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Research report:
The gap strategy in Ixcatec (Otomanguean, Mexico)*

Evangelia Adamou¹ and Denis Costaouec²

¹French National Centre for Scientific Research (CNRS) and ²University Paris Descartes

Abstract

The present research report provides an overview of the gap strategy in Ixcatec, a critically-endangered and under-described Otomanguean language of Mexico. Ixcatec RCs using the gap strategy are postnominal. They are built with an uninflected complementizer and involve a finite verb or a predicate adjective. The head of the RC can be a noun, but in free-speech RCs are frequently constructed with a null nominal.

Keywords: Relative clauses, Otomanguean

1. Introduction

This article presents an overview of the gap relativization strategy in Ixcatec (ISO code: *ixc*). Ixcatec is a language of the Otomanguean stock and the Popolocan branch, together with Chocho (or Ngigua and Ngiba), Popoloc, and Mazatec (Fernández de Miranda 1951, 1956, Hamp 1958, Gudschinsky 1959, Swadesh 1960: 83). The Ixcatec speakers reside in Santa María Ixcatlán in the State of Oaxaca, in Mexico (see map in Figure 1). Nowadays Santa María Ixcatlán has roughly 400 inhabitants, but it was an important centre when the Spaniards arrived in 1522 knowing that it was estimated to have had a population of 10,000 to 30,000 inhabitants (Hironymous 2007).

Ixcatec is a critically endangered language as it is spoken by less than ten speakers who do not use the language in their daily lives (see endangerment scale in Krauss 2007). This situation is the result of a long process of shift to Spanish, starting with Spanish colonization in the 16th century. Although contact with Spanish speakers was most likely scarce in the past centuries, intensive and extensive shift to Spanish took place during the early twentieth century and is nowadays fully completed (Adamou 2016).

Ixcatec is an under-described language. Among the earliest studies, we note a phonological analysis, a dictionary, and a study of possessives (Fernández de Miranda 1953, 1959, 1961). In the early 2000s there has been some preliminary work on Ixcatec nominal phrases (Veerman-Leichsenring 2001a) and the Ixcatec data were discussed in publications on the Popolocan branch (e.g., Veerman-Leichsenring 2000). More recently, work has been conducted on Ixcatec phonetics and phonology (Alarcón Montero 2010), on syntax and morphology (Adamou & Costaouec 2013; Adamou 2014; Costaouec & Swanton 2015;

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Adamou 2017b), on spatial language and cognition (Adamou 2017a), and on information structure (Adamou, Gordon & Gries in press).

