FREE RELATIVE CLAUSES IN TWO MIXTEC LANGUAGES[1]

Ivano Caponigro, Harold Torrence, and Carlos Cisneros

University of California University of Kansas University of California

San Diego   Lawrence   San Diego

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Two previously unstudied Mixtec languages - Nieves Mixtec and Melchor Ocampo Mixtec – are investigated, with special emphasis on free relative clauses and two related wh-constructions – constituent interrogatives and headed relative clauses. It is shown that both Mixtec languages make use of most wh-words found in interrogatives to form free relatives, i.e. non-interrogative wh-clauses like the bracketed one in *Luca tasted* [*what Adam cooked*]. Both languages exhibit the three kinds of free relatives that are attested cross-linguistically: definite free relatives (with the distribution and interpretation of definite descriptions like in the example above), existential free relatives (occurring in the complement position of existential constructions), and *–ever* free relatives (occurring as arguments like *I'll do* [*whatever you say*] or as clausal adjuncts like [*Whatever you say*], *I won't change my mind*). Similarities and differences are discussed between free relative clauses and headed relative clauses in both languages and between Mixtec wh-constructions and cross-linguistic patterns.

KEYWORDS: Mixtec, Nieves Mixtec, Melchor Ocampo Mixtec, wh-words, wh-constructions, free relative clauses, interrogative clauses, headed relative clause

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1. Introduction. This paper investigates embedded non-interrogative wh-clauses known as *free relative clauses* (henceforth, *FRs*) in two Mixtec languages – Nieves Mixtec and Melchor Ocampo Mixtec. FRs are clauses like the bracketed one in Luca tasted [what Adam cooked]. While the literature on Mixtec languages does document interrogative wh-clauses and headed relative clauses (e.g. Bradley 1970, Daly 1973, Alexander 1980, Bradley and Hollenbach 1988b, 1990, 1991, 1992, Macaulay 1996, Eberhardt 1999), we know of no reference to or description of FRs in any Mixtec language. Also, we are not aware of any previous study on Nieves Mixtec or Melchor Ocampo Mixtec.

Mixtec languages together with Triqui and Cuicatec constitute the Mixtecan languages, a branch of the Oto-Manguean language family. The roughly fifty Mixtec languages are spoken in the Mexican region called La Mixteca, which is located in the western part of Oaxaca and in adjoining parts of Puebla and Guerrero. Due to vast emigration because of poverty, Mixtec languages are now spoken in California and other U.S. states as well.

Nieves Mixtec is spoken in and around the village of San Juan Ixpantepec Nieves in the Silacayoapan district of western Oaxaca. Taxonomically, Nieves Mixtec belongs to the Western Lowlands subgroup of the Mixteca Baja languages (Josserand 1983, Bradley and Hollenbach 1988a). Melchor Ocampo Mixtec is spoken in the town of Melchor Ocampo in Guerrero state in the Alcozauca municipality and belongs to the Guerrero group (Josserand 1983). Although we are not aware of any published linguistic materials that specifically deal with either language, there are studies on geographically close Mixtec languages. In particular, there is work on Silacayoapan Mixtec, which is spoken in the same district as Nieves Mixtec (North and Shields 1976, 1977, Shields 1988), and there is a dictionary with a short grammatical sketch for Xochapa Mixtec, which is spoken in the closest neighboring village to Melchor Ocampo (Stark, Johnson, and Guzmán 2005).

This paper contributes to the study of the Mixtec languages by starting to investigate two Mixtec languages that were previously undocumented – Nieves Mixtec and Melchor Ocampo Mixtec. The paper focuses on a specific kind of wh-clause – FRs – that was previously undocumented within the Mixtec family, and provides further evidence on two related constructions – interrogative wh-clauses and headed relative clauses – that had been previously documented in other Mixtec languages. More broadly, the paper aims to inspire further investigation of Nieves Mixtec and Melchor Ocampo Mixtec and of FRs in other Mixtec languages. Finally, the paper widens the typological picture of wh-clauses and their wh-words cross-linguistically (Haspelmath 1997, Cheng 1997, Caponigro 2003).

The paper is structured as follows. Section 2 presents a brief overview of the main features of Nieves Mixtec and Melchor Ocampo Mixtec that are relevant for our discussion, such as word order, interrogative wh-clauses, and headed relative clauses. Section 3 provides a general introduction to FRs from a typological perspective. A precise definition of FRs is given, their cross-linguistic distribution is discussed together with a three-way taxonomy based on their interpretative properties: definite FRs, existential FRs, and -*ever* FRs. Sections 4-6 are dedicated to the discussion of each type of FR in Nieves Mixtec and Melchor Ocampo Mixtec. In particular, Section 4 describes definite FRs, Section 5 existential FRs, and Section 6 -*ever* FRs. Section 7 contains the conclusions and directions for future research.

The Nieves Mixtec and Melchor Ocampo Mixtec data presented below result from field work conducted with native speakers of Melchor Ocampo Mixtec in Lawrence, Kansas and native speakers of Nieves Mixtec in San Diego, California and Nieves, Oaxaca, Mexico. All elicitations were conducted in Spanish.

2. Overview of some relevant aspects of Nieves Mixtec and Melchor Ocampo Mixtec.

2.1. Word order. In both Nieves Mixtec (N) and Melchor Ocampo Mixtec (MO), the basic word order is VSO, as shown in (1) and (2).[2,3]

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[2] Like other Mixtec languages, Nieves Mixtec and Melchor Ocampo Mixtec exhibit a complex tonal system that demands an extended independent investigation. On the surface, Nieves Mixtec has three level tones, while Melchor Ocampo Mixtec has four level tones. In addition, both languages have an undetermined number of contour tones and tone sandhi. We know of no (tonal) analysis of Nieves Mixtec or Melchor Ocampo Mixtec. In this paper, the following conventions for indicating tone are employed. For Nieves Mixtec, we adopt the system Shields (1988) uses for Silacayoapan Mixtec, which is geographically close to Nieves Mixtec (see also North and Shields 1977). A high tone is written with an acute accent (*á*), mid tone with a macron (*ā*), and low tone is unmarked (*a*). For Melchor Ocampo Nieves, we follow the system used in Starke, et al. (2006) for Xochapa Mixtec, which is geographically close. The highest tone is marked with an acute accent (á), the second highest tone is unmarked (*a*), the next lower tone is indicated with a grave accent (*à*), while the lowest tone is indicated by an underline (*a̲*).

(1) ni-kuvaʔa   ōktávíó   ndyāyi   *N*
    CMP-make[4]   Octavio   mole
    'Octavio cooked the mole.'

(2) tùvi   ti   ñuʔñu   yùʔu   *MO*
    sting.CMP   CL.ANM   bee   PRN.1SG
    'The bee stung me.'

Like most verb-initial languages (Greenberg 1963), Nieves Mixtec and Melchor Ocampo Mixtec also allow for one constituent to occur in sentence initial position, typically to indicate topic-hood or emphasis. Examples in (3)-(8) show different kinds of sentence-initial constituents in brackets: the subject in (3), (4), (7), and (8), the object in (5), and the locative in (6).

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[3] In our transcriptions, we use IPA except for the following, for which we use common conventions for Mixtec and more generally Native American languages: ch=[tʃ], dy=[ɟ], ñ=[ɲ], j=[h], r=[ɾ], x=[ʃ] ty=[c], and y=[ʒ] for Nieves Mixtec and y=[j] for Melchor Ocampo Mixtec.
The following abbreviations or conventions were used in the glosses: -: morpheme boundary; =: pronominal affix boundary; ACC: accusative; ANM: animal; CAUS: causative; CL: classifier; CMP: completive; CON: continuative; COP: copula; DAT: dative; F: human feminine; HUM: human; IMP: imperative; IN: inanimate; LIQ: inanimate liquid; M: human masculine; NEG: negation; NOM: nominative; PL: plural; POT: potential; POSS: possessive pronoun; PRN: independent (non-clitic) pronoun; SG: singular; TEMP: temporal subordinator (a non-wh version of *when* in English).

[4] Following the tradition in the Mixtec literature (e.g., Bradley and Hollenbach 1988b), we assume that Nieves Mixtec and Melchor Ocampo Mixtec mark aspect on verbs rather than tense, and gloss verbal forms and related markers as completive (CMP), continuative (CON), or potential (POT). In both languages, some verbs make use of a preceding morphologically independent completive aspectual marker. In those case, we gloss with CMP the aspectual marker only, while we do not include any aspectual specification in the glosses for the verb (as in (3) above). Aspectual distinctions can also be marked by differences in tones.

(3) [ōktávíó] ni-kuvaʔa=**ra** ndyāyi *N*
    Octavio CMP-make=3SG.M⁵ mole

    'Octavio made the mole.'

(4) [k̲ī̲r̲ī̲ tyīna] sāsī=**rī** jíʔva *N*
    CL.ANM dog eat.CON=ANM chocolate

    'The dog eats chocolate.'

(5) [jwán] ni-ja-takueʔe yuū káʔnō *N*
    Juan CMP-CAUS-be_hurt rockbig

    'The large rock hurt Juan.'

(6) [sata vēʔē] ni-kuvaʔa jūlīétá ndyāyi *N*
    back house CMP-make Julieta mole

    'Julieta made mole behind the house.'

(7) [t̲i̲ ñuʔñu] tùvi=**ri** yùʔu *MO*
    CL.ANM bee sting.CMP=ANM PRN.1SG

    'The bee stung me.'

(8) [(t̲a̲) oktavio] keʔe=**ra** mole *MO*
    CL.3.M Octavio make.CMP=3SG.M mole

    'Octavio made mole.'

The examples in (3)-(8) also illustrate two other properties held in common by both Nieves Mixtec and Melchor Ocampo Mixtec. First, both languages possess noun classifiers in prenominal position, as shown by the underlined forms in (4), (7), and (8). Noun classifiers vary according to features of the noun like human male/human female/animal/inanimate/wood/liquid etc. (de León 1988, Aihkenvald 2000). The singular feature is conveyed only by human classifiers. In Melchor Ocampo Mixtec, classifiers can optionally occur with names as well (cf. (8)), while this is not acceptable in Nieves Mixtec. In both languages, classifiers can be used to introduce relative clauses

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⁵ Since gender and first/second person distinctions mark human clitic pronouns only, we do not specify the feature HUM ('human') in the glosses whenever gender and/or first/second person is specified.

(see online Appendix). Throughout the paper we gloss classifiers as CL followed by their features. Though classifiers form a phonological unit with the following word, we follow the convention in the Mixtec literature (cf. Bradley and Hollenbach 1988b) and write them as a separate word.

A second relevant property of both Mixtec languages is that when the subject precedes the verb, a clitic pronoun obligatorily appears postverbally, as shown in (3), (4), (7), and (8) with the clitic pronoun in bold (cf. Macaulay 2005). The clitic pronoun varies in form according to the class of the preverbal subject. For instance, in Nieves Mixtec, the clitic pronoun is *=ra* with a singular human male preverbal subject (3), while it is *=ri* with an animal subject (4). The subject clitic pronouns are in complementary distribution with postverbal subjects. When the subject is postverbal, the clitic pronouns are impossible, as shown in (9) and (10).

(9) * ni-kuvaʔa=**ra**   ōktávíó ndyāyi (cf. (3))   *N*
       CMP-make=3SG.M Octavio mole
       'Octavio made the mole.'

