 different markers or sequences of markers to realize 64 cells, 67 in class II, and 64 in class III (i.e., this class lacks cell-mates). The labels “same” and “different” indicate whether the inflectional markers realizing these cells are the same or are different than the ones realizing the same cell for a different class.

Table 18. *Degree of overlap among the conjugation classes.*

	I				II				III			
	same	%	diff.	%	same	%	diff.	%	same	%	diff.	%
I	66	--	--	--	44	66.6	22	33.4	32	48.5	34	51.5
II	67	44	65.6	23	34.4	--	--	--	22	32.9	45	67.1
III	64	32	50.0	32	50.0	22	34.4	42	65.6	--	--	--

Table 18 indicates that the overlaps between class I and class II, and between class I and class III are greater than those involving class II and III. For instance, 66.6% of all markers involved in the inflection of a class I verb are also used for the inflection of class II. With class III, the overlap is of 48.5%. However, only 32.9% of the markers of a class II verb are actually also used to inflect a class III verb. The figures in Table 8 further indicate that the degree of neutralization between class I and II is greater than that between class I and III.

In Section 5, I have shown that there are cases where there is complete neutralization across the three classes. In this light, Table 18 is not entirely informative about the type of overlap that happens. In other words, there are some questions that remain. For example, to what extent does the overlap between class II and III also involve class I? or to what extent are the inflectional markers involved in the paradigm of a given class distinctive of that particular class? To address such questions, please consider Table 19 first.

Table 19. *Distinctive marking vs. overlaps in verbal inflection.*

	I		II		III	
Distinctive	8	12.2%	19	28.4%	28	43.8%
Overlapping	58	87.8%	48	71.6%	36	56.2%
Total	66	100%	67	100%	64	100%
Ratio	1/13.8	100%	1/3.9	100%	1/1.2	100%

Table 19 shows that in the entire paradigm of a class I verb there are only eight markers that are distinctively class I markers! This means that almost 90% of the morphology realizing the paradigm of a class I verb is also used to inflect classes II and III, although to various degrees. In contrast, class II has 18 distinctive markers or sequence of markers (16 of which involve the person formatives *tYP* and *gYP*), while class III has up to 28, of which 23 (93%) indeed carry the formative *tZP*. In Table 19, I have also included the ratio of distinctive markers per overlapping ones. For class I, this ratio is extremely high: for each distinctive marker we find 14 others which overlap. We find class III in the opposite end, with an almost 1:1 ratio.

Alternatively, the remaining overlapping areas in Table 19 show some distributional asymmetries, given in Table 20.

Table 20. *Types of overlap among classes.*

	I		II		III	
= II and = III	18	31%				
= II but ≠ III	26	44.8%				

= III but ≠ II	14	24.2%			
= I and = III			18	37.5%	
= I but ≠ III			26	54.1%	
= III but ≠ I			4	8.4%	
= I and = II					18 50%
= I but ≠ II					14 38.8%
= II but ≠ I					4 11.2%
Total	58	100%	48	100%	36 100%

There are 18 cells showing complete neutralization across the paradigms of the three classes. This represents 31% of all overlapping cases for the inflection of class I verbs, 37.5% of class II, and up to 50% of class III! Furthermore, Table 20 also shows that those overlapping cases between class II and class III that exclude class I are rather low: 8.4% for class II and 11.2% for class III. This situation can be interpreted in two alternative ways.

One way to interpret this is to view the morphology involved in the realization of the paradigm of class I as a morphological default. Such a default would have spread over 65.6% of the paradigmatic space of class II verbs, and over 50% of class III verbs.³³ Alternatively, class II or III could be regarded as colonizers of the 87.8% of the paradigmatic space of class I.³⁴ In this article, I adhere to the first possibility, although in reality there are arguments in favor of either direction.

Class I serves as a base to derive the inflection of classes II and III in cases where the formatives *tYP* and *gYP* and *tZP* are added to the P&TAM clitic of class I. The role of class I as a default is further sustained in the local subparadigms. For example, the inflectional realization of the present irrealis translocative is common to all classes but it is based on the markers of conjugation class I. Similarly, the subparadigm of the immediative tense for verbs of conjugation class III is based on class I. If this were not the case, the inflected form for the first person would be something like **xta gi tZP* instead of the attested form *xta gY*. The same applies for the past and the perfect irrealis.

Third person cells are especially interesting because they always show neutralization. Class I and II show neutralization in the present and the imperfect tenses of the realis, but also in the pluperfect. The same applies to class II and III in the perfect realis, in the perfect translocative realis, and in the present realis. Such neutralization makes the marker of class I stand out distinctively in three out of the only eight cases where class I receives distinct marking.³⁵ In some cases we find the same markers across the three classes, for example in many local tenses, and in the past realis. But in none of the cases we can really pinpoint the direction of the leveling in an exact way. This is only possible in a very few cases. For example, the leveling is clearly from class I to class II in the ambulative irrealis where the P&TAM marker is *ta* instead of *ti*, which is the same used in the present irrealis. But in the past irrealis (also the perfect; based on the past), the direction is exactly the opposite, i.e., from class II and III to class I, because the marker involved is *ti* instead of *ta*, although this cell may be built on the andative irrealis.

In both the ambulative cislocative realis and in its derived tense, the imperfect ambulative, there is what appears to be a leveling from class III to class I for the first and second persons. The forms in question carry the formative *tZP*, which is characteristic of class III. Nevertheless, it is not entirely clear that this is an instance of leveling, because the

forms of classII also have a similar morpheme dZP for all persons, and both morphemes (the tZP of classI and the dZP of classII) could have in principle developed from a common directive morpheme, ultimately related to the P&TAM ti used for the third person of andative irrealis.

Finally, despite the arguments in favor of classI being a morphological default, the language behaves in a remarkable way concerning loanwords. One should expect that, all things being equal, the optimal way to integrate a loanword into the inflectional system is by means of the morphological default. This is what happens crosslinguistically. In T-Oto, however, loaned transitive verbs from Spanish are categorized as members of classIII.³⁶ Some examples are given in (25) below.

6. The membership of the conjugation classes

For a grammarian, confronted with a linguistic system with densely populated inflectional classes, it becomes natural to seek for generalizations that may help us understand the way a given lexeme is assigned class membership in the lexicon. Against this expectation, in his defense of inflectional classes as purely morphological ontologies (i.e., morphomic), Aronoff (1994) regards class assignment to conjugation classes as a necessarily random phenomenon. As we have seen in Section 2, this is also the position taken by Corbett (2009) when defining the ideal construct of canonical inflectional classes according to criteria 6–9 in (3), to which I added in (3) the criterion suggesting a lack of semantic motivation.

Nonetheless, those in search for generalizations often find them, and there are at times phonological, morphological, as well as semantic factors that can orient class membership at least in a probabilistic way. In this section, I show that conjugation class I is very canonical in this respect, because there is no obvious specific property that most of its members share that may serve as an index for class membership. In contrast, those properties exist in class III, and especially in class II, which stands as the least canonical class of the three.

