

5 Building the Case for 1Lex: Gender in Code-Switching

This chapter focuses on gender assignment and concord to further explore the empirical consequences of the 1Lex approach to code-switching and the MDM model. Why gender? Bilinguals code-switch between the determiner and the noun – in fact, it is one of the most frequent forms of code-switching there is. Moreover, it is very likely that the two grammars involved in code-switching have different requirements regarding gender assignment and concord. Consequently, there is going to be some possible and impossible code-switches that have the potential to illuminate both code-switching and linguistic theory in general.

The model presented – particularly in [Sections 4.1 and 4.2.2](#) – would seem to predict that all kinds of combinations should be possible (as [Pierantozzi 2008](#) points out in a different context). For instance, I have argued that it is possible for a root – √455 (=certificate) – to be merged in the structure in two different morphosyntactic frames, the Swahili one with a class feature and an English one without it. If we take this argument to its logical conclusion, one should expect that a L1/L2 bilingual can insert any noun of L1 in the frame provided by L2 and vice-versa. For instance, a Spanish/English bilingual should accept either of the following:

- (1) Spanish/English
 - a. *la key*
 - b. *the llave*

The data do not (always) confirm this expectation and some D+N combinations are rejected. In exploring these rejections, we will have a chance to explore our model and show that it does in fact make a number of intricate correct predictions.

The problem can be broken down into two parts. First, as pointed out, not every code-switching between a determiner and a noun is acceptable. For instance, [González-Vilbazo \(2005\)](#) reports that while (2a) is acceptable among the community of Esplugisch speakers that he carried out his fieldwork with, (2b) is not. In (2a) we have a Spanish feminine noun with a German feminine determiner, a combination that is always acceptable. In (2b) the

Spanish noun is masculine and the German determiner is also masculine, with further inflection for nominative case. In fact, no combination between a German definite nominative determiner and a Spanish masculine noun is acceptable:

- (2)
- | | | |
|------------------------|---------------|-----------------|
| German/ <i>Spanish</i> | | |
| a. | die | <i>torre</i> |
| | DEF.F.NOM/ACC | tower(f) |
| b. | ??der | <i>cuaderno</i> |
| | DEF.M.NOM | notebook(m) |

González-Vilbazo 2005: 162

On the other hand, a combination of a German dative determiner and a Spanish noun is grammatical, even if the noun is masculine:

- (3)
- | | | |
|----|-------------|--------------------|
| a. | dem | <i>interruptor</i> |
| | DEF.M/N.DAT | switch(m) |
| b. | der | <i>torre</i> |
| | DEF.F.DAT | tower(f) |

González-Vilbazo 2005: 162

The difference between (2) and (3) falls out of the feature structure of the determiner, as I show in a minute.

Second, even in the contexts in which code-switching is possible, code-switchers have to make a choice concerning the morphological form of the determiner. Consider Spanish/English code-switching. Determiners in Spanish must bear masculine or feminine gender in concord with the noun but English nouns have no gender. Thus, code-switchers who use a Spanish determiner and an English noun have to make a choice: sometimes they choose feminine for the determiner, sometimes masculine. To make this decision, they use two possible strategies. One strategy is the *analogical gender* strategy, which consists of transferring the gender of the Spanish noun onto the English translational equivalent noun. We are already familiar with this phenomenon because we were able to inspect a variant of it in our discussion of the feminization of beer in Section 4.2.1. The analogical gender strategy is shown in (4): since the Spanish word *fiesta* is feminine, the code-switched ‘party’ is selected by a feminine determiner.

- (4)
- | | | |
|-------------------------|--------------|------------------------------|
| Spanish/ <i>English</i> | | |
| la | <i>party</i> | (Spanish: <i>fiesta</i> (f)) |
| DEF.F | | |
| the | | |

Recent neurolinguistic work has shown that analogical gender is not just an on-the-fly strategy to assign gender to new nouns but it is rooted in our linguistic competence system. Boutonnet, Athanasopoulos, and Thierry (2012) asked a group of Spanish/English bilinguals if the third picture was the same as or

different than the previous two. Although the task was carried out entirely in English, ERPs showed a brain wave pattern modulated by gender inconsistency. This result suggests that the hypotheses put forward in this monograph must be right: the lexicon of the bilingual is not split in two, grammatical features such as gender are not inherent on the nouns but rather are features associated with subsets of roots.

An alternative strategy is to take one gender – say, masculine – as the *default gender*, as shown in (5):

- (5) el survey (Spanish: *encuesta*(f))
 DEF.M
 the

We can tell that masculine is default because in corpora the masculine determiner is used much more frequently than the feminine determiner (Valdés-Kroff 2016) and the masculine determiner is used even for nouns whose Spanish equivalent is feminine, as in (5).

Liceras, Fernández Fuertes, and Klassen's (2016) survey article finds that both strategies – analogic replacement and masculine default – are available to bilinguals as reported in various studies, although the type of bilingualism seems to play a role in how much they use one or the other. What influences the choice between the two strategies? One factor that has been identified is language dominance: if your dominant language is Spanish, you are more likely to choose the analogical gender (Otheguy and Lapidus 2003, Liceras, Fernández Fuertes, Perales, and Spradlin 2008). Similarly, early simultaneous bilingual adults are reported to prefer masculine as default while those who learned Spanish first and English later might be inclined to use the analogical criterion more often. An additional factor is semantic field: if the noun comes from the familial environment, analogical gender becomes the chosen strategy (Delgado 2018). As Delgado (2018) argues, the usage of feminine determiner among code-switching bilinguals may reflect the way the word was learned from their parents and caretakers if they are L2 speakers of English.

What happens when the determiner is English and the noun Spanish, as in (1b) *the llave*? What we find is even more interesting: we find that the noun influences the pronunciation of the determiner, which acquires a distinctly Spanish phonetics.

Given the wealth of data and its intriguing properties, it is not surprising that there is a considerable pile of literature on the topic. We find papers that use corpora data as well as experimental data (and the experiments can be designed in several different ways, from AJTs to completion tasks). We also find data from different types of bilinguals: early adult bilinguals, child bilinguals, and advanced L2 learners. We also have studies of different code-switching pairs: Spanish/English, Basque/Spanish, Spanish-French-Italian/German, Welsh/

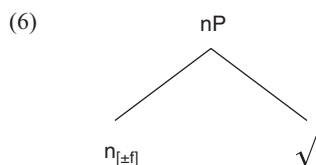
English, Arabic/French, Arabic/Dutch. See in particular: Badiola and Sande 2018, Cantone and Müller 2008, Delgado 2018, Eichler, Janssen, and Müller 2013, González-Vilbazo 2005, Herring et al. 2010, Jake et al. 2002, Klassen and Licerias 2017, Licerias et al. 2008, 2016, Moro 2014, Myers-Scotton 2002, Parafita Couto et al. 2015, Parafita and Gullberg 2017, Pierantozzi 2012, Radford et al. 2007.

In this section, I present four case studies that are representative of the range of problems and show how in every case the data presents further support for the MDM+ILex model. Section 5.2 discusses Spanish-Basque code-switching, Section 5.3 moves on to Spanish-English code-switching, Section 5.4 briefly approaches MacSwan's (1999) data on Nahuatl, and Section 5.5 is dedicated to Spanish-German bilinguals. But before we begin with the analyses, Section 5.1 discusses the grammar of gender in general and – given the centrality of Spanish in the discussion – of Spanish gender in particular.

5.1 Remarks on Gender Assignment and Concord

Traditionally, gender – and more generally, noun classification systems – has been understood as a feature inherent to the noun itself. For instance, *puente* 'bridge' is masculine while *fuelle* 'spring' is feminine – for no reason at all. In Section 3.1 we briefly mentioned that this assumption has been challenged in recent work. In fact, the assumption of inherence presents empirical problems that have been recently brought to the fore. Take, for instance, gender in Romanian. There is a large class of nouns in Romanian that are masculine in the singular and feminine in the plural. Recall also the fluidity of noun classes in the Bantu languages mentioned in Section 3.1. This is not possible if gender is inherent to the noun. Rather, it seems that gender is an emergent feature that arises out of the interaction of a root with the *n* head and even other constituents in the noun phrase such as number (see Kihm 2005, Saab 2008, Acquaviva 2009, Kramer 2015, Estomba 2016, among others).

For our purposes, we assume that gender is a feature bundled with *n*, which therefore may come in different flavors in a gender language. Spanish is a two-gender language, and therefore we can distinguish $n_{[-f]}$ and $n_{[+f]}$. Languages without gender then have an *n* devoid of any features.



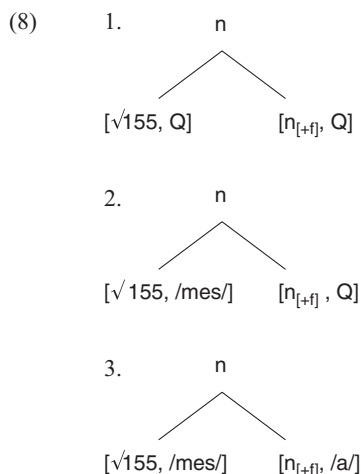
Each of the gender morphemes can be spelled out in a number of ways. The general rule in Spanish is that [+f] is spelled out as /a/ and [-f] as /o/. But there are other possibilities: a few feminine words actually spell out as /o/ and some masculine nouns spell out as /a/. Nouns that end in a consonant or any of the other vowels can go either way. Derivational affixes carry their own gender. For this reason, Harris (1991) made a distinction between the gender feature and the word marker (or desinence). The suffixes [-a] and [-o] are regarded as word markers whose relationship with the grammatical feature gender may be complicated. In my view, a word marker is the particular spell-out that a noun+gender combination may exhibit.

Thus, every root that becomes a noun has to become a noun of the right gender. The root $\sqrt{\text{mes}}$ has to merge with an $n_{[+f]}$ and spell out as *mesa* ‘table’ and the root $\sqrt{\text{fuent}}$ has to merge with $n_{[+f]}$ and the latter has to spell out as [e]. Thus, I propose that in order to describe Spanish gender within a DM framework, we need a set of rules that simultaneously ensure that nouns get the right gender and the right spell out for n . The rules have the form: “spell out $n_{[\alpha g]}$ as /x/ in the context of /.../,” where /.../ is the spell out of a root. Here is a partial (and somewhat informal) picture of gender in Spanish.

- (7) *Partial set of rules that spell-out Spanish gender on nouns*
- R1: $n_{[+f]}$ \longleftrightarrow /o/ || _____ {man- (hand), mot- (motorbike), fot- (photo), ...}
 - R2: $n_{[-f]}$ \longleftrightarrow /a/ || _____ {poet- (poet), tem- (theme), di- (day), ...}
 - R3: $n_{[\pm f]}$ \longleftrightarrow /e/ || _____ {estudiant- (student), representant- (representative), ...}
 - R4: $n_{[-f]}$ \longleftrightarrow /e/ || _____ {(re)bot- (bounce), sirvient- (servant), ...}
 - R5: $n_{[+f]}$ \longleftrightarrow \emptyset || _____ {luz- (light), ...}
 - R6: $n_{[-f]}$ \longleftrightarrow \emptyset || _____ {camión- (truck), pez- (fish), ...}
 - R7: $n_{[+f]}$ \longleftrightarrow /a/
 - R8: $n_{[-f]}$ \longleftrightarrow /o/

These rules read as follows. R1 says: a feminine n spells out as [o] in the context of the vocabulary items $\sqrt{\text{man-}}$, $\sqrt{\text{mot-}}$, $\sqrt{\text{fot-}}$ (and a couple others). R2 says: a masculine n spells out as /a/ in the context of the vocabulary items $\sqrt{\text{poet-}}$, $\sqrt{\text{tem-}}$, $\sqrt{\text{di-}}$, etc. The rules are ordered from more specific to more general. At the bottom, the most general rules for Spanish gender are the ones here listed as R7 and R8: /o/ is linked to masculine gender, /a/ is linked to feminine. R7 and R8 are in fact the only rules that will be relevant in the ensuing discussion. To sum up, I take it that a Spanish noun is a syntactic structure consisting of a root and a functional category n that comes in two flavors $n_{[+f]}$ and $n_{[-f]}$. Both the root and the functional category include a variable Q that is eventually replaced with a vocabulary item.

