ФУНКЦИОНАЛЬНЫЕ ПРОЕКЦИИ И ЯЗЫКОВОЙ КОНТАКТ: МАРКИРОВАНИЕ МНОЖЕСТВЕННОГО ЧИСЛА ИСПАНСКИХ ИМЕН В ЮКАТЕКСКОМ МАЙЯНСКОМ[*]

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В статье мы предлагаем анализ двух различных в типологическом отношении маркеров множественного числа, сосуществующих в юкатекском майянском в результате языкового контакта с испанским языком. Мы показываем, что в юкатекском майянском дистрибуция испанского маркера множественного числа идентична дистрибуции юкатекского маркера множественного числа (и не совпадает с дистрибуцией этого маркера в испанском) за исключением случаев, когда в именной группе присутствует испанское числительное — в последнем случае используется модель маркирования, характерная для испанского языка. В предлагаемом анализе эти факты следуют из стандартных представлений о структуре составляющих и лексической селекции при независимо аргументируемом в литературе допущении, что два анализируемых маркера множественного числа соответствуют разным формальным сущностям.

Ключевые слова: число, множественность, языковой контакт, юкатекский язык, язык майя, испанский язык.

FUNCTIONAL PROJECTIONS AND LANGUAGE CONTACT: THE CASE OF PLURAL MARKING OF SPANISH NOUNS IN YUCATEC MAYA[*]

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In this paper we present an analysis of two crosslinguistically different plural markers that coexist in Yucatec Maya (Mayan, Mexico) as a result of language contact with Spanish. We show that the distribution of the Spanish plural marker is exactly like the one of the Yucatec plural marker (unlike Spanish), with the exception that it is sensitive to the presence of a Spanish numeral, in which case it behaves like in Spanish. We develop an analysis where the relevant facts follow from standard assumptions about phrase structure and lexical selection, so long as an analysis is adopted in which the two plural markers are formally different, as has been suggested in the literature.

Keywords: number, plural, language contact, Yucatec Maya, Spanish.

1. Introduction

In this paper we present an analysis of two crosslinguistically different plural markers that coexist in Yucatec Maya (a Mayan language from Mexico) as the result of language contact with Spanish. We develop a formal analysis of one of the results reported in [Uth, Gutiérrez-Bravo 2018], which has to do with the interaction between Spanish numerals borrowed as loanwords and the mechanisms available in Yucatec Maya to express plurality. Plural marking is optional in Yucatec and this is also the case both for Spanish loanwords, and for the Spanish plural suffix which can appear with these loanwords. Yet plural marking in Spanish nouns, otherwise entirely optional, is obligatory in one specific context: in the presence of a numeral borrowed from Spanish. As a result of the analysis that we develop to account for these data, we submit the following hypothesis regarding the distribution of functional heads in contexts of language contact:

(1) a. The adoption by a recipient language A of functional head X^0 from a language B does not entail that X^0 will behave in language A in the same way that it does in language B.

   b. In contrast, the adoption by a recipient language A of **both** a functional head X^0 **and** a lexical (or functional) head Y^0 that selects X^0 does bring with it a distribution of X^0 that is similar to the one observed in the contact language B.

We show that no special theoretical mechanisms or stipulations are needed to account for the state of affairs described in (1): as shown in the analysis below, this follows from the basic properties of Merge in conjunction with lexical selection. The paper is organized as follows; in Section 2 we provide some basic information about Yucatec Maya and of its nominal morphology. In Section 3 we provide a brief overview of the theoretical apparatus to be used later in the analysis, namely, the proposal developed in [Wiltschko 2008] and the specific analysis in [Butler 2012, 2013] of plural marking in Yucatec nouns using this proposal. In Section 4 we present the data corresponding to plural marking in Spanish loanwords, followed by the analysis we propose to account for these data. In Section 5 we discuss two alternative analyses of the data and conclude that they are problematic when compared to our analysis. Section 6 provides some brief discussion of further issues related to our proposal, and in Section 7 we present our conclusions.

2. Nominal morphology in Yucatec Maya

Yucatec Maya (henceforth Yucatec) is the Mayan language spoken in the Yucatan Peninsula, Mexico, by 824,670 people [2010 census: INEGI]. It is also spoken in some bordering districts of Belize and Guatemala. It is arguably the most studied and best described of all the 364 indigenous languages spoken in Mexico.

Figure 1. The Yucatan Peninsula

Nominal inflectional morphology is particularly simple in Yucatec Maya, like in other Mayan languages (see for instance [Coon 2016; England 2017]). Inflectional morphology basically reduces to the following suffixes: (a) an honorific suffix *-tsil* (currently very rarely used), (b) two relational suffixes, *-il* and *-el* (the latter suffix is used exclusively for inalienable relations) and (c) the plural suffix *-o'ob*, which has an allomorph *-ob* when it follows a glottalized vowel. The plural suffix *-o'ob*, which will be the focus of this paper, is transcategorial: it is observed not only in nouns, but also in verbs (as in (2)), adjectives, relational nouns and prepositions (in which case it marks agreement between the preposition and its complement when the complement is a null *pro* with a plural referent). There are also two prefixes for biological gender, *j-* [h] for male and *x-* [ʃ] for female entities; these are actually the only two prefixes in the language. With the exception of the relational suffixes in certain contexts, all of these inflectional affixes are essentially optional.

The optional nature of plural marking in Yucatec has been widely observed in the literature [Andrade 1955; Lehmann 1998; Lucy 1992; Briceño Chel 2002] and has more recently been the focus of considerable experimental research [Butler 2012, 2013, Butler et al. 2014]. Optional plural marking can be observed in subject-verb agreement, for instance.[1] Hence in (2) the plural subject triggers plural agreement on the verb, which is probably the most frequent option.