As for T-Oto, conjugation classI is a major class that serves as a lexical default. The greatest bulk of the verbs of this class are semantically heterogeneous and defy any semantic generalization. In this class, we also find all stative and inchoative verbs of the language. These verbs are intransitive verbs which are morphologically patientive (i.e., their subject is cross-referenced as an object). The verbs are inflected for TAM using the markers of the third person of conjugation classI.³⁷ An example of a stative verb is given in (13), while two inchoative verbs are illustrated in (14).³⁸

(13) $xY=ndePn-gi$
 PERF.R=swell.AS-1OBJ
 ‘I got swollen up’.

(14) a. $b^{(w)}Y=tYP-Gpa-KkKi$
 <TRANSLOC>PST.R=INCH-heat.up.AS-2OBJ
 ‘You got hot’.

b. $xY=tYP-kKwaPni$
 PERF.R=INCH-boil[3OBJ]
 ‘It's boiled’.

In contrast to the verbs of conjugation class I, the members in classes II and III have a semantic and a morphological profile which is more readily identifiable. This profile deserves a study of its own in order to shed light onto how these classes operate in T-Oto, especially because they compete with conjugation class I in the partition of the verbal lexicon.

6.1 *The verbs of conjugation class II*

The 72 verbs of conjugation class II in my sample are all intransitive verbs. Most of such intransitive verbs are unergative verbs with a specific semantic profile: they express daily-life activities performed by human beings. In this sense, because many of the verbs in this class have this semantic property, being an unergative verb in the language is a property that orients class membership to class II, at least in a probabilistic way.

Similarly, the class has both basic (non-derived) and derived verbs. The list of the verbs in (15) illustrates a number of basic members of class II which typically illustrate this semantics, (*intr* stands for “intransitive”).

- (15) *KoPfo* (intr/II) ‘write’
nEM3 (intr/II) ‘dance’
NO (intr/II) ‘speak’
XQPtKi (intr/II) ‘make *tortillas*’
VyUPhU (intr/II) ‘sing’
XQGti (intr/II) ‘beg’
Kafi (intr/II) ‘scrap agave’
xY (intr/II) ‘chop wood’
xoPfo (intr/II) ‘harvest’

The class also includes other intransitive verbs expressing the same type of human activities but this time morphologically derived from transitive verbs of conjugation class I. I call such verbs “antipassive”. In T-Oto, there are four rules that produce such antipassive verbs: (i) by means of the affixation of *n-*, (ii) by the affixation of *-ve*, (iii) by compounding, and (iv) by changing inflectional class.³⁹

(i) A nasal prefix *n-* is found in the five verbs in (16). The three verbs in (16a) are clearly related to an existing transitive verb, but the two in (16b) are old formations which lack a transitive correlate, (*tr* stands for “transitive”).

- (16) a. *m-fCPdi* (intr/II) ‘watch cattle’ < *fCPdi* (tr/I) ‘watch over’
m-XqGti (intr/II) ‘patch’ < *XqGti* (tr/I) ‘patch’
n-tsoMni (intr/II) ‘crack (wood)’ < *tsoMni* (tr/I)
‘hack, chew’
b. *n-cKEPni* (intr/II) ‘play’
n-cKOntKi (intr/II) ‘chat’

(ii) A derivational affix *-ve* (at times also *-XYVe*) is found in more verbs, given in (17). The suffix renders the action of the source verb as a customary occupational activity. Derived verbs with *-ve* may be further converted into agent nouns that designate such occupations.

- (17) *xCP-GpYVe* (intr/II) ‘teach’/‘be a teacher’ < *xCPdi* (tr/I) ‘teach’
KUPGtY-Ve (intr/II) ‘teach’/‘be a teacher’ <
KUPGti (tr/I) ‘show’ <
XC-GpYVe (intr/II) ‘sell’/‘be a salesperson’ < *XC* (tr/I) ‘sell’
KqPthe-Ve (intr/II) ‘heal’/‘be a healer’ < *Kqthe* (tr/I)
‘heal’
ho-Gte (intr/II) ‘beat’/‘be a thug’ < *ho* (tr/I) ‘hit’
tsa-Gte (intr/II) ‘bite’/‘be a biter’ (for dogs) < *tsa* (tr/I) ‘bite’
NUP-Gte (intr/II) ‘have sight’ /‘be a visionary’ < *NUP* (tr/I) ‘see’

(iii) Antipassive verbs are also produced by V+N compounding. The five examples in my sample are given in (18). The last example also bears the antipassive prefix *n-*.

- (18) *hoPn+jom* (intr/II) ‘look for mushrooms’ < *hoPni* ‘look for’ (tr/I) +
jom ‘mushroom’
tsZP+hme (intr/II) ‘have a meal’ < *tsZM* ‘ingest’ (tr/I) + *hme* ‘tortilla’
VyU+the (intr/II) ‘be thirsty’ < *VyU* ‘die’ (tr/I) + *tePhe* ‘water’
XQ+Kmbita (intr/II) ‘make music’ < *XQ3* ‘play instr.’
(tr/I) + *Kmbita* ‘music’
n-tsoMn+zaP (intr/II) ‘hack wood’ < *tsoMni*
‘hack, chew’ (tr/I) + *zaM* ‘wood’

(iv) The antipassive verbs of conjugation classII in (19) are also derived from classI by just changing the membership of the verb to class II.

- (19) *mbaPtKi* (intr/II) ‘call’ < *mbaPtKi* (tr/I) ‘call’
KraPtsKi (intr/II) ‘cross’ < *KraPtsKi* (tr/I) ‘cross’
XaPxi (intr/II) ‘sweep’ < *XaPxi* (tr/I) ‘sweep’
XE (intr/II) ‘steal’ < *XE* (tr/I) ‘steal’
Xeni (intr/II) ‘do the laundry’ < *Xeni* (tr/I) ‘wash (clothes)’
BYPni (intr/II) ‘grind corn’ < *BYPni* (tr/I) ‘grind corn’
KwOMhO (intr/II) ‘plow’ < *KwOMhO* (tr/I) ‘plow’
nEMhi (intr/II) ‘read’ < *nEMhi* (tr/I) ‘read’
VyUMhU (intr/II) ‘sow’ < *VyUMhU* (tr/I) ‘sow’
xoPngi (intr/II) ‘open corn-cob’ < *xoPngi* (tr/I) ‘open (corn-cob)’
tsYKti (intr/II) ‘smoke’ < *tsYKti* (tr/I) ‘smoke’
hYPxi (intr/II) ‘blow instrument’ < *hYPxi* (tr/I) ‘blow (instrument)’
tO-beni (intr/II) ‘forget’ < *tO-beni* (tr/I) ‘forget’
KwQPdi (intr/II) ‘sew’ < *KwQPdi* (tr/I) ‘sew’
nthOP-nde (intr/II) ‘kiss’ < *nthOP-nde* (tr/I)
‘kiss’(nde ‘mouth’)