I take it that the application of VIRs works from the bottom up (Embick 2015). This is shown explicitly in (8)



(8.1.) shows the structure generated by the computational system. At this point, $[\sqrt{155}, Q]$ is targeted by a VIR with the result that $\sqrt{155}$ receives the spell-out /mes-/, as shown in (8.2). After that, $[n_{[+f]}, Q]$ is targeted by the VIRs, yielding $[n_{[+f]}, /a/]$, as shown in (8.3). Notice that the rules in (7) make the spell out of n dependent on the exponent of the root, rather than the root itself. This technical detail becomes important when we discuss bilingual speakers, whose I-language may include two vocabulary items for the same root – say, *llave* and ‘key’ – and one of them has gender and the other does not. To the extent that this situation exists, it suggests that gender assignment is keyed to the exponent of the root rather than the root itself.

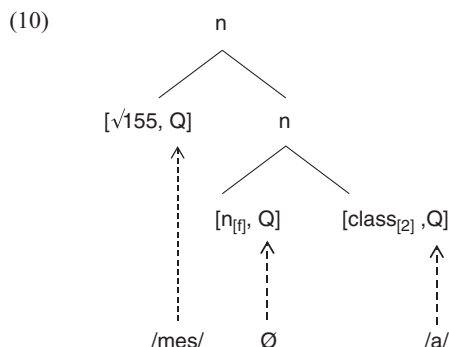
The set of rules listed in (7) is meant to be a tool for the description of Spanish gender, not a fully fledged theoretical proposal. For instance, the /e/ that ends many nouns is usually an epenthetic vowel rather than a declension class and so rules R3 and R4 would probably be eliminated in a more sophisticated analysis. Another feature absent from table (7) is that nominalizing suffixes carry their own gender feature: thus, nouns that end in the suffixes /ion/ (*revolucion* ‘revolución’), /ura/ (*licenciatura* ‘college degree’) or /dad/ (*caridad* ‘charity’) are feminine while /ento/ (*entretenimiento* ‘entertainment’) is masculine. Natural gender is also not included in (7). Rules that generate these facts should be included in a more complete picture of Spanish gender (see Kučerová 2018 for a recent contribution).

As Roca (1989) and Harris (1991) point out, masculine in Spanish seems to be working as a form of default gender, assigned to items that do not normally have any gender. In example (9), a conjunction is used as a nominal and it automatically triggers masculine concord:

- (9) No quiero ningún pero.
 NEG want.1 no.M but
 'I don't want any buts.'

Harris concludes that what we call masculine is the absence of any gender feature – Spanish gender system would be a privative system. I would rather say that Spanish does have a binary $[\pm\text{feminine}]$ feature choice and that roots can be selected by $[-\text{feminine}]$ or $[\text{feminine}]$ n . Examples such as the one in (9) can be accounted for under the assumption that $n_{[-f]}$ is the default nominal-making strategy. Thus, as the root $\sqrt{\text{pero}}$ is inserted in a nominal morphosyntactic frame, it is selected by $n_{[-f]}$. The advantage of assuming a $[-f]$ feature instead of adopting a privative system will become clear when we study German/Spanish code-switching. In a nutshell: German is a three-way masculine, feminine, neuter system, and we find that Spanish masculine nouns are compatible with masculine and neuter determiners in German; this is only possible if the masculine/neuter determiners in German and the Spanish masculine nouns have some feature in common; I take this feature to be $[-f]$ (see also the discussion in p64).

DM approaches to Spanish gender are typically different. Saab (2008), Embick (2015), Kramer (2015), and Estomba (2016) assume that an nP has three terminal nodes: one for n , one for gender and an extra category, called *Declension Class*, corresponding to the main suffixes – Harris' word markers – which configure the edge of a Spanish noun. In Spanish there would be three main classes: Class 1: [o], Class 2: [a] and Class 3: [\emptyset /e] (see Roca 1989, Harris 1991, Oltra-Massuet 1999). Within this view, the declension class is a dissociated morpheme attached to n post-syntax. The result is a structure such as the following:



In this view, the Spanish word *mesa* ‘table’ is a feminine noun of class 2, *mano* ‘hand’ is a noun of feminine gender and class 1, while *llano* ‘flat land’ is of masculine gender and class 1. The rules of vocabulary insertion make sure that the right vowel matches the right declension class, rather than the right gender – gender itself never has an exponent. The probability that a member of class 1 is masculine is captured by means of general VI rules (see Kramer 2015, Oltra-Massuet and Arregi 2005).

In some analyses (see Oltra-Massuet 1999, Alexiadou and Müller 2008), the declension class is an inherent feature of the root and has to match the class of the dissociated morpheme – a problematic assumption in the context of a theory that adopts the hypothesis that roots have no grammatical properties. Kramer (2015) proposes an alternative that avoids assigning a root a class feature. Instead, the rules that insert the class features are contextually dependent. For instance, two separate rules introduce Class 1 in the structure: A very specific rule lists the roots that are selected by a $n_{[-f]}$ ($\sqrt{\text{man-}}$, $\sqrt{\text{mot-}}$, etc.) and a general rule introduces a Class 1 node in the context of $n_{[-f]}$. The same thing goes for Class 2 and Class 3.

It is hard to decide which analysis is best. Do we need class features? Kramer (2015: 237–238) argues that doing away with class features is an undesirable move because we end up with several rules of vocabulary insertion that result in the spell-out of [o], [a] and [e] (see 7), whereas in the system represented in (10) the three desinences are always the spell out of the same three declension classes. This consideration is convincing to the extent that the assumption of declensional classes in Spanish gives us empirical mileage – but in fact, it does not, since there are no actual declensions in Spanish nouns as are found in languages such as Latin. In Latin, the class of a noun decides its inflection for number and case. But in Spanish there is no case inflection and the plural morpheme [s] is independent of the desinence that precedes it. Thus, the construct of declension class for Spanish nouns provides no insight. I would argue that the system in (7) allows us to simplify the analysis in two ways: (i) we can dispense with the notion of declension class; and (ii) we don’t need to sprout a dissociated morpheme in the post-syntactic component, in full-throated violation of the inclusiveness condition.

Gender in Spanish is expressed on determiners, quantifiers, and adjectives via concord with the noun. Example (11) shows the definite and indefinite determiners in Spanish:

- (11)
- | | | |
|------|---|-----------------|
| el | : | [def, -f] |
| la | : | [def, +f] |
| un | : | [indef, -f] |
| una | : | [indef, +f] |
| los | : | [def, -f, pl] |
| las | : | [def, +f, pl] |
| unos | : | [indef, -f, pl] |
| unas | : | [indef, -f, pl] |

For all those nouns that do not follow the more general rules R7 and R8, the gender of a noun is only visible in concord with the determiners (as well as adjectives, if there are any):

- (12) a. el puente
 DEF.M bridge(m)
 b. la fuente
 DEF.F spring(f)

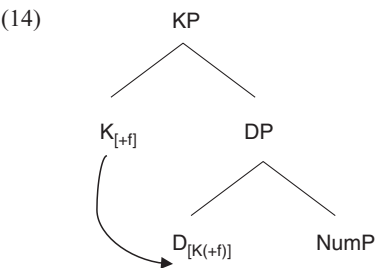
Following Carstens (2000), I take it that concord is a dependency that can be expressed using the Agree (probe, goal) presented in Section 3.1. The question of the probe for concord is complex. Recall that I argued in Section 3.1 that concord originates in K, which is therefore a repository of the unvalued gender and number features that trigger probing. The empirical argument that I presented in Section 3.1 (and in much deeper detail in López 2019) emerges from the fact that concord is possible if the right type of K head is present in the structure. I reproduce example (19) from Chapter 3 here as example (13) for the reader's convenience:

- (13) Russian/Kazakh
Vyssh-ij shkol-dī bitir-d osında.
high-M.SG.NOM/ACC school-ACC finish-3.PAST here
'He finished high school here.'

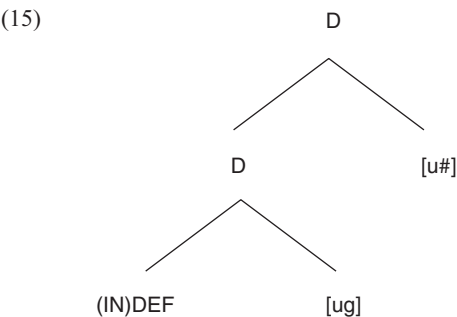
Auer and Muhamedova 2005: 43

In example (13), the Russian NP *vysshij shkol'dī* lacks gender concord, which would always be obligatory in a normal Russian DP. The reason for this lack of concord is that this DP is the complement of a Kazakh K and Kazakh is a language that has no form of concord. We also showed data in Turkish/German and Basque/Spanish code-switching that points in the same direction: if K is from a language that has no concord, concord within the DP disappears.

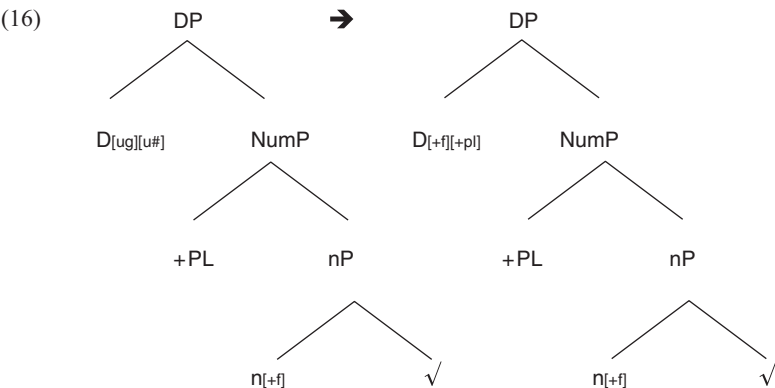
In Section 3.1 I argued that this empirical data should lead us to the conclusion that K is present in (at least some) languages that do not express it explicitly. Consider the following: if a Spanish DP appears as the complement of a Basque K, number concord within the DP disappears. If we take concord to originate in K, this empirical datum gets an easy account: the Spanish K has been replaced by the Basque K, with the result that concord within the DP is limited to what the Basque K allows. I take it then that gender and number concord in Spanish originates in K. However, as we know, the gender and number features show up on the D. I propose that K and D share these features – maybe through *feature inheritance*. The mechanism of inheritance makes a copy of the entire K bundle and merges it as a sub-label of D.