(2) *Tumen   le   paal-al-**o'ob**-o' <…>   t-u   k'áat-ik-∅-**o'ob***
because   DET   child-RDP-PL-CL   PROG-ERG.3SG   ask.for-IND-ABS.3SG-PL
'The children <…> ask for it.' [NM-189]

Plural agreement, however, is optional. Hence in (3) we have once again a plural subject (*things*), but the verb does not show the kind of plural agreement observed in (2). It is also possible, although unusual, to have the opposite situation, that is, to have a verb show plural agreement with a semantically plural subject which is not morphsyntactically marked as plural. This is observed in (4), presumably an example constructed for experimental purposes, and in the text example in (5), where the subject is expressed by a singular demonstrative pronoun, and not by the corresponding plural demonstrative pronoun *lelo'oba'* 'these'.

(3) *tuláakal   ba'al-**o'ob**   k-u   taal*
all   thing-PL   HAB-ERG.3SG   come
'all (kinds of) things come.' [NM-191]

(4) *Táan   u   k'aay-**o'ob**   le   x-ch'úupal-o'.*
PROG   ERG.3SG   sing-PL   DET   FEM-girl-CL
'The girls are singing.' [Butler 2013:107]

(5) *Lela'   teen   k-u   tomojchi'i-t-ik-en-**o'ob**.*
this   1SG   HAB-ERG.3SG   evil.omen-TR-IND-ABS.1SG-PL
'These (signs) are showing evil omen to me.' [NMC-71]

It is important to note that the optionality of the plural marker is not entirely random. As noted in a number of works that address this topic [Lucy 1992; Lehmann 1998; Uth, Gutiérrez-Bravo 2018, and others], there is a pref-

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[1] All of the data in this paper are presented in standard Yucatec orthography. In this orthographical system, symbols have their expected values except for *ch* = [tʃ], *j* = [h], *x* = [ʃ], and ' = [ʔ]. In the Yucatec examples, NM corresponds to [Monforte et al. 2010] and NMC to [Can, Gutiérrez-Bravo 2016]. A list of abbreviations can be found at the end of this paper.

erence for animate and human nominal expressions to show the plural suffix, in contrast with inanimate ones. [Uth, Gutiérrez-Bravo 2018] further observe that there is also a preference to use the Yucatec plural suffix in Spanish loanwords when the loanword corresponds to the grammatical subject (see also (3)). Nevertheless, these are only tendencies and none of these preferences is categorical: all else being equal, the Yucatec plural suffix can be observed with any kind of noun, irrespective of its semantic properties or its grammatical relation. We refer the reader to [Uth, Gutiérrez-Bravo 2018] for further details on the interaction of these typological parameters and plural marking of Spanish loanwords in Yucatec.

Now, observe that the same optionality of plural marking is found in the presence of Yucatec numerals. In Yucatec, most of the original Yucatec numerals have been replaced by Spanish loanwords since at least the mid-20th century. The only remaining Yucatec numerals are the ones going from 1 to 4. As shown in (6)–(7) below, plural marking is also optional in this case. From 5 and onwards, Spanish numerals are always used, as in (8), where the Spanish numeral *cinco* 'five' is observed. Plural marking of the Yucatec nouns in this case is equally optional, as illustrated in (9) with the Spanish numeral *trece* 'thirteen'. Observe that plural marking in the presence of both Yucatec and Spanish numerals is attested even though Yucatec is a language with numeral classifiers.

(6) *le   óox   túul paal-al-o'ob-o'*
      DET   three   CLF   child-RDP-PL-CL
      'the three children' [NMC-85]

(7) *ka'a   túul nukuch   tso'*
      two   CLF   big   turkey
      'two big turkeys' [NM-38]

(8) *cinco   chan   ba'as-o'ob*
      five   little suitcase-PL
      'five little suitcases' [NM-135]
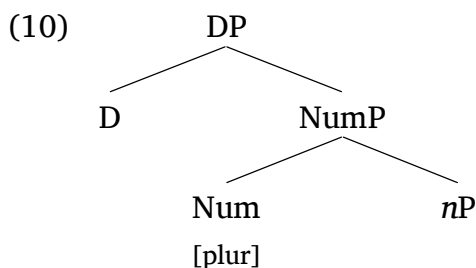
(9) *trece   mejen   luuch*
      thirteen tiny   gourd
      'thirteen tiny gourds' [NM-138]

As shown by these data and in the references cited above, the optionality of plural marking is robust and widespread in Yucatec. It is therefore particularly
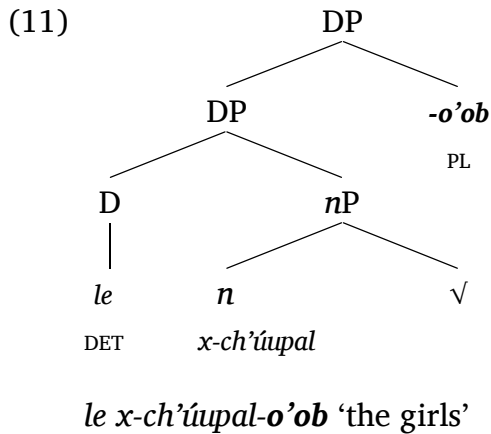
interesting that this optionality is not observed in the presence of the Spanish loanwords that have replaced the original Yucatec numerals in all instances starting with five and above. Before addressing this phenomenon, though, we present a brief sketch of the theoretical tools that we use in the analysis that follows.

3. Two different kinds of plural marking

[Wiltschko 2008] proposes that, crosslinguistically, there are two different kinds of plural marking. In English and Spanish where plural marking is obligatory, it is the result of the presence of a Number Phrase (NumP) above the *n*P headed by a [plural] feature [Bernstein 1991; Ritter 1991, and many others; see also Mathieu 2013]. This structure is illustrated in (10). Since the structure of Spanish nominal expressions is not a central topic of our analysis we assume this simplified version of Spanish DPs, but see [Roca 2015], [Höhn 2016] and references therein for more detailed descriptions of Spanish DP structure.