In contrast to the cases in (16) to (18), the derivation of the intransitive verbs in (19) does not occur by means of any overt morphological marking, but instead involves a special derivational rule that implies changing the inflectional class of the verbs involved. This is a possible analysis that has been already advanced for some of the conjugation classes of Hebrew in Aronoff (1994) where they are known as “binyanim”.⁴⁰ Alternatively, the verb pairs in (19) could be interpreted as being labile, that is, verbs which can both function transitively and intransitively without explicit morphological means, such as for example

English *drive* in its transitive use in *I'm driving a BMW these days* contrasted with intransitive *I'm driving*. Nevertheless, I take true labile verbs in T-Oto to be those which do not change conjugation class, and such verbs abound in conjugation classes I and III, e.g., *tsoni* (tr/intr/I) 'chew', *joni* (tr/intr/I) 'sweep', *kKYGki* (tr/intr/III) 'burst', *pQPXu* (tr/intr/III) 'weigh'), where the intransitive verb in the pair more often than not has the same agentive meaning as the intransitive verbs of class II in (19). If the relation between the verbs in (19) were to be treated as that of labile verbs, one should expect that there would be no restriction on the source of the transitive verb in question, and as it happens, no transitive verb of conjugation class III has an antipassive intransitive verb in class II.

The class also includes verbs which, depicting actions carried out by humans, are also typically targeted by middle voice morphology according to Kemmer (1993). The verbs in (20) are the ones found in my sample which have middle semantics. These verbs are basic verbs which are not marked morphologically with the middle prefix *n-*, which as we will see in Section 6.2.1 belong to conjugation III. The verbs in (20) are organized according to the middle situation types proposed by Kemmer, which include verbs depicting actions involving the human body, as well as other cognitive and motion verbs.

(20) Involving the body:	<i>KmbYM</i>	(intr/II)	'live'
	<i>KOMhO</i>	(intr/II)	'sleep'
	<i>ñUPhU</i>	(intr/II)	'wake up'
	<i>kCPni</i>	(intr/II)	'snore'
	<i>kOKtsKi</i>	(intr/II)	'breathe'
	<i>hi</i>	(intr/II)	'have a bath'
	<i>tsYM</i>	(intr/II)	'suckle'
	<i>thePde</i>	(intr/II)	'laugh'
	<i>mbaPfi</i>	(intr/II)	'yell'
	<i>hePci</i>	(intr/II)	'sneeze'
	<i>Xi</i>	(intr/II)	'defecate'
	<i>skY-Gpi</i> ⁴¹	(intr/II)	'urinate'
	<i>haP+ndeP</i> ⁴²	(intr/II)	'yawn'
Physio-psychological:	<i>tsU</i>	(intr/II)	'get scared'
	<i>zoPni</i>	(intr/II)	'cry'
	<i>hwOMKtsKi</i>	(intr/II)	'get startled'
	<i>VOntsKi</i>	(intr/II)	'complain'
Motion:	<i>KmbC</i>	(intr/II)	'stand up'
	<i>m-pKQKtsKi</i>	(intr/II)	'lean on one's chest'
	<i>Kyo</i>	(intr/II)	'walk'
	<i>XY</i>	(intr/II)	'walk fast'
	<i>Vihi</i>	(intr/II)	'be in a hurry'

Finally, in the sample there are at least nine verbs with non-human subjects that do not readily conform to the general profile of the class: *KmbQPtKo* 'go first', *fqPgi* 'bark',⁴³ *hUMi* 'lay eggs', *ja* 'exist', *tsqM* 'catch fire', *zYPdi* 'for a thing to hang', *n-kKOMKtsKi* 'loom, appear', *BO* 'for a flaccid mass to be on top of something' and *Ve* 'grow/be alive'. The relevance of these verbs will be discussed further in Section 7.

6.2. The verbs of conjugation class III

In contrast to conjugation classII, the semantic profile of the members of classIII is heterogeneous and membership is not restricted to a specific transitivity type. Nevertheless, a closer look at the verbs in this class reveals that the class functions as a depository of verbs which have a special set of grammatical properties (semantic or morphological), and consequently, many of the members of this class can still be organized in small idiosyncratic groups. This makes the principles ruling the membership of a lexeme to this class an intricate phenomenon, as I will try to show.

6.2.1. *Transitive verbs.* The class includes a few typical ditransitive (dtr) verbs. The ones found in the sample are given in (21).

- (21) *KUMni* (dtr/III) ‘give to a third person’
Kna (dtr/III) ‘give to a first or second person’
hwEPGki (dtr/III) ‘give as a gift’
hmZMGti (dtr/III) ‘lend’

In the sample, there are also a number of inchoative verbs of conjugation classI which originated from transitive verbs of conjugation classIII by means of the inchoative prefix *tY-*

- (22) *kKwaPni* (tr/III) ‘boil’ > *tY-kKwaPni* (intr/I) ‘boil’
KmbQPdi (tr/III) ‘lose’ > *tY-KmbQPdi* (intr/I) ‘get
lost’
KotKi (tr/III) ‘dry’ > *tY-KotKi* (intr/I) ‘get dry’
KUMgi (tr/III) ‘sweeten’ > *tY-KUMgi* (intr/I) ‘sweeten’
KUMxki (tr/III) ‘make salty’ > *tY-KUMxki* (intr/I) ‘get salty’
BYPtKi (tr/III) ‘put in’ > *tY-GkYPtKi* (intr/I) ‘go in’
mbaPGki (tr/III) ‘enlarge’ > *tY-mbaPGki* (intr/I) ‘get
large’
ntyUPmi (tr/III) ‘make lukewarm’ > *tY-ntyUPmi* (intr/I) ‘be
lukewarm’
NUPtsKi (tr/III) ‘fill’ > *tY-NUPtsKi* (intr/I) ‘fill
up’
XatKi (tr/III) ‘heat up’ > *tY-GpatKi* (intr/I) ‘get hot’
XZPdi (tr/III) ‘frighten’ > *tY-GpZMdi* (intr/I) ‘get frightened’
thePge (tr/III) ‘finish up’ > *tY-thePge* (intr/I) ‘end’
VO (tr/III) ‘cook’ > *tY-GtO* (intr/I) ‘boil’
tsKoMgi (tr/III) ‘make dirty’ > *tY-tsKoMgi* (intr/I) ‘get
dirty’

Besides the verbs in (22), the three verbs in (23) have an intransitive correlate in conjugation classII. The relation between the verbs in (23) is difficult to interpret, but in principle they could be taken to be old outcomes of a causative rule (no longer productive), which involved change of inflectional class.

- (23) *KraPtsKi* (tr/III) ‘cross someone’ < *KraPtsKi* (intr/II) ‘cross’
tsqM (tr/III) ‘set fire’ < *tsqM* (intr/II) ‘catch fire’
NO (tr/III) ‘talk of someone’ < *NO* (intr/II) ‘talk’

Similarly, there are 14 verbs in this class which are truly labile. In such pairs, the intransitive verb most commonly depicts a human activity similar to the semantics of most verbs of classII (24a). Those that stray from this semantic generalization are given in (24b).