Spanish determiners consist of two or three terminals: One terminal for the (in) definiteness morpheme (which will spell out as /*un*/ for indefinite and /*l*/ for definite), one terminal for gender (*a* for feminine and \emptyset for masculine singular or *o* for masculine plural) and a terminal for plural, which spells out as *s*. The structure of a Spanish determiner is as follows:



The unvalued gender and number features constitute independent probes and are valued using the familiar mechanism of Agree in the c-command domain of D. In the following examples, I arbitrarily choose the values plural and feminine:

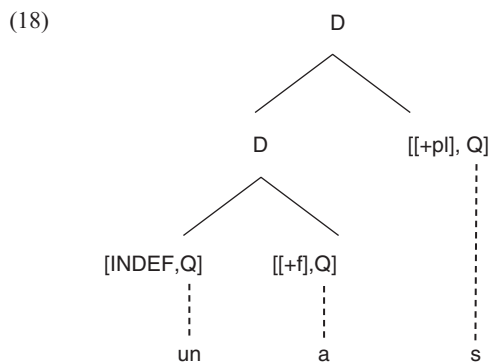


Since the features of D are now valued, D is ready for vocabulary insertion. These rules may take a shape like the following:

(17) VIRs for Spanish determiners (first pass)

1. DEF \longleftrightarrow /l/
2. INDEF \longleftrightarrow /un/
3. +f \longleftrightarrow /a/
4. -f \longleftrightarrow /o/ || _____ [pl]
5. -f \longleftrightarrow \emptyset

The resulting structure after all features are valued and VIRs have been applied is in (18):



5.2 Gender in Basque/Spanish Code-Switching

In this section, I present some Basque/Spanish data that provides empirical evidence that the List 2 of a bilingual is one integrated system.

As Badiola and Sande (2018) show, the inhabitants of Gernika, in the Basque Country, are deep bilinguals who use Basque and Spanish regularly and code-switch between them. Their code-switching reveals an interesting feature of their linguistic competence. Basque is a language that does not express gender on the nouns (with only a few exceptional borrowings from Romance; see Hualde and Ortiz de Urbina 2003: 137, and my brief discussion to follow) and nouns can end in any consonant or vowel without any grammatical consequences. Spanish, however, is a language with masculine and feminine genders, which are associated with a variety of environments. The question that arises is: what happens when a Basque noun is merged as a complement of a Spanish in a code-switched discourse? What kind of concord will it trigger on the determiner?

Badiola and Sande (2018) presented a survey to bilingual speakers that included an acceptability judgment task and a forced choice task. Their

research question was: what Spanish determiner would their subjects choose for a Basque noun? The result is that generally they chose the masculine gender, which confirms Roca's (1989) and Harris' (1991) analyses in which masculine is viewed as default (but see Parafita et al. 2015, for a different result with a different community of Basque speakers). The glaring exception is that if the word ended in [a] they consistently preferred the feminine determiner:

- (19) *Spanish/Basque*
 a. *la* *makila* (Spanish: el bastón)
 DEF.F walking-stick
 b. *la* *gona* (Spanish: la falda)
 DEF.F skirt

The preference for feminine is cued exclusively to the word ending. Notice in particular that analogical gender plays no role: although the Spanish word *bastón* is masculine, the Basque equivalent *makila* collocates with the feminine determiner.¹

The data uncovered by Badiola and Sande can be accounted for easily within a 1Lex theory. The VIR that links feminine with [a] is a VIR that is part and parcel of the linguistic competence of these speakers, not a rule of the *Spanish* of these speakers. In other words, there are no two separate sets of VIRs, but just one, which will operate whenever the environment is right, regardless of "language." I submit the data in (19) as empirical evidence in favor of the 1Lex theory and against the 2Lex theory. If indeed the bilingual speaker had two lexicons, or even two separate List 2, these data could not be accounted for: how could a Spanish rule affect a subset of the Basque lexicon?

Let me develop this in more detail. As mentioned, Spanish nouns ending in /a/ are in fact complex words, made up of a root and a little *n* with a [+f] feature. The desinence /a/ is the spell out of $n_{[+f]}$:

- (20) *falda* $[[\sqrt{123}] + n_{[+f]}] \rightarrow \text{fald} + a$
 SKIRT

Evidence that /a/ is not part of the root comes from derivational morphology. When a derivational suffix is added, it is added on the root $\sqrt{\text{fald}}$: *faldita* (small skirt), *faldón* (shirttail).

The Basque /a/ in words like *makila* and *gona* is also a separable constituent of the word. This can be seen in the following examples drawn from Hualde and Ortiz de Urbina (2003: 173), where the reader can find the entire paradigm (thanks to Karlos Arregi for a useful discussion):

- (21) *hondartza* : 'beach'
 hondartzok: beach.ABS.DEF.PL.PROX
 hondartzetan: beach.LOC.DEF

Interestingly, other vowels do not drop when adding suffixes. The noun *etxe* 'house' is inflected as *etxeok* not as **etxok*.

Thus, I believe it makes sense to propose that Basque /a/ is actually a desinence, the spell-out of *n* when *n* attaches to a particular set of roots, as shown in (22a). With this setup, it is very easy to see how *makila* and *gona* might trigger feminine concord on the Spanish determiner. It is only a question of letting the roots $\sqrt{\text{makil}}$, $\sqrt{\text{hondartz}}$, and $\sqrt{\text{gon}}$ be inserted in an additional morphosyntactic frame, as shown in (22b):

- (22) a. *makila* : $[[\sqrt{133}] + n] \rightarrow \text{makil} + a$
 b. *makila* : $[[\sqrt{133}] + n_{[+f]}] \rightarrow \text{makil} + a$

This development causes no strain on the system and allows Basque nouns that end in /a/ to be assimilated into the VIR R7 (in (7)).

Some borrowings from Romance suggest that this analysis is on the right track. Hualde and Ortiz de Urbina 2003: 137) document that there is a small number of Spanish borrowings that appear in masculine and feminine form in some dialects. The short list includes the adjectives *majo/maja* (nice), *tonto/tonta* (silly), *katoliko/katolika* (Catholic). Within my terms, this means that these Basque adjectives are inserted in “Spanish” morphosyntactic frames a $[\pm f]$. Again, this is only possible if the two lexicons are integrated in the mind of a Basque/Spanish bilingual.

5.3 Gender in English/Spanish Code-Switching

We are now discussing examples in which a Spanish determiner is followed by an English noun (the *carro*) and vice-versa (*el car*). As is often the case in the field of code-switching, the literature does not fully agree on the description of the facts. Everyone agrees that Spanish D followed by English N is fine – so, (*el car*) is always fine.² The disagreement comes with English D and Spanish N – so, (the *carro*) is a source of controversy. Some of the literature argues that code-switching between an English D and a Spanish noun is less acceptable than the reverse (Belazi et al. 1994, Radford et al. 2007, Moro 2014) while others doubt that this is invariably the case (see Herring et al. 2010, which inspects corpus data). I conducted my own informal survey of three early and highly proficient Spanish/English bilinguals of the Chicago area with the goal of finding out if English D and Spanish N could indeed go together. I did indeed find an asymmetry, albeit one that is different from what has previously been described. The asymmetry that I found in acceptability judgments was confirmed via inspection of the Miami Corpus, gathered, transcribed, and made public by the Bangor Center for Bilingualism in Theory and Practice. The study of gender in English/Spanish code-switching provides additional evidence for the integrated approach because, as I shall show, the 2Lex assumption makes the incorrect prediction that some impossible outcomes should be acceptable.

5.3.1 The Data

The consultants were asked to read sentences like the ones in (23) and evaluate whether they found them acceptable or not. As they evaluated the sentences, I asked them to read the code-switched examples with two alternative pronunciations. The framing device that surrounded the code-switched DP was in English:

- | | | |
|------|--|---------------|
| (23) | Juan forgot to bring us the <i>pez</i> . | (pez=fish) |
| | Before going to bed, María turned off the <i>luz</i> . | (light) |
| | To get to the dentist, you need to cross the <i>punte</i> . | (bridge) |
| | You can get some fresh water from the <i>fuenta</i> | (spring) |
| | You got a stomach ache because you ate all the <i>queso</i> . | (cheese) |
| | You shouldn't drive the <i>carro</i> . | (car) |
| | When you open an account at the bank, they give you the <i>libreta</i> . | (notebook) |
| | Do me a favor, get me the <i>mesa</i> . | (table) |
| | This church is ugly, I didn't like the <i>restauración</i> . | (restoration) |
| | Sander thought he would bring us the <i>revolución</i> . | (revolution) |
| | The <i>resentimiento</i> prevented him from loving his brother. | (resentment) |
| | She didn't forgive him, despite the <i>arrepentimiento</i> that he showed. | (regret) |

The results are summarized in (24) with one randomly chosen example. What I found is that code-switching between 'the' and a Spanish noun worked alright, with only one restriction regarding the pronunciation of the DP, which is exemplified in the contrast between (24d) and (24e). (24d) shows that *the mesa* pronounced with English phonetics, is not acceptable to my consultants while (24e) shows that the same DP is acceptable if the entire DP is pronounced as if it were Spanish:

- | | | |
|------|-----------------------|------------|
| (24) | Spanish/English | |
| a. | Get me la mesa. | |
| | the table | |
| b. | Get me the table. | |
| c. | √/? Get me la table. | |
| d. | */?? Get me the mesa. | [ðə meisə] |
| e. | Get me the mesa | [da mesa] |
| f. | */?? Get me el mesa. | [el meisə] |

Let's consider the sentences in (24) in turn. The judgments in (24a–b) fall in line with what previous researchers have found. With respect to (24c), my consultants express a preference to have *table* pronounced with English phonetics, but this preference seems not to be strong enough to regard the structure as unacceptable. With some hesitation, I regard (24c) as uniformly grammatical.

The contrast in (24d) and (24e), as far as I know, has not been discussed in earlier work. As shown in the transcriptions that accompany the examples, it is

acceptable to have an English determiner followed by a Spanish noun provided that the whole DP receives a Spanish phonetics. The judgments in (24d) and (24e) were corroborated via a corpus investigation in Delgado (2019). Delgado inspected the Bangor Miami Corpus generously made public by the CBTP, University of Bangor, and found fourteen instances of ‘the + Spanish NP’:

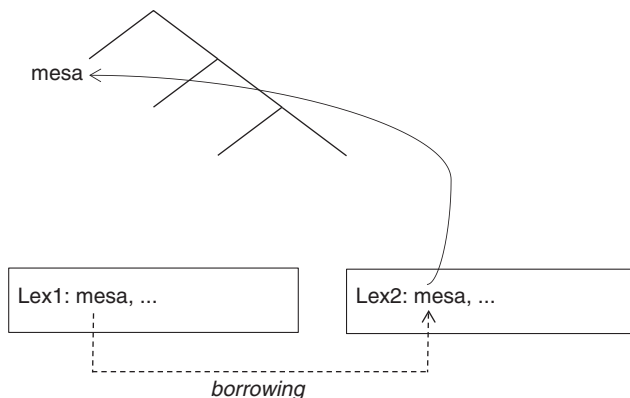
(25)	The <i>boca</i>	Herring8
	‘the mouth’	
	The <i>manguera</i>	Herring9
	‘the hose’	
	The <i>costos</i>	Maria27
	‘the expenses’	
	The <i>gringo</i>	Sastre10
	‘the gringo’	
	The <i>capitana</i>	Sastre10
	‘the captain (female)’	
	The <i>muebles</i>	Sastre11
	‘the furniture’	
	The <i>harina</i>	Zeledon6
	‘the flour’	
	The <i>maizena</i>	Zeledon6
	‘the corn starch’	
	The <i>mosquitero</i>	Zeledon6
	‘the mosquito net’	
	The <i>sala</i>	Zeledon13
	‘the living room’	
	The <i>malicia</i>	Zeledon13
	‘the malice’	
	The <i>espíritu santo</i>	Herring17
	‘the holy spirit’	
	The real <i>espiritismo</i>	Herring17
	‘the real spiritism’	

He then trained an undergraduate research assistant to analyze the F1 and F2 formants of the vowel in the determiner and found that the vowel in ‘the + Spanish NP’ is indeed similar to the same speaker’s /a/ in the Spanish determiner *la* and dissimilar to ‘the’ when it is followed by an English NP (the consonant /d/ could not be analyzed due to the fuzziness of the data). Pending a deeper investigation, it seems that the contrast between (24d) and (24e) is real and in need of explanation.

