5. A MINIMALIST APPROACH TO CODE SWITCHING

The approach to code switching pursued in this dissertation is minimalist in two respects. First, it restricts considerations to the minimal theoretical apparatus necessary to explain the facts of language mixture, as discussed in section 5.1. Second, and consistent with this basic assumption, it appeals to an explanation of the code switching facts within the general framework of Chomsky (1995a), as pursued in sections 5.2, 5.3 and 5.4.

5.1 Code Switching on Minimalist Assumptions

The earliest accounts of the grammar of code switching were strictly descriptive, cataloguing boundaries such as those listed in Table 1 (page 68). Poplack (1980) was among the first to attempt a more principled account, as discussed in section 2.2.2.1. Some have criticized Poplack's work as a "third grammar" approach (Mahootian, 1993), one in which an external, regulating principle governs code switching. Some of the other approaches reviewed in chapter 2 also might be regarded as "third grammar" approaches, despite the widespread belief among researchers on code switching that the correct approach will make no appeal to apparatus outside UG or the relevant mixed grammars (Woolford, 1983; Belazi, Rubin and Toribio, 1994).

The central, leading aim of Chomsky's (1995a) minimalist program is the elimination of all mechanisms that are not necessary and essential on conceptual grounds alone; thus, only the *minimal* theoretical assumptions may be made to account for linguistic data, privileging more simplistic and elegant accounts over complex and

cumbersome ones. These assumptions would naturally favor accounts of code switching which make use of independently motivated principles of grammar over those which posit rules, principles or other constructs specific to it. The idea that no code switching-specific mechanisms may be admitted is also consistent with views expressed in most current work on code switching, and I shall pursue this idea here as well. In general terms, this research program may be stated as in (1), where the minimal code switching-specific apparatus is assumed.

(1) Nothing constrains code switching apart from the requirements of the mixed grammars.

Notice that (1) does not imply that there are no unacceptable code-switched sentences. In (1), *constrain* is used in its technical sense in syntactic theory, entailing that there are no statements, rules or principles of grammar which refer to code switching.[62]

A bit more concretely, (1) entails that we ignore differences between the identities of particular languages for the purposes of linguistic theory. The language faculty (and associated learning principles) is a generating function which selects a particular language L*x* or L*y* (... L*n*), given input from L*x* or L*y* (... L*n*). Thus, the value of L determined by the language faculty crucially may not be a construct in linguistic theory; its value is derived, *determined* by the theory of grammar (and associated learning principles). Hence, while distinctions like "Spanish," "French," "English" and "Berber" are meaningful for many interesting questions of language use, they do not enter into the

[62]Of course, (1) itself is not a statement or principle of grammar. It is a research agenda.

apparatus of syntactic theory, and should play no role in an account of code switching (see §2.2.2.5).

Clearly, however, there are language-particular requirements; in the minimalist program, these are taken to be represented in morphology. An explanation of grammaticality in code-switched sentences must therefore appeal to mechanisms motivated to account for grammaticality in monolingual sentences, or appeal to conflicts in the requirements of the mixed languages (that is, conflicts in their parametric settings), or to other factors independently motivated for linguistic theory.

Our conception of such conflicts is very much determined by our conception of the organization of the grammar. In classical GB Theory, parametric differences were generally assumed to be properties of the computational system. For instance, noting that some subjacency violations of the English variety are acceptable in Italian, Rizzi (1982) proposed that the bounding nodes for the Subjacency Principle are parameterized (NP and IP in English, NP and CP in Italian). Similarly, Hyams (1986) proposed the *Pro*-Drop Parameter, a mechanism of the computational system which specified whether a language could drop subjects (Spanish, Italian) or not (English, German). On this conception of parametric variation, in which the computational system itself differs between languages, it is very difficult to know how a *conflict in language-specific requirements* should be precisely defined. In an Italian-English mixed construction, for instance, what determines whether the sentence will be sensitive to IP or CP as a bounding node for the purposes of the Subjacency Principle? The answer depends upon

which computational system is in use (Italian or English), and it is very unclear what factors should determine this for a bilingual.

Indeed, in this conception of parametric variation, in which parameters consist of language-specific, or even construction-specific rules, it comes as a surprise that switching between languages is even possible. Consider, for instance, a case involving *contradictory* requirements, such as the branching parameter of earlier models (set to *left* or *right*). It should be impossible to take the union of such grammars, because under union the branching parameter could not have a setting. Similar remarks hold for a number of other conceivable non-lexical parameters. Thus, with respect to the non-lexical parameters of earlier models, we must either assume that the two languages are compartmentalized, making switching impossible, or a "control structure" is required which mediates between them. The latter maneuver, as I will show in sections 5.2.2 and 5.3, is unnecessary and therefore, on general principles of economy and elegance, incorrect.