- (24) a. *fYtsKi* (tr/intr/III) ‘uproot’
gwOPntsKi (tr/intr/III) ‘stir up’
tsYni (tr/intr/III) ‘prick’
kKatsKi (tr/intr/III) ‘gather cattle’
mUPntsKi (tr/intr/III) ‘gather, harvest’
mYPndo (tr/intr/III) ‘gather, heap up’
nOMmi (tr/intr/III) ‘water’
goPsa (tr/intr/III) ‘enjoy’
pQPXu (tr/intr/III) ‘weigh’
nVxUGki (tr/intr/III) ‘heal (with witchcraft)’
ngwaPGki (tr/intr/III) ‘rinse’
*xCdi*⁴⁴ (tr/intr/III) ‘pray’
- b. *jwaPdi*⁴⁵ (tr/intr/III) ‘finish’ (tr. ‘kill’)
xUni (tr/intr/III) ‘split’
kKYGki (tr/intr/III) ‘burst’

All transitive loanwords from Spanish also belong to this conjugation class. The verbs in (25) are the ones found in the sample. This is evidence that the rule assigning class membership to classIII was still productive at least at the time when the words were borrowed.⁴⁶ The fact that such loan verbs appear in class III is surprising, for the expectation is that they should be categorized as members of class I, which is the class that serves as both a morphological and a lexical default.

- (25) *aPndaProP* (tr/III) ‘for an illness to be about to affect someone’ < *andar*⁴⁷
goPsa (tr/intr/III) ‘enjoy’ < *gozar*
hoPrba (tr/III) ‘annoy’ < *jorobar*
koPbra (tr/III) ‘charge’ < *cobrar*
maPnsa (tr/III) ‘tame, calm somebody down’ < *amansar*
mpaPrePhoP (tr/III) ‘make a surface even’
< *emparejar*
pQPXu (tr/intr/III) ‘weigh’ < *pesar*
prePsePntaP (tr/III) ‘present, introduce’ < *presentar*

Finally, the remaining 51 transitive verbs in the sample of conjugation classIII are basic verbs with a miscellany of meanings with no apparent semantic core. The verbs include eventive verbs (e.g., *jwaPdi* ‘finish/kill’, *fqGki* ‘squash’, *foPGti* ‘nail’, *ja* ‘do’, *thoGki* ‘bore a whole’, *tsQPtKi* ‘chop’, *tsYni* ‘prick’, *VyYtKi* ‘crush’, etc.), verbs of carrying (e.g., *thEMni* ‘load’, *KwEGki* ‘take away’, *BoPKtsKi* ‘return’, etc.), and many other verbs which do not involve physical impact (e.g., *VQPGti* ‘entrust’, *ja-mO-mOdi* ‘thank’, *zQngwa* ‘greet’, *KNE* ‘have family/animals’, etc.).

6.2.2. *Intransitive verbs.* The intransitive verbs of classIII are subject to more generalizations than the transitive verbs in Section 6.2.1. For example, all reciprocal verbs in the language

belong to this class. Reciprocal verbs in T-Oto are intransitive verbs which are commonly derived (the only basic verb in my sample is *thOGti* ‘get married’). Most reciprocal verbs are derived by means of the middle voice prefix *n-*, which is homophonous to the antipassive marker in (16) above.⁴⁸ The verbs in the sample are given in (26).⁴⁹ Some of such verbs are deponent verbs, that is, verbs which are marked with the middle voice prefix, but lack a transitive counterpart. These are given in (27), (*e.o.* stands for “each other”).

- (26) *m-XOMdi* (intr/III) ‘get to know e.o.’ < *XOMdi* (tr/I) ‘know’
n-hYfi (intr/III) ‘hug e.o.’ < *hYfi* (tr/I) ‘hug’
n-thQtsKi (intr/III) ‘hug e.o.’ < *thQtsKi* (tr/I) ‘hug’
n-huPnta (intr/III) ‘get together’ < *huPnta* (tr/III) ‘put together’
m-prePsePntaP (intr/III) ‘introduce to e.o.’ < *prePsePntaP*
(tr/III) ‘introduce’
n-xUni (intr/III) ‘get divorced’ < *xUni* (tr/III) ‘split’
n-zQPngwa (intr/III) ‘greet e.o.’ < *zQPngwa* (tr/III) ‘greet’
nthOP+nde (intr/III) ‘kiss e.o.’ < *nthOP+nde* (tr/I) ‘kiss’
mXYKtsKi (intr/III) ‘bump into e.o.’ < *mXYKtsKi* (tr/III) ‘bump into sth.’
- (27) *n-VyU* (intr/III) ‘fight’
n-syEti (intr/III) ‘be opposite to e.o.’
n-thyQ (intr/III) ‘come across e. o.’
*n-syUtY+kU*⁵⁰ (intr/III) ‘murmur in e.o.’s ears’
*n-jo+ndeP*⁵¹ (intr/III) ‘tell e.o. secrets’

The reciprocal verbs in (28) were also produced by changing the conjugation class of the verb, just like the causative ones in (23), and the agentive verbs in (19).

- (28) *NO* (intr/III) ‘talk to e.o.’ < *NO* (intr/II) ‘talk’
ñUP (intr/III) ‘see each other’ (e.o.) < *NUP* (tr/I) ‘see’
zoPfo (intr/III) ‘talk to e.o.’ < *zoPfo* (tr/I) ‘talk to sb.’
ñOni (intr/III) ‘help e.o.’ < *NOni* (tr/I) ‘help’

Similarly, conjugation class III holds the vast majority of middle verbs of the language. A middle verb in T-Otomi is an intransitive verb that bears the middle prefix *n-* and has the semantics associated with the middle situation types in Kemmer (1993), i.e., including actions involving the body, motion and other cognitive and psychological actions. The middle verbs found in my sample that belong to this class appear in (29). These verbs have similar middle semantics as the ones presented in (20) above which belong to class II. The only difference between these and the ones in (20) involves the presence of the middle prefix *n-*.⁵² A middle voice analysis can be also extended to account for the reciprocal verbs in (26) above. Deponent middle verbs are given in (30), and they are equivalent to the deponent reciprocal verbs in (27).⁵³

- (29) *n-cKE* (intr/III) ‘agree with, suit’ < *KEhE* (intr/I) ‘come’
n-kKaP (intr/III) ‘get wet’ (on purpose) < *kKaP* (intr/I) ‘get wet’
n-BOni (intr/III) ‘rest’ < *BOni* (tr/I) ‘cool up’
m-XCdi (intr/III) ‘change clothes’ < *XCdi* (tr/I) ‘change’
n-VqtKi (intr/III) ‘fasten’ < *VqtKi* (tr/I) ‘fasten’