It is worth pointing out that corpora studies reveal that while the Spanish determiner + English noun combination is very common, the reverse is less frequent (see Licerias et al. 2016: 118 for a summary of the results). This would follow if it is indeed the case that the English determiner + Spanish noun combination happens to be more restricted than the Spanish determiner + English noun combination.

The data in (24d–e) are challenging for a 2Lex approach. Within a 2Lex theory that incorporates a distinction between code-switching and borrowing (see Section 4.4), (24d) should be grammatical under the following scenario. Consider the diagram in (26) and take Lex1 to be the “Spanish” lexicon and Lex2 to be the “English” lexicon. The word *mesa* /mesa/, a member of Lex1, may be borrowed into the Lex2 of the bilingual: it becomes the English word ‘mesa’, pronounced (/meisə/).

(26)



Once ‘mesa’ has become an English word, it should accept the determiner *the*, pronounced [ðə] – and this is how we incorrectly allow the unacceptable (24d). Unless we build up a constraint on borrowing from one lexicon to the other, in a 2Lex theory there is no restriction that would yield the unacceptability of (24d).

Let me now add another turn of the screw. DPs that look superficially like (24d) are indeed acceptable by bilingual speakers. As far as I can tell, they always involve Spanish-origin words that have become common currency in American English:

- (27)
- a. John ate all the *tamales* yesterday. [ðə təmələz]
 - b. I’m not drinking the *tequila* today. [ðə təkilə]

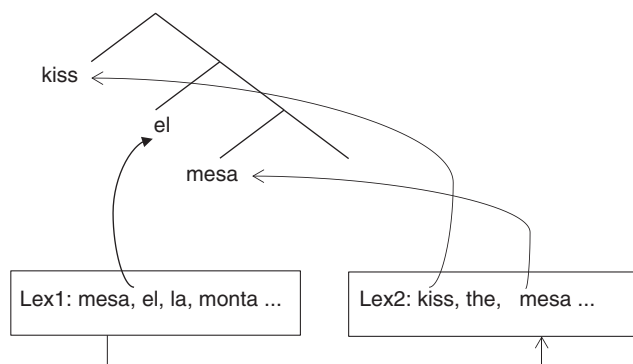
Thus, we need a formal theory that prevents (24d) in the general case while simultaneously allowing for the occasional development of what is exemplified in (27). Current theories seem to me to be too strict or too loose.

Moro (2014) (see also MacSwan 2005) is an example of an overly strict theory. In her approach, the entire feature structure of a functional category must be checked. She argues that examples like ‘the mesa’ are ungrammatical because the gender feature of the noun must be checked against the gender feature of the determiner: the unchecked gender features on the determiner in mixings such as ‘la table’ creates no such problem, following a particular theory of feature (sub)sets. Leaving aside that Spanish nouns can appear in monolingual speech without a determiner that could

check their gender features (as in *Luis Enrique está buscando electricista* ‘Luis Enrique is looking for (an) electrician’), Moro’s theory does not capture the distinction between (24d) and (24e). In contrast, Licerias et al. (2008) can be presented as a theory that is too loose, since all possible D+N combinations are grammatical in their account, incorrectly allowing (24d) in the general case.

Finally, let me discuss (24f). The data in (24f) presents another interesting puzzle for the 2Lex theory. The inclusion of (24f) in this list might be surprising because, as far as I know, it has never been discussed. But the assumption of two lexicons with the added option of borrowing items from one lexicon to the other predicts that (24f) should be possible. (24f) represents the following scenario: the word *mesa* in Lex 1 is imported into the Lex2 and therefore is selected by English *n*; thus *mesa* in Lex2 is a genderless noun because it is a noun of the English lexicon. If *mesa* can be turned into an English word, then it can be code-switched with a *Spanish* determiner. Which Spanish determiner? In Spanish, the default gender is masculine (and that’s how we get *el building*, *el survey*, *el city hall*, etc., see Delgado 2018 and references therein). In such a scenario, the Spanish determiner could be *el*, which is the default choice when there is no agreement:

(28)



Thus, (24f) should be as grammatical as ‘*el building*’. In fact, we should expect that Spanish feminine nouns should generally appear with a feminine determiner and with a masculine determiner – but this is not the case: with rare exceptions, gender assignment is fixed, among bilingual speakers as much as among monolinguals. This problem is inherent to any approach that assumes two separate lexicons and the possibility of borrowing from one to the other.

5.3.2 Analysis: Preliminaries

Let’s start with the analysis. Building on the assumptions developed in Chapter 4, I take ‘table’ and *mes-* to be alternative spell outs of one root in List 1, here randomly assigned the index 145:

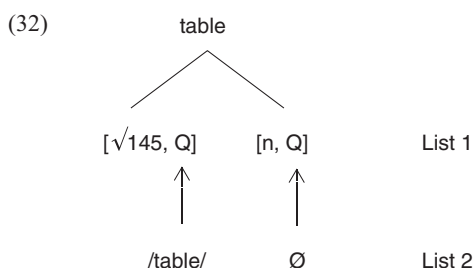
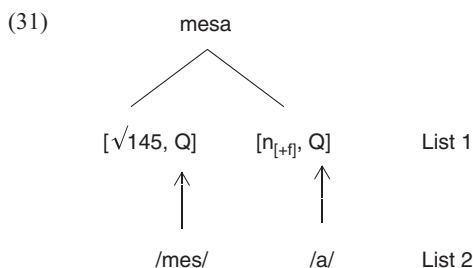
- (29) List 1: $\sqrt{145}$
 List 2: $\sqrt{145} \longleftrightarrow \{\text{table, mes-}\}$

The root can then become the complement of a little n . As discussed in Section 3.2 as well as in Section 5.1, I take gender to be a feature of n . Let's posit three types or flavors of little n . The basic one is the "English" one, which has no extra properties. Spanish has two flavors of n , corresponding to the two genders:

- (30) Little n in English: n
 Little n in Spanish: $n_{[+f]}$
 $n_{[-f]}$

As argued in Section 5.1, the connection between the gender feature and the noun desinence in Spanish is not trivial, involving a number of different rules. The summary I presented (see Section 5.1) stated that (i) the general rule is that /a/ spells out feminine and /o/ masculine, (ii) a number of more specific VIRs associate either gender to any vowel ending, and (iii) gender can also have a zero realization when the noun ends in a consonant.

For the time being, consider the following two structures. The first one shows the syntactic structure and spell out of the Spanish noun *mesa* and the second one shows the English noun 'table'. Thus, we have two VIRs:



Obviously, these two VIRs are available to the bilingual speaker. But the data in (24) suggests that the bilingual speaker has additional options: /table/ can be selected by $n_{[+f]}$ as a possible spell out for $\sqrt{145}$ (yielding *la table*). The

acceptability of *the mesa* suggests that a $n_{[+f]}$ can be selected by a featureless English determiner.

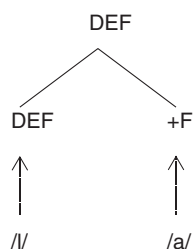
The morphology of determiners in English and Spanish is quite distinct. I take it that English ‘the’ is the spell out of the DEF feature while ‘a’ spells out INDEF. In Spanish, the DEF/INDEF features inflect for gender and number, as shown in (11). As described in Section 5.1, I take it that the features DEF/INDEF may carry an unvalued gender feature that gets to be valued as $[\pm f]$ as a result of concord with $n_{[\pm f]}$. This DEF/INDEF with valued gender must spell out as *el/la* or *un/una*. But if DEF/INDEF[uGender] probes and only finds an *n* without a gender feature (an English *n*), the [uGender] of DEF/INDEF remains unvalued. Unvalued features do not lead to a crashed derivation but rather trigger default options (see Section 3.2, as well as López 2007 and Preminger 2014). Thus, when the VIRs kick in, it turns out that the subset principle decides that only ‘the’ can pair up with a DEF that has an unvalued feature: ‘the’ is a featureless determiner and the Spanish *el/la* have an additional gender feature that makes them too rich. This is how we get *the mesa*, where *mesa* maintains its Spanish structure with the noun desinence, as I shall detail. Likewise, only ‘a’ can spell out an INDEF feature with an unvalued gender feature.

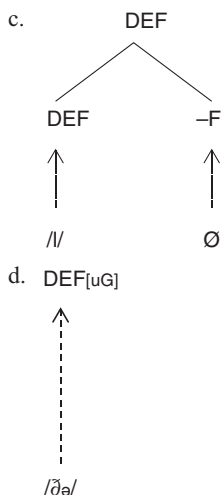
After feature valuation, both the DEF/INDEF feature and the gender feature are independent terminals. /l/ spells out DEF, /un/ spells out INDEF, Ø spells out masculine and /a/ feminine (see 17). Thus, the syntax of determiners in English and Spanish is as follows (for the example I use only the DEF feature). English ‘the’ can be the spell out of a definite head with no gender features or with an unvalued gender feature. A determiner with feminine or masculine gender spells out as /l/ (in the following I omit the feature Q to unclutter the representations):

(33) a. DEF



b.





In subsequent trees, I generally simplify (33b) as DEF_[+f] and (33c) as DEF_[-f] if nothing in the analysis hinges on it. The corresponding spell-out rules for English and Spanish definite determiners for a bilingual speaker are as follows:

- (34)
- | | | |
|-------|---|-----------------------|
| DEF | ↔ | /l/ ____ [gender] |
| DEF | ↔ | ðə |
| +F | ↔ | /a/ |
| -F | ↔ | Ø |
| INDEF | ↔ | /a/ |
| INDEF | ↔ | /un/ ____ [gender] |
| -F | ↔ | /o/ ____ [pl] |

The Spanish exponents /l/ and /un/ can be inserted in a context in which they are adjacent to a valued gender terminal, otherwise the exponents /ðə/ and /a/ are inserted. The feature [-f] has no exponent (yielding *un* and *el*) unless it is adjacent to the plural node, in which case it is spelled out as /o/ (yielding *unos* and *los*). The feature [+f] is uniformly spelled out as /a/. The *e* in *el* is, I assume, a later readjustment rule.