(10)

```
              DP
            /    \
          D      NumP
                /    \
             Num      nP
            [plur]
```

In contrast, in languages where plural marking is optional (for instance, Halkomelem), the plural marker is just an adjunct feature that adjoins somewhere in the N-projection, possibly without any categorial properties of its own. Like any other adjunct, its presence is entirely optional, and this accounts for the optionality of plural marking in those languages where it is observed. This is indeed the analysis proposed in [Butler 2012, 2013] and [Butler et al. 2014], following [Wiltschko 2008]. In this analysis, the Yucatec plural suffix **-o'ob** is an adjunct modifier of DP. We adopt Butler's analysis in its essentials, with one relevant difference: we assume that, all else being equal, there is no NumP in Yucatec nominal expressions. This is crucial for understanding why plural marking is not obligatory in Yucatec, but more importantly, it will be crucial in accounting for the data resulting from language contact with Spanish. As such, the basic structure of nominal expressions in Yucatec that we adopt in our analysis is the following:

(11)

```
                          DP
                         /  \
                       DP    -o'ob
                      /  \      PL
                     D    nP
                     |   /  \
                     le n    √
                    DET x-ch'úupal
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*le x-ch'úupal-**o'ob*** 'the girls'

With this theoretical background we now address the central topic of this paper. We begin by presenting a description of the relevant data.

4. Plural marking of Spanish nouns in Yucatec

4.1. Basic description

As previously mentioned, the inflectional morphology of Yucatec nouns is surprisingly simple when compared to its complex verbal morphology. Spanish nominal morphology is considerably more complex, but crucially, the only inflectional category in which the two languages intersect is precisely plural.

Table 1. Nominal morphology in Yucatec and Spanish

Yucatec	Spanish
plural	plural
honorific	gender
relational suffix	affective suffixes

According to some works on language contact [Thomason Kaufmann 1988; Klee, Lynch 2009], mutual translinguistic influence is more likely between typologically similar languages, since "when parallel structures exist in the two languages, it is much more likely that there is linguistic transfer or convergence between them" [Klee, Lynch 2009: 20, our translation]. Hence it is arguably not surprising that the complex interaction between the two languages described in what follows has to do with the inflectional category shared by both.

Recall that plural marking in Yucatec nouns is essentially optional. Nouns borrowed from Spanish, however, exhibit a puzzling behavior. Spanish loanwords can show plural morphology, both with the Spanish plural suffix -*s* (as in *clase* 'class' and *tejido* 'knitting' in (12)) **and** with the Yucatec plural suffix -*o'ob* (as in *abuelo* 'grandparent' in (13)).

(12)   *Clase-s-il   tejido-s   k-in   meen-t-ik-∅.*
       class-PL-RL   knitting-**PL**   HAB-ERG.1SG   make-TR-IND-ABS.3SG
       'I make different kinds of knittings.' [NM-31]

(13)   *Tumen   leti'ob,   u   abuelo-'ob   in   w-íicham-o'*
       because   them   his   grandparent-**PL**   my   EP-husband-CL
       'Because them, my husband's grandparents …' [NM-24]

More interestingly, in most cases plural marking on these loanwords is equally optional. This is shown in (14b), where *candado* 'padlock' shows no plural inflection in the presence of a Yucatec non-singular numeral (cf. 14a), something which is completely impossible in Spanish.

(14) a. *Yaan-∅   kex   ka'a p'éel   docena-s   u   y-alak' peek'.*
        EX-ABS.3SG   about   two CLF   dozen-**PL**   his   EP-CLF dog
        'He had about two dozen dogs.' [NM-209]

    b. *Óox   p'éel   candado   yaan-∅-i'.*
       three   CLF   padlock   EX-ABS.3SG-LOC
       'It had three padlocks.' [NM-26]

Summing up, the general pattern illustrated so far is that plural Spanish nouns can show three different forms: with the Spanish plural suffix (12), with the Yucatec plural suffix (13), or with no plural morphology whatsoever ((14b); see also Fig. 2).[2] However, our results from a corpus study [Uth, Gutiérrez-Bravo 2018] show that Spanish nouns preceded by a Spanish numeral **always** show the Spanish plural suffix -*s* and **only** the suffix -*s*, as in (15)–(17), where Spanish loanwords are underlined.

(15)   *jach   diez metro-s   wal-e'.*
       very   ten meter-**PL**   perhaps-CL
       'at most perhaps ten meters' [NM-48]

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[2] In §4.2 we will see that there is actually a fourth possibility.

(16) *diez*   *bolsa-s*   *lu'um*
    ten   bag-**PL**   soil
    'ten bags of soil' [NM-13]

(17) *Yaan-∅*   *kex*   *siete*   *rancho-s*   *ti'-∅*.
    EX-ABS.3SG   about   seven   ranch-**PL**   PREP-ABS.3SG
    'He had about seven ranches.' [NM-209]

In what follows, we only analyze the data from [Uth, Gutiérrez-Bravo 2018]. Since this is corpus data, it is subject to the same inherent limitations as any corpus study. Specifically, in what follows we are unable to provide minimal pairs and negative evidence to further support the descriptive generalizations outlined above. However, it is worth mentioning that in these data, plural marking of a Spanish noun in the presence of a Spanish numeral is categorical, as shown in Figure 2.[3] Categorical effects are not often found in corpus data, so we consider our data to be reliable. The complete quantitative results, originally reported in [Uth, Gutiérrez-Bravo 2018], are shown in the graph below (SN = Spanish numeral).