	<i>n-VaPGki</i>	(intr/III)	‘scratch (a lot)’	<	<i>VaPGki</i>	(tr/I)
	‘cut’					
	<i>n-txKQGpi</i>	(intr/III)	‘dash’	<	<i>KQGpi</i>	(tr/I)
	‘cast’					
	<i>n-cKExki</i>	(intr/III)	‘comb’	<	<i>KExki</i>	(tr/I)
	‘comb’					
	<i>n-cKOPxni</i>	(intr/III)	‘shave’	<	<i>KOMxni</i>	(tr/I)
	‘shave’					
up’	<i>m-XaPtKi</i>	(intr/III)	‘get warm’	<	<i>XaPtKi</i>	(tr/III) ‘heat
	<i>m-pKQPdi</i>	(intr/III)	‘get lost’	<	<i>mbQPdi</i>	(tr/III)
	‘lose’					
	<i>m-pQPXu</i>	(intr/III)	‘weigh (oneself)’	<	<i>pQPXu</i>	(tr/III) ‘weigh’
	<i>n-jwaPdi</i>	(intr/III)	‘kill oneself’	<	<i>jwaPdi</i>	
	(tr/III) ‘kill’					
(30)	<i>m-fQtsKi</i>	(intr/III)	‘swim’			
	<i>m-XCPGki</i>	(intr/III)	‘get something twisted’			
	<i>n-cKOni</i>	(intr/III)	‘hide’			
	<i>n-cKQPnte</i>	(intr/III)	‘get involved’			
	<i>n-VxUMni</i>	(intr/III)	‘get all muddy’			
	<i>n-hwZMtsKi</i>	(intr/III)	‘get in bed’			
	<i>n-kKoPtKi</i>	(intr/III)	‘undress’			
	<i>n-BqPde</i>	(intr/III)	‘get dressed’			
	<i>n-syEP</i>	(intr/III)	‘look at oneself in the mirror’			
	<i>n-thQP</i>	(intr/III)	‘agree with, suit’			
	<i>n-Vqxni</i>	(intr/III)	‘lean on one side’			
	<i>n-cKoP+mfePni</i>	(intr/III)	‘have second thoughts’			

Other intransitive verbs of classIII in my sample include a number of derived antipassive verbs (31), which are similar to the verbs of conjugation classII, and the few basic atmospheric verbs (32).⁵⁴

(31)	<i>m-XQfi</i>	(intr/III)	‘work’	<	<i>XQfi</i>	(tr/I)	‘work, do’
	<i>zQPngwa-Ve</i>	(intr/III)	‘greet’	<	<i>zQPngwa</i>	(tr/III)	‘greet’
	<i>hmZMGtY-Ve</i>	(intr/III)	‘be lending’	<	<i>hmZMGti</i>	(tr/III)	‘lend’
	<i>hwEPGkY-Ve</i>	(intr/III)	‘donate’	<	<i>hwEPGki</i>	(tr/III)	‘give as a gift’

(32)	<i>haPtsi</i>	(intr/III)	‘dawn, wake up at the start of the day’ ⁵⁵
	<i>neGki</i>	(intr/III)	‘dawn’
	<i>n-jUni</i> ⁵⁶	(intr/III)	‘get cloudy’
	<i>jYKtKi</i>	(intr/III)	‘drip, leak’

The rest of the intransitive verbs in the sample do not readily conform to any semantic or morphological generalization. Such verbs include: *fQtKi* ‘tremble’, *kKePntKi* ‘get an ankle twisted’, *mYngi* ‘get skin wrinkled’, *suPfrZP* ‘suffer’, *VOni* ‘stroll’, *xqMni* ‘stride’, *VaPGki* ‘scratch’, *mitYxi* ‘be lodged at some place’, *hmOMn+the* ‘water by hand’ (*tePhe* ‘water’) and *jYtKi* ‘drip, leak’.

7. Canonicity and the conjugation classes of Tilapa Otomi

In this section, I briefly evaluate the degree of canonicity of the conjugation classes of T-Oto against the canonical approach to inflectional classes by Corbett's (2009) presented in Section 2. I show that classes I and III are more canonical than class II, which is rather atypical. There were two principles ruling the canon: the formal principle, which attends to morphological properties of the classes, and the independence principle, which attends to the distribution of class members. The principles were realized by a number of definitional criteria.

Canonicity is a property ascribable to actual constructions that are compared with the canon. The overall ranking of canonicity of a given conjugation class can be calculated in an impressionistic way by assigning a numerical value to the behavior of each class for each of the definitional criteria. In principle, this value can be assigned according to the following score: 1 is canonical and 0 is non-canonical.⁵⁷

However, canonicity is a gradable property. This means that the degree of canonicity of a structure is not just a question of a yes or no answer, but a question of degree. The same applies to the behavior of a certain class with respect to one of the criteria. In other words, for some criteria the behavior of the classes lie in a grey area. When this happens, it is difficult to come up with an exact numeral value, between 1 and 0, which may index the exact tinge of gray worn by the behavior of a given class. Our judgment here is based on qualitative factors.

In this article, all the gray areas, regardless of the intensity of the shading, will be given a value of 0.5. In other words, I will assign a 0.5 value to a given structure when its degree of canonicity lies somewhere in between being maximally canonical and being maximally non-canonical. The sum of the total number of criteria (10 in this case) represents maximal canonicity. This procedure works with the assumption that all criteria are equal in weight in the shaping of the canon.⁵⁸

The relevant results are given in Table 21. For convenience, I have just included the gist of each criterion. Further below, I discuss the assignment of values to each of the criteria one by one.

Table 21. *The degree of canonicity of the three conjugation classes of T-Oto.*

In a canonical situation...		I	II	III	System
Formal	1 Forms differ as consistently as possible across classes.	0	0	0.5	
	2 The classes realize the same distinctions.	1	1	1	
	3 Each member behaves identically.	0	0	1	
	4 Each paradigm cell is of equal status.	0	0	0.5	
Independence	5 The larger the number of members, the more canonical the class.	1	0	0	
	6 There is no phonological motivation.	1	1	1	
	7 There is no syntactic motivation.	1	0	1	
	8 There is no word-class motivation.	0	0	0	
	9 There is no pragmatic motivation.	1	1	1	
	10 There is no semantic motivation.	1	0	0.5	
Total		6	3	6.5	
Ratio of canonicity		6/10	3/10	6.5/10	15.5/30

Criterion 1 has weak values because of the high degree of paradigmatic neutralization across the classes. The morphology involved in the paradigm of class I verbs is so erratically spread over the inflectional system that its marking is hardly unique to this class at all. In Table 19, the ratio of distinctive markers per overlapping ones was 1 to 14 for this class! The forms of class II and III are more consistent, but neither of them is very canonical. Most crucially, there are very few inflected forms in the entire system where the three classes are clearly distinguished by means of completely different markers. Despite this, I have given class III a value of 0.5 instead of a zero, because the ratio of overlapping markers in this class is the lowest of the three, with a one to one ratio.

Criterion 2 is the only one where the three conjugation classes of T-Oto rank together as canonical, as all of them realize the same morphosyntactic and morphosemantic distinctions. This does not mean that all members of such classes should have all the distinctions available. For example, class I has many stative verbs which cannot be inflected in certain tenses, for example the past. Similarly a number of motion verbs of class I, such as *KEMhE* (intr/I) ‘come’, *BYPhYP*(intr/I) ‘get in hither’, *XqPhqP* (intr/I) ‘flow’, *tsZMtSKi* (tr/I) ‘bring a person’, *tsY* (tr/I) ‘bring’, *VyUM* (tr/I) ‘carry’, etc. are only inflected in the local tenses. Such inflectional restrictions are not a characteristic or a handicap of the class, they respond to the lexical properties of specific members. Similarly, the classes rank with very low canonicity for criteria 3 and 4.