Notice that imposing a condition on insertion of /l/ and /un/ is necessary to ensure that the desinence only affixes to /l/, not to /ðə/, and to /un/, not to /a/. Notice also that the grammar of a monolingual Spanish speaker does not require this contextual restriction. When constructing the VIRs of a monolingual who only has one exponent for definiteness, it is unnecessary to describe its context of appearance. Thus, the integrated assumption leads us to the conclusion that the grammar of a bilingual is indeed subtly different from that of a monolingual – reminding us of Grosjean’s old dictum: “a bilingual is not two monolinguals

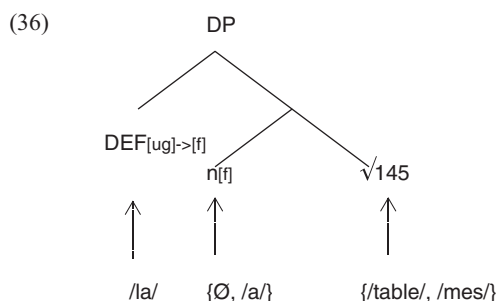
rolled into one.” This is a conclusion derived from the integrated assumption that may have far-reaching consequences, which I hope to explore in future work.

5.3.3 Analysis: *la table*

We are now in a position to begin the discussion of the puzzling code-switching data in (24c–f). Recall that we take the word ‘table’ and the root ‘mes-’ to be alternative spell-outs of the same root, which we will arbitrarily assign the index 145:

- (35) List 2: $\sqrt{145} \longleftrightarrow \{\text{mes-}, \text{table}\}$

Let’s start with (24c), *la table*. The syntactic structure is represented in (36). In (36), the root merges with a $n_{[+f]}$ and the latter then merges with a D that has an unvalued gender feature. As a result of concord, the determiner values its gender feature as $[+f]$. The only vocabulary item available is $/l-/$:



Recall my discussion in Section 4.2.1 about how the Germanic word *bior* (beer), which was neuter in the original and ended up becoming feminine in Italian and French. I propose that a similar process of analogical gender is available here: ‘table’ becomes the complement of a $n_{[+f]}$ in analogy with the other exponent, *mesa*.

As the reader may have noticed, there are several possible combinations of D, n and root. D could have an unvalued gender or no gender feature at all. n could have a valued gender feature or none at all. And there are two possible vocabulary items for the root. Some of these options are shown in (37). In (37), I consider only the spell out of the root as ‘table’. As an instance of valued gender I arbitrarily choose feminine.

Let’s start with (37i). (37i) is a regular English DP: the root that spells out as ‘table’ is selected by English n , and the latter is selected by the English determiner, without unvalued gender, and spells out as ‘the’.

(37ii) recapitulates the analysis of (24c), *la table*. D has unvalued gender and n is feminine. Example (24c) is possible because ‘table’ is an available spell out

for root $\sqrt{145}$ when it is selected by Spanish $n_{[+f]}$. As an option, $n_{[+f]}$ has no exponent.

Consider now (37iii). If the English n is selected by a determiner with gender features, the gender features remain unvalued. Since the Spanish vocabulary items *el* and *la* both have a gender feature, only the English *the* can be inserted, and this results in (37iii), for all purposes undistinguishable from (37i).

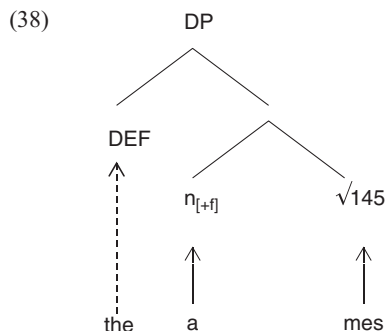
Finally, we consider (37iv): the Spanish $n_{[+f]}$ is selected by English DEF, without an unvalued gender feature, and then we have ‘the table’ again:

- (37) Possible outcomes with spell out ‘table’:
- i DEF + n + [$\sqrt{145}$, /table/] : the table
 - ii DEF_[uGender] + $n_{[+f]}$ + [$\sqrt{145}$, /table/] : la table
 - iii DEF_[uGender] + n + [$\sqrt{145}$, /table/] : the table
 - iv DEF + $n_{[+f]}$ + [$\sqrt{145}$, /table/] : the table

In parenthesis, allow me to point out that analogical gender is not obligatory in these configurations. In fact, bilinguals prefer the determiner *el* for words like ‘survey’ even though the Spanish equivalent, *encuesta* is feminine. For these speakers $n_{[+f]}$ cannot select the corresponding root, the root can only be selected by regular n or by $n_{[-f]}$. As Delgado (2018) argues, this is an accidental fact, the outcome of a particular sociolinguistic situation. As suggested, ‘table’ gets its feminine gender the same way that *birra* did, by analogic replacement, which in my terms involves adding an additional spell out option to the morphosyntactic frame. As Delgado shows, this happens with items of the familial environment. However, when bilinguals learn words outside the familial environment, such as ‘survey’, they learn them only as instances of the English morphosyntactic frame. If there is code-switching, and a Spanish DEF_[uGender] is selected, the bilingual speaker has to choose the proper morphosyntactic frame and there is no Spanish analogue to guide her. More often than not, she chooses the default gender, $[-f]$. The determiner copies this value and it is spelled out as \emptyset , as shown in (34). (Relatedly, see Liceras et al.’s (2016) survey article.)

5.3.4 Analysis: the *mesa*

Consider now the more difficult examples of (24d) and (24e). Recall that (24d) ([ðə meisə]) is judged unacceptable while (24e) ([da mesa]) is acceptable. For the speakers who give these judgments, the word ‘mesa’ is necessarily a complex word, made up of the root $\sqrt{\text{mes-}}$ and the word marker /a/. As pointed out above, the word marker is the spell out of $n_{[+f]}$. Therefore, the nP is necessarily feminine. In the following example, the determiner is “English style” without any gender features.



A determiner with no gender features can select for this $n_{[+f]}$, and it will spell out as ‘the’. The interesting question now is why the entire DP must be pronounced in the Spanish way and not the English way. This is the more puzzling in contrast with ‘la table’, which does not seem to have the mirror requirement (or at least not to the same extent). My intuition is that the difference between *mesa* and ‘table’ lies in the complex structure of the former, which necessarily includes a particular type of n , namely, $n_{[+f]}$. I take the categorizing morpheme $n_{[+f]}$ to be the head of the word and therefore to decide which externalization system will be chosen. Recall that I have argued that since the root is devoid of any grammatical properties, including a label, it is also not able to project onto a higher category. It follows that the categorizer has to be the head of the word. This headedness can be expressed in Embick’s (2010) model, according to which the categorizing head is the head of a phase (even if the transfer takes place at a later phase, as Embick argues). The pronunciation of ‘the’ as [da] comes about because the determiner and the categorizing head are units of the same phonological word and a phonological word must be sent to the externalization systems in one fell swoop (MacSwan 2000, MacSwan and Colina 2014). ‘table’, on the other hand can appear in any morphosyntactic environment – either n or $n_{[+f]}$ – and I believe this flexibility is the reason why it has the freedom to take on an English or a Spanish phonetics. For more on this issue, see Section 6.5.)

Example (39) considers the possible outcomes for the root *mes-* in combination with an n with a gender value and an n without it, as well as a determiner with or without unvalued gender. Since *mes-* requires a word marker, n must have a specification for gender. This disqualifies (37i) and (37iii). (37ii) is a regular Spanish DP. (37iv) is the interesting case: the n has a gender value while the determiner has no gender. Nothing makes this phrase impossible:

- (39) Possible outcomes with spell out *mesa*:
- i DEF + n + [√145, /mes/] : *the mesa
 - ii DEF_[uGender] + $n_{[+f]}$ + [√145, /mes/] : la mesa

- iii DEF[uGender] + n + [$\sqrt{145}$, /mes/] : *the mesa
 iv DEF + n_[+f] + [$\sqrt{145}$, /mes/] : the mesa

Let's now return to the following examples:

- (40) a. John ate all the *tamales* yesterday. (cf. 27)
 b. I'm not drinking the *tequila* today.

The examples in (40) contrast with (24d–e). There are no pronunciation restrictions on the determiner or the nouns in these examples. Descriptively speaking, the situation is as follows: bilinguals have created two morphosyntactic frames for these roots, a Spanish one with a gendered *n* and an English one without it. In effect, the words *tamal* and *tequila* have acquired full morphosyntactic flexibility. This is all the difference between the acceptable $\delta\alpha$ tāmæləz and the unacceptable * $\delta\alpha$ meisə. Could * $\delta\alpha$ meisə become acceptable in the model of $\delta\alpha$ tāmæləz? Certainly: a vocabulary item *mesa* could be created and inserted as the complement of English *n*; notice that this new creation does not have a word marker or any form of nominal desinence, the root would be $\sqrt{\text{mesa}}$, not $\sqrt{\text{mes-}}$. This is formally possible but somewhat unlikely. Why do *the tamales* and *the tacos* exist? We note one discriminating factor: *mesa* has an alternative “English” spell-out in the form of *table* while *tamal* does not. This makes the development of an English style morphosyntactic frame for *mesa* unlikely and one for *tamal* almost obligatory. I believe this is the factor that leads to two morphosyntactic frames for *tamal* while only one for *mesa*. (Having said this, the word ‘mesa’ does exist in the Southwest of the USA, as a word meaning ‘plateau’.)

Finally, let's return to (24f), **el mesa*. Recall that I presented this example as an empirical challenge to the 2Lex model, which should allow the word *mesa* to be borrowed into the English lexicon and then become integrated in a Spanish phrase as a code-switched English noun. Within my assumptions, the reason why this phrase is rejected by my consultants is a failure of gender assignment, which is the same reason why monolingual speakers do not accept it either. Technically, we just need to posit that the root $\sqrt{\text{mes-}}$ is selected by n_[+f]. Since $\sqrt{\text{mes-}}$ is selected by n_[+f], the determiner values its own uGENDER as feminine, and this spells out as *la*. Could there be a process of language change so that $\sqrt{\text{mes-}}$ could end up being selected by n_[–f]? Formally, nothing prevents it, and this is the way it should be. Let's consider the possibilities of having the structure [n_[–f] $\sqrt{\text{mes-}}$]. This structure could be fed into the most general spell out rule, which would yield *meso*. Alternatively, we could add the spell-out *mesa* to the list of exceptional spell outs for n_[–f] (like other masculine nouns that end in /a/, such as *drama*, see (7)). Both options are formally possible, and I assume they may happen if the need arises. But generally, once words are fit into a morphosyntactic framework, this tends to remain stable. Historically,

one can detect a few changes of this kind, but not many (in Spanish we see hesitation between a few words *el/la calor* ‘the heat’ *el/la mar* ‘the sea’, *el/la sartén* ‘the frying pan’).

To conclude Section 5.3.1–4: In these sections, I have developed an analysis of gender assignment and gender concord in Spanish/English code-switching within the 1Lex MDM framework. In particular, I have shown that the 2Lex system overgenerates unacceptable structures (see the examples in 24) while the 1Lex system avoids these pitfalls without any additional assumptions.

5.3.5 Earlier Approaches

As mentioned, there are many approaches to concord in English/Spanish bilingualism and I am not able to discuss them all here. But I would like to mention those whose theoretical assumptions are closest to my own framework: the one developed by Juana Muñoz Licerás and her colleagues (Licerás et al. 2008, 2016, Licerás 2016), as well as Pierantozzi (2012).