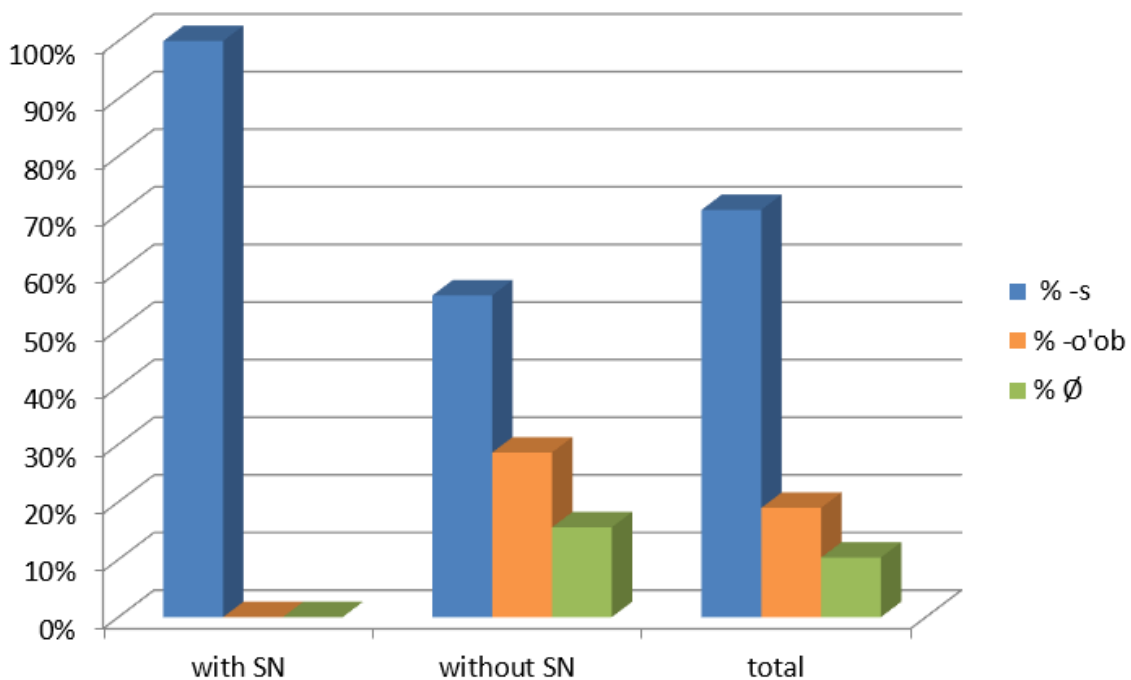

Figure 2. Plural marking of Spanish loanwords preceded by a Spanish numeral *vs*. Spanish loanwords without a Spanish numeral

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[3] Christian Lehmann (personal communication) also found this effect to be categorical in his own corpus, which is one of the largest, and certainly the most detailed corpus of Yucatec narratives that we know of.

Although data in our corpus is too scarce to make any conclusions (N = 1), plural marking with the Spanish suffix is also observed in an alternative construction in Yucatec in which a possessed numeral classifier introduces the Spanish noun, as in (18). This construction is widely reported in descriptions of Yucatec from the 1950–80s, but is essentially out of use today.[4]
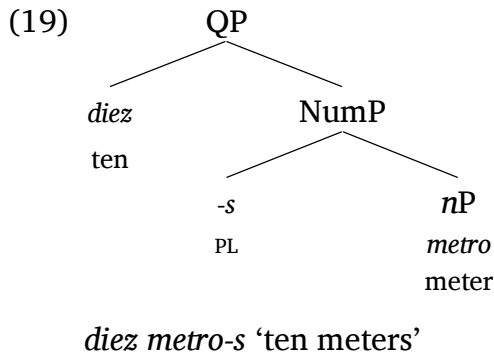
(18) *ocho*   *u*   *túul-ul*   *señora-s*   *ts'-u*   *k'uch-ul-o'ob-i'.*
      eight   ERG.3   CLF-RDP   lady-**PL**   TRM-ERG.3   arrive-IND-PL-LOC
      'eight ladies had already arrived.' [NM-273]

Crucially, the observed behavior is categorical in the presence of a Spanish numeral, but not in its absence: when there is no Spanish numeral, the presence of the Spanish plural suffix *-s* is not obligatory, as in (14b). This shows that the obligatory nature of plural marking in (15)–(17) cannot simply be the result of the fact that plural morphology is obligatory in Spanish. In what follows we propose that the relevant facts receive a straightforward account with Wiltschko's [2008] analysis of two formally different kinds of plural.
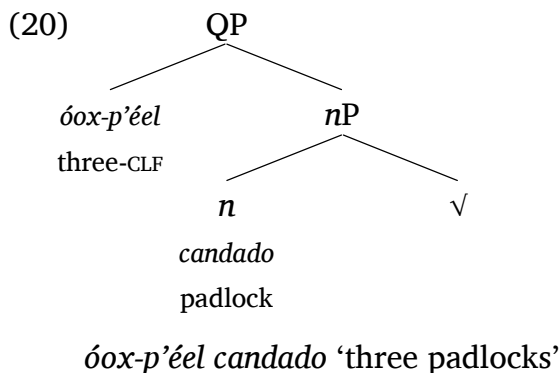
4.2. Analysis

To account for the Yucatec data, we propose an analysis where Spanish numerals have kept their original selectional properties, even after having been long borrowed by Yucatec. These numerals c-select a NumP, as they do in Spanish, and so plural marking becomes obligatory, as originally illustrated in (10). Because of the selectional properties of the Spanish numeral, the resulting structure in (19), based on (15), is no different from what it would be in Spanish.

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[4] We label this construction "alternative" because we assume that, when it was still productive, it coexisted (alternated) with the constructions that show the pattern that we analyze here, i.e. (8)–(9) and (15)–(17). We assume this based on the fact that the monolingual speaker that produced (18) also produced one other construction with a Spanish numeral, but with the current pattern of (8)–(9) and (15)–(17). This is only an assumption: it is of course impossible to conclude on the basis of only two data points that such an alternation existed when the construction in (18) was still productive. Since this alternative construction has all but disappeared вin contemporary spoken Yucatec, it is unclear if further verification of this assumption is possible, but this is not in any way crucial for the analysis we propose of the contemporary construction in (8)–(9) and (15)–(17).

(19)
```
            QP
          /    \
      diez      NumP
      ten      /    \
            -s        nP
            PL       metro
                     meter
```

diez metro-s 'ten meters'

Yucatec numerals and other functional heads in the nominal domain, how-ever, lack this lexical property: in Yucatec [plural] is an adjunct and not the head feature of a complement that can be selected for (§3). As such, NumP is not selected by any head in the nominal domain, and in this way the non-obligatory nature of plural marking, even in the presence of a Yucatec numeral, is accounted for. This is illustrated in (20)–(21).

Importantly, our analysis also provides specific and concrete evidence that morphological number marking in Spanish depends exclusively on a functional head distinct from n/N. This is because of two different considerations. The first one is that *-s* is subject to c-selection by another syntactic head, i.e. the numeral in (19), as is typical of syntactic (versus purely morphological) con-stituents. The second one has to do with semantic compatibility: in (20) there is no NumP, and consequently no source for morphological plural marking of the Spanish noun with the plural suffix *-s*. But clearly this absence does not bring with it a singular (atomic) interpretation of the noun (see [Wiltschko 2008]): if it did, we would expect a semantic anomaly to arise between the plural numeral *óox* 'three', and the noun *candado* 'padlock'. We conclude that whatever singular or plural specification the Spanish noun has must come from some other element that is *not* the noun itself, i.e., the head of NumP. This in turn supports the proposal in [Wiltschko 2008] that nouns are not lexically specified for [number], contra [Chierchia 1998].
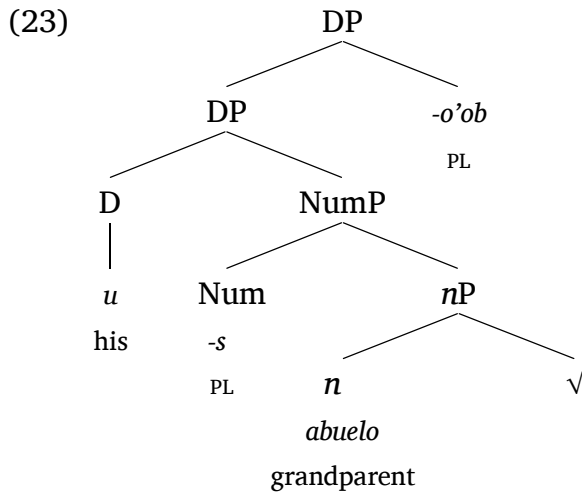
(20)
```
                QP
              /    \
      óox-p'éel      nP
      three-CLF     /    \
                  n        √
               candado
               padlock
```

óox-p'éel candado 'three padlocks'

(21)