However, if we assume that the computational system is invariant across languages, and that parameters are part of the lexicon which the computational system uses to build up larger structures, then the question of which particular language system is in use is answered straightforwardly. Each lexical item introduces features into the derivation, and these features must be checked. Languages differ with respect to their feature matrices, as set by experience. The language faculty need pay no attention to the sociopolitical identity of words (our associations of *tree* with "English" or of *árbol* with "Spanish"). It only knows that these lexical items have features which enter into the

derivation, and that these features must be checked; when features mismatch, or when uninterpretable features cannot be checked, the derivation crashes, whether the set of lexical items is associated with one particular language or two (or more). Thus, in the minimalist program, a *conflict in language-specific requirements* is just a conflict involving lexical features, and the interface of distinct "languages" is trivially solved.[63]

However, as Chomsky (1995a) emphasizes, the nature of the syntactic rule system responsible for mapping N→λ is "radically different" from the system which takes N→π. We assume no linguistic variation in the syntactic computation; the same operations apply to lexically-encoded features to derive observable differences between particular languages. However, unlike syntax, PF rules vary cross-linguistically, and have different orders (or rankings) with respect to one another--orders which also vary cross-linguistically (Bromberger and Halle, 1989). Thus, for reasons having to do with the structure of the PF computation, switching at PF may indeed be impossible. I will return to this possibility in section 5.2.2 and beyond.

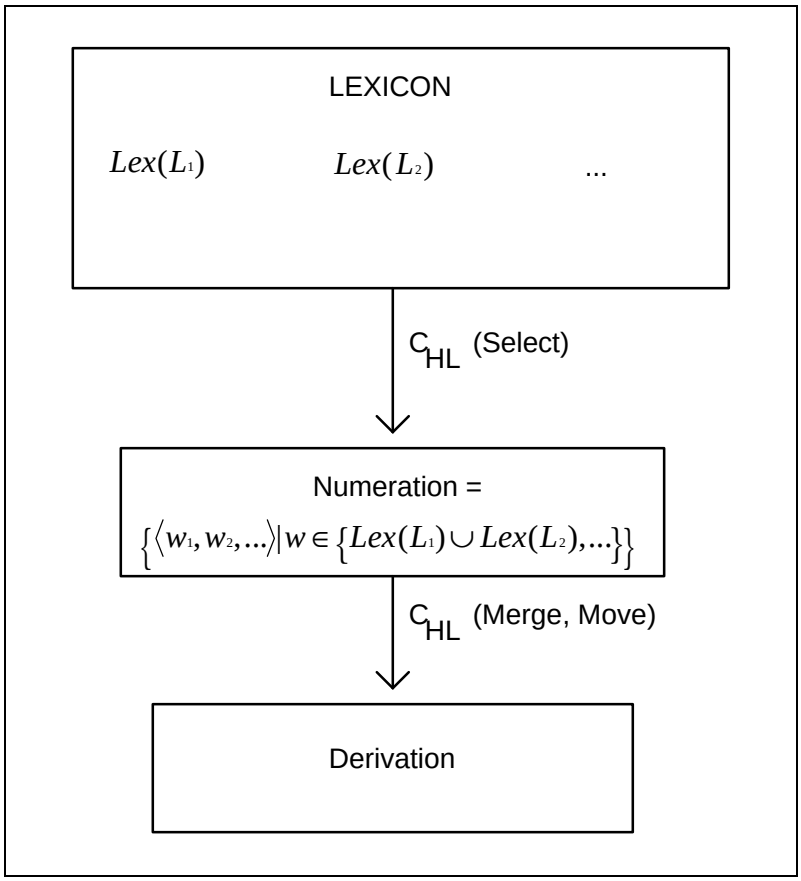
The proposed model is represented graphically in Figure 8 below (with questions of the PF component postponed). $Lex(L_1)$ is the lexicon associated with one of the mixed languages, $Lex(L_2)$ with another. Again, it is of no importance to the syntax whether a lexical item is "Spanish," "French," "Nahuatl," or whatever, apart from the characteristics of its feature matrices. The computational system (C_{HL}) selects new items

[63]Based on Borer (1983), Finer (1990) makes a number of observations similar to those I have made in this section; based on language mixture and other facts, he argues for a modular grammar in which parameters are strictly lexical.

from the lexicon and places them into a numeration from which a derivation is then constructed by further application of C_{HL}. The numeration constructed in this way may be made up from elements of one or both lexicons, as expressed in (2).

(2) Numeration = $\{\langle w_1, w_2, ...\rangle | w \in \{Lex(L_1) \cup Lex(L_2), ...\}\}$

Figure 8: Code Switching on Minimalist Assumptions



If all of the lexical items in the numeration happen to have been drawn from either $Lex(L_1)$ or $Lex(L_2)$ (not both), then the expression will be monolingual; if the lexical items are drawn from both $Lex(L_1)$ and $Lex(L_2)$, then the expression will be an example of bilingual code switching. Its well-formedness depends on whether its

features match, whether it is a monolingual or a bilingual expression. In addition, there is in principle no bound on the number of languages which may be mixed into a linguistic expression in this way.

The basic idea that a code switch is unacceptable when the respective grammatical systems clash in some way is at the heart of much of the work reviewed in section 2.2.2, especially that of Poplack (1980, 1981), Mahootian (1993) and Belazi, Rubin and Toribio (1994). However, as I argued there, none of these proposals properly characterize the nature of these grammatical clashes. That, however, is largely due to the fact that a theory with extremely rich lexical requirements which move far beyond the encoding of simple categorial information was previously unavailable. The crucial advantage of minimalist grammars for the study of code switching is precisely this: On this approach, the lexicon has much richer requirements than in earlier models, requirements rich enough to generate clause structure, and language-specific requirements may be concretely related to particular lexical items.