Licerás and her colleagues used as subjects of their experiments Spanish-dominant bilinguals who may have quite a different profile from my own heritage subjects – consequently, their results and mine may not be comparable. Be that as it may, allow me to say a few words about their work. Their starting point is a contrast between (41a) and (41b) and they claim that both are possible but (41a) is substantially more common:

- (41) a. *la* house
b. the *casa*

Recall that my claim is somewhat different: (41b) is acceptable if the pronunciation is fully adapted to Spanish. Licerás and colleagues suggest that a notion of *Internal Dominance* accounts for the pattern in (41). Since both forms are attested, they argue that a grammatical analysis should be abandoned and a processing analysis adopted instead. The internally dominant language is the language that contributes the most grammaticized features to the structure. Thus, the Spanish determiner wins over the English determiner because it has gender. This predicts that ‘la house’ is more common than ‘the casa’, although the latter is not impossible. The ultimate reason behind this is the *Grammatical Features Spell-out Hypothesis*: a processing condition that says that you want to spell out functional categories that are more visible because they express more grammatical features.

Notice that once we take phonology into consideration, we are led to assume that the difference between (41a) and (41b) is indeed a grammatical one, but the grammatical conditions are of a different nature: the acceptability or not of code-switches relies on the types of morphosyntactic frames in which roots can

be merged and the subsequent pronunciation that the morphosyntactic frames give rise to.

A discussion of Pierantozzi (2012) will provide additional insight into the assumptions and analyses adopted here. Pierantozzi (2012) assumes a DM framework similar to mine, with the important difference that, for her, gender is an inherent feature of the noun. This assumption is crucial because it makes it impossible to adopt an integrated system. Let's see why.

In Pierantozzi's (2012) framework, in a language that has gender, a noun is a syntactic terminal with the feature specification $N[g]$ as evidenced by concord on the determiner, adjective, etc. In the linguistic system of a bilingual – say, a English/Spanish bilingual – two vocabulary items could be inserted in this terminal: for instance, /house/ or /casa/. The Spanish vocabulary item /casa/ has a gender feature that matches the one in $N[g]$ but /house/ does not. Both *la casa* and *la house* are acceptable to bilingual consultants, despite the fact that /casa/ is a better match for $N[g]$ than /house/ is. It follows that /casa/ and /house/ are not in competition. And this entails that /casa/ and /house/ must be lodged in distinct independent List 2. In contrast, my analysis does not require that the bilingual speaker have separate lists of exponents for each of their languages – the only crucial assumption that allows *la house* is the notion that gender is not inherent to a root but rather it emerges from the morphosyntactic structure. Crucially, neither the roots nor the exponents have any gender features: these are housed in the functional categorizer n . The vocabulary items /house/ and /cas/ can spell out the same root R , and R is in a morphosyntactic environment that includes $n_{[+f]}$. *La house* is possible to the extent that the vocabulary item /house/ can be selected by $n_{[+f]}$, just as any other form of gender assignment.

5.4 Gender in Nahuatl/Spanish Code-Switching

The analysis of noun class in English/Swahili code-switching, as well as the analysis of gender in Basque/Spanish and English/Spanish code-switching, is based on the overarching assumption that nouns can fit more than one morphosyntactic frame. This is certainly a feature of “monolingual” grammars: Swahili roots can show up in more than one noun class (recall: *mtoto* ‘child’, *kitoto* ‘small child’, *matoto* ‘big child’), some nouns in Spanish can be both masculine or feminine (*estudiante* ‘student’), some nouns in Romanian have different gender in the singular and the plural. Thus, it is not surprising that the same phenomenon happens in “bilingual” grammar. This is the reason why we find that, for example, the Basque noun *makila* may be selected by a $n_{[+f]}$ as well as the regular Basque little n . It is not surprising but, then again, it is not obligatory either. Issues of what is usually referred to “gender assignment” – in our terms, selection of a root by a particular flavor of n – are somewhat arbitrary and once choices are made, they tend to be rigid. It should be interesting to see

what predictions we would make for a language that did not allow for gender assignment flexibility.

Let's assume code-switching between L_x , a language with gender, and L_y , a language that has no gender and no assignment flexibility. In this language, $D_y + NP_x$ would work along the lines of *the casa*. However, $D_x + NP_y$ would never work. The NP_y would never have a gender feature and therefore D_x would end up without valuing its gender feature. If the gender feature is not valued, an exponent with a valued gender feature would be too specified and would not fit. The only possible spell out for an unvalued gender feature would be a genderless exponent of L_y .

This abstract scenario is instantiated in Nahuatl/Spanish code-switching, as discussed in MacSwan's study of $D+NP$ combinations in this language pair (MacSwan (1999: 244–250)). As we know, determiners in Spanish inflect for gender and number; the interesting part is that determiners in Nahuatl do not. According to MacSwan, the $D+NP$ code-switching combination is acceptable if the determiner is Nahuatl and the noun is Spanish, but not the other way around.

- (42) Nahuatl/*Spanish*
- a. neka *hombre*
'This man'
 - b. * *este* tlakatl
'This man'
 - c. se *hombre*
'a man'
 - d. * *aquel* tlakatl
'that man'

MacSwan 1999: 244–245

The contrast between (42a) and (42b), as well as the acceptability of (42c) and the unacceptability of (42d) can be accounted for in the sort of analysis that I presented in the previous sections with the added assumption that Nahuatl roots do not accept being selected by a Spanish *n*. Let's see how.

- (43) Nahuatl/*Spanish*
- a. neka/se *hombre*
 $D + n_{[-f]} + [\sqrt{23}, \text{hombre}]$
 - b. * *este/aquel* tlakatl
 $D[\text{ug}] + n + [\sqrt{23}, \text{tlakatl}]$

(42a) and (42c) can be accounted for along the lines set up in previous sections. The little *n* has the gender feature $[-f]$ and the $(IN)_{DEF}$ feature is brought in without unvalued gender features. The spell out for this $(IN)_{DEF}$ is the Nahuatl determiner, as shown in (43a).

As for (42b) and (42d), the unacceptability arises when an $(IN)_{DEF}$ with an unvalued gender feature selects for a Nahuatl *n* without a gender feature. The

gender feature of (IN)DEF reaches the VIRs with the gender feature unvalued. At that point, it can only be spelled out by the Nahuatl determiner because Spanish determiners, which do bear a [+f] or [-f] feature, are too specified. This is shown in (43b).

(42b) and (42d) would only be possible if the Nahuatl noun could be inserted in a Spanish frame with a $n_{[\pm f]}$, in the model of *la house*. Apparently, this possibility has not developed in the I-language of Nahuatl/Spanish bilinguals. Ultimately, the reason why (42b,d) are ungrammatical is a simple issue of gender assignment.

MacSwan's account of the Nahuatl/Spanish situation is (roughly) based on the notion that the ϕ -features of D need to be checked while those in N do not. Following MacSwan's reasoning, a Spanish D will require a Spanish N and a Nahuatl N would be unacceptable because it would not have the requisite valued features. But a Nahuatl D does not require a Nahuatl N because the Nahuatl D has no features to check. This analysis is based on the notion that unvalued features lead to unacceptability, which, as discussed in Section 3.2, is probably a mistaken assumption. Moreover, it leaves many of the examples discussed above without an account: for instance, why should *la house* be possible?

5.5 Gender in Spanish/German Code-Switching

Gender in the Spanish/German variety called *Esplugisch* is discussed in detail in González-Vilbazo (2005). These data came out of González-Vilbazo's field work at the German School of Barcelona over a period of several weeks, where he gathered data informally, recorded some dialogs and presented consultants with acceptability judgment tasks. He also confirmed these judgments with other Spanish/German bilinguals. The data presented in this thesis will help bolster my argument that an integrated view of bilingual grammar is preferable to the 2Lex worldview that remains dominant.

The data presents a high degree of intricacy. For instance, it is generally possible to have a German noun with a Spanish determiner:

- (44) *Spanish/German*
El brötchen
 DEF.M bread(n)

In the opposite direction, it is possible with some combinations but not others. For instance, code-switching is possible in (45a), with a dative determiner, but not in (45b), with a nominative one (see also Sections 5.2, 5.3):

- (45) *German/Spanish*
 a. Dem *cuaderno*
 DEF.M/N.DAT notebook(m)
 b. * Der *cuaderno*
 DEF.M.NOM notebook(m)

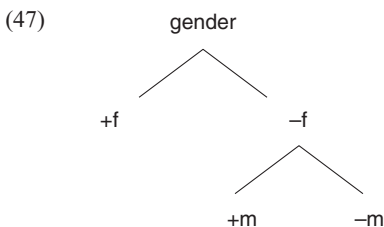
The purpose of this section is to account for the restrictions on German/Spanish code-switching within the DP. The solution relies crucially on the MDM model presented in these pages and provides a proof of concept that it can handle complex data sets. I start presenting a short tutorial on German gender in [Section 5.5.1](#) and I present González-Vilbazo's findings in [Section 5.5.2](#). I then develop an analysis in [Section 5.5.3](#).

5.5.1 Spanish and German Gender

As was described in [Section 5.1](#), Spanish nouns are divided into two genders, traditionally referred to as masculine and feminine and which I refer to as [+feminine] and [−feminine].

- (46)
- | | | | |
|------|---|-----------------|---|
| el | : | [def, −f] | (see Section 5.1 , ex (11)) |
| la | : | [def, +f] | |
| un | : | [indef, −f] | |
| una | : | [indef, +f] | |
| los | : | [def, −f, pl] | |
| las | : | [def, +f, pl] | |
| unos | : | [indef, −f, pl] | |
| unas | : | [indef, −f, pl] | |

The German system is a three-gendered system: feminine, masculine, and neuter. Following González-Vilbazo, I take the German system to form a feature hierarchy with three possible values. The feminine gender has the feature [+f], masculine is [−f, +m] and neuter is [−f, −m] (see also [Section 4.3](#)):³



This yields three possible morphosyntactic frames for German nouns:

- (48)
- | | | |
|----|----------------|---|
| a. | $n_{[+f]}$ | $\sqrt{\{\text{frau (woman), stadt (city), gabel (fork) \dots\}}$ |
| b. | $n_{[-f, +m]}$ | $\sqrt{\{\text{löffel (spoon), stuhl (chair), mann (man) \dots\}}$ |
| c. | $n_{[-f, -m]}$ | $\sqrt{\{\text{messer (knife), hemd (shirt), kind (child) \dots\}}$ |

The German D copies the gender and number features of *n*. It also inflects for morphological case, which distinguishes nominative, accusative, dative, and genitive. Gender, number, and case are all expressed in the determiner, albeit

with numerous syncretisms. The following is a table of nominative, accusative, and dative singular masculine, feminine, and neuter German determiners:

(49) Some singular determiners in German

	DEF			INDEF		
	M	N	F	M	N	F
NOM	der	das	die	ein	ein	eine
ACC	den	das	die	einen	ein	eine
DAT	dem	dem	der	einem	einem	einer

The plural determiners only inflect for case. There is no gender morphology associated with the plural determiners in German.