```
                          DP
                    ┌──────┴──────┐
                   DP           -o'ob
              ┌─────┴─────┐        PL
              D           QP
              │      ┌─────┴─────┐
              le     Q          nP
                     │      ┌─────┴─────┐
                  óox-túul   n           √
                  three-CLF  paal-al
                             child-RDP
```

*le óox-túul-paal-al-**o'ob*** 'the three children'

Observe now that the two plural markers are independent from one another (one is the result of lexical selection, the other one of adjunction), so in principle it should be possible to find both of them simultaneously in the same language. This indeed has recently been argued to be the case in Blackfoot [Kim et al. 2017]. We suggest that Yucatec instantiates a similar kind of language, with the difference that one of the two plural markers originates from language contact. Furthermore, since the two different plural features are formally different (one is a head, the other one is just an adjunct), in principle it should be possible for a noun to simultaneously display them both. In contrast to Blackfoot, this is indeed attested in Yucatec, where Spanish loanwords can simultaneously show the plural suffix of Spanish and the plural suffix of Yucatec.

(22) *ayik'al   le   u   <u>abuelo**-s-o'ob**</u>*
     rich   DET   his   grandparent-PL-PL
     'his grandparents were rich' [NM-24]

The only attested order in this case is *-s* + *-o'ob* (see [Uth, Gutiérrez-Bravo 2018]). The inverse order (**-o'ob* + *-s*) is unattested in our data, and is not reported elsewhere in the literature. Our analysis accounts for this fact, since *-s* is the head of the NumP, but *-o'ob* right-adjoins to the DP which dominates NumP. This fact also provides an additional argument in favor of Butler's analysis of the Yucatec plural suffix as an adjunct and not a head.

(23)