In this dissertation, I pursue an explanation of the code switching facts in terms of conflicts in the lexical requirements of words which are independent of code switching-specific mechanisms. In section 5.2, I examine the Spanish-Nahuatl corpus reported in chapter 4, and in section 5.3 I attempt to extend my conclusions to findings that have been reported in other corpora.

5.2 The Spanish-Nahuatl Corpus

Before analyzing the data in chapter 4, I will briefly discuss the implications of the Spanish-Nahuatl data for the theories of code switching reviewed in section 2.2.2 of

the literature review, evaluating their empirical predictions in terms of the data collected. All of the Spanish-Nahuatl examples presented in this section are repeated from chapter 4; however, for ease of exposition, the examples have been renumbered (with references to the relevant subsections of chapter 4 provided).

5.2.1 The Spanish-Nahuatl Corpus on Other Theories

Poplack's (1980, 1981) approach predicts that (a) a code switch will not occur at the boundary of a bound morpheme, and (b) a code switch is allowed between constituents only if the word order requirements of both languages are met at S-structure for those constituents (see section 2.2.2.1). Although it is sometimes difficult to know whether a morpheme is bound or free, numerous examples presented in chapter 4 appear to indicate that (a) is false. In (3a), *nik-* is indisputably a bound morpheme, as is *ki-* in (3b) (see sections 4.1.12 and 4.2.10 for other examples). Thus, the operative principle which governs code switching cannot be Poplack's Free Morpheme Constraint.

(3a) Ne nik*amar*oa in Maria
ne ni-k-amar-oa in Maria
I 1S-3Ss-love-VSF IN Maria
'I love Maria'

(3b) Mo*tratar*oa de nin ki*rescatar*oa n Pocajontas
mo-tratar-oa de nin 0-ki-rescatar-oa in Pocajontas
REF-treat-VSF about this 3S-3Os-escape-VSF IN Pocahontas
'It deals with Pocahontas, the one who escaped.'

Also note that (3) might be examples of borrowings rather than code switches. In section 5.3.1.7, I will return to Poplack's approach and address some of these issues, modifying the analysis of (3) suggested here.

Poplack's idea that a code switch is allowed between constituents only if the relevant word order requirements of both languages are met at S-structure (her Equivalence Constraint; see section 2.2.2.1) appears to be empirically incorrect. In (4) and (5), switches occur between a subject pronoun and a verb, both in their correct S-structure position for both languages, yet one example is ill-formed and the other well-formed (see section 4.1.10). The operative principle involved in code switching could not therefore be Poplack's Equivalence Constraint.

(4) *Tú *tikoas tlakemetl*
tú ti-k-koa-s tlake-me-tl
you/SING 2S-3Os-buy-FUT garment-PL-NSF
'You will buy clothes'

(5) Él *kikoas tlakemetl*
él 0-ki-koa-s tlak-eme-tl
he 3S-3Os-buy-FUT garment-PL-NSF
'He will buy clothes'

Other counter-examples appear in sections 4.1.4, 4.1.6, 4.1.7, 4.1.9, and 4.1.11.

Joshi's (1985) account predicts that a switch into the "embedded language" may not occur at the boundary of a closed-class item (see section 2.2.2.2 for discussion). However, in (6) and (7), a switch into the embedded language occurs at the boundary of a determiner (*in* and *el*), a closed class item, yet the constructions are well-formed. Joshi's constraint could not therefore be the operative principle governing code switching.

(6) Arrancó *in* vestido *non de Maria*
arranc-ó in vestido non de Maria
pull-PAST/3Ss IN dress which of Maria
'She pulled on Maria's dress'

(7) Okipipitzo *el hermano de Maria*
o-0-ki-pipitzo el hermano de Maria
PAST-3S-3Os-kiss the brother of Maria
'Maria's brother kissed her'

Other possible counter-examples may be found in sections 4.1.1, 4.1.4, 4.1.6, 4.1.8, 4.1.11, and 4.1.12.

Di Sciullo, Muysken and Singh (1986) proposed an anti-government condition on code switching, claiming that a code switch cannot occur where a government relation holds (see section 2.2.2.3). In GB Theory, subjects are assumed to receive nominative case from the Infl node under government. Thus, any acceptable sentence in which a subject DP occurs with a verb from another language will serve as a counter-example to this claim. Similarly, in GB Theory objects receive accusative case under government by a verb, so a code switch between a verb and its object likewise falsifies this claim. Examples (5) and (7) therefore count as counter-examples to this approach, as do the sentences in (8) and (9), showing that Di Sciullo, Muysken and Singh's system does not capture the operative principles which govern code switching.[64]

(8) Mi hermana *kitlasojtla in Juan*
mi hermana 0-ki-tlasojtla in Juan
my sister 3S-3Os-love IN Juan
'My sister loves Juan'

(9) Okipipitzo *al hermano de Maria*
o-0-ki-pipitzo a-el hermano de Maria
PAST-3S-3Os-kiss PRT-the brother of Maria
'He kissed Maria's brother'

[64]In section 5.2.2.1, I analyze the object in (9) as an adjunct. If this is the correct analysis of (9), it would not count as a counter-example to Di Sciullo, Muysken and Singh's theory. However, other examples presented here suffice to show that their approach could not be correct.