(10) * tùvi=**ri**   ti   ñuʔñu yùʔu   (cf. (7))   *MO*
       sting.CMP=3SG CL.ANM bee   PRN.1SG
       'The bee stung me.'

Clitic pronouns can also occur without an overt full NP subject, as shown in (11) and (12).

(11) ni-kuvaʔa=**ra**   ndyāyi   *N*
       CMP-make=3SG.M   mole
       'He made the mole.'

(12) keʔe=**ra**   mole   *MO*
       make.CMP=3SG.M   mole
       'He made mole.'

Clitic pronouns convey similar feature distinctions as noun classifiers, but the two classes are not morphologically identical. For instance, the animal noun classifier in Nieves Mixtec is *kīrī*, while the animal verb clitic is *=ri* (cf. (4)). Similarly, the animal noun classifier is *ti* in Melchor Ocampo Mixtec, while the animal verb clitic is *=ri* (cf. (7)). We

gloss verb clitics just with their features. Therefore, a morpheme glossed just as ANM can only be a verb clitic, while a morpheme glossed as CL.ANM can only be a classifier.

2.2. Interrogative wh-clauses. Interrogative wh-clauses in Nieves Mixtec and Melchor Ocampo Mixtec are formed by placing the wh-expression to the left edge of the clause – so that it precedes all verbal material – and by leaving a gap in the position where the corresponding non-wh expression would appear. For instance, the wh-word *yō* 'who' questioning the subject in (13) occurs in sentence initial position, but no overt material occurs in the post-verbal subject position.

(13) **yō** ni-kuvaʔa ndyāyi   *N*
       who CMP-make   mole
       'Who made the mole?'

Notice that the fronting of the wh-subject in (13) does not trigger the occurrence of a subject clitic suffix on the verb, unlike what we saw for fronted non-wh subjects in the previous section. The presence of a subject clitic would actually make the sentence unacceptable.

Table 1 below gives the inventory of wh-expressions in both languages. Examples follow.

Table 1

Wh-Expressions in Nieves Mixtec and Melchor Ocampo Mixtec.

	Nieves Mixtec	Melchor Ocampo Mixtec	
who	*yō*	*ìkúnà*	(HUM)
		ìkúña	(SG.F)
		ìkúra	(SG.M)
		ndakúna	(HUM)
		naa	(HUM)
what	*ndyákūa*	*ñaà*	
	ndyákīa	*ñàʔá*	
	ndyáñakūa	*ndàkúwá*	
	ndyáñakīa	*ikúwá*	
	ndyáña		
which/what N	*ndyá*	*ndá*	
where	*ndyáa*[6]	*ndá(chí)*	
		ndáchíkúwá	
		ñuù	
when	*ndyánāmā*	*amakúwa*	
how	*ndyīxī*	*achí*	
		àchiká	
		ndákúwá	
why	*navaʔa*	*achí*	
		(àchiká)[7]	
		àchìkúwá	
how much/	*nājāā*	*nasá*	
how many		*nasákúyá*	

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[6] The wh-word *ndyáa* 'where' differs from the wh-word *ndyaá* 'what' in vowel length but also in tones, with *ndyáa* carrying falling tone and *ndyá* carrying high tone.

[7] In certain contexts *àchiká* seems to be interpretable as 'why' as well, besides its usual meaning as 'how.' This pattern resembles varieties of English like African American Vernacular English (AAVE), as shown in (i):

(i) **How** are you going to treat your mother like that?   *AAVE*

   '**Why** would you treat your mother like that?'

We leave the determination of the factors licensing such restricted use of *àchiká* for future research.

The interrogative wh-clauses in (14)-(27) exemplify the use of all the wh-words that will be relevant for our discussion of FRs. Examples (14)-(20) are from Nieves Mixtec (an example of an interrogative introduced by 'who' was already given in (13) above), while examples (21)-(27) are from Melchor Ocampo Mixtec.

(14) **ndyáña** ni-kuvaʔa jūlīétá   *N*
       what   CMP-cook   Julieta
       'What did Julieta cook?'

(15) **ndyánāmā** ni-kuvaʔa jūlīétá ndyāyi   *N*
       when   CMP-make Julieta mole
       'When did Julieta make the mole?'

(16) **ndyáa** ni-kuvaʔa   jūlīétá ndyāyi   *N*
       where   CMP-make   Julieta mole
       'Where did Julieta make the mole?'

(17) **ndyīxī** ni-kuvaʔa   jūlīétá ndyāyi   *N*
       how   CMP-make   Julieta mole
       'How did Julieta make the mole?'

(18) **nājāā**   ndyāyi ni-kuvaʔa jūlīétá   *N*
       how_much mole   CMP-make Julieta
       'How much mole did Julieta make?'

(19) **nājāā**   xīta   ni-kuvaʔa jūlīétá   *N*
       how_many tortilla   CMP-make Julieta
       'How many tortillas did Julieta make?'

(20) **navaʔa** ni-kuvaʔa jūlīétá   ndyāyi   *N*
       why   CMP-make Julieta   mole
       'Why did Julieta make the mole?'

(21) **i̱kúná** xi̱ni̱   yo̱ʔo̱   *MO*
       who   see.CMP   PRN.2SG
       'Who saw you?'

(22) **ñaʔa** ke̱ʔe̱   ra̱   jwǎ   *MO*
       what   make.CMP   CL.M Juan
       'What did Juan make?'

(23) **amakúwa** x<u>i</u>n<u>i</u>=ṹ   *MO*
      when   see.CMP=2SG
      'When did you see him?'

(24) **ndáchi**   ka?k=ṹ   *MO*
      where   be_born.CMP=2SG
      'Where were you born?'

(25) **àchiká** ke?=ṹ   tìya?á   *MO*
      how   make.CMP=2SG salsa
      'How did you make the salsa?'

(26) **nasá**   chòcòlatè/libru   sata=ṹ   *MO*
      how_much/how_many   chocolate/book   buy.CMP=2SG
      '{How much chocolate}/{how many books} did you buy?'

(27) **àchìkúwá** ndi-xa=ũ   <u>i</u>tà   *MO*
      why   CMP-go=2SG   river
      'Why did you go to the river?'

Wh-movement is obligatory and wh-in situ is ungrammatical in both languages. In (28), the wh-subject *yō* 'who' appears in situ with no constituent in the preverbal position. In (29), the wh-object *ndyáña* 'what' is in situ, while the subject *jwán* 'Juan' has been fronted. Neither wh-clause is acceptable in Nieves Mixtec. The same pattern holds in Melchor Ocampo Mixtec, as shown in (30)-(31).

(28) * ni-kānī **yō**   jwán   *N*
       CMP-hit   who   Juan
      ('Who hit Juan?')

(29) * jwán ni-kuva?a=ra   **ndyáña**   *N*
       Juan   CMP-make=3SG.M   what
      ('What did Juan make?')

(30) * jwáẽ k<u>a</u>n<u>i</u>   ìkúnà   *MO*
       Juan   hit.CMP   who
      ('Who hit Juan?')

(31) * k<u>e</u>'<u>e</u>   r<u>a</u>   jwáẽ **ñaá**   *MO*
       make.CMP   CL.3.M   Juan   what
      ('What did Juan make?')

Most of the wh-expressions appear to be morphologically complex. For example, the Melchor Ocampo Mixtec forms *ikuña*, *ikura*, and *ikuna* seem to be composed of what looks like a form of the copula *ku* and the human pronominal verbal suffixes =*ña*, =*na*, or =*ra*. The initial *i-* also seems to occur in the form *ikuwa* 'what'. That many of the wh-expressions are internally complex can also be seen by looking at *ndyá* (Nieves Mixtec) and *nda* (Melchor Ocampo Mixtec), which occur in many of the wh-expressions in Table 1. The forms *ndyá* and *nda* also occur with ordinary nouns and seem to correspond to the English *which* + N, as shown in (32)-(33).

(32) **ndyá tyútyú** ni-kā?vī jwán   *N*
      which paper   CMP-read Juan
      'Which book did Juan read?'

(33) **ndá libru** sàta   ña   maria   *MO*
      which book buy.CMP CL.F Maria
      'Which book did Maria buy?'

At this point, the exact segmentation of many of the forms in Table 1 is unclear. Thus, we leave a fine-grained morphological analysis of the internal structure of the wh-expressions for future research. What is important for our purposes is that a form like *ikuna* corresponds to 'who'. That is, if a speaker is asked how to say 'who', *ikuna* is the form given.

Embedded interrogative wh-clauses are identical to matrix ones, including obligatory fronting of the wh-phrase and lack of subject clitic pronoun on the verb with wh-subject. Example (34) shows a matrix interrogative wh-clause in Nieves Mixtec, while (35) shows the corresponding embedded one. The same pattern is shown in (36) and (37) for Melchor Ocampo Mixtec.

(34) **yō** ni-kuva?a ndyāyi   *N*
      who CMP-make mole
      'Who made the mole?'

(35) sēnóbíá kúni=a   kūndā?īñ=a   [**yō** ni-kuva?a ndyāyi] *N*
      Cenobia want.CON=3SG.F understand.POT=3SG.F who CMP-make mole
      'Cenobia wants to know who made the mole.'

(36) **ndachí** ndi̱-xa̱=ũ   *MO*
     where   CMP-go=2SG
     'Where did you go?

(37) koó xìn=ì   [**ndachí** ndí-xà=ũ   ]   *MO*
     NEG know.CON=1SG   where   CMP-go=2SG
     'I don't know where you went.'

Neither Nieves Mixtec nor Melchor Ocampo Mixtec allow for interrogative wh-clauses with more than one wh-word (see online Appendix for relevant data).

Unlike languages like Japanese or Mandarin, wh-words in Nieves Mixtec or Melchor Ocampo Mixtec cannot occur in a matrix declarative sentence to form indefinite or universally quantified expressions. Neither (38) in Nieves Mixtec nor (39) in Melchor Ocampo Mixtec can ever mean that Juan made/cooked something or everything, since they are just unacceptable sentences.[8]

(38) * jwán ni-kuvaʔa=ra   **ndyáña**   *N*
      Juan CMP-cook=3SG.M   what

(39) * ra̱   jwã́ sikwa=ra   **ikúwá /ndàkúwá/ñà'á**   *MO*
      CL.3.M Juan prepare.CMP=3SG.M what

2.3. Headed Relative Clauses. Both Nieves Mixtec and Melchor Ocampo Mixtec have headed relative clauses, i.e., relative clauses that are always introduced by an external constituent behaving like their 'head'. Headed relative clauses share important features with interrogative wh-clauses in both languages. Similar to the fronting of the wh-phrase in interrogative wh-clauses, the head of a relative clause occurs on the far left edge of the entire relative clause, as expected of verb-initial languages. In addition, the head noun is not resumed by any clitic on the verb or full pronoun in argument position inside of the

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[8] Our consultants find the strings in (38) and (39) acceptable only if understood and uttered as two separate clauses like the English *John cooked (something). What?*.

relative clause. That is, there is a gap strategy in both interrogative wh-clauses and relative clauses.