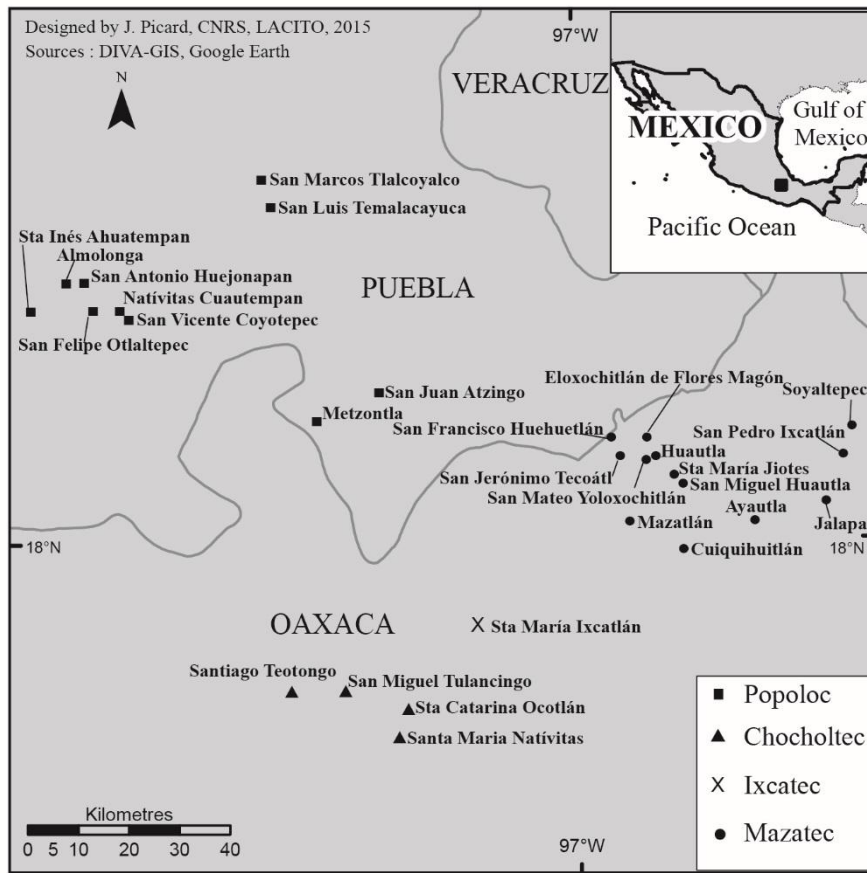


Figure 1. The localities in which the Popolocan languages are spoken (Mexico). Ixcatec is only spoken at Santa María Ixcatlán.

Ixcatec is phonologically distinguishing between three level tones, a high tone (noted ¹), a mid tone (noted ²), and a low tone (noted ³). Verbs and nouns are clearly distinct. Verbs are the syntactic nucleus of independent or dependant clauses and receive tense, aspect, and modality markers (perfective, imperfective, progressive, evidential, and anterior; the latter is also used with predicate adjectives), valency-changing suffixes (e.g., antipassive, applicative, causative), and person suffixes. Nouns are determined by the definite and the indefinite articles, demonstratives, possessives, quantifiers, and numerals. Animate nouns are formed with the *noun classifiers* *di*²- ‘man’, *k^wa*²- ‘woman’, *ʔu*²- ‘animal’ (glossed CLF) and agree with the cross-reference morphemes *-ðá*² ‘male’, *-k^wa*² ‘female’, and *-βá*³ ‘animal’ which are suffixed on verbs, possessives, and predicate adjectives only with S arguments and only when those are in a syntactically marked position. Noun classifiers are distinct from *class terms* (glossed CLS) which partake in word formation for certain categories of nouns (designation of plants, body parts, etc.) but do not exhibit agreement.

Ixcatec is a head-marking language, i.e., grammatical relations are marked on the verb (Nichols 1986). Core arguments are not coded through case morphemes or adpositions. Ixcatec has accusative alignment in indexing (A = S ≠ P) (Malchukov et al. 2010), i.e., only the single argument of intransitive verbs (S) and the agent-like argument of transitive verbs

(A) are indexed on the verb through a series of suffixes, with third person being zero. A dozen experience predicates take a different coding for person, namely through possessive suffixes.

Ixcatec is a pro-drop language, i.e., free pronouns are optionally used for all functions, and noun phrases (NPs) are frequently omitted. In main clauses, Ixcatec has a VS unmarked order and monotransitive main clauses have an SVO order. Ixcatec yes/no questions are introduced by an optional interrogative particle *ʔa*². *Wh*-words (e.g., *ja'ra*² 'who', *nda'ra*² 'what', *ndi'ra*² 'where'), always precede verbs in direct and indirect questions.

The present paper is organized as follows. Section 2 presents the methodology. Section 3 illustrates the gap strategy in Ixcatec. Finally, section 4 offers some concluding remarks and future directions for research.

2. Method

A free-speech Ixcatec corpus was collected from 2010 to 2013 as part of the Ixcatec language documentation programme.¹ 50 hours of video recordings are now available on the *Endangered Languages Archive* (ELAR).² 30 minutes of annotated speech, synchronized with the videos, are available at the Pangloss Collection.³

Part of the Ixcatec corpus is transcribed using ELAN (Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands), part of it is in Toolbox, and part of it in field notes. For this study, four hours were analysed: relative clauses (RCs) were identified and coded as intransitive subject RCs, agent RCs, and object RCs. Examples that were unclear were discarded from the analysis. Moreover, we glossed and analysed the RCs in the Ixcatec texts that were collected, transcribed, and translated in Spanish by Fernández de Miranda (1961). In addition, elicited data were used whenever there were no instances of relevant RCs in the corpus.