```
                        DP
                      /    \
                   DP        -o'ob
                 /    \        PL
               D       NumP
               |      /    \
               u    Num      nP
              his    -s     /  \
                     PL    n     √
                         abuelo
                        grandparent
```

u abuelo-s-o'ob 'his grandparents'

The Yucatec data are particularly relevant because they provide strong evidence in favor of Wiltschko's analysis that languages can show two structurally different kinds of plural. As mentioned, since the two kinds of plural are structurally different and completely independent from one another, in principle one would expect to find languages in which both plurals coexist. The Spanish loanwords of Yucatec Maya with double plural marking are exactly the case in point, and so they fulfill this expectation in a particularly convincing way. For instance, [Kim et al. 2017] propose that Blackfoot also has the two different kinds of plural of [Wiltschko 2008]. However, in Blackfoot the two plural suffixes have the same phonetic realization, i.e. the plural that is a head feature and the plural that is an adjunct feature are not phonemically distinct (they are homophonous). Additionally, although in principle possible, double plural marking is actually unattested in Blackfoot, a fact that [Kim et al. 2017] attribute to semantic anomaly. In contrast, the situation observed in Yucatec is much more straightforward, since the two different plural suffixes are clearly distinct and double plural marking by combining them is indeed possible.[5]

Our analysis of the coexistence of these two plural suffixes in Yucatec also relates in an interesting way to the Late Insertion Hypothesis. In principle, since Num^0 has no phonemic content before Spellout, we would expect that the [plur] feature could be realized as either the plural suffix of Spanish or the plu-

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[5] Since we expect the semantics of plural marking in this case to be the same for Blackfoot and Yucatec, this also points to the conclusion that the absence of double plural marking in Blackfoot is not due to a semantic restriction, and must be accounted for in a different way.

ral suffix of Yucatec. However, as we have shown, this is not the case: Spanish loanwords preceded by a numeral always show the suffix *-s* and only this suffix. Crucially, this is precisely what is expected in an analysis that adopts Wiltschko's proposal, where the two different kinds of plurals are formally different. The plural suffix of Spanish has the possibility of functioning as a head, the plural suffix of Yucatec does not.[6] Consequently, if the [plur] feature is found in a head position at the point of Spellout, this feature can only be realized as the suffix *-s* of Spanish, and if it is found in an adjoined position, it can only be realized as the suffix *-o'ob* of Yucatec.

Our analysis of this language contact situation further makes an interesting prediction: if a language has its own plural marker, and it has also borrowed the plural marker from the contact language, it is predicted that (while optional, like in Yucatec) the simultaneous presence of both plural markers should never be obligatory, even if both plural markers are heads (and not adjuncts), as illustrated in (24).

(24) *Noun -PL   -PL
           obligatory   obligatory

This is because the obligatory presence of Num^0 is the result of selection by a higher head. However if there are two NumPs, the head of the higher one would have to select the lower NumP, but (to the best of our knowledge) we do not know of any cases reported in the literature where a Num^0 selects a second Num^0. In other words, we hypothesize that selection of another NumP is not part of the lexical information of either Num^0-*1* or Num^0-*2*. Because of this the following configuration cannot be obligatory in the way that it is when a numeral (Q) selects NumP.

(25)

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[6] Ultimately, it is reasonable to assume that this is specified as part of the lexical information of each of these suffixes.

In this structure, NumP-*2* can appear optionally, in the same way that the NumP headed by the Spanish suffix *-s* can appear optionally and is not obligatorily present unless a Spanish numeral selects it (we briefly address this specific point in §6). However, as mentioned, we submit that it should not be obligatory since it is not being selected by the higher Num head. Furthermore, if, as is most often assumed, the configuration in (25) can *only* be the result of Num^0-*1* selecting NumP-*2*, then the prediction made by our analysis is even stronger: the specific configuration in (25) should quite simply never be attested at all.[7] Again, this is because the head of the higher NumP would have to select another NumP, again a situation theoretically unheard-of to the best of our knowledge.

5. Alternative analyses

In this section we discuss two alternative analyses of the data we have presented here, each of which was pointed out to us by an anonymous reviewer. The first alternative analysis has to do with our interpretation of the data. A reviewer points out that there are cases where it is not immediately obvious if the contact phenomena studied here corresponds to borrowing (as we claim in our analysis) or code-switching: see, for instance, [Treffers-Daller 1991]. More specifically to the point at hand, [Sebonde 2014] notes that this is particularly the case of single-word switches in numerical expressions, and furthermore, [Khomchenkova, Pleshak 2019] show that there are unequivocal cases of code switching of numerical expressions in Moksha and Hill Mari (Finno-Ugric, Russia), which additionally indicate that cardinal numerals seem to require from their complement to be a well-formed nominal expression of the same language, i.e., no switching is allowed within a numeral construction. The resulting switches to Russian, of which we present an example in (26), look very similar to the Yucatec data presented so far.

(26) Hill Mari

st'ip'end'ij-žə	*dv'enacat'*	*rubl'-ej*	*əl'-ə*	*v*	*m'es'ac*
scholarship-POSS.3SG	twelve	ruble-GEN.PL(rus)	be-AOR.3SG	in	month

'The scholarship was 12 rubles per month.' [Khomchenkova, Pleshak 2019]

There are numerous facts, however, that point to the conclusion that the Yucatec data is not the result of code-switching. First, the original numeral system

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[7] We are thankful to an anonymous reviewer for bringing this latter point to our attention.

of Yucatec has not been conserved, except for the four cardinal numbers going from 1 to 4 (see §2). As such, it is unsurprising that our data set includes data from monolingual Yucatec speakers (see [Uth, Gutiérrez-Bravo 2018] for further details). However, these data (which do not show any relevant differences when compared to the data from bilingual speakers) could not possibly have been the result of code-switching. Secondly, and also in relation to this, it is common to distinguish borrowings from code switching on the basis of predictability: the occurrence of any given borrowing is mostly predictable, while code-switching never is. In this respect, the occurrence in Yucatec of every Spanish numeral above four is entirely predictable, since only the cardinal numerals from 1 to 4 have been conserved.

There is also morphosyntactic evidence which supports the conclusion that the constructions we have analyzed here are borrowings. We have extracted the relevant parts of the complete examples above and repeat them below for simplicity in (27)–(28), (30). Consider example (27) first. Both here and in [Uth, Gutiérrez-Bravo 2018] we assume the code-switching typology in [Poplack 1980]. According to this typology, words that have adapted morphology from the recipient language correspond to borrowings and not to code-switching. Based on this, (27), where the Yucatec plural suffix is used instead of the Spanish plural suffix, should be considered a borrowing (see also (22)).

(27) *u*   *abuelo-'ob*   *in*   *w-íicham-o'*
     his   grandparent-**PL**   my   **EP**-husband-**CL**
     'my husband's grandparents' (extraction from (13))