Both Nieves Mixtec and Melchor Ocampo Mixtec make use of three slightly different strategies to form relative clauses. All three share the properties of having a fronted head and a gap. They differ in what immediately follows the head: (i) just the predicate of the relative clause (with possible aspect markers), (ii) a classifier that precedes the relative predicate, or (iii) a wh-word (or wh-phrase) that precedes the relative predicate. For reasons of space, we don't go into a detailed description of each type of headed relative clause, but we just focus on relativization strategy (iii), which is more directly relevant for free relative clauses, since both constructions make use of wh-words. Further discussion and examples of the other two relativization strategies are provided in the online appendix.

Both Nieves Mixtec and Melchor Ocampo Mixtec can form headed relative clauses by having a wh-expression occur right after the head of the relative clause. Only a small subset of wh-words that introduce interrogative clauses can introduce headed relative clauses as well, as shown in Table 2. Relevant examples from both languages follow.

Table 2

Distribution of wh-words in headed relative clauses

in Nieves Mixtec and Melchor Ocampo Mixtec

	who	what	where	when	how	why	what + N/ which + N	how much/ how many
N	√	*	√/*	*	√	*	n/a	n/a
MO	*	*	√	*	?	?	n/a	n/a

Note. √: acceptable; *: not acceptable; ?: unclear; n/a: data not available.

Let's consider examples from Nieves Mixtec first. The example in (40) shows that the wh-word for 'who' can introduce a headed relative clause.

(40)   jwán kūtóó=ra   ñáʔa [**yō** kūtóó   jēráldó]   *N*
       Juan like.CON=3SG.M   woman who like.CON Geraldo
       'Juan likes the woman who Geraldo likes.'

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The example in (41) shows that the wh-words for 'how' as well can introduce a headed relative clause.

(41)   māríá   kūtóó=a   naké?ā [**ndyīxī**   sātāsā?a=ra]   *N*
       Maria   like.CON=3SG.F way   how   dance.CON=3SG.M
       'Maria likes how he dances.'

The wh-word for 'where' exhibits a mixed behavior: it can introduce headed relative clauses if the preceding nominal head is more naturally interpreted as an indefinite (42), while the resulting sentence is degraded if the nominal head is more naturally interpreted as a definite (43).

(42)   jwán   íí   vē?ē [**ndyáa**   kúju=ra]   *N*
       Juan   exist.CON house where   sleep.CON=3SG.M
       'Juan has a house where he sleeps.'
(43)   * jwán   kūtóó=ra   vē?ē [**ndyáa**   íí   māríá]   *N*
         Juan   like.CON=3SG.M house   where   exist.CON Maria
         ('Juan likes the house where Maria lives.')

The wh-words for 'what,' 'when,' and 'why' cannot introduce headed relative clauses at all:

(44)   * jwán kūtóó=ra   tyīna [**ndyáña** kūtóó   jēráldó]   *N*
         Juan like.CON=3SG.M dog   what   like.CON Geraldo
         ('Juan likes the dog which Geraldo likes.')
(45)   * jwán íí   tyāni [**ndyánāmā** kú kā'vī=rā   ī̄ tyútyú]   *N*
         Juan exist.CON time   when   can read.POT =3SG.M one book
         ('Juan has time when he can read a book.')
(46)   * jwán   ni-sa?a=ra   kōsíná sá? [**nava?a** kūsā?ā   māríá kōsíná] *N*
         Juan   CMP-come=3SG.M kitchen reason why   come.POT maria kitchen
         ('Juan came to the kitchen for the same reason why Maria will come to the
         kitchen.')

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Let's now consider examples in Melchor Ocampo. The wh-words for 'who' and 'what'
cannot introduce headed relative clauses, unlike the classifiers (47)-(48).

(47) jwɛ̃́ x<u>i</u>n<u>i</u>=rà   ñà   ñà'a   [***ìkúña** / **ñà**   xinu   ] *MO*
      Juan see.CMP=3SG.M   CL.3.F woman   who.SG.F/ CL.3SG.F run.CMP
      'Juan saw the woman who ran.'

(48) l<u>e</u>k<u>o</u> [***ndá /***   **ti**   yaxi   chòkòlatè]   *MO*
      rabbit   what / CL.ANM   eat.CON   chocolate
      'the rabbit that eats chocolate.'

The wh-words for 'where' can introduce headed relative clauses (49), while the wh-word
for 'when' cannot (a temporal marker is needed, instead) (50).

(49) xìn=ì   vè?è   [**ndachí** íí   y<u>o</u>=ũ   ]   *MO*
      see.CMP=1S   house   where   exist.CON live.CMP =2SG
      'I saw the house where you live.'

(50) kivi [***amakúwa** / tá   xin=i   yo?o]   *MO*
      day   when /   TEMP see.CMP=1SG   PRN.2SG
      'the day when I saw you'

Finally, there are several wh-words that can be used for either 'how' or 'why' or both in
Melchor Ocampo Mixtec, but only one of them (*achika*) can introduce a headed relative
clause (51).

(51) kùtoo=i   kù'va   [**achí/àchiká/àchìkúwá/ndakúwá**   *MO*
      like.CON=1SG   way/reason   how/why
      sìkw<u>a</u>?=ũ   tìya?á]
      prepare.CMP=2SG salsa
      'I like the way how you made the salsa.' or
      'I like the reason why you made salsa.'

In conclusion, both Nieves Mixtec and Melchor Ocampo Mixtec have headed relative
clauses, i.e., relative clauses that are introduced by an external head. They can be
introduced by a wh-word as a relative marker, occurring right after the head. No wh-word

that looks morphologically complex can introduce headed relative clauses, and only some morphological simple wh-words can. As shown in the next sections, free relative clauses exhibit a different pattern as far as the wh-words that can introduce them are concerned.

3. Introducing Free Relative Clauses. The construction we are focusing on in the remainder of the paper is called *free relative clauses* (*FRs*). A FR is an embedded non-interrogative wh-clause like *what Adam cooked* in *Luca tasted what Adam cooked*. In this section, we first define FRs in a way that provides a clear test for identifying them within a language and across languages (Sec. 3.1), then we introduce the three kinds of FRs that have been attested cross-linguistically (Sec. 3.2). In the next sections (Sec.4-6), we apply this definition to show that both Nieves Mixtec and Melchor Ocampo Mixtec have all three kinds of FRs.

3.1. A definition of free relative clauses. In our investigation of FRs in Mixtec, we adopt the definition of FRs in (52) (adapted from Caponigro 2003, 2004).

(52)   **DEFINITION OF FRS**
FRs are all and only those strings that satisfy the following three properties:
a.   LEXICAL PROPERTY: FRs contain a <u>wh-word</u>;
b.   SYNTACTIC PROPERTY: FRs are <u>embedded clauses</u> with a <u>gap</u> in argument or adjunct position;
c.   SEMANTIC PROPERTY: FRs can <u>always</u> be replaced with truth-conditionally equivalent NPs or Preposition Phrases (PP) (or oblique or adverbial constituents).

According to this definition, the string we mentioned above *what Adam cooked* in *Luca tasted what Adam cooked* is a FR because (a) it contains the wh-word *what*, (b) it is an embedded clause with an object gap (*cooked* lacks its object), (c) it can be replaced and paraphrased with the definite NP *the thing(s) that Adam cooked*.

FRs are attested cross-linguistically. They are found in many Indo-European languages (Germanic, Romance, Slavic, Albanian, Modern Greek), in Finno-Ugric languages (at least Estonian, Finnish, and Hungarian), in Semitic languages (at least, Modern Hebrew and Moroccan Arabic), in Mayan languages (at least, Yucatec Maya, Kaqchikel, and

Kʔicheeʔ), and in Haida, an isolate Native American language (or a member of the Na-Dene family according to some).[9]

3.2. Three kinds of free relative clauses. Three kinds of FRs have been discussed in the literature and are attested cross-linguistically. We briefly discuss each of them below since they will be relevant for our investigation of FRs in Mixtec in Sections 4-6.

3.2.1. Definite Free Relatives. The most common FRs are those that can be replaced or paraphrased with a definite NP or a definite PP (or oblique). Let's call these FRs *definite FRs*. Examples of definite FRs in English introduced by all five wh-words that can introduce them are given in (53) to (57) below. In each pair, a. provides an example with a FR, while b. provides the corresponding example with a definite NP or a PP replacing and paraphrasing the FR.

(53) a. Luca tasted [$_{FR}$ **what** Adam cooked].
  b. Luca tasted [$_{NP}$ {**the food/the thing(s)**} Adam cooked].
(54) a. I'll marry [$_{FR}$ **who** you choose].
  b. I'll marry [$_{NP}$ **the person** you choose].
(55) a. You can't smoke [$_{FR}$ **where** the kids are playing].
  b. You can't smoke [$_{PP}$ **in the place(s)** where the kids are playing].
(56) a. I left [$_{FR}$ **when** Daniel arrived].
  b. I left [$_{PP}$ **at the same time** that Daniel arrived].
(57) a. WE did it [$_{FR}$ **how** YOU did it].
  b. WE did it [$_{PP}$ **in the way** YOU did it].

---

[9] See Caponigro (2003, 2004) for Indo-European, Finno-Ugric, and Semitic languages; Tonhauser (2003), Gutiérrez-Bravo & Monforte (2009) and Gutiérrez-Bravo (2010) for Yucatec Maya; Torrence (2010) for Kaqchikel; Henderson (to appear) for Kʔicheeʔ; Enrico (2003) for Haida. The syntactic nature of FRs (their categorical status and the syntactic position of their wh-word) is an open issue. See van Riemsdijk (2005) for a thorough survey.

Notice that FRs introduced by *where*, *when*, and *how* can occur where a PP would usually occur, as just shown in (55)-(57) above, but they can also occur where an NP would usually occur, as shown in (58)-(60) below.

(58) a. I don't like [FR **where** the kids are playing].
      b. I don't like [NP **the place(s)** where the kids are playing].
(59) a. They were happy from [FR **when** Daniel arrived] to [FR **when** he left]
      b. They were happy from [NP **the moment** Daniel arrived] to [NP **the moment** he left]
(60) a. I hate [FR **how** you did it].
      b. I hate [NP **the way** you did it].

3.2.2. Existential Free Relatives. Some languages allow FRs to occur as the complement of existential predicates. Germanic languages usually disallow this option (but see Yiddish for an exception, Caponigro 2003), while the other Indo-European languages and Semitic languages mentioned above do allow for these FRs that we call *existential FRs*.[10] Examples of existential FRs are given in (61) and (62) below from Hebrew.[11] The two existential FRs are introduced by a different wh-word and their meaning is equivalent to the meaning of a complex indefinite NP, as highlighted by the English translation.

(61) le-mazal-i   yesh li   [FR im   **mi**   le-daber] kshe=ani   acuva.
      to-luck-1SG.POSS   have 1SG.DAT with **who** to-talk   when=1SG.NOM   sad
      'Fortunately, I have somebody to talk to when I am sad.'

---

[10] Cf. Šimík (2011) for a comprehensive survey of existential free relatives cross-linguistically and a detailed proposal for their syntactic and semantic analysis.

[11] Thanks to Daphna Heller, Orr Ravitz, and Yael Sharvit for the data. The Hebrew data is transcribed according to the transliteration from Hebrew that our consultants provided us with and doesn't follow the conventions we adopted for transcribing Mixtec (cf. Caponigro 2003 for further Hebrew data and cross-linguistic data about existential FRs).