The four most fluent speakers of Ixcatec participated in this study. The last Ixcatec speakers learned Ixcatec from having spent more time with their grandparents who were monolingual in Ixcatec and from their parents who were bilingual, L1-Ixcatec and L2-Spanish. One of the speakers was raised monolingual in Ixcatec and learned Spanish from school. All four speakers have not been using Ixcatec in their daily lives for the last 50 years. They have participated at the Ixcatec language documentation programme and on this occasion started using Ixcatec again for the recording sessions. Moreover, three of the four speakers also gave classes of Ixcatec at the kindergarten, primary, and secondary school, once per week, roughly at the same period as the Ixcatec language documentation program.

The two 80-year-old female speakers, who are close friends, were brought together at the house of one of the speakers. They vividly discussed their daily life and their conversations are characterized by frequent overlaps and back-channelling and quick turn-taking, 220 ms in average (Adamou 2016: 10). The two 80-year-old men, who are family members, would generally discuss local traditions and recollections. Their conversations showed few overlaps and back-channelling and were characterized by slow turn-taking, i.e., 1000 ms in average, which can be considered as part of a more formal communication register (Adamou 2016: 10).

¹ Endangered Languages Documentation Program (ELDP): *Lexical Documentation of Ixcatec, a highly endangered Otomanguan language of Oaxaca* (HRELP, MDP 0214), 2010–2013, PI. D. Costaouec.

² Accessed at <http://www.elar-archive.org/index.php>

³ Accessed at http://lacito.vjf.cnrs.fr/pangloss/corpus/list_rsc.php?lg=Ixcatec

All Ixcatec speakers were informed about the goals of this research and signed formal authorizations. In parallel, the Ixcatec language documentation programme was approved by the community's general assembly. Participants were paid for their participation in this study.

3. Gap strategy

A relative clause can be defined as “a subordinate clause which delimits the reference of an NP by specifying the role of the referent of that NP in the situation described by the RC” (Andrews 2007: 206). For example, subordination of the clause ‘The cat catches the rat’, in (1b), to the clause ‘I see the cat’, in (1a), results in the complex clause ‘I see the cat that catches the rat’, in (1c).

- (1) a. *I see the cat.*
 b. *The cat catches the rat.*
 c. *I see the cat [that Ø catches the rat].*

More specifically, (1c) is composed of a matrix clause and a relative clause (noted in brackets). The head of the RC, ‘cat’ in this example, is underscored. When the co-referential NP is not overtly expressed in the RC, it is referred to as a *gap* and it is noted as Ø; see (1c). When the gap has the grammatical function of a subject, as in (1c), the RC is dubbed *subject relative clause*, and when it has the function of an object it is dubbed *object relative clause*. The RC in (1c) is *postnominal*, i.e., it follows the head NP.

To account for gaps at a theoretical level, three influential analyses were extensively discussed in the literature: the traditional base-generated head (or head external) analysis, according to which the head NP originates outside the RC (Chomsky 1977 among many others); the head raising analysis, according to which the head NP raises from inside the RC by syntactic movement (Kayne 1994 among others); and the matching analysis, according to which there is both an external and an internal head, but the internal head is phonologically deleted through matching with the external head (see Chomsky 1965). However, in the functional-typological literature, the term ‘gap’ is adopted without any discussion as to where the gap originates from. The use of the term ‘gap strategy’ is merely one referring to a RC where no overt NP expresses the relative function (Andrews 2007: 206). Following the latter tradition, the theoretical discussion concerning the origin of the gaps remains beyond the scope of this paper.

Ixcatec RCs are generally built with the gap strategy. Example in (2) shows how two main clauses, in (2a) and (2b), form a complex clause consisting of a matrix clause and a RC, in (2c).