Other possible counter-examples appear in sections 4.1.10, 4.1.11, 4.1.13, and 4.2.6.

In Mahootian's (1993) approach, properties of syntactic heads determine the position of their complements (section 2.2.2.4). This theory is much more about word order in code switching than it is about well-formedness; however, Mahootian's approach additionally suggests that code-switched constructions will be well-formed so long as the basic selectional requirements of heads have been met. Nonetheless, in (10), although the Nahuatl verb *nikneki* selects a tensed IP complement, satisfied by Spanish *compraré,* the mixture results in an ill-formed construction (§4.1.3).

(10) *Nikneki *compraré ropa*
ni-k-neki compr-aré ropa
1S-3Os-want buy-1Ss/FUT clothing
'I want to buy some clothes'

Similarly, in (11), although the basic selectional requirements of the Spanish verb *veo* have been met, the construction is ill-formed (§4.1.11).

(11) *Veo (a) *in ichpochtle*
veo (a) in ichpochtle
see/3Ss/PRES (a) IN girl
'I see the girl'

The contrast captured in (4) and (5) is also problematic for Mahootian's system. In fact, any ill-formed construction in which a switch occurs between a head and its complement will constitute a counter-example to her approach. Thus, Mahootian's approach does not properly characterize the operative principles involved in code switching either. Other possible counter-examples appear in sections 4.1.4, 4.1.5, 4.1.6, 4.1.7, 4.1.9, 4.1.10, and 4.1.11.

Belazi, Rubin and Toribio (1994) claim that a code switch may not occur between a functional head and its complement (see section 2.2.2.5). Although there is some controversy as to what should count as a functional head, fairly uncontroversial[65] cases are elements of categories D, C, Agr, T and Neg. Therefore, the clearest counter-examples in chapter 4 to Belazi, Rubin and Toribio's approach might be those in which a switch occurs between a determiner (such as Nahuatl *in* or *se*) and its NP complement; two such cases are (6), repeated here as (12a), and (12b) (§4.1.7). In (13), a switch occurs between Neg and its VP complement, another case that Belazi, Rubin and Toribio's approach predicts to be ill-formed, contrary to the facts (§4.1.4).

(12a) Arrancó *in* vestido *non de Maria*
arranc-ó in vestido non de Maria
pull-PAST/3Ss IN dress which of Maria
'She pulled on Maria's dress'

(12b) Se *hombre* kikoas se kalli
se hombre 0-ki-koa-s se kalli
a man 3S-3Os-buy-FUT a house
'A man will buy a house'

(13a) Amo *estoy* tekititoc
amo estoy tekiti-toc
not be/PRES/1Ss work-DUR
'I'm not working'

(13b) Amo *le dije*
amo le dije
not DAT.CLITIC tell/PAST/1Ss
'I didn't tell him'

[65]Of course, D, C, Agr, T and Neg are not clear cases of functional heads to those who deny that functional categories exist. See Stabler (1997b) for discussion.

Other possible counter-examples, involving elements whose status as functional heads is less clear, may be found in sections 4.1.2, 4.1.4, 4.1.6, 4.1.8, 4.1.11, and 4.2.8. However, the cases provided certainly suffice to show that Belazi, Rubin and Toribio's empirical generalizations are incorrect, and their analysis certainly flawed.[66]

Finally, the speech-planning proposals reviewed in section 2.2.2.6 claim that the matrix language defines the position of content words and functional elements. Counter-examples to this proposal may be sought in any ill-formed code-switched construction in which the content words and functional elements are in the position required by the matrix language.[67] In (14) and (15), all of the words are in the position required by the matrix language, yet (14) is ill-formed and (15) is not; (15) differs only in that it lacks Nahuatl-appropriate agreement morphology, a surprising fact (§4.1.3).

(14) *Estoy *nitlajtohtoc*
estoy ni-tla-toh-toc
be/PRES/1Ss 1S-INDEF-speak-DUR
'I'm speaking'

[66]Although I will not take up the topic here, some of the examples of Spanish-English code switching in Belazi, Rubin and Toribio (1994) are spurious. For instance, none of the Spanish-English bilinguals I have consulted agree that the complementizer *que/that* must be in the language of the complement clause, as these authors claim. Also, contrary to their claims, English determiners may often precede Spanish nouns: The *borracho* who came to dinner yesterday *se tomó toda la tequila* ('The drunk who came to dinner yesterday drank all the tequila'). See section 5.3.1.4 for further discussion of these cases.

[67]The matrix language is the one which *dominates* in some sense. Myers-Scotton (1993b: 68). adopts "a frequency based criterion" to distinguish the matrix language from the embedded language, the matrix language being the one which contributes "more morphemes" to the expressions (Myers-Scotton, 1993b: 68). I return to Myers-Scotton's Matrix Language Frame (MLF) model in section 5.2.2.1 in connection with an analysis of Spanish-Nahuatl pronominal code switching.