(62) al   tidʔag   yesh lanu [_FR **ma**   li-kro].
      NEG worry.2SG.M   have 1PL.DAT **what** to-read
      'Don't worry! We have something to read.'

3.3.3. -*ever* Free Relatives. Finally, most languages allow for FRs whose wh-words are morphologically or syntactically modified by what in English looks like the suffix –*ever*. The morpho-syntactic marking is associated with a change in the syntactic and the semantic behavior of the FRs, though the correct description and account for such a change are still debated. Examples of -*ever* FRs from English are given in (63)-(67). The example a. in each pair provides the -*ever* FR, while the example in b. gives a close paraphrase by means of an NP introduced by the free choice element *any*.

(63) a. I'll marry [_FR **whoever** you choose].
      b. I'll marry [_NP **any person** you choose].
(64) a. Luca tastes [_FR **whatever** Adam cooks].
      b. Luca tastes [_NP {**any food/anything**} Adam cooks].
(65) a. You can't smoke [_FR **wherever** the kids are playing].
      b. You can't smoke [_PP **in any place** where the kids are playing].
(66) a. I leave [_FR **whenever** Flavio shows up].
      b. I leave [_PP **anytime** Flavio shows up].
(67) a. We'll do it [_FR **however** you do it].
      b. We'll do it [_PP **anyway** you do it].

In what follows, we show that both Mixtec languages described in the present study have all three kinds of FRs that are found across languages.

4. Definite Free Relative Clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec have definite FRs, that is FRs that are interpreted as definite descriptions. In what follows, we give examples of FRs introduced by each wh-expression in both languages.

4.1. Definite FRs introduced by 'who'. Definite FRs can be introduced by the wh-word for 'who' in both languages:

(68) [**yō**   ni-kānī jēráldó] ni-kānī jwán   *N*
      who CMP-hit Geraldo CMP-hit Juan
      'The one(s) who hit Geraldo hit Juan too.'

(69) [**yō**   ni-jā-tākwēʔē   yuū] kō ni-síʔi   *N*
      who CMP-CAUS-be_hurt   rock NEG CMP-die
      'The one(s) who the rock hurt did not die.'

(70) kùʔù=i kani [**ìkúnà/naa/ìkúrà/ìkúñà/ndàkúná** xìnì=ũ   ] *MO*
      FUT=1SG hit   who   see.CMP=2SG
      'I will hit the one(s) who you saw.'

(71) kùʔù =i   kani [**ìkúnà/naa/ìkúrà/ìkúñà/ndàkúná** sata   libru]   *MO*
      FUT=1SG hit   who   buy.CMP   book
      'I will hit the one(s) who bought the book.'

4.2. Definite FRs introduced by 'what'. Definite FRs can be introduced by the wh-word for 'what' in both languages:

(72) jwán ni-sáʔnō=rā   [**ndyáñakūa** ni-jā-tākwēʔē   jēráldó]   *N*
      Juan CMP-break=3SG.M what   CMP-CAUS-be_hurt   Geraldo
      'Juan broke what hurt Geraldo.'

(73) jwán kūtóó=ra   [**ndyákūa** ni-kuvaʔa jūlīétá]   *N*
      Juan like.CON=3SG.M what   CMP-make Julieta
      'Juan likes what Julieta made.'

(74) kúx=í   [**ndàkúwá** x̠in̠i̠=ũ   ]   *MO*
      eat.POT=1SG what   see.CMP=2SG
      'I will eat what you saw.'

4.3. Definite FRs introduced by 'what/which' + N. Definite FRs can be introduced by the equivalent of the complex wh-expression *what/which* + N in Melchor Ocampo Mixtec (76)-(77), but not in Nieves Mixtec (75). The behavior of Nieves Mixtec is the most common across languages: complex wh-expressions usually do not introduce FRs (Caponigro 2003).

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(75) * jwán kúni=ra　　　　[**ndyá tyīna** sāsī　　jíʔva]　*N*
　　　Juan want.CON=3SG.M　what dog　eats.CON　chocolate
　　　('Juan wants the dog that eats chocolate.')

(76) xèko=i　　　[**ndá burro** kúú ri　　　xìnu　] *MO*
　　　sell.POT=1SG　what　donkey　COP　PRN.ANM　run.CMP
　　　'I will sell the donkeys that ran.'

(77) kux=i　　　[**ndá ñaʔá** kuwa xini=ű] *MO*
　　　eat.POT=1SG　what thing　COP　　see.CMP=2SG
　　　'I will eat what you saw.'

4.4. Definite FRs introduced by 'where'. Definite FRs introduced by the the wh-word for 'where' occurring as the complement of a predicate selecting for an NP, are unacceptable in Nieves Mixtec (78), while they are fine in Melchor Ocampo Mixtec (79).

(78) * jwán kūtóó=ra　　[**ndyáa** ni-kāʔvī=ra　　　tyútyú]　*N*
　　　Juan like.CON=3SG.M　where CMP-read=3SG.M　book
　　　('Juan likes where he read the book.')

(79) kùtoo=i　　[**ndáchíkúwá** kà'vi　　jwǎ libru]　*MO*
　　　like.CMP=1SG where　　　　read.CMP Juan book
　　　'I liked where Juan read the book.'

Definite FRs introduced by the wh-word for 'where' occurring where a PP or other locative form would usually occur are acceptable in both languages:

(80) gābrīélá ni-ndīkwā=ā　　　xīta　[**ndyáa**　ni-kuvaʔa jūlīétá ndyāyi]　　*N*
　　　Gabriela CMP-make=3SG.F　tortilla　where　CMP-cook　Julieta mole
　　　'Gabriela made tortillas where Julieta made mole.'

(81) kusũ=i　　　[**ndachíkuwa** ndi-kixi　yoʔo]　*MO*
　　　sleep.POT=1SG where　　　　CMP-sleep　2SG
　　　'I will sleep where you slept.'

4.5. Definite FRs introduced by 'when'. Definite FRs introduced by the wh-word for 'when' occurring as the complement of a predicate selecting for an NP, are unacceptable in both languages:

21

(82) * vīktóor kūtóó=ra   [**ndyánāmā** kānī   jwán jēráldó]   *N*
        Victor like.CON=3SG.M   when   hit.CON Juan Geraldo
        ('Victor likes when Juan hits Geraldo.')

(83) * kùtoo=i   [**amakúwa** ka̠ni̠   jwá̱ dàvìd] *MO*
        like.CMP=1SG   when   hit.CMP Juan David
        ('I liked when Juan hit David.')

Definite FRs introduced by the wh-word for 'when' occurring where a PP or other temporal form would normally occur, are acceptable in Nieves Mixtec:

(84) kāríná ni-kuvaʔa   ī̄ī pāstéel [**ndyánāmā** ni-kuvaʔa jūlīétá ndyāyi]   *N*
        Carina CMP-cook   one cake   when   CMP-cook Julieta mole
        'Carina made a cake when Julieta made the mole.'

On the other hand, in Melchor Ocampo Mixtec, the wh-word that introduces interrogative *when*-clauses (85) cannot introduce FRs (86). The non-wh temporal subordinator *ta* must be used, instead (87). *ta* cannot introduce interrogative *when*-clauses, though (88).

(85) **amakúwa** sata=ű̄   libru=m   *MO*
        when   buy.CMP=2SG book= POSS.2SG
        'When did you buy the book?'

(86) * sate=i   libru=i   [**amakúwa** sata=ũ   librú=m]   *MO*
        buy.CMP=1SG book=POSS.1SG   when   buy.CMP=2SG book=POSS.2SG
        ('I bought my book when you bought your book.')

(87) sate=i   libru=i   [**tá**   sata=ũ   librú=m]   *MO*
        buy.CMP=1SG   book= POSS.1SG TEMP buy.CMP=2SG book=POSS.2SG
        'I bought my book when you bought your book"

(88) * **tá**   sata=ű̄   librú=m   *MO*
        TEMP   buy=CMP.2SG book= POSS.2SG
        ('When did you buy your book?')

The very same pattern (in which the wh-word introducing temporal interrogative clauses cannot be used to form a FR and a different non-wh word must be used to form a non-interrogative temporal clause) is attested in other languages with FRs. For instance, in

German the wh-word *wann* 'when' can introduce interrogative temporal clauses, while the non-wh temporal subordinator *als* 'when' cannot (89). The reverse pattern holds for non-interrogative temporal clauses (90).[12]

(89) Ich   habe dich   gefragt, [**wann/*als**   Maria angekommen ist].
      PRN.1SG have PRN.2SG.ACC asked   when/TEMP Maria arrived   is
      'I asked you when Maria arrived.'

(90) Ich   bin gegangen, [*****wann**/**als**   Maria angekommen ist].
      PRN.1SG am left   when/TEMP Maria arrived   is
      'I left when Maria arrived.'

4.6. Definite FRs introduced by 'how'. Definite FRs introduced by the wh-word for 'how' are attested in Nieves Mixtec, and can occur as the complement of a predicate selecting for an NP (91) or in a position where a PP or other manner expressions would usually occur (92).

(91) jwán kundají=ra   [**ndyīxī** ni-kuvaʔa jēráldó ndyāyi]   *N*
      Juan hate.CON=3SG.M how   CMP-cook Geraldo mole
      'Juan hates how Geraldo made the mole.'

(92) éríka kúni=a   kuvaʔ=a   ndyāyi [**ndyīxī** ni-kuvaʔa jūlíétá *N*
      Erica want.CON=3SG.F cook.POT=3SG.F mole   how   CMP-cook Julieta
      ndyā̄yi]
      mole
      'Erica wants to make mole how Julieta made mole.'

In Melchor Ocampo Mixtec, the wh-word *àchiká* is interpreted as 'how' or 'why' when it occurs in FRs. Thus, the resulting FR is ambiguous, no matter if it behaves like an NP (93) or a PP (94).

(93) koó ni-kutoo=i   [**àchiká** sikwa=ũ   tìyaʔá]   *MO*
      NEG CMP-like=1SG   how   prepare.CMP=2SG   salsa
      'I didn't like how you prepared the salsa.' or
      'I didn't like the reason why you prepared the salsa.'

(94) jwá̃ kuni=ra   keʔe=ra   tìyaʔá [**àchiká** keʔ=ű
      Juan want.CON=3SG.M make.CON=3SG.M salsa   how   make.CMP=2SG
      tìyaʔá]   *MO*
      salsa
      'Juan wants to make salsa how you made salsa.' or
      'Juan wants to make salsa for the same reason why you made that salsa.'

Interestingly, *àchiká* canonically means just 'how' in constituent interrogative clauses (95) (though see fn. 7).

(95) **àchiká** keʔ=ũ   tìyaʔá   *MO*
      how   make.CMP=2SG   salsa
      'How did you make the salsa?' (*cannot mean*: 'Why did you make the salsa?')

4.7. Definite FRs introduced by 'why'. The wh-word that is used as 'why' in constituent interrogative clauses can't introduce a FR in either language. This pattern holds cross-linguistically (Caponigro 2003). In Nieves Mixtec, the wh-word for 'why' can't introduce a FR behaving like an NP (96) nor like a PP (97).

(96) * jwán   kūtóó=ra   [**navaʔa** ni-kuvaʔa jūlīétá ndyāyi]   *N*
        Juan   like.CON=3SG.M   **why**   CMP-make Julieta mole
        ('Juan likes the reason why Julieta made mole.')