- (2) a. $\text{ʔi}^2\text{na}^1\text{na}^3$ $\text{k}^w\text{-i}^2\text{ʃkũ}^2\text{-na}^3$ sa^1 $\text{ʔu}^2\text{-tʃi}^1\text{tu}^1$
 1SG PFV-see-1SG DEF CLF.AN-cat
 ‘I see the cat.’ {JSB-elic-2015}⁴
- b. sa^1 $\text{ʔu}^2\text{-tʃi}^1\text{tu}^1$ $\text{k}^w\text{-i}^1\text{ka}^1$ sa^1 $\text{ʔu}^2\text{-ra}^1\text{tʔi}^3$
 DEF CLF.AN-cat PFV-catch DEF CLF.AN-rat
 ‘The cat catches the rat’. {JSB-elic-2015}

⁴ The examples code the speaker through her/his initials, the type of data (conv: conversational, elic: elicited), the year of recording, the name of the text and the number of the sentence when appropriate.

- c. $\text{ʔi}^2\text{na}^1\text{na}^3$ $\text{k}^w\text{-i}^2\text{ʃkũ}^2\text{-na}^3$ sa^1 $\text{ʔu}^2\text{-tʃi}^1\text{tu}^1$
 1SG PFV-see-1SG DEF CLF.AN-cat
- $[\text{la}^2$ $\text{k}^w\text{-i}^1\text{ka}^1$ \emptyset_s sa^1 $\text{ʔu}^2\text{-ra}^1\text{tʔi}^3]$
 COMP PFV-catch DEF CLF.AN-rat
 ‘I see the cat that catches the rat.’ {JSB-elic-2015}⁵

Adamou (2017) observes the syntactic and morphological ambiguity of the Ixcatec RCs. Indeed, even though the semantics and pragmatics favour the subject interpretation of (2c), ‘I see the cat that catches the rat’, the Ixcatec RC has no case marking, no agreement and no word order that could indicate whether this is a subject RC or an object RC: *la*² is uninflected, there is no verb morphology, and the word order of the NP in the RC is postverbal in both subject and object RCs. As illustrated in (2c), Ixcatec RCs are generally constructed with a finite verb, marked for tense-mood-aspect and receiving the personal suffixes (third person being zero as in this example). The head of the RC can be a noun, as in (2c), but it can also be a personal pronoun, a demonstrative pronoun, a definite article, a numeral, or a quantifier.

The Ixcatec RCs are typically introduced by the uninflected complementizer *la*². Albeit frequent, the use of the complementizer *la*² is optional as shown in (3) with an example from the conversational corpus. Such uses were also noted during systematic data collection with translation tasks (Adamou 2017).

- (3) $\text{ka}^2\text{na}^1\text{ko}^3$ $[\text{βa}^2\text{-tse}^2$ $\text{re}^2\text{si}^2\text{βi}^2$ ka^2 $\text{tʃa}^2\text{hmi}^2$ \emptyset_{DO} me^1nda^2
 everything IPFV-do receive all people for_this
 ‘Everything that all the people are going to inhale, that’s why.’
 {RRM-conv-2010-Everyday life_2_86}

In addition, the Ixcatec complementizer *la*² introduces adverbial clauses, in (4), and completive clauses, in (5).

- (4) $\text{k}^w\text{a}^2\text{tu}^1=\text{βi}^2\text{hi}^2\text{-ʔa}^2\text{-na}^2$ $[\text{la}^2$ $\text{mã}^1\text{hũ}^1\text{ra}^2]$
 PFV.PL-arrive-NEG-FOC-FOC COMP sweep there??
 ‘Won’t they come to sweep there?’ {RRM-conv-2010-Everyday life_3_11}