Criterion 3 has internal scope and implies that there should be no stem alternants or other subclasses within one given inflectional class. Here many verbs in classes I and II have stem alternants required by their inflection. This may be seen in the paradigms in Table 7 and 8, where the model verbs ‘fall’ and ‘grind corn’ occur in three different stems, respectively (e.g., *VCPgi*, *tCPgi*, *ntCPgi* and *BYPni*, *kYPni*, *nkYPni*). This alternation is not available for class III verbs. In this respect, class III ranks as canonical.

Criterion 4 dictates that for the canonical situation each cell is of equal status. If there are implications between cells in the form of paradigm-structure conditions (Wurzel 1989 [1984]; Carstairs-McCarthy 1998; etc.) or of any other type, these can reduce the differences between classes, so that the paradigms are not kept maximally independent. In this respect, the erratic dispersion of the morphology realizing class I across classes II and III, regardless of how we account for the direction of leveling, makes this class rank non-canonically. Class II is a little more canonical than class I because if a given form has the first person formative *tYP*, this will predict that the form for the second person will have *gYP*, and vice versa. The correlation works for most cases except for the immediative irrealis. But all in all, there are only 16 instances in the paradigm where this could apply. Class III is the most canonical of the three. Here the occurrence of the formative *tZP* in any form predicts that a *tZP* will also be used for all persons.⁵⁹ For the inflection of the past tenses of class III (also the perfect) speakers could be further aided by a rule of referral that directs them to the inflection of class I verbs, at least for the first and second persons. Because of this, I have given class III a value 0.5.

Criterion 5 is about distribution. In the canonical situation, the larger the number of members of an inflectional class the more canonical that class. The equal share of three classes is 33.3% (100 divided by three). In my sample, 62.5% of the verbs belong to class I. This represents +29.2 points above the equal share, making class I canonical. In contrast, the

other two classes are non-canonical in this respect. 11.6% of the verbs in the sample belong to class II, ranking -21.7 points below the equal share! On the other hand, while class III has more than a quarter of the verbs in the sample (25.8%), this share still ranks -7.5 points below the equal share.

The rest of the criteria suggest that in the canonical situation speakers should remember the assignment of a particular lexeme to a particular class without further clues. Weakening of the criteria may apply precisely when a given property associated with the lexeme serves as a token signaling its class membership. In this respect, while the three classes rank canonically according to criteria 6 and 9, they rank low in canonicity for criterion 8 because the classes are limited to verbs.⁶⁰ Class I and III are also canonical in respect of criterion 7. In contrast, class II is non-canonical because all its members are intransitive verbs.

Finally, criterion 10 dictates that a canonical class should not be semantically motivated. Class I is canonical in this respect. The same applies to the vast majority of the members of class III, but as middle verbs (marked with the middle prefix *n-*) are found in this class, the class is not entirely canonical. This is why I have given class III a value of 0.5 instead of 1. Most problematic in this respect is the status of class II.

In Section 6.1, we saw that the vast majority of the verbs in conjugation class II, whether basic or derived, depict actions performed by human beings: 63 verbs out of a total of 72, constituting the 87%. According to criterion 10, the semantic homogeneity of class II would rank so low that it could even jeopardize its treatment as a genuine conjugation class. The alternative could be to treat such verbs as a subclass of class I verbs. There are at least three pieces of evidence that point to class II being a conjugation class.

Firstly, there is not a single marker in the paradigm of a class II verb that can be reasonably conceived of as functioning as an exponent of any agentive, intransitive or high animacy feature value. Secondly, in (19) we saw a number of instances where verbs of class II could be treated as derived from class I in the very same fashion as the Semitic *binyanim* advocated by Aronoff (1994). This phenomenon also happens between class I and III for most reciprocal verbs in (28), and between class II and III for the old causative pairs in (23). Similarly, verbs with agentive semantics are also found in other conjugation classes, so that agentivity or high animacy is not a feature value that forces membership to class II. For example *tsCgi*(intr) ‘jump’, *VetsKi*(intr) ‘go up’, *tsoni*(tr/intr) ‘chew’, *Kqde* (intr) ‘hear, obey’, etc. belong to conjugation class I, while *kKatsKi* (tr/intr) ‘gather (cattle)’, *mUPntsKi* (tr/intr) ‘gather (corn), harvest’, *nOMmi* (tr/intr) ‘water (plants)’, and others like them belong to class III. Finally, I have pointed out that class II also includes a number of verbs with non-human subjects. While these verbs are still few, they constitute 12% of the sample; a portion of the lexicon which may become significant as more members were added.

Table 11 also indicates the overall score of canonicity of the classes when all the values are put together. I take any score above 5 as being canonical, while below 5 is non-canonical.⁶¹ Then there is the question of degree, which is approached by the numerical value. The most canonical of the conjugation classes of T-Oto is class III: it misses maximal canonicity by only 3.5 points. Class III is closely followed by class I. In contrast, class II is typically non-canonical, as it does not only rank below 5, but misses maximal non-canonicity by just 3 points, almost the opposite of class III.

In principle, we could also take the ranking of the three conjugation classes together and evaluate them as a morphological system. Because of the low canonicity of classII, the overall ranking of the system is relatively low: it is roughly canonical because it barely scores over half of the spectrum (15.5 represents the 51% of 30).⁶²

8. Final remarks

In this article, I have studied in detail the three conjugation classes of T-Oto focusing both on their inflectional realizations and on the factors determining class membership. I have shown that conjugation classI works as a default major class, while classes II and III are less canonical inflectional classes because their formal distinctiveness is based on elaborations based on the realizations of classI, and the vast majority of their members are not assigned arbitrarily, but present a number of properties that make probabilistic predictions possible. This is especially the case for classII. A number of such predictions are given in (33) in the form of implicational hierarchies similar to those proposed in Blevins (2006):

- (33) a. If a verb depicts a property concept or an inchoative state, it belongs to classI.
b. If a verb has reciprocal semantics, it is intransitive and belongs to classIII.
c. If a verb has middle semantics, it is intransitive.
d. If a verb with middle semantics bears a nasal prefix, it belongs to classIII; if it does not have a prefix, it will most likely belong to classII.
e. When an intransitive verb depicts a human agentive activity, it belongs to classII (only exceptionally could it belong to classIII),
 (i) if it has a *-Ve* ending, or
 (ii) if it has the antipassive prefix *n-*, or
 (iii) if it is a compound.
f. When an intransitive verb depicts a human agentive activity, and
 (i) if its transitive pair belongs to classIII, it then belongs to classIII, or
 (ii) if its transitive pair belongs to classI, it most likely belongs to classII.
g. If a verb is transitive, it belongs to either classI or classIII.
h. If a transitive verb is a loanword from Spanish, it belongs to classIII.