(97) * ōktávíó ni-saʔa=ra   kōsíná [**navaʔa** ni-saʔa   jūlíétá   kōsíná] *N*

Octavio CMP-arrive=3SG.M kitchen why   CMP-arrive Julieta kitchen

('Octavio came to the kitchen for the same reason why Julieta did.')[13]

In Melchor Ocampo Mixtec, the wh-word *àchìkúwá* in a constituent interrogative can only mean 'why' (98), unlike the wh-word *àchiká* we discussed in the previous section that can mean either 'why' or 'how.'

(98) **àchìkúwá** keʔ=ű́   tìyaʔá   *MO*

why   make.CMP=2SG   salsa

'Why did you make the salsa?'

Unlike *àchiká*, *àchìkúwá* can never introduce a FR (99).

(99) * ndì-xa̲=i̲   i̲tà [**àchìkúwá** ndì-xa̲ yo̲ʔo̲   ]   *MO*

CMP-go=1SG   river **why**   CMP-go PRN.2SG

('I went to the river for the same reason why you went.')

4.8. Definite FRs introduced by 'how much/how many'. The complex wh-expression equivalent to *how much/many* + N can introduce definite FRs in both languages:

(100) jwán íí   [**nājāā**   **ndyāyi** íí   nũū̄ māríá]   *N*

Juan exist.CON how_much mole   exist.CON to   Maria

'Juan has the same amount of mole as Maria.'

(101) jwán kúni=ra   [**nājāā**   **tákó** íí   nũū̄ māríá]   *N*

Juan want.CON=3SG.M how_many taco   exist.CON to   Maria

'Juan wants as many tacos as Maria has.'

---

[13] This string is acceptable if analyzed as two sentences meaning 'Octavio came to the kitchen. Why did Julieta come to the kitchen?'.

25

(102) kò'ò=i   [**nasá**   **lèchè** s<u>a</u>ta=ũ   ]   *MO*

      drink.POT=1SG   how_much   milk   buy.CMP=2SG

      'I will drink as much milk as you bought.'

(103) ka?v=i   [**nasá**   **libru** sata=ṹ]   *MO*

      read.POT=1SG   how_many   book   buy.CMP=2SG

      'I will read as many books as you bought.'

4.9. Summary about definite FRs. Our findings about the wh-words that can introduce definite FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in the table below.

Table 3

Distribution of wh-words in definite FRs in Nieves Mixtec and Melchor Ocampo Mixtec

	who	what	where NP/PP	when NP/PP	how NP/PP	why NP/PP	what/ which + N	how much/ how many
N	√	√	* / √	* / √	√ / √	* / *	*	√
MO	√	√	√ / √	* / *	√ / √	? / ?	√	√

Note. √: acceptable; *: not acceptable; ?: unclear

5. Existential Free Relative Clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec have a construction that is close in meaning to the existential constructions *there is/are* + NP (e.g. *There's something to read*) or *have* + NP (e.g. *Jim has a place to live*) in English. In both Mixtec languages, the existential construction is built around a predicate that roughly means 'exist'. (104) shows an example of an existential construction in Nieves Mixtec that resembles the *there is/are* + NP construction in English. The existential predicate *íí* 'exist' is followed by what looks like a relative clause introduced by just the inanimate classifier *ña* without an overt head (we bracketed the whole relative clause in this example and the following). The same pattern is observed in Melchor Ocampo Mixtec (105).

(104) íí   [ña   ku   kusiáʔa=na]   *N*
      exist.CON   CL.IN can eat.POT=3PL.HUM
      'There is something they can eat.'

(105) iyo   [ya   v<u>a</u>ʔ<u>a</u>   kàxi=ndó]   *MO*
      exist   CL.IN   can.CON   eat.CON=2PL.HUM
      'There is something you all can eat.'

Both Mixtec languages form the equivalent of the *have* + NP existential construction in English by adding a fronted constituent to the existential predicate, as shown in (106).

(106) jwán íí   [ña   kāʔvī=ra]   *N*
      Juan   exist.CON CL.IN   read.POT=3SG.M
      'Juan has something to read.'

(107) jwá̋ iyo   [ya   k<u>a</u>ʔvi=ra]   *MO*
      Juan exist.CON CL.IN   read.POT=3SG.M
      'Juan has something to read.'

The preverbal constituent semantically behaves like the subject of existential *have* in English. Syntactically, though, it is not a subject, rather an oblique, as shown by the lack of a subject clitic on the existential predicate. This is a common way of forming existential constructions across languages (e.g., Latin and Hebrew): *Juan has something to eat* is literally *To Juan there's something to eat* in these languages.

The constituent following the existential predicate doesn't need to be a relative clause introduced just by a classifier. It can be a fully headed relative in either Mixtec languages (we highlighted the head in bold):

(108) jwán íí   **nũṹ̄** [kóó=ra]   *N*
      Juan exist.CON place   live.POT=3SG.M
      'Juan has a place to live.'

(109) jwán íí   **ī̄=na**   [kūndōtṹʔṹ   sĩ̄ʔĩ̄=ra]   *N*
      Juan exist.CON one=3.HUM   chat.POT   with=3SG.M
      'Juan has someone who can chat with him.'

(110) jwã́ iyo   **ĩ̄**   **libru** [kaʔvi=ra]   *MO*
      Juan exist.CON one   book read.POT=3SG.M
      'Juan has a book to read.'

(111) jwã́ iyo   **ĩ̄**   **veʔe** [kusũ=ra]   *MO*
      Juan exist.CON one   house sleep.POT=3SG.M
      'Juan has a house to sleep in.'

In the examples above, a complex NP that is interpreted as an indefinite NP (often a complex NP containing a relative clause) always follows the existential predicate.[14] FRs can immediately follow the existential predicate as well, forming what we earlier called existential FRs (Sec. 32.). Existential FRs receive an indefinite-like interpretation as well, which differs from the definite interpretation of the FRs we discussed in the previous section. Below we present and discuss examples of existential FRs introduced by different wh-words from both Mixtec languages.

5.1 Existential FRs introduced by 'who'. The wh-word for 'who' can introduce existential FRs in both languages:[15]

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[14] In both Mixtec languages, what looks like the existential construction can be used to convey the meaning of 'to live' as well, in which case the existential predicate can be followed by a definite/referential expression:

(i) yuʔu   íí   lājóyá   *N*
     PRN.1SG exist.CON La_Jolla
     'I live in La Jolla.'

(ii) iyo   i   lorens   *MO*
      exist.CON PRN.1SG Lawrence
     'I live in Lawrence.'

[15] Example (112) from Nieves Mixtec and example (113) from Melchor Ocampo Mixtec exhibit what is known as 'pied-piping with inversion' in the literature on Mesoamerican languages (Aissen 1996 and Gutierrez-Bravo 2010 a.o.). When a complex wh-phrase made of a preposition and its wh-complement moves (pied-piping), then the preposition has to follow its complement (inversion). Pied-piping with inversion occurs in wh-interrogatives as well, in both Mixtec languages, while it's unacceptable in headed relative clauses introduced by wh-words.

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(112) jwán íí   [**yō**   sĩ̄ʔĩ̄ kūndōtṹʔṹ=ra]   *N*

      Juan exist.CON who with chat.POT=3SG.M

      'Juan has someone to chat with.'

(113) jwã́ iyò   [**ikú xiʔi**   ka̠ʔ=ra̠   ] *MO*

      Juan exist.CON   who with   talk.POT=3SG.M

      'Juan has someone to talk to.'

5.2 Existential FRs introduced by 'what'. The various wh-words roughly corresponding to *what* in English can introduce existential FRs in both Mixtec languages:

(114) jwán kōñáʔā   [**ñáʔndyá**=ña kusiáʔa=ra][16]   *N*

      Juan NEG.exist.CON   what=3.IN   eat.POT=3SG.M

      'Juan doesn't have anything to eat.'

(115) iyò   [**ñà'á/ndàkúwá/ìkúwá/** ya   kùnì=ndó[17]

      exist.CON   what   CL.IN   can.CON=3PL.HUM

      kàxì=ndō]   *MO*

      eat.POT=3PL.HUM

      'They have something they can/want to eat.'

---

[16] Whenever the existential matrix predicate is given in its negative form in the example here and below, it means that our consultant found it more acceptable than the corresponding positive form without matrix negation. This is a pattern observed in existential FRs cross-linguistically (Šimík 2011: 39-41).

[17] The verb *kuni* in Melchor Ocampo Mixtec can mean 'can' or 'want'.

(116) iyo   [**ñà'á/ndàkúwá/ìkúwá/*ñaa** ya   kuni   ra   jwã́
  exist.CON   what   CL.IN can.CON CL.3.M Juan
  ka?vi=ra] *MO*
  read.POT=3SG.M
  'Juan has something he can/wants to read.'

5.3 Existential FRs introduced by 'where'. The wh-word for 'where' can introduce existential FRs in both languages:

(117) jwán kōñá?ā [**ndyáa** kōō=ra] *N*
  Juan NEG.exist.CON where live.POT=3SG.M
  'Juan does not have a place to live.'

(118) iyò [**ndáchí** k<u>u</u>s<u>ũ</u> r<u>a</u> jwã́] *MO*
  exist.CON where sleep.CON CL.3SG.M Juan
  'Juan has a place to sleep.'

5.4 Existential FRs introduced by 'when'. In Nieves Mixtec, the wh-word for 'when,' which we saw earlier can introduce definite FRs (Section 4.5), can introduce existential FRs as well:

(119) jwán kōñá?ā [**ndyánāmā** kúju=ra *N*
  Juan NEG.exist.CON when sleep.POT=3SG.M
  'Juan does not have time to sleep.'

In Melchor Ocampo Mixtec, instead, the wh-word for 'when' that occurs in interrogative clauses cannot introduce existential FRs, in the same way as we saw earlier it cannot introduce definite FRs (Section 4.5):

(120) * jwã́ koó [**amakúwa** k<u>a</u>?vi=ra   ] *MO*
  Juan NEG   when read.POT=3SG.M
  ('Juan doesn't have time to read.')

5.5 Existential FRs introduced by 'how'/'why'. The wh-word *ndyīxī* 'how' in Nieves Mixtec can introduce existential FRs:

(121) jwán kōñáʔā   [**ndyīxī** kuvaʔa=ra   ndyāyi]   *N*
        Juan NEG.exist.CON   how   make.POT=3SG.M   mole
        'Juan doesn't have a way to make mole.'

The wh-words *achika* and *achikuwa* in Melchor Ocampo Mixtec can introduce either purpose/reason or manner existential FRs:

(122) iyò   [**àchiká**   sìkw<u>a</u>=ì   mole]   *MO*
        exist.CON   how/why   prepare.POT=1SG   mole
        'I have a way to prepare mole.' or 'I have a reason to prepare mole.'

(123) koó [**àchìkúwá** kùʔũ=i   kà]   *MO*
        NEG   how/why   go.POT=1SG   there
        'I have no way to go there.' or 'I have no reason to go there.'

In Nieves Mixtec, *navaʔa* 'why' can never introduce an existential FR:

(124) * jwán   íí   [**navaʔa** kuvaʔa=ra   ndyāyi]   *N*
         Juan   exist.CON   why   make.POT=3SG.M   mole
         ('Juan has a reason to make mole.')