- (5) $\text{ku}^1\text{-tʃe}^2\text{-ku}^1\text{-na}^3$ sa^2 $\text{k}^w\text{a}^1\text{-e}^2\text{nʔe}^2\text{rme}^1\text{ra}^2$ $\text{ku}^1\text{-tʃe}^2\text{-ku}^1\text{-na}^3$
 PFV-say-ANT-1SG DEF CLF.F-nurse PFV-say-ANT-1SG
- $[\text{la}^2$ nda^1 ʃta^1 $\text{si}^1]$
 COMP what ugly EXS.PRED
 ‘I said to the nurse, I said how ugly it is!’
 {JSB-conv-2010-Everyday life_3_90}

Adamou & Costaouec (2013) noted the similarity of the Ixcatec *la*² and the Popoloc complementizer *la*³/*na*³ (Veerman-Leichsenring 1991).

⁵ We note that a problem with the annotation of the gaps arises for Ixcatec. The subject gap in this example is postverbal because the unmarked position of subjects in the Ixcatec RCs is postverbal. However, the position of the subject gap before the object is rather arbitrary; the unmarked word order in the Ixcatec transitive main clauses is SVO while the two arguments are not expressed simultaneously in the RCs.

3.1 Noun headed RCs

Example in (6) illustrates a subject RC headed by a NP. It also illustrates the use of the complementizer *la*² to introduce a complement clause with the verb ‘to think’. In addition, it can be seen that the head noun ‘people’ is only used in the first subject RC, but is omitted in the two following subject RCs, i.e., ‘that worked’.

- (6) me¹ la² ʔi²na¹na³ βi²-ʃja²ku²-na³
 therefore COMP 1SG IPFV-think-1SG
- la² ʔu¹tʃa¹ tʃa²hmi² [la² k^wa²tu¹=βa²hi¹ la² Ø_S] /
 COMP much people COMP PFV.PL-pass LOC.DIST
- [la² k^wa²tu¹=tse² ʃa³ Ø_S] /
 COMP PFV.PL-do work
- [la² ʔu¹tʃa¹ ʃa³ k^wa²tu¹=tse² Ø_S]
 COMP much work PFV.PL-do
 ‘Therefore I’m thinking that many people that have passed by there, that they worked, that they worked a lot...’ {CRG-conv-2010-Monte Alban_46}

Example (7) illustrates a RC with the locative predicate *ki*¹*i*². Examples (8) and (9) illustrate a subject RC with a predicate adjective, i.e., ‘be good’, ‘be mild’, and ‘be spicy’.

- (7) tsu²-me¹-ʃi² na²ʔmi¹ni³ntu² [la² Ø_S ki¹i² ka²ʔja²]
 want/say-?-APPL god COMP LOC.PRED up
 ‘What says God who is above...’ {CRG-conv-2011-Milpa_237}
- (8) k^wa²ndi² β-i²rha²-ma² h¹ŋgu² tu²ndzi¹ʔu¹ [la² i¹na³-ku¹ ki¹tʃa³ Ø_S]
 when IPFV-find-3PL one agave_heart COMP fine-ANT ripe
 ‘When they find an agave that is already ripe...’ {PSG-conv-2008-Palenque_28}
- (9) la² k^wa²-a²ʔa² ɲũ¹hũ¹ h¹na² ʃe¹
 COMP PFV-throw_in four pepper sweet
- ɲũ¹hũ¹ h¹na² ʃe¹ /
 four pepper sweet
- ɲũ¹hũ¹ wa²hi²u² [la² tʃe³-ʔa²-na² Ø_S] //
 four sweet_pepper COMP spicy-NEG-FOC
- ku² ju¹hu² [la² tʃe³-na² Ø_S]
 COORD/INS two COMP spicy-FOC
 ‘One throws in four sweet peppers, four sweet peppers, four *guajillos* (*Capsicum annuum*) that are not spicy, and/with two that are very spicy.’ {RRM-conv-2011-Caldo de res_454}

Example (10) illustrates a RC with a direct object.

- (10) sa¹-ra² ja²hu² [la² ku²-ʔu²ne²hi² Ø_{DO}]
 DEF-DEM.DIST meat COMP PFV-wash
 ‘That meat that one washes...’ {RRM-conv-2011-Caldo de res_13}

We did not find any examples of RCs with an indirect object although it is possible in elicitation; see (11).