(15) Estoy *tlajtohtoc*
estoy tla-toh-toc
be/1Ss INDEF-speak-DUR
'I'm speaking'

Other counter-examples to this approach may be found in sections 4.1.4, 4.1.6, 4.1.9, 4.1.10, 4.1.11, and some additional discussion occurs in 5.2.2.1. However, the cases presented here suffice to show that the speech-planning approaches do not correctly characterize the operative principles governing code switching.

We are now in a position to answer some of the research questions posed in chapter 3, specifically, those which ask of each code switching theory reviewed in section 2.2.2 whether or not it accounts for the Spanish-Nahuatl data presented in chapter 4 (questions (2c)-(2e)). As we have seen, the Spanish-Nahuatl corpus holds counter-examples for each of the models reviewed. In the next section, I will attempt to develop an analysis of the Spanish-Nahuatl data consistent with the goals of section 5.1.

5.2.2 An Analysis of the Data

Given the general assumptions of the minimalist program, sketched in section 2.4.3, and the research framework outlined in section 5.1, my strategy in the present section will consist in locating language-specific conflicts in the feature specifications of functional categories as a way of explaining the grammaticality judgments on the data in chapter 4. For ease of exposition, the data in chapter 4 is tackled by theme.

5.2.2.1 Pronouns and Agreement Morphemes

Chapter 4 reported an interesting asymmetry in grammaticality judgments on constructions involving a switch between a subject pronoun and a verb (§4.1.10): A

switch between a Spanish pronoun and a Nahuatl verb may not occur for first or second person; third person switches, however, are well-formed.

(16) *Yo *nikoas tlakemetl*
yo ni-k-koa-s tlake-me-tl
I 1S-3Os-buy-FUT garment-PL-NSF
'I will buy clothes'

(17) *Tú *tikoas tlakemetl*
tú ti-k-koa-s tlake-me-tl
you/SING 2S-3Os-buy-FUT garment-PL-NSF
'You will buy clothes'

(18) Él *kikoas tlakemetl*
él 0-ki-koa-s tlak-eme-tl
he 3S-3Os-buy-FUT garment-PL-NSF
'He will buy clothes'

(19) Ella *kikoas tlakemetl*
ella 0-ki-koa-s tlake-me-tl
she 3S-3Os-buy-FUT garment-PL-NSF
'She will buy clothes'

As noted in section 2.2.2.7, it has frequently been reported that a code switch between a subject pronoun and its predicate is not allowed. Jake (1994) points out that the code switching data often do not agree on this point, with some corpora indicating no conflict and others indicating marked unacceptability. In (16)-(19), the examples show variation in acceptability within a single corpus, where person appears to be the offending characteristic.

Jake (1994) approaches this problem in the literature by breaking up the class of pronouns into four distinct functional categories, as illustrated in (20), according to whether they function as system or content morphemes.

(20a) *Discourse-emphatic pronouns*
Me, I wouldn't do it for all the money in the world.

(20b) *Dummy pronouns*
It seems that he is somewhat conservative.

(20c) *Indefinite pronouns*
Somebody wants to go.

(20d) *Personal pronouns*
Me, *I* wouldn't do it for all the money in the world.

The category of a pronoun is determined by language-specific properties in Jake's system. For instance, personal pronouns in languages like Spanish are system morphemes because (a) they may be null and (b) they occur in argument position. Relating this situation to Myers-Scotton's (1993b) Matrix Language Frame (MLF) Model, reviewed briefly in section 2.2.2.6, Jake (1994) argues that the available code switching data attest the soundness of Myers-Scotton's (1993b: 83) System-Morpheme Principle, stated in (21), where ML refers to a matrix language and EL refers to an embedded language.

(21) *System-Morpheme Principle*
In ML + EL constituents, all system morphemes which have grammatical relations external to their constituent (i.e. which participate in the sentence's thematic role grid) will come from the ML.

It is difficult in Myers-Scotton's system to know which language counts as the matrix language and which as the embedded language since she adopts "a frequency based criterion" to differentiate these, the matrix language being the one which contributes "more morphemes" to the expressions (1993b: 68). A complication arises with the stipulation that the ML may change even within a single conversation. This difficulty in clearly defining the ML is a severe empirical weakness, with contradictory predictions depending upon which language is identified as the ML.

Nonetheless, while Jake (1994) provides a rich and fascinating review of code switching data, it is clear that the MLF Model will not help with respect to the data in (16)-(19). In both Spanish and Nahuatl, personal pronouns should be system morphemes, since in both languages these are assigned to argument positions. Moreover, the ML in (16)-(19) should be Nahuatl, on Myers-Scotton's frequency-based definition of ML, yet the system pronouns in (18) and (19) come from Spanish, violating the System-Morpheme Principle in (21). The only way to save the System-Morpheme Principle in light of the Spanish-Nahuatl data is to define the ML as Spanish for (18) and (19) and as Nahuatl for (16) and (17), hardly a credible maneuver.

However, some linguists have classified Nahuatl as a "pronominal argument language," a possible alternative which may help Jake's analysis. Following Jelinek (1984), Baker (1996) assumes that case is absorbed by agreement morphemes in polysynthetic languages like Nahuatl, making such morphemes the true arguments (or *system morphemes*) and making pronouns adjuncts. However, this proposal is not especially helpful to Jake (1994) and Myers-Scotton (1993b), since the subject pronouns in the Spanish-Nahuatl examples above are from *Spanish*, and are therefore system morphemes, and the ML is Nahuatl (still a violation of the System-Morpheme Principle).