A word of caution is in order here, though. Since, as mentioned in §4.1, Spanish loanwords preceded by a Spanish numeral never show Yucatec plural morphology in our corpus, this evidence can only be taken to be indirect. Nevertheless, on the basis of the much larger data set of pluralization of Spanish loanwords analyzed in [Uth, Gutiérrez-Bravo 2018] (to which we refer the reader for further details), we do not find any reason to differentiate between the relevant data that shows only Spanish plural morphology and the data that shows Yucatec morphology or mixed Yucatec and Spanish morphology. Further observe that this limitation applies only to the Spanish nouns in the data, since, as mentioned above, the fact that the original Yucatec numeral system has not been conserved allows us to safely conclude that Spanish numerals are unquestionably loanwords.

More evidence can be found in data like (28), which corresponds to a complex nominal expression in which the embedded NP *tejidos* 'knittings' complements the head of the larger NP, *clases* 'kinds'.

(28) *Clase-s-il*   *tejido-s*
      class-PL-RL   knitting-PL
      'different kinds of knittings' (extraction from (12))

Even though the two nouns of this nominal expression come from Spanish, this is certainly not a possible Spanish nominal expression. In this nominal expression we find the Yucatec relational suffix *-il*, which indicates that the first noun is related to the second one, playing a role somewhat similar to that of the Spanish preposition *de* 'of', in the Spanish nominal expression *clases de tejidos* '(different) kinds of knittings'. It is precisely the presence of the relational suffix and the absence of the Spanish preposition that indicates that this is a nominal expression composed of two loanwords, and not a switch. Additionally, the fact that the suffix *-il* intervenes between the two Spanish parts of the NP results in a pattern which is not normally considered as code-switching in the literature, since it violates (at least) the free morpheme constraint, according to which "[c]odes may be switched after any constituent in discourse provided that constituent is not a bound morpheme" [Poplack 1980: 585f]. As such, this constitutes independent evidence that the Spanish plural suffix is productively found in constituents that cannot be analyzed as switches. Crucially, the Yucatec relational suffix *-il* can be observed in the numeral constructions analyzed in this paper, as in (29).

(29) *seis* *mes-es-il*   *u*   *ts'o'ok-ok-∅*   *u*   *beel-e'*
      six   month-PL-RL   ERG.3   finish-IRR-ABS.3SG   his   path-CL
      'six months after he gets married' Lit.: 'six months (after) his path finishes.' [NM-222]

Finally, additional evidence can be found in the numeral construction in (30), originally presented in (18). Recall that at some point this construction was the canonical construction used with loanword numerals from Spanish.

(30) *ocho*   *u*   *túul-ul*   *señora-s*
      eight   ERG.3   CLF-RDP   lady-PL
      'eight ladies' (extraction from (18))

In this example the Spanish numeral and the Spanish noun it quantifies are not syntactically adjacent. This represents a clear example against a code-switching analysis, since there is no evidence for chunks being interrupted in this way as the result of code-switching. While it is true that this construction is no longer productive in Yucatec, it still provides evidence in favor of our analysis, since it shows Spanish numerals and Spanish nouns functioning as loanwords (not code-switching) even at an earlier stage of the language.

The second alternative analysis pointed to us by a different anonymous reviewer corresponds to a different formalization of the analysis. The reviewer points out that there is an alternative way of analyzing multiple plural markers in loanwords, which does not need to appeal to the different syntactic status of the plural markers involved. Consider the following data from Russian, where the English loanwords have kept their original plural marker *-s* and also show the characteristic number/case declensions of Russian:

(31) Russian
    a. *čips-y*   b. *v MS Teams-ax*
       chips-NOM.PL   in MS Teams-PRP.PL
       'potato chips'   'in Microsoft Teams'

The reviewer points out that, since Russian and English are structurally much closer to one another than Yucatec and Spanish, it does not seem feasible to analyze the two plural markers as having a different syntactic status. We agree with the reviewer on this point. Now, since the two plural markers probably do not have a different syntactic status in this case, our proposal cannot be applied to the Russian data, and consequently a different analysis altogether is required.

The reviewer suggests an analysis in which the English plural suffix in these examples has been reanalyzed as belonging to the lexical root. As such, *čips* 'chips' enters the syntactic derivation as an inseparable lexical item which then merges with the Russian plural, which results in the apparent sequence of two adjacent plural suffixes observed in (31): we agree with the reviewer both with respect to the fact that this is a theoretically plausible analysis and that it is very likely the correct analysis for the relevant Russian data. Yet, if an analysis along these lines is independently needed for data like (31), it would be preferable to adopt this very same analysis for the Yucatec data, both in terms of having a unified analysis for the whole data set and in terms of having an analysis that does not depend on the different syntactic status of the two plural suffixes.

However, one specific characteristic of the Yucatec data makes it very problematic to adopt this analysis for the facts presented so far. Specifically, the Spanish plural suffix is optional (just like its Yucatec counterpart) in every context except in the presence of a Spanish numeral. This can be observed in (14), repeated here has (32), where the Spanish plural suffix *-s* is optional even in the presence of a Yucatec numeral.

(32) a. *Yaan-∅   kex   ka'a p'éel   docena-s   u   y-alak'   peek'.*
       EX-ABS.3SG   about   two   CLF   dozen-**PL**   his   EP-CLF   dog
       'He had about two dozen dogs.' [NM-209]

    b. *Óox   p'éel   candado   yaan-∅-i'.*
       three   CLF   padlock   EX-ABS.3SG-LOC
       'It had three padlocks.' [NM-26]

The optionality of the Spanish plural suffix indicates that in those loanwords where it does appear it has not been reanalyzed a part of the root, but instead remains a distinct morphological entity as in Spanish and also like the Yucatec plural suffix. Since the competing analysis laid out above crucially depends on the Spanish plural suffix having been reanalyzed as part of the root, we conclude that it would be problematic to adopt this competing analysis and consequently that an analysis along the lines of the one we propose is necessary for the Yucatec data.

Furthermore, it is worth observing that, irrespective of the language contact situation that we analyze here, the behavior of the Yucatec plural suffix is so different from that of the plural suffixes of Spanish and English that it seems necessary to conclude that it is an entirely different morphosyntactic entity, which is precisely the proposal of [Butler 2012, 2013]. Consequently, it is necessary to analyze the plural suffixes of Yucatec and Spanish as having a different syntactic status independently of the specific language contact data that we present here. As such, although it would certainly be appealing in analytical and theoretical terms to have a unified analysis of the Spanish and Yucatec plural suffixes, the data indicates that this possibility might simply not be available (see also [Wiltschko 2008] and [Kim et al. 2017]).

6. Discussion

Before concluding this paper, we briefly address two points which require a more thorough discussion than can be provided here. The first one relates to the specific architecture of the analysis that we have developed so far, the sec-

ond one relates to a much broader (and at this point, speculative) discussion of what exactly facilitates linguistic transfer like the one described in this paper.