- (11) sa¹ i²-ʔi¹ [la² sa¹ k^wa²-ru²fi¹na² ku²-tʃe²-k^wa²
 DEF CLS-little COMP DEF CLF.F-NP PFV-say-CO.3SG
 h^hŋgu² i²sto¹ria² Ø_{IO}]
 INDF story
 ‘The kid that Rufina tells a story to.’ {JSB-elic-2015}

Examples in (12) and (13) illustrate RCs with an oblique instrumental gap and in (14) with a comitative. Note the absence of an applicative instrumental marker on the verb or the instrumental *ku²* ‘with’.

- (12) la² ba¹ra² [la² tsee²-me²di¹ Ø_{INS}]
 COMP ruler COMP do-measure
 ʔmẽ¹ʔõ² ʔi¹na² ta¹sj-a³ me²di¹da¹
 also well be-2SG measure
 ‘(Because as says the Word of God) that [with] the ruler with which you measure, you will be measured.’ (de Miranda 1961: 86)⁶

- (13) sa¹ ma²tʃi¹ti² [la² k^w-a²te²-na³ ʔi²nu² Ø_{INS}]
 DEF machete COMP PFV-cut-1SG corn_field
 ‘The *machete* with which I cut the corn.’ {JSB-elic-2015}

- (14) ne²ru²-pa¹na³ [la² tse²-na³ ʃa³ Ø_{COM}]
 comrade-POSS.1SG COMP do-1SG work
 ‘The comrade of mine with whom I work.’ {JSB-elic-2015}

Examples in (15) and (16) illustrate RCs with time and (17) with reason.

- (15) nda²tʃi²ka²-na² i²nga² [la² ku²-tse² ʃa³ Ø_{TIME}]
 how_many-FOC year COMP PFV-do work
 ‘How many years during which they worked!’ {PSG-conv-2010-Monte Alban_80}

- (16) sa¹ u¹ra² [la² k^wa²-ʃ^he²-na³ Ø_{TIME}]
 DEF time COMP PFV-get_out-1SG
 ‘The time when I got out.’ {JSB-elic-2015}

- (17) sa¹ mo²ti¹vu² [la² k^wa²-ʃ^he² Ø_{REASON}]
 DEF reason COMP PFV-get_out
 ‘The reason for which he/she got out.’ {JSB-elic-2015}

⁶ We have respected the transcription and segmentation provided by the author and have added glosses and a translation from Spanish to English.

Example (18) illustrates a RC with a possessive function (also known as genitive). No examples were found in the spontaneous corpus.

- (18) sa¹ a²lu¹mnu² [la² tra²ba¹ju²-ʔe¹ Ø_{POSS} la² ʔi¹na³]
 DEF student COMP work-POSS.3SG COMP fine
 ‘The student whose work is fine.’ {JSB-elic-2015}

3.2 RCs with null nominal head

The analysis of the free-speech Ixcatec corpus revealed a high number of RCs in which the nominal head is not overtly expressed (Lehmann 1984). In (19) and (20) the head is a personal pronoun. These examples also illustrate non-restrictive RCs, i.e., RCs that only comment on the NP. Non-restrictive RCs may involve a pause between the head NP and the RC (Andrews 2007: 207), and this is the case in (20) where a small pause precedes the complementizer *la²*.

- (19) ʔi²na¹na³ [la² mi²ʔe²-na³ Ø_S] ki¹=ʃte²nga² ki¹=ʃte²nga²
 1SG COMP hear-1SG PROG.3SG-thunder PROG.3SG-thunder
 ‘I, who have not heard that it is thundering, thundering...’⁷
 {JSB-conv-2010-Everyday life_6_459}

- (20) ʔi²na³ri² / [la² tu¹=tse²-ri² Ø_A ʃa²e¹na²]
 1PL.EXCL COMP PROG.PL-do-HON/2PL.EXCL task
 ‘We, who are doing the tasks...’ {RRM-conv-2010-Everyday life_2_202}

In some rare examples, the RC is introduced by a demonstrative pronoun, as in (21).