However, putting the MLF Model aside, there may be syntactic insights worth considering in Baker's (1996) approach, insights that might help explain the facts in (16)-(19). Modifying Jelinek's (1984) and Baker's (1996) approach to conform to a more thorough-going feature-driven system, we might assume that in Nahuatl the functional category D (which heads pronouns) lacks a case feature, and that for this reason case may

be absorbed by Nahuatl agreement morphemes[68] (as English *-en* and Spanish *se* are thought to absorb case; see Jaeggli (1982, 1986)). As for Spanish, however, we assume that D requires case, as expected.

Now, before proceeding with this line of thought, notice that the subject agreement morpheme is null for the third person in Nahuatl, but is *ni-* for first person and *ti-* for second person, as may be observed in (16)-(19). This asymmetry is precisely the opposite of what one finds in English, where *-s* marks third-person agreement but the first and second person are null.

Pollock (1994) suggests, following Kayne (1989), that there is no null person suffix -ø which contrasts with *-s* in English. Pollock uses this morphological asymmetry to account for two interesting syntactic puzzles of English, the inflection puzzle, first noticed by Jaeggli and Hyams (1993), and the causative puzzle:

(22a) John goes to talk to his advisor every day.
(22b) *John goes talk to his advisor every day.
(22c) I/you go to see a movie every Tuesday.
(22d) I/you go see a movie every Tuesday.

(23a) John made Mary leave
(23b) Mary was made to leave
(23c) *Mary was made leave

[68]Here I assume that the traditional "subject agreement morphemes" of Nahuatl verbs are in fact agreement morphemes, not clitics. If this assumption is correct, then, according to Zwicky and Pullum (1983), we will be further committed to the view that traditional object agreement morphemes are agreements too, since "clitics can attach to material already containing clitics, but [agreement] affixes cannot" (504). However, there is reason to believe that distinguishing between agreement affixes and clitics may be misguided (Luján and Parodi, 1996; Everett, 1996; Ura, 1996). For my purposes, it is sufficient to regard them as agreement morphemes without giving special attention to the status of clitics.

Pollock (1994) accounts for these contrasts by assuming that English verbs undergo LF checking only if they are marked with an agreement morpheme whose features require checking; otherwise the element remains in situ (at LF and PF).[69] In this respect, Pollock claims, uninflected verbs in English are like the bare forms used in infinitival constructions.

Assuming Jelinek and Baker's system, (16) and (17) may be analyzed as ill-formed because the pronouns cannot get case (put differently, the [case] feature of Spanish D cannot be satisfied). In (19), however, there is no third-person agreement morpheme to absorb case, leaving case assignment open for Spanish *él* and *ella* in (18) and (19) and explaining the judgments presented.

While this analysis satisfies the requirements of our research agenda (derives the facts from nothing external to the relevant grammars), there are a number of shortcomings. First, if case has not been absorbed by the absent agreement morpheme in (18) and (19), such that it may be assigned to Spanish *él* and *ella*, then it must also be

[69]Pollock's approach leaves an important question unanswered. Specifically, on his account, there is no obvious way to bar **He like Mary* in English or **Ne kikoas tlakemetl* 'I buy/3Ss cloths' in Nahuatl. The subject checks its case and φ-features in [Spec, TP], but the bare verbs *like* and *kikoas* do not raise for LF checking; hence, no conflict in features should be detected and these constructions should be well-formed, contrary to the facts. Pollock (personal communication) has suggested that this relationship is perhaps mediated in the VP shell before subject or verb extraction, perhaps involving some condition on lexical insertion. Indeed, with respect to similar issues in other data, Shütze (1997: 113-114) posits the Accord Maximization Principle (AMP) which requires that a derivation have a maximal number of agreement and case features: "Among a set of convergent derivations *S* that result from numerations that are identical except for uninterpretable phi- and case-features, such that the members of *S* satisfy other relevant constraints, those members of *S* where the greatest number of Accord relations are established block all other derivations in *S*." Thus, while *He like Mary* and *Ne kikoas tlakemetl* are convergent derivations, they are blocked by *He likes Mary* and *Ne nikoas tlakemetl*, other convergent derivations with maximal accord morphemes. I will return to this topic in section 5.2.2.4 where AMP is used to account for Spanish-Nahuatl code switches involving duratives.

available in (24), a well-formed monolingual Nahuatl expression; but *ye* in (24) cannot check the case feature according to the present hypothesis.

(24) Ye kikoas tlakemetl
ye 0-ki-koa-s tlak-eme-tl
(s)he 3S-3Os-buy-FUT garment-PL-NSF
'(S)he will buy clothes'

If, for some reason, the case feature does not need to be satisfied in (24), then we are back to square one, with no explanation for the acceptability of (18) and (19) in which the Spanish pronouns presumably receive case. Assuming that case assignment is "optional" in (18)-(19) and (24) may save the analysis, but it does so at a tremendous loss of empirical force.