The ban in Nieves Mixtec of *navaʔa* 'why' resembles what we saw with definite FRs in Sections 4.6 and 4.7 and follows the cross-linguistic pattern that is attested for both definite and existential FRs – it is rarely the case that the equivalent of the wh-word *why* can introduce either.

5.6 Existential FRs introduced by complex wh-phrases. Complex wh-expressions of the kind *which/what* + N can introduce existential FRs in both languages:

(125) jwán   kōñáʔā   [**ndyá tyīna**   kujīkī   **sī̄ʔī̄**=ra]   *N*
        Juan   NEG.exist.CON   what dog   play.POT   with=3SG.M
        'Juan doesn't have a dog that plays with him.'

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(126) iyò   [**nda** **nuù** koo   ra   jwɑ̃́] *MO*
exist.CON which place live.CON   CL.3SG.M Juan
'Juan has a place to live.'

The complex wh-expressions *how much/many* + NP can't introduce an existential FR in either language – a pattern that is attested cross-linguistically as well:

(127) * jwán íí   [**nājāā ndyāyi** kusiáʔa=ra] *N*
Juan exist.CON much   mole   eat.POT=3SG.M
('Juan has an amount of mole to eat.')
(128) * iyò   [**nasá** **lèchè** (kúwá) kòʔo=i   ] *MO*
exist.CON how_much milk   (COP)   drink.POT=1SG
('I have a quantity of milk to drink.')
(129) * iyò   [**nasá** **libru** (kúwa) kaʔv=i] *MO*
exist.CON how_many book (COP)   read.POT=1SG
('I have a number of books to read.')

5.7. Summary about existential FRs. Our findings about the wh-words that can introduce existential FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in the table below.

Table 4

Distribution of wh-words in existential FRs

in Nieves Mixtec and Melchor Ocampo Mixtec

	who	what	where	when	how	why	what/ which + N	how much/ how many
N	√	√	√	√	√	*	√	*
MO	√	√	√	*	√	√	√	*

Note. √: acceptable; *: not acceptable; ?: unclear; n/a: data not available

6. *-ever* Free Relative Clauses in Nieves Mixtec and Melchor Ocampo Mixtec. The last kind of FR that is found cross-linguistically is what we labeled *-ever* FRs in section 3.2. *-ever* FRs are often characterized by the presence of an extra element that can occur as an affix on the wh-word or as an independent lexical item close to the wh-word. In English the suffix *-ever* modifies the wh-word in *-ever* FRs (sec. 3.2).

-ever FRs exhibit two different patterns of distribution and interpretation. They can occur as arguments or PP adjuncts and be close in meaning (and distribution) to NPs introduced by the free choice determiner *any* in English. Examples of *-ever* FRs in English occurring as argument or PP adjuncts were given in (63)-(67) above, together with their paraphrases with NPs introduced by the free choice determiner *any*.

Unlike definite FRs and existential FRs, *-ever* FRs can be introduced by complex wh-phrases in English (and across languages with FRs), as shown by the bolded wh-phrase *whatever book* in (130).

(130) I'll read [**whatever book** you read].
   (cf. I'll read any book you read.)

Finally, like definite FRs and existential FRs, *-ever* FRs can't be introduced by the wh-word *why* either (131).

(131) * I'll go to the party [**whyever** you go].
   (cf. I'll go to the party for any/whatever reason you go.)

-ever FRs can also occur where clausal adjuncts would occur – sentence initial or sentence final, rather than in argument or PP adjunct position (Izvorski 2000). These *-ever* FRs are close in meaning to *no matter* clausal adjuncts. For instance, the clausal adjunct *-ever* FR in (132)a is fronted like the *no matter* clausal adjunct in (132)b and the two clausal adjuncts have very close meanings.

(132) a. [**Whoever** you choose], I'll hire the person I want.
   b. [**No matter who** you choose], I'll hire the person I want.

Clausal adjunct *-ever* FRs are introduced by the same wh-expressions as the argument/PP-adjunct *-ever* FRs (132)-(137), including complex wh-phrases (134).

(133) She can't stand me, [**whatever** I do for her].

(134) [**Whatever fruit** I taste], I vomit.

(135) [**Wherever** I go], I run into troubles.

(136) It rains [**whenever** I decide to go out].

(137) My parents complain all the time, [**however** I behave].

 Clausal adjunct *-ever* FRs can't be introduced by the wh-word *why* (138), as with any other type of FR.

(138) * [**Whyever** you did it], I won't forgive you.

Incidentally, *-ever* wh-words or phrases can occur by themselves too without being part of a FR:

(139) a. I'll drink **whatever (herbal tea)**.
       b. We'll talk to **whoever**.
       c. You can go **wherever**.
       d. Feel free to come **whenever**.

In the remainder of this section, we show that *-ever* FRs occur in both Mixtec languages, though their patterns are partially different. Therefore, we'll discuss each language separately.

6.1. -ever FRs in Nieves Mixtec. Nieves Mixtec has both kinds of *-ever* FRs: the ones behaving like NP arguments or PP adjuncts, and the ones behaving like adverbial clauses. All *-ever* FRs are introduced by wh-words followed by the expression *kūmévā*, whose possible complex morphological nature we leave for future investigation.[18] Examples of -

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[18] Barbara Hollenbach (p.c.) suggests that *kūmévā* could be made of *kuu* 'be.PRES', *mee/mii* 'self.EMPHATIC', and *va* 'just'.

ever FRs in Nieves Mixtec behaving like NP argument or PP adjuncts are given in (140)-(144).

(140) jwán kūtóó=ra   [**yō kūmévā** kūtóó   māríá] *N*
       Juan like.CON=3SG.M who -ever   like.CON Maria
       'Juan likes whoever Maria likes.'

(141) jwán sisiá?a=ra   [**ndyá kūmévā** kuva?a   māríá]   *N*
       Juan eat.CON=3SG.M what -ever   make.CON Maria
       'Juan eats whatever Maria makes.'

(142) jwán kwá̄?ã=ra   [**ndyá kūmēvā** kwá̄?ã māríá]   *N*
       Juan go.CON=3SG.M   where -ever   go.CON Maria
       'Juan goes wherever Maria goes.'

(143) jwán kunaka kwí?a=ra [**ndyánāmā kūmévā** jání māríá kunaka]   *N*
       Juan sit.CON sad=3SG.M when   -ever   also Maria sit.CON
       'Juan is sad whenever Maria is also feeling that way.'

(144) jwán kuva?a=ra   ndyāyi [**ndyīxī kūmévā** kí?ā māríá kuva?a=ra]   *N*
       Juan make.CON=3SG.M mole   how -ever   like Maria make.CON=3SG.LIQ
       'Juan makes mole however Maria makes it.'

The wh-word for 'why' cannot introduce *-ever* FRs in Nieves Mixtec, similar to English (cf. (138) above) and to what we observed earlier for definite FRs (Section 4.7) and existential FRs (cf. (124) above) in the same language.

(145) * jwán kúni=ra   kōō=ra   [**nava?a kūmévā** māríá
        Juan want.CON=3SG.M go.CON =3SG.M why   -ever   Maria
        kwá̄?=ã] *N*
        take_off.CON=3SG.F
        ('Juan wants to go for whatever reason Maria is taking off.')

-ever FRs in Nieves Mixtec can also be introduced by complex wh-phrases containing a wh-word, *kūmévā,* and a noun, like in (146) and (147).

(146) jwán kúni=ra   [**ndyá tyīna kūmévā** kúni   māríá]   *N*
     Juan want.CON=3SG.M what dog -ever   want.CON=3SG.M Maria
     'Juan wants whatever dog Maria wants.'

(147) jwán kúni=ra   [**nājāā**   kūmévā tákó íí   nũ̄ū̃ māríá]   *N*
     Juan want.CON=3SG.M how_many -ever   taco exist for Maria
     'Juan want however many tacos Maria has.'

Notice that the wh-word and the following *kūmévā* do not necessarily form a morphological unit since words can occur between them, as shown in (148) (and in (149) and (156) as well).

(148) jwán kúni=ra   [**ndyá** kīrī   **kūmévā** tyīna kīrī   māríá
     Juan want.CON=3SG.M what CL.ANM -ever   dog   CL.ANM Maria
     kuni=a]   *N*
     want.CON=3SG.F
     'Juan wants whatever dog Maria wants.'

-ever FRs in Nieves Mixtec can serve as adverbial clauses as well. The prefix *ná-* on the embedded verb in (149) and (150) is obligatory and is likely to be a mood marker, as described in Macaulay (1996:76-78). Adverbial *-ever* FRs often occur in a non-indicative mood across languages. Further investigation is needed to fully understand the distribution of *ná-* and its role in Nieves Mixtec.

(149) [**yō**   sī̃ʔī̃ **kūmévá** ná-kundotū̃ʔū̃ māríá] kō-kūtóó   jwán   *N*
      who with -ever   MOOD-chat.POT Maria NEG-like.CON Juan
      'Whoever Maria might chat with, Juan doesn't like it.'

(150) [**ndyá kūmévā** ná-kāchī   māríá] kō-sinijō̄ʔō   jwán   *N*
      what -ever   MOOD-say.POT Maria NEG-listen.CON Juan
      'Whatever Maria might say, Juan does not listen.'

(151) [**ndyá kūmēvā** saʔa   jwán] sīni=ra   yiví saa   *N*
      where -ever   come.CON Juan   meet.CON=3SG.M people new
      'Wherever Juan goes, he meets new friends.'

(152) [**ndyánāmā kūmévā** kwā́ʔã jwán] māríá sākū=a   *N*

   when   -ever   go.CON Juan   Maria cry.CON=3SG.F

   'Whenever Juan takes off, Maria cries.'

(153) [**ndyīxī kūmévā** kuvaʔa   māríá ndyāyi] jwán kusiáʔa=ra=rã *N*

   how   -ever   make.CON Maria mole   Juan   eat.POT=3SG.M=3SG.LIQ

   'However Maria makes the mole, Juan will eat it.'

Like English (cf. (139) above), Nieves Mixtec allows for *-ever* wh-words (i.e., wh-words followed by *kūmévā*) to occur without being part of a free relative clause, but just as NPs or PPs:

(154) jwán kūtóó=ra   [**yō** **kūmévā**]   *N*

   Juan like.CON=3SG.M who -ever

   'Juan likes anybody.' (Lit.: 'Juan likes whoever.')

(155) jwán sisiáʔa=ra   [**ndyá kūmévā**]   *N*

   Juan eat.CON=3SG.M what -ever

   'Juan eats anything.' (Lit.: 'Juan eats whatever.')

(156) jwán kúni=ra   [**ndyá kīrī   tyīna kūmévā**][19]   *N*

   Juan want=3SG.M   what CL.ANM dog -ever

   'Juan is looking for any kind of dog.' (Lit.: 'Juan wants whatever dog.')

(157) jwán kwā́ʔã=ra   [**ndyá kūmēvā**]   *N*

   Juan go.CON=3SG.M   where -ever

   'Juan goes to any place.' (Lit: 'Juan goes wherever.')

(158) jwán kunaka kwíʔa=ra [**ndyánāmā kūmévā**]   *N*

   Juan sit.CON sad=3SG.M when   -ever

   'Juan is sad any time.' (Lit.: 'Juan is sad whenever.')