Morphologically, the classes of T-Oto constitute an interesting object of study for a theory of inflectional classes because they are made possible by loose inflectional formatives, which are neither bound affixes in the traditional sense nor stem extensions closer to the root. Similar contrasts appear in distantly related Chichimeco Jonaz as described in Angulo (1932), but the extent to which there are systemic similarities remains an open question for further research. Oto-Manguenan languages display rich morphological complexity, and conjugation classes appear to be one of the axes where such complexity is resolved, but much of the morphological treasures of these languages remain veiled and awaiting discovery.

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Notes

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- ² A linguistic variety is defined as “(l)a variante lingüística... se define como una forma de habla que: a) presenta diferencias estructurales y léxicas en comparación con otras variantes de la misma agrupación lingüística; y b) implica para sus usuarios una determinada identidad sociolingüística, que se diferencia de la identidad sociolingüística de los usuarios de otras variantes.” (CLIN 2008: 37), [“a variety of speech (i) which has structural and lexical differences in comparison with other varieties within the same linguistic group, and (ii) which has a distinct sociolinguistic mark of identity for their users, different from the sociolinguistic identity born by speakers of other varieties.” (my translation)].
- ³ Santiago Tilapa is located at 2,768m above sea level at coordinates 19° 11' 12.86" N and 99° 25' 18.30" W.
- ⁴ Consonants: CK/C[?]; C4/FORTIS/ (word initially); GC/FORTIS/ (word internally); ɛ/p^h/; j/k^h/; kʀ/; N/ɲ/; c/ɬ/; r/ɾ/; x/s/; y/j/. Vowels: C/ɔ/[ɒ]; ɔ/ɛ/; q/ə/; ʏ/ɨ/; ̃ nasal vowel. Abbreviations: ◊ represents an infix; = clitic; 1/2/3 grammatical persons; AS adjusted stem; AMBU ambulative; B bound shape of a verb; CONT continuous; DEF definitive; EMPH emphatic; EXCL exclusive; IMPF imperfect; INCL inclusive; *intr*

intransitive verb; INCH inchoative; IRR irrealis; NEG negative; OBJ object; PL plural; PRES present; PST past; R realis; SG singular; SS secondary stem; ST stative; TRANSLOC translocative; *tr* transitive verb.

5 Verb stems like *VCPgi* ‘fall’ and *BYPni* ‘grind corn’ are words with an onset fortis consonant /t/ and /k/. Fortis consonants are commonly realized by pre-aspirated voiceless allophones (i.e., [ʰt] and [ʰk]) when preceded by an open syllable, like the verbal stems in (9a) and (9b). They are not pre-aspirated when preceded by a close syllable, like in the subparadigm of the ambulative andative realis in Table 7 below. In turn, the stems *VCPgi* and *BYPni* serve both as primary stems and as citation forms. See Example (12) and Note 7 for alternative stems.

6 The same softening occurs in the homophonous P&TAM clitic *VYP* in Example (11).

7 The verbs *VCPgi* ‘fall’ and *BYPni* ‘grind corn’ appear here in their ‘secondary stem’, which is built by lenisizing the onset fortis consonant, e.g., *tCPgi* and *kYPni*. The secondary stem is used when the verb inflects for the third person (at times also the second person) in a number of specific tenses, the present irrealis being one of them. There is a third stem I treat as the “perfect stem” which is used for the form of third person in the perfect realis and the ambulative irrealis.

8 The sample is mainly based on a database of about 7,000 inflected forms from different lexemes. While for some lexemes, only a number of contrastive forms were collected to register their class, for many, the database has the entire paradigm. For the majority of the lexemes in the database there are a number of informative forms. The paradigms in Section 4 were constructed with the information provided in this database.

9 Transitive verbs are used here as a convenient cover category to include both monotransitive and ditransitive verbs.

10 The tenses I treat here as “imperfect distal realis” and “pluperfect realis”, and to a certain extent the “ambulative irrealis” are also commonly used with fronted adverbials. In this respect, their occurrence may respond to other types of morphosyntactic requirements which at the time of writing this article were not yet properly understood. Nevertheless, this does not affect the pertinence of the present analysis.

11 As pointed out in Section 3, the imperfect tenses are morphologically built on present tenses, and they both behave as a block for distributional purposes.

12 The formative has the phonologically conditioned alternant *tYP* [tɛ̃P], which results from the harmonization of /i/ in /tʃ/ to the central vowel /i/ of the syllabic nucleus of the preceding syllable.

13 Like in the other two present tenses in Table 9, the first and the second person carry a high tone here as well. The TAM marker *a* receives a high tone in the third person when preceded by the cislocative affix *b-*. Historically, the labial affix was the marker *ba*, which in the third person was associated with the bare stem. In reality, a form such as *g^waP* for the second person resulted from a left-driven metathesis in an original sequence **/g-aP-ba/ > */g-aP-b/ > */g(b)aP/ > [g^waP]*.

15 While the cislocative value is conveyed for the second and third person by the labial affix, for the first person, there is ambiguity between an ambulative and a cislocative reading except with option B of class I, which have *tZP*.

16 The translocative of the third person is realized as follows: /B-bi/ > /b(B)i/ > /bwi/ > [b^wi] (*b^wY*). The /i/ is centralized through assimilation to the velar component of the labialization.

17 In the sequence *tYP=tYP*, the lenis of the second formative, i.e., the person marker, is always realized as [d], e.g., *tYP=dYP*.

18 The old adverb survives in T-Oto as the adverbial clitic *x* ‘already’. This can combine freely with other tenses to express anteriority, as for example in (i), where it is used with the imperfect continuous realis.

- (i) *KneM a naPna x=maP=KOMh=aP*
and DEF.SG woman already=IMPF.CONT.R=[3.PRES]sleep.AS=PHRASE.FINAL
‘And the woman was already sleeping.’ (Txt)

19 Alternatively, /g/ and /b/ could be seen as the voiced phones [g] and [b] of a lenis /k/ and /t/ for initial position, whose voiceless (non-preaspirated) phones [k] and [t] are used before /j/. Such an account is more coherent with what appears to have happened historically.

20 This marker corresponds to the marker *xæ*, already found in Cárceres. It may be an early weak pronunciation of the adverb *xC* ‘already’ (i.e., centralized) occurring with an inflected form with a zero P&TAM clitic. Alternatively, it may well result from associating *xC* to the inflected form of third person of the present habitual realis marked with a clitic *i*, which still survives as a present marker in Eastern Highlands Otomi (Voigtlander and Echegoyen 1979), which then underwent centralization.

21 As mentioned in Note 15, in the local tenses an /i/ gets centralized after the velar component of the labialization, e.g., /j=B-gZP/ > /j=g(B)ZP/ > /j=gwZP/ > [j=k^wɛ̃P] (*xk^wYYP*).