With respect to the first point, recall that, when there is no Spanish numeral, Spanish plural morphology is optional in Spanish loanwords, as in (32). The relevant point is whether it is not problematic to propose that the presence of a functional head can be obligatory in some contexts (i.e. (15)–(17)), but optional in others, as in (32). With respect to this, it is worth pointing out that this very same situation is observed in other syntactic phenomena. One that is particularly well known is the presence or the absence of the complementizer *that* in English.

(33) a. *He thinks* [*that the visitors are not really comfortable*].

  b. *He thinks* [*the visitors are not really comfortable*].

From the perspective of an extended projection analysis [Grimshaw 1997] the absence of a head with explicit phonetic content in most cases indicates that the head is not present in the syntactic representation/numeration at all, which is the analysis we assume for (33). Yet, as is well known, there are some contexts where these otherwise optional functional heads become obligatory. Hence, *that* deletion is not possible when the clause is a sentential subject or when the clause and the verb are separated by an adverbial expression:

(34) a. [*That Fred is feeding her rabbit*] *annoys Karen*.

  b. *[*Fred is feeding her rabbit*] *annoys Karen*. [Baker 1989: 144]

(35) a. *We didn't know, until we read the story in the paper,* [*that he had resigned*].

  b. **We didn't know, until we read the story in the paper,* [*he had resigned*]. [Radford 2016: 198]

The structures in (34)–(35) are obviously not parallel to what is observed in Yucatec, where there is a strictly local head-complement configuration between the numeral and NumP, but they clearly illustrate the more general situation in which the presence of an otherwise optional functional head becomes obligatory in some specific context. Observe now that *that* deletion is not possible or becomes degraded in a head-complement configuration where the matrix verb is a manner-of-speaking, factive, or response-stance verb [Stowell 1981, Baker 1989, Hiroe 1999].

(36) a. *Jack whispered* [*that the X-files were strictly confidential*].

   b. **Jack whispered* [*the X-files were strictly confidential*]. [Hiroe 1999: 68]

In these cases, where the relevant syntactic configuration is just like the head-complement configuration in (19)–(20), the most plausible explanation of course is to attribute the absence of *that* deletion to the lexical properties of specific heads like the verb *whisper*. This is very much like the situation observed in Yucatec: NumP/*-s* can be optionally present in bare nominal expressions and when the preceding head is a Yucatec determiner or numeral, but its presence becomes obligatory when the preceding head is a Spanish numeral.

In this respect, an anonymous reviewer brings up an important point. The reviewer asks whether this part of our analysis is not problematic in view of the arguments presented in [Bruening 2009] and [Bruening et al. 2018] against Grimshaw's proposal that the clause is an extended projection of the verb. We do not think that this is problematic for our analysis for two reasons. First, even if correct, it is not immediately obvious that these authors' proposal can be extended across a broad typological spectrum. For instance, at first sight polysynthetic languages and languages where complement "clauses" are nominals and not clauses would appear to be a challenge to the proposal by these authors. More specifically for our purposes, Yucatec is clearly not typologically similar to the languages contemplated by these authors and so it doesn't seem possible to claim, without further analysis, if these authors' objections can be immediately carried through to Yucatec. The second reason why we think that this is not a problem for our analysis is that the basic proposal by these authors is that "clauses and nominals are not parallel at all" [Bruening et al. 2018: 6] and that this in turn indicates that the DP analysis is not correct. But crucially, in these authors' proposal one of the facts that shows that clauses and nominals are not parallel is that there is no sense in which the clause is an extended projection of the verb, while nominals clearly *are* a projection of the noun [Bruening 2009: 27; Bruening et al. 2018: 2, 12, 46]. This is the central claim of the extended projection analysis when applied to nominals. Our data and analysis correspond exclusively to the nominal domain, and so we do not consider that a critique of the notion of the clause as an extended projection of verb applies to our proposal.

The second point we would like to mention briefly in this final section has to do with what specifically facilitates or allows linguistic transfer as the result of

language contact. We previously mentioned that we follow those analyses which claim that the interaction between two languages in contact is most likely to occur in those areas that the grammars of these languages have in common. However, our primary goal in this paper has been to provide specific evidence that, morphosyntactically, the plural suffixes of Yucatec and Spanish are very different elements. Consequently, what the data presented here seems to indicate is that semantics, and not morphology and syntax, plays a more important role in linguistic transfer. More specifically, if the convergence illustrated in Table 1 were dependent on a concrete convergence of the formal morphological and syntactic properties of the elements in question, it is hard to see how this transfer from Spanish to Yucatec could have occurred in the first place. This leads us to speculate that it may be the case that originally the Spanish plural suffix was adopted as an adjunct, i.e., having morphological and syntactic properties closer to those of the Yucatec suffix, and that only at a later stage did this suffix begin to display a morpho-syntactic behavior more closely resembling the one observed in Spanish. This is not only an idea worth pursuing, but additionally one for which the relevant data probably exists, since there exist almost 500 years' worth of written Yucatec documents, going back to the beginning of the colonial era. Appealing as this idea is, it is without doubt beyond the scope of this study and should be left for further investigation in the future.

7. Conclusions

In this paper we have provided an analysis of plural marking in Spanish loanwords in Yucatec Maya. Our results strongly confirm the specific formalization in [Wiltschko 2008] of two different kind of plural affixes that can be observed in different languages. The two different kinds of suffixes coexist in Yucatec Maya as the result of language contact with Spanish. The hypothesis that we submit from the analysis of these data is that the adoption by a recipient language A of functional head X^0 from a language B does not entail that X^0 will behave in language A in the same way that it does in language B. Hence, by itself, the Spanish plural suffix behaves just like the Yucatec plural suffix in most respects. However, the adoption by a recipient language A of both a functional head X^0 and a lexical (or functional) head Y^0 that selects X^0 does bring with it a distribution of X^0 that is similar to the one observed in the contact language B. As such, in the presence of a Spanish numeral, the Spanish plural

suffix behaves in exactly the same way it would in Spanish. We have shown that in this analysis the relevant facts follow directly from the standard properties of Merge and lexical selection. Finally, we showed that further aspects of the interaction between the plural suffixes Spanish and Yucatec, including their simultaneous co-occurrence and their relative order, are also straightforwardly accounted for in the analysis we propose.

Abbreviations

ABS — absolutive; AOR — aorist; CL — clitic; CLF — classifier; DET — determiner; EP — epenthesis; ERG — ergative; EX — existential; FEM — female; GEN — genitive; HAB — habitual; IND — indicative; IRR — irrealis; LOC — locative; PL — plural; POSS — possession; PREP — preposition; PRP — prepositional case; PROG — progressive; RDP — reduplication; RL — relational; SG — singular; SUF — suffix; TR — transitive; TRM — terminative.

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