(50) Some plural determiners in German

	M	N	F
NOM	die	die	die
ACC	die	die	die
DAT	den	den	den

Notice that there are several places where the exponents for the [−f] determiners are the same. Let’s classify nominative and accusative together as [+structural] and dative as [−structural] (while keeping genitive out for the time being). With this information, we can analyze the feature structure of each determiner as in (51). I present the feature structures in a semi-formal way, mixing privative and binary features; in a more formal presentation, nominative should be [+structural, −accusative] and accusative should be [+structural, +accusative]. Additionally, I have not tried to account for all the apparent syncretisms, thus allowing the phonological strings /der/, /die/, and /den/ to expone two distinct morpheme bundles; finally, I use orthographic rather than IPA representations to facilitate the discussion (as I do in other sections of this monograph):

- (51)
- 1

/der/

:

[nom, def, −f, +m]

[nominative=+structural-accusative]

2

/das/

:

[+structural, def, −f, −m]

3

/die/

:

[+structural, def, +f]

4

/den/

:

[acc, def, −f, +m]

[accusative=+structural+accusative]

5

/dem/

:

[−structural, def, −f]

6

/der/

:

[−structural, def, +f]

[−structural=dative]

7

/ein/

:

[+structural, indef, −f]

8

/eine/

:

[+structural, indef, +f]

9

/einen/

:

[acc, −f, +m]

10

/einem/

:

[−structural, −f]

11

/einer/

:

[−structural, +f]

12

/die/

:

[+structural, def, pl]

13

/den/

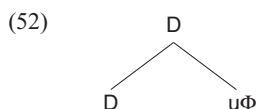
:

[−structural, def, pl]

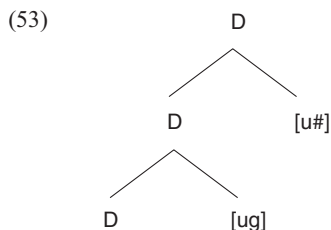
Let's focus on the gender feature. Some of the determiners in (51) are [+f] (3, 6, 8, 11). Plural determiners have no gender feature: /die/ works for all nominative and accusative nouns and /den/ for all dative nouns. Notice also that there are some determiners with the feature structure [-f, +m] or [-f, -m], while others seem to be only [-f]. The determiner in (51.1) (/der/) only works with masculine nouns and the one in (51.2) (/das/) only works with neutral nouns. It makes sense therefore to assign to them the features [+m] and [-m] respectively. On the other hand, the dative determiners in (51.5) (/dem/) and (51.10) (/einem/) are used with masculine and neuter nouns. Thus, I assume that (51.5) and (51.10) only have the gender feature [-f], with no specification for [\pm m].

The indefinite determiners (51.7–11) demand a little more attention. Notice that /ein/ can be used for nominative masculine and neuter and for accusative neuter. For accusative neuter, we have a specified determiner, /einen/. Thus, I have taken the latter to have the feature [+m] while I take /ein/ to be [+structural] (therefore able to fit in nominative and accusative terminals) and [-f], without specification for [\pm m]. This feature structure allows it to fit into syntactic terminals with the feature structures [nominative, \pm m] as well as [accusative, -m].

German determiners include two terminals. There is a terminal for the (in)definiteness feature (*d* for definite, *ein* for indefinite) and another terminal that has either a plural value or a gender value (I abstract away from case at this point). I take it that the German D has a terminal with an unvalued ϕ -feature, which is not specified for type:



The structure of the German D contrasts with the Spanish D, repeated here for the reader's convenience, as the latter has separate terminals for gender and number:



Consequently, the German D has a unique probe, which consists of an unvalued ϕ -feature, which will seek any valued ϕ -features it can find in its c-command domain. Let's see how it works. Assume that a singular noun

phrase is a noun phrase without a Number head (i.e., singular is the absence of number). In this circumstance, the probe $[u\Phi]$ finds the gender features in n and copies them. Assume now that the noun phrase is plural (i.e., there is a plural feature projecting a Number Phrase between D and n). The probe in the German D finds this plural feature and copies it. This ends the probing: the probe has its ϕ -feature valued and there are no additional probes in D. This is how the German D never exhibits any gender features in the plural.

Finally, we are now in a position to formulate the rules of vocabulary insertion that characterize the I-language of the Esplugisch speaker. At this point it is important to note, as is often done, that a bilingual is not two monolinguals rolled into one. If a speaker has a linguistic system, call it L_a , with only one exponent for definiteness, the rule of exponence will be maximally simple. A “multilingual” individual may have several exponents for definiteness whose context of appearance may be complex. For instance, a Spanish/German bilingual has two exponents of definiteness, $/l-/$ and $/d-/$. Morphologically, they are clearly distinct: The former is associated with additional terminals for gender and number while the latter is associated with only one terminal for all its ϕ -features. Thus, the VIRs for l and d that I propose exploit this fact.⁴ For the time being, let’s focus on the Esplugisch speaker.

(54)	1.	def	\longleftrightarrow	$/l/$	\parallel [D _____ T1 T2]
	2.	def	\longleftrightarrow	$/d/$	
	3.	indef	\longleftrightarrow	$/un/$	\parallel [D _____ T1 T2]
	4.	indef	\longleftrightarrow	$/ein/$	
	5.	+f	\longleftrightarrow	$/a/$	\parallel _____ [#]
	6.	-f	\longleftrightarrow	$/o/$	\parallel _____ [pl]
	7.	-f	\longleftrightarrow	\emptyset	\parallel _____ [#]
	8.	pl	\longleftrightarrow	$/s/$	\parallel _____ [g]
	9.	+f	\longleftrightarrow	$/ie/$	\parallel [+structural] def _____
	10.	+f	\longleftrightarrow	$/e/$	\parallel [+structural] indef _____
	11.	+f	\longleftrightarrow	$/er/$	
	12.	-f,+m	\longleftrightarrow	$/er/$	\parallel [+structural] _____
	13.	-f,+m	\longleftrightarrow	$/en/$	\parallel [+accusative] _____
	14.	-f,-m	\longleftrightarrow	$/as/$	\parallel [+structural] _____
	15.	-f	\longleftrightarrow	$/em/$	\parallel [-structural] _____
	16.	-f	\longleftrightarrow	\emptyset	\parallel [+structural] indef _____
	17.	pl	\longleftrightarrow	$/ie/$	\parallel [+structural] _____
	18.	pl	\longleftrightarrow	$/en/$	

(54.1) and (54.3) say that $/l/$ and $/un/$ insert in nodes that have the feature definite or indefinite, respectively, and that are found within a Dmax that

includes two other terminals. The two-terminals requirement is simply the environment that distinguishes the German and the Spanish determiner. The German /d/ and /ein/ are inserted elsewhere, as shown in (54.2) and (54.4).

The batch of rules in (54.5) to (54.8) define the “Spanish” spell out for gender and number on the determiner: (54.5) says that a feminine terminal spells out as /a/ if it is sitting next to a number feature (either a number feature valued as plural or an unvalued number feature.) This correctly defines the environment that spells out /a/ as feminine because none of the “German” gender exponents is adjacent to a number feature. (54.6) defines the spell out of masculine as /o/ if the determiner is plural, yielding *los* and (54.7) tells us that masculine has no exponent in the singular, and so we have *el* (I assume that the *e* is epenthetic).

The rules (54.9) to (54.11) define the contexts of the “German” [+f] terminals, yielding *die*, *eine*, and *der* respectively. (54.12) and (54.13) define the contexts of the masculine determiners *der*, *den*, and *einen*, while (54.14) defines the neuter determiner *das*. (54.15) and (54.16) define the determiners that have the feature [−f]: the dative determiners *dem* and *einem* as well as the nominative indefinite *ein* and accusative indefinite neuter *ein*. Finally, (54.17) and (54.18) define the plural determiners *die* and *den*.

5.5.2 Esplugish Data

Let me now present the Esplugish data, as originally brought to the attention of code-switching researchers by González-Vilbazo (2005: 158–167).

Esplugish speakers do not seem to resort to analogical gender. Thus, the determiner concurs with the noun that spells out, not the equivalent in the other language.

When the determiner is Spanish, code-switching is always possible. German feminine nouns take the feminine Spanish determiner while masculine and neuter nouns take the non-feminine determiner (recall the discussion of clitic left dislocation in Section 4.3):

- (55) *l-a* hose
DEF−F pant(f)
- (56) *el* gürtel
DEF.−F belt(m)
- (57) *el* brötchen
DEF.−F bun(n)
- (58) *un-a* hose
INDEF−F pant(f)
- (59) *un* gürtel
INDEF.−F belt(m)

- (60) *un* *brötchen*
 INDEF.-F bun(n)

When the determiner is German, we need to pay attention to case morphology as well as to definiteness. We start with definite determiners. If they are in nominative or accusative case, the feminine determiner can collocate with a feminine Spanish noun. But if the Spanish noun is masculine, it cannot collocate with any nominative or accusative German determiner:

- (61) d-ie *torre*
 DEF-F.NOM/ACC tower(f)
- (62) ?? d-er *tenedor*
 DEF-M.NOM fork(-f)
- (63) ?? d-as *tenedor*
 DEF-N.NOM/ACC fork(-f)
- (64) ?? d-en *tenedor*
 DEF-M.ACC fork(-f)

However, if the determiner is in dative case, it is grammatical in all genders:

- (65) d-em *interruptor*
 DEF-M/N.DAT switch(-f)
- (66) d-er *torre*
 DEF-F.DAT tower(f)

With indefinite determiners, we find the following situation: Code-switching is always possible in the nominative case.

- (67) ein *interruptor*
 INDEF.M/N.NOM switch(-f)

In the accusative case, it remains possible as long as we use the neuter determiner, not the accusative one:

- (68) ein *interruptor*
 INDEF.N.ACC switch(-f)
- (69) ?? ein-en *interruptor*
 INDEF-M.ACC switch(-f)

Code-switching is always possible with an indefinite feminine determiner (González-Vilbazo provides no examples but it follows from the discussion).

Finally, code-switching is always possible between a plural determiner and a noun:

- (70) a. d-ie *tenedores*
 DEF-PL forks(-f)

- b. l-a-s frauen
 DEF-F-PL women

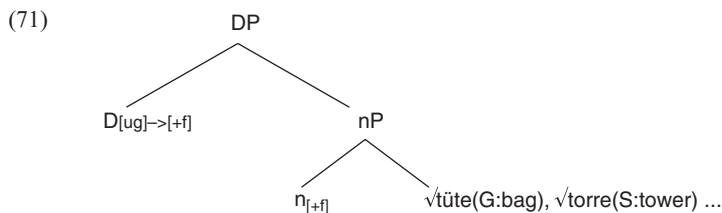
As we can see, there are some surprisingly unacceptable forms (examples (62), (63), (64), (69)) but some of the acceptable forms are surprising too, within a lLex framework.

Here is the gist of the analysis that I develop in Section 5.4.3. Consider the list of rules in (51). By looking at this list, we can see that there are some German determiners that have the same gender structure as some Spanish ones. *Dem*, *ein*, *einem* all have only the feature $[-f]$, just like Spanish *el*. *Die*(3), *der*(6), *eine*, and *einer* just have the feature $[+f]$. We can predict that the German $[-f]$ and $[+f]$ determiners should all be interchangeable with the corresponding Spanish determiners. On the other hand, some German determiners have a more complex gender structure than Spanish determiners: *der*(1), *das*, *den*(4), *einen* are all $[-f, \pm m]$. This feature composition is too rich to fit a syntactic terminal that has only a $[\pm f]$ feature. Thus, we can predict that these German determiners cannot take a Spanish *n* as a complement.

5.5.3 Analysis

Now we have all the ingredients to study the code-switching data presented in González-Vilbazo (2005). Recall that we have two different structures for determiners, one with terminals for gender and number and another one with just one terminal for phi features. We also have the VIRs listed in (54). The goal is to exclude code-switching between a Spanish singular masculine noun and a German nominative or accusative definite determiner or a masculine accusative indefinite determiner, while allowing all the other combinations.