There are other problems with Baker's (1996) proposals as well, at least with respect to modern Nahuatl. As mentioned, Jelinek's (1984) basic idea, incorporated into Baker's (1996) polysynthesis parameter, is that subject and object agreement morphemes absorb case, forcing all NPs to be adjuncts in polysynthetic languages. Nahuatl, like Mohawk and other languages Baker considers, fits the definition of a polysynthetic language (Baker, 1996: 17-20; also see section 2.5.1), and should therefore adhere to the polysynthesis parameter posited in Baker (1996) (that is, Baker's system predicts that Nahuatl should behave like Mohawk, with all NPs always in adjunct positions).

Baker (1996) surveys six syntactic differences between English and Mohawk which are said to follow from the assumption that all NPs in polysynthetic languages are adjuncts. However, I will limit my attention here to just one of Baker's tests, namely, the behavior of nonreferential quantified NPs in polysynthetic languages.

A central concern, of course, is the nature of quantification in these languages. If Baker's analysis is right, then quantifiers, like all other NPs, may only occur in adjunct position, coindexed to the agreement morphemes which serve as the true (θ-marked) arguments of the verb. Thus, these quantified NPs are *dislocated*.

As Baker mentions, Rizzi (1986) has observed that quantified NPs cannot be left-dislocated in Italian, as examples in (25) show.

(25a) *Nessuno, lo conosco in questa citta.
'Nobody, I know him in this city.'

(25b) *Tutto, lo diro' alla polizia.
'Everything, I will say it to the police.'

Rizzi (1986) posits (26) as a condition on quantifier binding at LF.

(26) A pronoun cannot be locally bound by a quantifier.

Rizzi (1986) further posits that the constructions in (25) are ill-formed because the pronouns cannot be interpreted as variables bound by the dislocated NPs since, he claims, every quantifier must bind (c-command and co-index) a trace in argument position.

On Baker's hypothesis, all NPs are adjoined to IP (=S) and coindexed with a null pronoun (*pro*) and are therefore like the constructions in (25). For this reason, this system predicts that "true quantified NPs are impossible" in polysynthetic languages, which, according to Baker, is precisely what is found in Mohawk and other languages he surveys, where no word like English *every* is available. Rather, Mohawk uses *akwéku* 'all' instead, a word with very different properties.

However, while Nahuatl, like Mohawk, indeed lacks a word for *every* (just as Spanish and many other *analytic* languages do), virtually every modern variety of

Nahuatl has borrowed Spanish *cada* 'each,' providing a salient counter-example to the claim that polysynthetic languages lack nonreferential quantified NPs.[70] Consider (27), where *cada tlakatl* occurs in subject and object positions.

(27a) Cada tlakatl okipipitzo in isiwa
cada tlaka-tl o-0-ki-pipitzo in i-siwa
each man-NSF PAST-3S-3Os-kiss IN 3SPOS-wife
'Each man kissed his wife'

(27b) Ye kitlasojtla cada tlakatl
ye 0-ki-tlasojtla cada tlaka-tl
(s)he 3S-3Os-love each man-nsf
'(S)he loves each man'

Since these constructions are well-formed, *cada tlakatl* could not be an adjunct here. It follows that NPs may be arguments in Nahuatl.

Baker also considers disjoint reference effects, the behavior of anaphora, interrogative constructions, CED effects, and weak crossover effects. Nahuatl behaves differently from Mohawk with respect to some of the properties he discusses, while a number of *analytic* languages behave the same as Mohawk with regard to some of them. In other words, there is no one-to-one relationship between polysynthetic languages and these properties, suggesting that no single parameter (no macroparameter, such as a polysynthesis parameter) is responsible for the cluster of effects Baker surveys. Also problematic for Baker's claim is the fact that word order is relatively fixed in modern Nahuatl, as discussed in section 2.5.3; this observation undermines general plausibility

[70]Beghelli and Stowell (1997) treat *every* and *each* as alike in all respects, with the exception that in their system *every*, unlike *each*, raises to [Spec, RefP] instead of [Spec, DistP] just in case it lacks the feature [+Distributive]. This accounts for the different scopal properties of *each* and *every* but does not compromise Rizzi's (1986) analysis of the constructions in (25).

for the claim that subjects and objects are adjuncts in this language, originally motivated by the assumption that Nahuatl word order is highly flexible. I therefore conclude that Nahuatl does not have the property that all NPs must be adjuncts. (See MacSwan (1997) for further discussion.)[71]

Our account of the facts in (16)-(19) must therefore assume a much more traditional phrase structure for Nahuatl, one in which NPs are (usually) in argument position. In addition, in keeping with the research agenda outlined in section 5.1, an approach which depends fundamentally upon feature checking should be developed. Thus, we might assume that the basic conflict in (18) and (19) resides in features of T, since T is the functional projection which occurs between the pronoun and V.

In Chomsky (1995a), it is assumed that T may be drawn from the lexicon with ϕ-features attached; this assumption, together with a theory which allows for multiple specifier positions, provides for the elimination of Agr^O and Agr^S of earlier proposals. Moreover, ϕ-features have long been assumed to be closely tied to pronominals. In fact, Chomsky (1981: 330) claims that pronominals are *just* ϕ-features, with or without a phonological matrix:

[71]Potter (1997) shows that Western Apache exhibits several properties presumably characteristic of pronominal argument languages (absence of nonreferential quantified NP, lack of certain expected condition C effects, rich subject and object morphology in verbs, optional overt nominal arguments, internally headed relative clauses, and discontinuous constituents); however, he demonstrates by using a variety of facts on negation, modal uncertainty, focus, and *wh*-constructions that Western Apache overt nominals *must* be in argument positions, implying that the six phenomena noted in Baker (1996, chapter 2) cannot be considered "characteristic" of pronominal argument status, and must therefore have alternative non-pronominal argument analyses.