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[19] Notice that a constituent interrogative clause with the same sequence wh-word + classifier + noun is unacceptable:

(i) *ndyá kīrī   tyīna kúni   jwán?   *N*

   what CL.ANM dog   want.CON Juan

   ('What (kind of) dog does Juan want?')

6.2. *-ever* FRs in Melchor Ocampo Mixtec. Melchor Ocampo Mixtec too has both kinds of *-ever* FRs – the ones behaving like NP arguments or PP adjuncts, and the ones behaving like adverbial clauses. They are all introduced by wh-words followed by the expressions *kuumi*, *kami*, or just *ka* or *mi*. *-ever* FRs in Melchor Ocampo Mixtec are likely to have a complex (cleft-like) syntactic structure and their wh-words a complex morphological structure, which we leave for future investigation. Our main goal here is just to show that Melchor Ocampo Mixtec has *-ever* FRs. Examples of *-ever* FRs that behave like NP arguments are given in (159)-(161), while examples of *-ever* FRs that behave like PP adjuncts are given in (162) and (163).

(159) kaní   [**ndá   kúúmí**   na   kutoo   jwɑ̃́   ] *MO*
      hit.IMP   what   -ever   CL.3.HUM   like.CON   Juan
      'Hit whoever Juan likes' (also 'Hit whoever likes Juan.')

(160) kaní   [**ikú   mí**   na   kutoo   jwɑ̃́]   *MO*
      hit.IMP   who   -ever   CL.3.HUM   like.CON   Juan
      'Hit whoever likes Juan.' (also 'Hit whoever Juan likes.')

(161) jwɑ̃́ sisi=rá   [**ndá kúúmí** ya   sìkwa   ña   maria   ]   *MO*
      Juan eat.CON=3SG.M   what -ever   CL.IN prepare.CON   CL.3.F   Maria
      "Juan eats whatever Maria prepares"

(162) jwɑ̃́ kwã =rá   [**ndá (ká)** nú   kwã   ña   maria]   *MO*
      Juan go.CON=3SG.M   which –ever   place go.CON   CL.3.F   Maria
      "Juan goes wherever Maria goes"

(163) jwɑ̃́ kèʔe=ra   tìyaʔá [**achi   káamí** kèʔe=ũ   tìyaʔá]   *MO*
      Juan make.CON=3SG.M   salsa   how -ever   make.CON=2SG   salsa
      'Juan makes salsa however you make salsa.'

(164) jwɑ̃́ sisi=ra   [**nda kuumi** ya   sìkwa   ña   maria]   *MO*
      Juan eat.CON=3SG.M   what -ever   CL.IN   prepare.CON   CL.3.F   Maria
      'Juan eats whatever Maria prepares.'

Not surprisingly, the wh-word for 'when' cannot introduce *-ever* FRs in Melchor Ocampo Mixtec, in the same way as it cannot introduce definite FRs (Section 4.5) or existential FRs (Section 5.4):

(165) * jwǎ kuchiña ini=ra   [**àmàkúwá káamí** kuchiña ini   ña
       Juan sad   inside=3SG.M when   -ever sad   inside CL.3.F
       maria]   *MO*
       Maria
       ('Juan is sad when(ever) Maria is sad.')[20]

As seen earlier, Melchor Ocampo Mixtec can use several wh-words for 'why', but none can introduce *-ever* FRs:

(166) * jwǎ kuni=ra   kũʔũ=ra   [**achí/àchiká/àchìkúwá kúúmí**
       Juan want.CON=3SG.M go.CON=3SG.M why   -ever
       kũʔũ   ña   maria] *MO*
       go.POT   CL.3F   Maria
       ('Juan wants to take off for whatever reason Maria is taking off.')

-ever FRs can be introduced by complex wh-phrases in Melchor Ocampo Mixtec:

(167) ka'ví   [**nda kúúmí** libru ya   tàa   ña   maria]   *MO*
       read.CON what -ever   book CL.IN write.CMP   CL.3.F Maria
       'Read whichever book (that) Maria wrote.'

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[20] One way to render English *-ever* FRs introduced by *when* in Melchor Ocampo Mixtec is by using the same temporal connective *ta* as temporal definite FRs, as shown in (i). Notice that adding the marker *ka mi*, which characterizes many *–ever* FRs, makes the sentence unacceptable.
(i) jwǎ kuchiña ini=ra   [**tá   (*kámi)** kuchiña ini   ña   maria] *MO*
    Juan sad   inside=3SG.M TEMP -ever   sad   inside CL.3.F Maria
    'Juan is sad when(ever) Maria is sad.'

(168) jwǎ kuni=ra kuxi=ra [**nasá kúúmí tako** xi̱xi
Juan want.CON=3SG.M eat.CON=3SG.M how_many -ever taco eat.CMP
ña maria] *MO*
CL.3.F Maria
'Juan wants to eat however many tacos Maria ate.'

Finally, *-ever* FRs can occur as clausal adjuncts in Melchor Ocampo Mixtec as well:

(169) [**ikú kamí** na kuni=ũ kani=ṹ] ka̰a̰=i xĩʔ=ũ *MO*
who -ever CL.3.HUM can.CON=2SG hit.POT=2SG talk.POT.NEG=1SG with=2SG
'Whoever you manage to hit, I won't talk with you.'

(170) [**ndáchi kamí** ku=ṹ] ka̰a̰=i xĩʔ=ũ *MO*
where -ever go.POT=2SG talk.POT.NEG=1SG with=2SG
'Wherever you go, I won't talk with you.'

Like English (cf. (139) above) and Nieves Mixtec (cf. (154)-(158) above), Melchor Ocampo Mixtec allows for *-ever* wh-words (i.e., wh-words followed by *kami* or *kummi*) to occur without being part of a free relative clause, but just as NPs or PPs:

(171) kaní [**ndá kamí** ná] *MO*
hit.IMP what -ever CL.3.HUM
'Hit anybody!' (Lit.: 'Hit whoever!')

(172) ra jwǎ kutoo=ra [**ndá kamí** na] *MO*
CL.M Juan like.CON=3SG.M what -ever CL.3.HUM
'Juan likes anybody.' (Lit.: 'Juan likes whoever.')

(173) kaʔví [**ndá ku̱ùmi** libru] *MO*
read.IMP what -ever book
'Read any book!' (Lit.: 'Read whatever book!')

(174) kaʔví [**ndá kamí**] *MO*
read.IMP what -ever
'Read anything!' (Lit.: 'Read whatever!')

(175) kwã̃ʔã [**ndáchí ku̱ùmi**] *MO*
go.IMP where -ever
'Go anywhere!' (Lit.: 'Go wherever!')

(176) taa [**nasá** **ku̱ùmi libru**] *MO*
   write.IMP how_many -ever book
   'Write however many books!'

6.3. Summary about *-ever* FRs. Our findings about the wh-words that can introduce *-ever* FRs in Nieves Mixtec and Melchor Ocampo Mixtec are summarized in the table below.

Table 5

Distribution of wh-words in *-ever* FRs in Nieves Mixtec and Melchor Ocampo Mixtec

	who	what	where	when	how	why	what/ which + N	how much/ how many
N	√	√	√	√	√	*	√	√
MO	√	?	√	*	√	*	√	√

Note. √: acceptable; *: not acceptable; ?: unclear; n/a: data not available.

7. Conclusions. In this paper, we have provided a preliminary investigation of some aspects of two previously unstudied Mixtec languages - Nieves Mixtec and Melchor Ocampo Mixtec. In particular, we have shown that Nieves Mixtec and Melchor Ocampo Mixtec use wh-words not only to form constituent interrogative clauses (and, to a lesser extent, headed relative clauses), but also the three main varieties of FRs that are attested cross-linguistically: definite FRs, existential FRs, and *-ever* FRs. The distribution of the different wh-words in the different constructions in the two languages is summarized in

Table 6

Distribution of wh-words across constructions
in Nieves Mixtec and Melchor Ocampo Mixtec

		who	what	where	when	how	why	what / which + N	how much / how many
				NP/PP	NP / PP	NP / PP	NP/PP		
definite FRs	N	√	√	* / √	* / √	√ / √	* / *	*	√
	MO	√	√	√ / √	* / *	√ / √	? / ?	√	√
existential FRs	N	√	√	√	√	√	*	√	*
	MO	√	√	√	*	√	√	√	*
-ever FRs	N	√	√	√	√	√	*	√	√
	MO	√	?	√	*	√	*	√	√
wh-interrogative clauses	N	√	√	√	√	√	√	√	√
	MO	√	√	√	√	√	√	√	√
headed relative clauses	N	√	*	√/*	*	√	*	n/a	n/a
	MO	*	*	√	*	?	?	n/a	n/a

Note. √: acceptable; *: not acceptable; ?: unclear; n/a: data not available

Though similar to other languages with FRs in many regards, Nieves Mixtec and Melchor Ocampo Mixtec exhibit at least one interesting peculiarity: they allow for complex wh-phrases like the equivalents of *which* + N and *how much/many* + N to introduce FRs, which is a less common pattern cross-linguistically (Caponigro 2003).

Further work is needed to fully understand the details of FRs in Nieves Mixtec and Melchor Ocampo Mixtec and related constructions. In particular, an in-depth investigation of constituent interrogative clauses and headed relative clauses may help shed further light on aspects of FRs like the morphological structure of wh-words, the way classifiers in the initial position of a clause with a gap work, and the actual syntactic structure of all these constructions.

Our study is the first one to document FRs in a Mixtec language. We aim to continue such an investigation in the future and hope that our preliminary results will inspire further work on wh-constructions in Nieves Mixtec and Melchor Ocampo Mixtec and, more generally, in Mixtec languages.

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FREE RELATIVE CLAUSES IN TWO MIXTEC LANGUAGES

Ivano Caponigro, Harold Torrence, and Carlos Cisneros

University of California   University of Kansas   University of California

San Diego   Lawrence   San Diego

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Online Appendix

I. No multiple wh-interrogatives in Nieves Mixtec or Melchor Ocampo Mixtec.
Neither Nieves Mixtec not Melchor Ocampo Mixtec allow for a wh-interrogative with
more than one wh-word. (1) and (2) show that in Nieves Mixtec questioning both the
subject and the object at the same time produces an unacceptable string, no matter if only
one wh-word (a. examples) or both (b. examples) are fronted or if the interrogative clause
is matrix (1) or embedded (2). The Nieves Mixtec construction closest in meaning to a
multiple wh-interrogative in English is what looks like a bi-clausal construction with a
conjunction introducing the second wh-word (c. examples).

(1)   a. ***yō**   ni-kuvaʔa **ndyáña**   N
           who CMP-cook   what
           ('Who cooked what?')
       b. ***yō ndyáña** ni-kuvaʔa   N
           who what CMP-cook
           ('Who cooked what?')
       c. **yō**   ni-kuvaʔa   tyī **ndyáña**   N
           who CMP-cook   and   what
           'Who cooked and what (did they cook)?'
(2)   a. * jwán   ndākatǚʔǚ=ra [**yō**   ni-kuvaʔa **ndyáña**]   N
           Juan   ask.CON=3SG.M who CMP-cook   what
           ('Juan is asking who cooked what?')
       b. *jwán   ndākatǚʔǚ=ra [**yō**   **ndyáña** ni-kuvaʔa]   N
           Juan   ask.CON=3SG.M who what   CMP-cook
           ('Juan is asking who cooked what?')

    c.   jwán   ndākatū́ʔū́=ra [**yō** ni-kuvaʔa tyī **ndyáña**]   *N*
        Juan   ask.CON=3SG.M who CMP-cook and what
        'Juan is asking who cooked and what (they cooked).'