22 The present irrealis is also one of the most common encodings of the imperative.

- 23 The maintenance of maximal differentiation in the present irrealis may also respond to the high frequency
of this tense.
- 24 Furthermore, in contrast to counterpart tenses of the realis, the present translocative irrealis is also used for
the first person. Defectiveness in person in the local paradigms may respond to semantic pressures (e.g., it
is more natural for the speaker to be able to talk about potential motion events that involve the speaker as
subject rather than actual ones), but such a restriction does certainly not explain the defectiveness of the
pattern in the past tense.
- 25 In Cárceres' description, Old Otomi is said to have two conjugation classes, which are called the *Tana* and
the *Tati* conjugations. Palancar (2011) argues for a reinterpretation of the historical data, and provides
evidence that the *Tana*-conjugation class in Cárceres in reality consists of two other classes, which are the
historical ancestors of class I and II of T-Oto.
- 26 See Note 11 for the alternant tYP [tɪ-P] of the formative tZP .
- 27 In the translocative, the markers of the first and the second person surface as homophonous [g^wɪ] because
of the centralization of /i/ before the labialization, (see Notes 15 and 19 for further examples). For the third
person the marker surfaces as either t^vY [t^wɪ] or as tY [tɪ], with optional labialization. I take this marker
to represent *ta* and not *ti*. Although both sources are equally possible, the leveling appears to be from
class I to classes II and III, and not the other way around. This could be seen in that the markers used for the
first and second persons are those of class I, and in that a *ta* marker is used for the third person of the
present ambulative. Despite all this, the direction of the leveling in the past tense is unequivocally from
classes II and III to class I.
- 28 This sequence always surfaces phonetically as [tɪ=g^wɪ] instead of [*t^wɪ=g^wɪ].
- 29 Lastra (1997) reports much variation for the encoding of past irrealis for the distant language of Ixtenco
Otomi. This could also be a case of overabundance.
- 30 Thornton (2010, 2011) takes a canonical approach to overabundance. The case of T-Oto ranks highly
canonical in Thornton's proposal because of various reasons: (a) the cell-mates are restricted to specific
cells in a subparadigm (i.e., here only in the first and second persons); (b) they have a similar frequency in
usage (i.e., speakers have an equal preference for one or the other, that is, they may produce one form at a
given point, and then produce some other at a different time under equal circumstances); (c) they are not
conditioned by any stylistic or pragmatic factors; and (d) they are morphomic, in that they are confined to
the verbs of a specific inflectional class.
- 31 I thank Matthew Baerman for a fruitful discussion on this matter.
- 32 In Table 11, I showed that the ambulative cislocative realis has two cell-mates for the first and the second
persons of class I verbs. In class II, the past irrealis has three cell-mates for the first person, and two for the
second.
- 33 For class II, overlap with class I happens in 44 inflectional forms out of a total of 67, for class III, in 32 out
of a total of 64.
- 34 For class I, we have overlap with either class II or class III, or with both, in 58 forms out of a total of 66.
- 35 A neutralization between class I and II in third person also occurs, e.g., the imperfect ambulative realis and
the pluperfect.
- 36 I thank one of the anonymous referees for suggesting placing some emphasis on this remarkable behavior.
- 37 In past tenses of the realis and in the irrealis, the marking of third person in P&TAM clitics cannot be
disassociated from the marking of TAM. In the present and imperfect tenses of the realis, it is zero.
- 38 Inchoative verbs select local tenses for their inflection, motivated by a metaphorical construal that views
state change as change of location.
- 39 The class also contains two verbs derived from intransitive verbs, the compound and middle verb *m-*
pKC+NO (intr/II) 'crouch' (from *KmbC* 'stand' (intr/I) + *NO* 'head') and the verb *n-cKo* (intr/II)
'accompany', derived from *KYo* (intr/II) 'walk'.
- 40 The binyanim are traditionally regarded as a set of phonological templates. Aronoff views such templates
as organized paradigms of different inflectional classes.
- 41 The element *skY-* is a diminutive prefix.
- 42 This verb is a compound with an opaque verb stem. The stem *ndeP* is a nominal meaning 'mouth'.
- 43 Despite the action not involving a human being, this verb could be included in the list in (20) as involving
the body. This was suggested by one of the anonymous referees.
- 44 The verb derives from *xCdi* (tr/I) 'teach'.
- 45 The transitive verb meaning 'kill' gave rise to the derived middle verb *n-jwaPdi* (intr/III) 'kill oneself'.

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- 46 I lack the appropriate data to support whether the rule is still productive. The list could also include the
verb *sePIeP* ‘turn around’, which is a stem of obscure origin that does not have native phonology (i.e.,
47 /s/ and /l/ are very rarely found in Otomi words).
- 48 All Otomi verbs have a similar meaning to the Spanish verb, except *andar* ‘walk’.
- 49 For the diachronic relation between the middle voice prefix and the antipassive marker, see Palancar
(2006).
- 50 The last two verbs in (26) derive from a transitive verb with a complex onset involving a nasal. The
association of the nasal prefix is sanctioned by the phonotactics.
- 51 The element *kU* is a nominal meaning ‘ear’.
- 52 See Note 39.
- 53 I have so far been only able to identify one middle verb of classII (*m-pKC+NO* ‘crouch’) and two of classI
(*m-Xeni* ‘remember’ and *m-Xidi* ‘get ill of a fright’).
- 54 The nasal in these examples is interpreted as an old prefix and not as a phonological nasal in a complex
onset because of the existence of cognate stems in other Otomi languages that do not bear the prefix.
- 55 Atmospheric verbs are also found in classI, e.g., *KwO* ‘rain’, *mbqGki* ‘dawn’, *VOGni* ‘thunder’, *zoⁱ-
nte* ‘go dark at dusk’, *zoⁱ-xU* ‘get dark’, etc.
- 56 The semantics of the verb *haPtsi* is equivalent to that of the verb *amanecer* ‘dawn’ in Spanish, which
can be used to refer to the act of waking up at the start of one's day, commonly in a given concomitant
state.
- 57 The verb derives from the noun *jUni* ‘cloud’.
- 58 An alternative approach to measure degree of canonicity is found in Brown et al. (2009).
- 59 I want to thank Dunstan Brown for this observation. While in principle we could make some of the criteria
play a more significant role than others in the shaping of what is canonical, I wanted to make all things
equal in order to avoid the risk of imposing any bias on the canon.
- 60 This happens in all cases except in the present irrealis, where the third person is not **titZP* but just *ti*.
- 61 This is, nonetheless, crosslinguistically expected. Corbett (2009: 7) himself acknowledges that this
criterion is likely to be met rarely. Although conjugation classes are commonly restricted to verbs only,
there are also certain inflectional classes that rank more canonical in this respect, like the ones involving
nouns and adjectives in some Indo-European languages.
- 62 Had the number of criteria been nine, the flexing point for canonicity would have then been 4.5.
- 63 However, this would perhaps not be adequate because a morphological system of inflectional classes
constitutes a different ontology than the inflectional classes it is made of and should perhaps be ranked
according to its own different canon defined by its own principles, including for example an evaluation of
the formal contrasts among the existing classes.