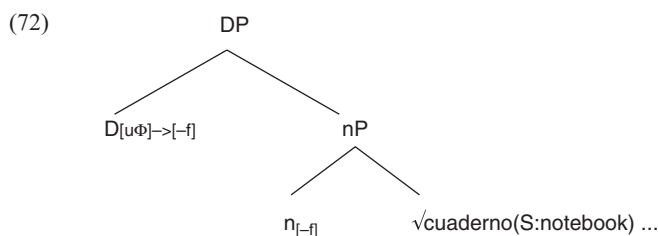
All the feminine nouns, in either direction, are always grammatical in code-switching. This is the structure of a feminine DP:



The example in (71) shows the morphosyntactic structure of a German noun like *tüte* ‘bag’ or a Spanish noun like *torre* ‘tower’. The *n* has a $[+f]$ feature, which values the unvalued gender of D after Agree. Let’s assume we have merged a “Spanish” D with two terminals $[D\ D, [ug], [u\#]]$. As a result of probing, we have a structure as follows: $[D\ D, [+f], [u\#]]$. This is the

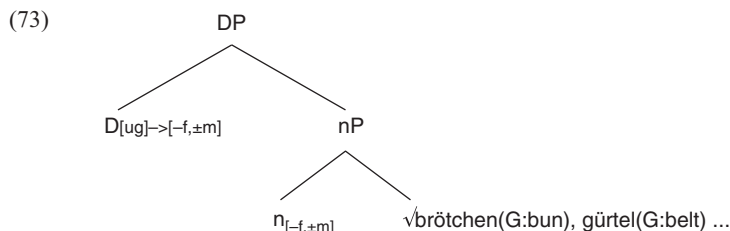
environment in which we can insert *la* or *una*, following VIR (54.5). Let's assume that we have merged a "German" D with only one terminal in (71), [D D, [uΦ]]. Then we have [D D, [+f]]. (54.5) cannot apply in the absence of a number terminal, and so one of the other rules to spell out [+f] must apply (54.9, 10, 11). The result is that code-switching between D and nP is always fine if the noun is feminine.

The case of German masculine and neuter definite determiners with a Spanish noun presents an interesting example of how the MDM in a lLex assumption works. Recall that a German definite nominative or accusative determiner does not collocate with a Spanish noun while a German dative determiner or a German indefinite determiner does. This is the relevant structure:



Let's assume we have merged a "German" determiner with only one terminal for ϕ -features, as shown in (72). The Spanish *n* in this structure only has a $[-f]$ feature, which gets copied onto the determiner. In this structure, vocabulary items that have a $[-f]$ feature can be inserted: German *dem* and *ein* (as well as the Spanish determiners), which are only $[-f]$ (see 51). Crucially, the determiners *der*, *das*, *den*, and *einen*, which have the more complex structure $[-f, +m]$ or $[-f, -m]$, are too specified. This accounts for the grammaticality of (65), (67), (68) and the unacceptability of (62), (63), (64), (69).

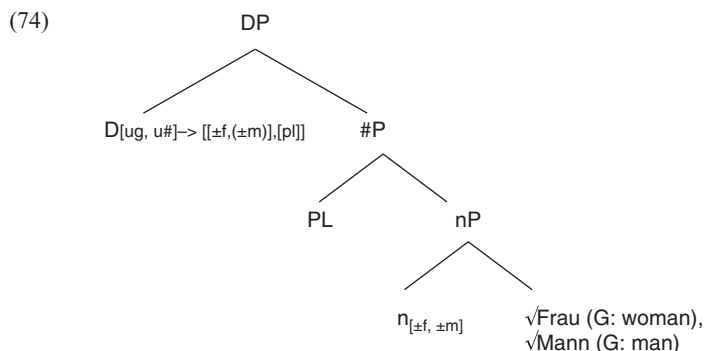
Let's now consider the case of the Spanish determiner with the German masculine or neutral noun. The syntactic structure of these examples is the following:



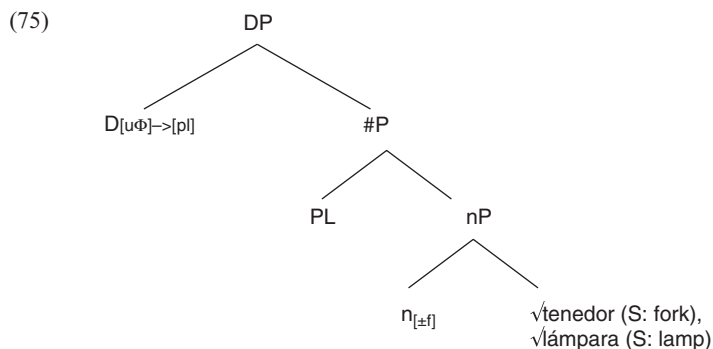
The *n* in this structure has the feature composition $[-f, +m]$ or $[-f, -m]$. This feature structure is copied onto D after Agree. Assume that a "Spanish D" has been merged, that is, a D with two terminals [D D, [ug], [u#]]. In this

configuration, the subset principle ensures that the Spanish exponent *el* can be inserted because *el* is only $[-f]$. The exponent *//* is not in competition with the German */d/* given the specificity of the environment with two terminals which ensures that *//* always beats */d/*. The German vocabulary items *der*, *das*, *den*, etc. can show up if we merge a “German” D with one terminal.

The same strategy can be applied to the plural forms in (70). Recall that code-switching between determiner and noun is always possible in the plural. The following is a possible structure, with a “Spanish” D with two terminals and a German noun:



The two terminals can probe separately and agree with Number and with *n*. The Spanish exponents *las* and *los* fit right in. *los*, whose gender feature is only $[-f]$, can be inserted thanks to the subset principle once again. Thus, we have the acceptable *las frauten* and *los männer*. Consider now the option of a “German” D, with only one terminal and a Spanish noun:



The unique ϕ -probe of D finds Number and copies its plural feature, without probing any further. The result is the acceptable *die tenedores* ‘the forks’ or *die lámparas*.

The only data presented by González-Vilbazo that I have not yet discussed involves genitive case. In German, determiners can inflect for genitive case. When that happens, code-switching with a Spanish noun is not possible:

- (76) * ein-es tenedor
 INDEF-GEN fork

It is not immediately obvious why this is the case (and González-Vilbazo provides no analysis either). One possible approach is the following. Genitive case in German triggers concord on the noun (which does not continually spell out):

- (77) ein-es Mannes
 INDEF-GEN man.GEN

This genitive morpheme on the noun should probably be regarded as a dissociated morpheme sprouted and cliticized after syntax. Quite possibly, the unacceptability of (76) comes about because Spanish nominal exponents do not accept such a dissociated morpheme.⁵

5.5.4 Discussion and Precedents

The analysis of the Esplugisch data shows how we can construct an integrated system within a MDM framework and design it in such a way that even very intricate restrictions can be accounted for without appealing to separate lists. Of some interest is the fact that determiner exponents with poor feature structure can be inserted in a syntactic terminal with a richer feature structure (subset principle) while exponents with a rich structure cannot be inserted in terminals with a poor structure. That is, we have *el brötchen* ‘the bun’, where the Spanish determiner with only a $[-f]$ feature can be inserted in a terminal with features $[-f, \pm m]$ while we also have that a determiner with a $[-f, \pm m]$ feature composition cannot be inserted in a terminal that only has the $[-f]$ feature, as in *der interruptor* ‘the switch’. This is an insight that is elegantly derived from the MDM principles and the 1Lex hypothesis; as far as I can tell, it would not be easily accommodated in a lexicalist framework, particularly one that takes a 2Lex hypothesis as a starting point.

Before I close this section, I need to refer to two previous analyses that have approached this same data.

González-Vilbazo (2005) introduced these data to the community as well as a wealth of data and analyses of Esplugisch. The analysis he developed is similar to mine in that it uses feature structures to account for the compatibility of determiners and nouns in the two languages. His model is lexicalist: instead of using DM, he proposes an algorithm to introduce determiners and spell them out, with results very similar to a DM approach. However, he does not assume

1Lex; rather, Spanish and German determiners are defined as such in the lexicon and the DP is therefore defined as a German or Spanish DP.

DenDikken (2011) also briefly approaches the Esplugisch data, within a DM framework that is very similar to mine. However, his choice of feature structures for the German articles lead him to wrong results. First, he is interested in capturing the fact that *die* appears both as singular feminine and as plural for all genders (see the tables in (49) and (50)). He claims that this is a phenomenon of syncretism and the German article *die* has no plural or gender feature. This may work well to describe the grammar of a German monolingual, but it does not do so well for a bilingual German/Spanish speaker because the Spanish article *la*, specified with gender, would always beat the German *die*. In order to circumvent this problem, he proposes that the structure of the Spanish DP includes an extra functional category Gender and therefore *die* and *la* are never in competition (although, as far as I can tell, this structural difference is not fully justified). Second, he defines *das* as simply [–f], which makes it equivalent to *el*. However, this would predict that **das cuaderno* should be grammatical, which is not (as he himself acknowledges). Although entirely in the right track in the general approach, DenDikken's approach is inadequate in the details of the analysis.

5.6 Conclusions

This section on gender has provided additional arguments to discard a 2Lex approach to code-switching and embrace the integrated MDM system instead.

With regard to the Basque data, a separationist approach to bilingual grammar cannot account for the fact that Basque words that end in /a/ can be merged with Spanish feminine determiners. This can only be approached within a system in which there is a unique set of List 2 rules and not two separate ones. Likewise, the Spanish/English code-switching is also incompatible with a 2Lex theory. A 2Lex theory incorporating borrowing as separate from code-switching such as that in MacSwan (1999, 2000 i.m.a.) cannot account for the impossibility of **[ðə meɪsə]* or **el mesa*. The Nahuatl/Spanish data discussed in MacSwan (1999) receives a natural analysis within 1Lex assumptions, while the analysis proposed by MacSwan within a 2Lex framework conflicts with what we know of other code-switching data. Finally, the apparently intractable Esplugisch data has turned out to be quite amenable to the framework presented here.

The analysis of earlier analyses gave us additional context. In particular, the contrast between the current framework and Pierantozzi (2012) showed us that the 1Lex approach is tied to the independently supported hypothesis that gender arises in a syntactic structure and is not an inherent feature of a noun.

This chapter is aimed at showing that the 1Lex MDM framework is capable of accounting for code-switching data emerging from different language pairs. This is a novel feature, since all previous work had concentrated on one language pair and had designed analyses tailored to this language pair without making sure that the analyses presented were consistent with other known databases.

Having said this, gender assignment and gender concord remain active fields of research in code-switching and will remain so for the foreseeable future because all work to date – including this chapter – has only scratched at the surface. For instance, Cocchi and Pierantozzi (2017) investigate gender concord outside the noun phrase with relative pronouns or participles, obtaining intriguing results, such as the one exemplified in (78):

- (78) German/ *Italian*
 Das Haus è *stat-a dipint-a*.
 The(n) house(n) is been-_F painted-_F
 (In Italian: *casa(f)*)
 ‘The house has been painted.’

At least some of their consultants, accepted sentences in which the German DP would trigger normal gender concord within the DP but then would trigger agreement on the participle following the analogical gender strategy. Food for thought.