- (21) me¹ra² la² / [la² ʃi²-e²ʔe² Ø_A sa²ʃo¹r ndra²] //
 DEM.DIST COMP / COMP IPFV-give taste like_this //
 ‘That one, that gives taste, like this.’ {RRM-conv-2011-Caldo de res_385}

The RC may also have a definite article as a head. See an example of a subject RC in (22) and (23), a direct object in (24), and a locative in (25).

- (22) k^w-i²te¹ʔe² ja²te³ k^we²nda² la²
 PFV-enter wood for COMP
- k^w-i²hi² ndju²ja¹ ʃta¹nda² la² ʔa²ku² ʃti²nde¹e¹
 arrive steam_bath after COMP inside bathe
- ka² sa¹ [la² k^wa²tu²-ʃi² Ø_S ndju²ja¹]
 all DEF COMP PFV.3PL-go steam_bath
 ‘One enters the wood in order for all those who go to the steam bath to bathe.’
 {PSG-conv-2008-Temascal_6}
- (23) me¹ / sa¹ [la² tu¹=ka²tse¹ngi² Ø_S] i¹na³ ʃ-a²ʃa²
 therefore DEF COMP PROG.PL-earth_up/lift fine IPFV-earn
 ‘So... the ones who are lifting (the maize plants) earn good money.’

⁷ The matrix clause of a RC is not always straightforward in conversations as speakers frequently replan their speech and negotiate turns.

{PSG-conv-2011-Milpa_153}

- (24) tsu²-ku¹ / k^w-e²na²-na³ // sa¹ /
 want/say-ANT / / PFV-buy-1SG // DEF /

sa¹ [la² k^wa²-ja¹ Ø_{DO} ka² rha²-na³]
 DEF COMP PFV-POSS.PRED all hand-POSS.BP.1SG

‘One says I buy the one that I have on my hands.’ {RRM-conv-2010-Everyday life_1_240}

- (25) ki¹i²-ke² sa¹ [la² β-i²ti¹?-i² Ø_{Loc}]
 LOC.PRED-ITER DEF COMP IPFV-enter-1PL.INCL

‘There is again the one (the Monte Alban archaeological site) in which we enter.’

{CRG-conv-2010-Monte Alban_96}

RCs may also have an indefinite article as head, in (26), and a quantifier, in (27).

- (26) me¹ra² je² h_{ngu}² [la² tʃa²tʃi²?e² Ø_A ka² li²-ʔi¹]
 DEM.DIST PRST.PRED one COMP teach all CLS-little
 ‘That is the one that teaches all the children.’ {CRG-conv-2010-Monte Alban_730}

- (27) la² k^we²nda² phi¹ ka² [la² li²-ʔi¹ Ø_s]
 COMP for go all COMP CLS-little

[la² mi¹?e² Ø_s]
 COMP sick

‘It is in order for all those who are children, who are sick, to go.’

{PSG-conv-2008-Temascal_16}

In some cases, there is no nominal head and no determiner either; see (28).

- (28) [la² tʃe³] [la² h_{ni}¹] /
 COMP spicy COMP tasty /

me¹ ku² [la² tʃe³-ʔa²-na²] // h_{ni}¹-ʔa²-na²
 therefore COORD/INS COMP spicy-NEG-FOC // tasty-NEG-FOC

‘(The one) which is spicy, is (the one) that is tasty, that is, with (the one) that isn’t spicy, it isn’t tasty.’ {RRM-conv-2011-Caldo de res_465}

Similar cases have been reported in the literature (see Andrews 2007: 214), but they are not discussed extensively. In the Ixcatec examples, it appears that the referents are well identified in the discourse and can therefore be omitted.