The same pattern holds for Melchor Ocampo Mixtec, as shown in (3) and. Questioning both the subject and the object at the same time produces an unacceptable string, no matter if only one wh-word (a. examples) or both (b. examples) are fronted or if the interrogative clause is matrix (3) or embedded (4).

(3)   a. ***ìkúnà /ndakúna /naa** sàta   **ñàʔá/ndàkúwá**   *MO*
        who   buy.CMP what
        ('Who bought what?')
     b. ***ìkúnà /ndakúna /naa** **ñàʔá/ndàkúwá**   sàta   *MO*
        who   what   buy.CMP
        ('Who bought what?')
(4)   a. *jwā́ ni-nd<u>a</u>k<u>a</u>n t<u>u</u>n=ra[21]   [**ìkúnà /ndakúna** sàta   **ñàʔá/ndàkúwá**]
    MO
        Juan CMP-ask   word=3SG.M who   buy.CMP what
        ('Juan asked who bought what.')
     b. * jwā́ ni-nd<u>a</u>k<u>a</u>n t<u>u</u>n=ra   [**ìkúnà /ndakúna ñàʔá/ndàkúwá** sàta]   *MO*
        Juan CMP-ask   word=3SG.M who   what   buy.CMP
        ('Juan asked who bought what.')

II. Two other strategies to form headed relative clauses in Nieves Mixtec and Melchor Ocampo Mixtec. Both Nieves Mixtec and Melchor Ocampo Mixtec make use of three slightly different relativiation strategies. All three share the properties of having a fronted head and a gap. They differ in what immediately follows the head: (i) just the predicate of the relative clause (with possible tense markers), (ii) a classifier that precedes the relative predicate, or (iii) a wh-word (or wh-phrase) that precedes the relative predicate. In Sec. 2.3 of the paper, we discuss the last strategy – strategy (iii). In this appendix, we briefly describe and give example of the other two strategies.

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[21] The verbal complex *ndakan tun* in Melchor Ocampo Mixtec is made up of a verb and noun but seems to behave like a unit, based on the occurrence of the person agreement suffix on the noun rather than the verb.

II.a. Zero-Marking Headed Relative Clauses. Zero-marking headed relative clauses are introduced by the head immediately followed by the verbal complex of the relative clause. Example (5) shows a plain matrix declarative sentence with bolded fronted subject and bolded subject clitic suffix *=a* on the verb. If the subject is relativized via the zero-marking strategy as in (6), the bracketed string consisting of the relative clause preceded by its bolded head looks identical to the declarative clause in (5), except for the lack of the verbal subject clitic suffix. No special marker intervenes between the head and verbal complex (which includes the tense marker *ni* as well) in the bracketed relative clause in (6).

(5) **yuū** ni-jā-tākwēʔ**=a**   tyī   tyaā   *N*
     rock   CMP-CAUS-be_hurt =3SG.IN   CL.3SG.M man
     'The rock hurt the man.'

(6) [**yuū** ni-jā-tākwēʔē   tyī   tyaā] ni-jā-tākwēʔ=a   jēráldó   *N*
      rock   CMP-CAUS-be_hurt CL.3SG.M man   CMP-CAUS-be_hurt=3SG.IN   Geraldo
     'The rock that hurt the man hurt Geraldo.'

If it is the object to be fronted in a matrix declarative clause and, therefore, no clitic suffix is required on the verb, as in (7), then the corresponding relative clause with a relativized object is virtually identical, as shown in the bracketed string in (8). No special marker intervenes between the head and verbal complex of this relative clause either.

(7) **tyī**   **tyaā** ni-jā-tākwēʔē   yuū káʔnō   *N*
     CL.3SG.M   man   CMP-CAUS-be_hurt   rock large
     'The large rock hurt the man.'

(8) [**tyī**   **tyaā** ni-jā-tākwēʔē   yuū] ni-kānī=rā   jēráldó   *N*
      CL.3SG.M   man   CMP-CAUS-be_hurt rock CMP-hit=3SG.M Geraldo
     'The man the rock hurt hit Geraldo.'

The same pattern holds in Melchor Ocampo Mixtec. (9) exemplifies the case of a declarative clause with a bolded fronted subject (and bolded subject clitic suffix *=ña* on the verb), while (10) provides its corresponding subject relative clause.

(9) **ña**   **ñàʔa** kaʔvi=**ña**   uvi libru   *MO*
     CL.3.F   woman   read.CMP=3SG.F   two   book
     'The woman read two books.'

(10) [**ña   ñàʔa**   kaʔvi   uvi libru] kani=ña   ra   karlos   *MO*
     CL.3.F woman read.CMP two book   hit.CMP=3SG.F CL.3.M Carlos
     'The woman who read two books hit Carlos.'

In the same way as only the wh-phrase can and must be fronted in interrogative wh-clauses, similarly only the relativized constituent, i.e. the head, can and must be fronted in a relative clause. (11) shows an example of an object relative clause in Nieves Mixtec in which the subject *jwã* is postverbal. The very same construction becomes unacceptable if the subject is fronted as well, as shown in (12).

(11)   tyīna [kūtóó   jwán]   sasi=ri   jíʔva   *N*
        dog   like.CON   Juan   eat.CON=3SG.ANM   chocolate
        'the dog that Juan likes eats chocolate.'
(12) * tyīna [jwán kūtóó=ra]   sasi=ri   jíʔva   *N*
        dog   Juan like.CON=3SG.M eat.CON=3SG.ANM   chocolate
        ('the dog that Juan likes eats chocolate.')

Melchor Ocampo exhibits a similar contrast, as show in (13) and (14).

(13)   tina [kùtoo   ra   jwã́] yaxi=ri   chòkòlatè   *MO*
        dog   like.CON   CL.3.M Juan   eat.CON=3SG.ANM chocolate
        'the dog that Juan likes eats chocolate'
(14) * tina [ra   jwã́   kùtoo] yaxi=ri   chòkòlatè   *MO*
        dog   CL.3.M Juan   like.CON eat.CON=3SG.ANM chocolate
        ('the dog that Juan likes eats chocolate')

We have found no evidence for internally-headed relative clauses in either Mixtec language: a relative clause must always have a gap in both languages. In (15), we constructed an internally-headed relative clause corresponding to the Nieves Mixtec externally-headed relative in (6). The bracketed internally-headed relative clause in (15) has no gap, since the object in bold is not sentence initial (unlike in the corresponding externally-headed relative clause), but in the standard post-verbal and post-subject position. The string in (15) is completely unacceptable.

(15) * [ni-jā-tākwēʔē   yuū **tyī**   **tyaā**] ni-kānī=rā   jēráldó   *N*
       CMP-CAUS-be_hurt   rock CL.3SG.M man   CMP-hit=3SG.M Geraldo
       ('The rock that hurt the man hurt Geraldo.')

iv

The same restriction holds for Melchor Ocampo Mixtec. (16) shows the internally-headed relative clause corresponding to the externally-headed relative clause in (13). The string in (16) is completely unacceptable.

(16) *[kùtoo ra jwɛ̃́ **ti̠na̠**] yaxi=ri chòkòlatè [22] *MO*
       like.CON CL.3.M Juan dog eat.CON=3SG.ANM chocolate
       'The dog that Juan likes eats chocolate.'

II.b. Classifier-Marking Headed Relative Clauses. In both languages, headed relative clauses may also be introduced by pronouns/classifiers that occurs right after the relative head and agrees in noun class with it. In (17) and (18), the pronouns/classifiers *kīrī* and *ti* immediately follow the head *tyīna* and precede the verb of the relative clause.

(17) jwán kúni=ra tyīna [**kīrī** sasi jíʔva][23] *N*
       Juan want.CON=3SG.M dog CL.ANM eat.CON chocolate
       'Juan wants the dog, which eats chocolate.' (*appositive interpretation*)
       'Juan wants the dog that eats chocolate.' (*restrictive interpretation*)
(18) sàte=i burro [**ti** yaxi chòkòlatè] *MO*
       buy.CMP=1SG donkey CL.ANM eat.CON chocolate
       'I bought the donkey, which eats chocolate' (*appositive interpretation*)
       'I bought the donkey that eats chocolate' (*restrictive interpretation*)

Our preliminary findings seem to show that headed relative clauses introduced by classifiers can be either restrictive or appositive, while headed relative clauses without a classifier are only restrictive. But further investigation is needed.

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[22] This string is acceptable if parsed as consisting of two separate sentences (one being the bracketed string, the other the string that follows). It would then be interpreted as meaning 'Juan likes the dog. It eats chocolate.'

[23] The constituency we are assigning to this example with *tyīna* the head of a relative clause introduced by *kīrī* is further supported by the fact that (i) is unacceptable, which shows that *tyīna kīrī* cannot form an NP:
(i) *tyīna kīrī sasi=ri jíʔva *N*
     dog CL.ANM eat.CON=ANM chocolate
     ('The dog eats chocolate.')
v

Both languages also allow for a type of relative clause introduced only by the classifier/pronoun, which is reminiscent of Citko's (2004) "light-headed relative clauses" (19)-(22).

(19) **na**   ni-kuvaʔa ndyāyi   *N*
     CL.HUM.PL   CMP-make   mole
     'those that made the mole'

(20) **kīrī**   sasi   chōkōláté   *N*
     CL.ANM   eat.CON   chocolate
     'the animal that eats chocolate'

(21) jwán sīni=ra   [**tyī**   ni-jā-tākwēʔē   yūchu]   *N*
     Juan know.CON=3SG.M CL. 3SG.M   CMP-CAUS-be_hurt knife
     'Juan knows the guy who the knife hurt.'

(22) **na**   sìkwa̱ʔà   tìyaʔá   *MO*
     CL.HUM.PL   prepare.CMP   salsa
     'those (people) who prepared the salsa'

(23) **kiti**   yaxi   chòkòlatè   *MO*
     CL.ANM   eat.CON   chocolate
     'the animal that eats chocolate'

It has been claimed for other Mixtec languages that the presence or absence of the classifier in a headed relative clause distinguishes appositive and restrictive relative clauses. Hills (1990) claims that the pronoun marks a restrictive relative in Ayutla Mixtec. Shields (1988) claims that the pronoun marks an appositive relative clause in Silacayoapan Mixtec. In Nieves Mixtec and Melchor Ocampo Mixtec headed relatives introduced by classifiers can be restrictive, as shown in (17) and (18) above, or appositive, as shown in (24) and (25) below.

(24) jwán ni-kānī=rā   jēráldó [**tyī**   ni-kāʔvī tyútyú]   *N*
     Juan CMP-hit=3SG.M   Geraldo CL. 3SG.M   CMP-read book
     'Juan hit Geraldo, who read the book.'

(25) kan=i   ra   jeraldo [**ta**   kaʔvi   libru]   *MO*
     hit.CMP=1SG   CL.3.M   Geraldo CL.3.M   read.CMP book
     'I hit Geraldo, who read the book.'

vi

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