3.3 Accessibility Hierarchy

This section summarizes the various RCs with respect to the Noun Phrase Accessibility Hierarchy (Keenan & Comrie 1977), presented in (24). According to this hierarchy, if a language can relativize a position in the Accessibility Hierarchy, it can relativize any higher position. Subjects and agents are considered as more accessible to relativization than direct objects, indirect objects, oblique objects, possessors, and objects of comparison.

- (29) subject > direct object > indirect object > oblique object > possessor > object of comparison

In the previous sections it was shown that Ixcatec allows relativization of subjects, direct objects, indirect objects, oblique objects (instrumental, comitative), adjuncts (locative, time, reason), and possessors through the gap strategy and the use of the complementizer *la*². Table 1 summarises these possibilities.

Table 1. Accessibility Hierarchy of the gap strategy in Ixcatec

	Subject	Direct object	Indirect object	Instrumental	Comitative	Locative	Time	Reason	Possessor
Gap strategy	✓	✓	✓	✓	✓	✓	✓	✓	✓

4. Concluding remarks

Ixcatec being an under-described language, this work is the first comprehensive study of the most common relativization strategy, the gap strategy. More research remains to be done on other types of relativization strategies and RCs which have not been discussed in the present paper. For example, we have found some rare instances of *internally headed relative clauses* (IHRCs) both in the texts by Fernández de Miranda (1961), exemplified in (30), and in the contemporary corpus, shown in (31). In these examples, we note that the RC involves an existential predicate.

[Preceding sentence: ‘How is the world formed?’]

- (30) ?mee¹ndrii² si¹ fo²rma¹du¹ tʃi²k²a ku¹
 like_this EXS.PRED formed like COORD/INS??

[**la**² tʷu²si¹[e]^s si¹-nga² rha²-na³]
 COMP orange EXS.PRED-inside hand-POSS.BP.1SG
 ‘In this way, it is formed like the orange that is in my hand.’
 {Fernández de Miranda 1961: 193}

- (31) ka²ndi² me¹ndi² la² tse¹-ʃi² ndju²ja¹
 when for_this COMP do-APPL.INS steam_bath

me¹ra² tsi¹-tse²-na² sa¹ a²ni¹ma³ βe¹tu²
 DEM.DIST EVD-do-FOC DEF deceased NP

[**la**² si¹ sa¹ ndju²ja¹-ri²s]
 COMP EXS.PRED DEF steam_bath-DEM.PROX

‘Thus when the steam bath was built, the one that built the late Alberto, this steam bath that is here...’ {PSG-conv-2008-Temascal_35}

In addition, Adamou (2017) draws attention to the use of the cross-reference morphemes (*-k^wa²* ‘woman’, *-ǰa²* ‘man’ and *-βa²* ‘animal’) as *resumptive pronouns*. The theoretical question of whether such uses are alternative realizations of gaps or ordinary pronouns is left for future research (see Asudeh 2012 for an overview of analyses of resumption).

In conclusion, this paper draws mainly on free-speech data, which have the advantage of showing what speakers are doing in natural communication. Elicited data were used to illustrate RCs that were not found in the analysed parts of the corpus. As larger portions of the Ixcatec corpus are being annotated, we hope to gain a better understanding of how relativization works in Ixcatec. In the meantime, this research report contributes to the typology of RCs in the languages of the Mesoamerica presented in this volume.

Abbreviations

Glosses follow the Leipzig Glossing Rules.

1, 2, 3	first, second, third person		
AN	animal	HON	honorific
ANT	anterior	INCL	inclusive
APPL	applicative	INDF	indefinite
BP	body part	INS	instrumental
CLF	classifier	IPFV	imperfective
CLS	class	ITER	iterative
CO	cross-reference	LOC	locative
COMP	complementizer	M	masculine/male
COORD	coordinator	NEG	negative
DEF	definite	NP	proper noun
DEM	demonstrative	PFV	perfective
DIST	distal	PL	plural
EVD	evidential	POSS	possessive
EXCL	exclusive	PRED	predicate
EXS	existential	PROG	progressive
F	feminine/female	PRST	presentative
FOC	focus	SG	singular

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