> Assume that there is some set of grammatical features ϕ that characterize pronouns; i.e., pronouns are distinguished from overt anaphors and R-expressions in that the grammatical features of pronouns are drawn soley from ϕ, whereas overt anaphors and R-expressions have some other grammatical features as well. ....
>
> A pronominal has no grammatical features other than ϕ-features, and may or may not have a phonological matrix.

Everett (1996) uses this idea to argue that individual ϕ-features (person, number, gender, and case) are primitives in the human lexicon, inserted (and "stacked") under D and Agr^O. He surveys an impressive range of languages, and points to numerous fascinating cross-linguistic facts which defend his basic thesis. In Everett's system, the phonological shape of a particular set of ϕ-features is determined by "postlexical or precompiled spell-out rules" (3). In a thorough-going minimalist model, such a rule would presumably be a language-specific PF rule, one which takes (for instance) the configuration [D^{max} [D^0 ϕ-features]] (Everett's definition of a pronoun) to *he* in English, just in case ϕ = {+third person, +singular, +masculine, +nominative}.

At least two important problems arise here, however. First, the relevant PF rule must be sensitive to categorial information ([D^{max} [D^0], in the example given), and it is sometimes assumed that rules operate at the phonetic interface with no regard for syntactic information, and that syntactic rules operate with no regard for whether a

constituent is phonetically empty or not.[72] This "independence of grammar" represents a long-standing tradition in generative grammar (see Chomsky (1957: 2-17) and (1995a: 229); indeed, Bouchard (1984) and Stabler (1997a) have emphasized that the stipulation of rules which depend on these considerations seriously undermines the empirical force of linguistic theory.

However, perhaps more important for topics in the study of bilingualism, addressed in this dissertation, is the problem of matching a PF rule for language L, triggered by the structure [D^{max} [D^0 ϕ-features]], to a phonological matrix associated with L. In other words, assuming that the structure [D^{max} [D^0 ϕ-features]] appears in [Spec, TP] (or whichever position) by Spell-Out, where ϕ = {+second person, +singular, ±masculine, +nominative}, what determines that a bilingual will apply a PF rule for Nahuatl (to get *te*) and not for Spanish (to get *tú*)? The answer clearly matters, as the contrasts in (16)-(19) indicate. If a phonological matrix is not associated with a structure such as [D^{max} [D^0 ϕ-features]], then Everett's system will be of little help in analyzing the pronominal facts in (16)-(19).[73]

[72]Everett's (1996: 11) spell-out rules "may refer only to phi-features and lexical properties," which he takes to imply that a spell-out rule "never sees more than one node at a time" so that "purely configurational features ... never have a phonological reflex." However, in his system, the difference between pronouns, clitics and affixes is (often) just the difference between the syntactic category (or syntactic position) of their ϕ-features. While categorial information is lexically specified, it is specifically syntactic information, and should not be visible at PF if syntax and phonology are believed to be fully independent of one another.

[73]Although I do not adopt it, later developments in this section make Everett's system compatible with (16)-(19) (see note 79, page 205).

Of course, there are other ways to represent the apparently very close relationship between T and the pronouns in its specifier position. As (28) illustrates, Nahuatl and Spanish pronouns differ from one another in two salient respects.

(28) Nahuatl and Spanish nominative (S) and accusative (O) pronouns[74]

Nahuatl pronouns				*Spanish pronouns*		
PERSON	*1S*	*2S*	*3S*	*1S*	*2S*	*3S*
SING	ne	te	ye	yo	tú	él (m) ella (f)
PLURAL	tehwa	nomehwa	yehwa	nosotros (m) nosotras (f)	ustedes *or* vosotros (m) vosotras (f)	ellos (m) ellas (f)
PERSON	*1O*	*2O*	*3O*	*1O*	*2O*	*3O*
SING	ne	te	ye	mí	ti	él (m) ella (f)
PLURAL	tehwa	nomehwa	yehwa	nosotros (m) nosotras (f)	ustedes *or* vosotros (m) vosotras (f)	ellos (m) ellas (f)

Nahuatl pronouns do not overtly mark either a nominative/accusative (case) distinction or a masculine/feminine (gender) distinction, while the Spanish paradigm includes morphological markings for both. This observation is not restricted to the pronominal system: the absence of overt case and gender markings is a general property of Nahuatl DPs, while Spanish DPs are always overtly marked for gender but not for case. I will assume, then, that either case or gender plays a role in an analysis of (16)-(19). Below I explore accounts in terms of each alternative.

As (28) shows, Nahuatl pronouns do not differ with respect to overt accusative and nominative case markings. We might assume that languages differ typologically in this regard, with DPs in languages like Nahuatl bearing a simple CASE feature, while

[74]In Table (28), *m* and *f* denote "masculine" and "feminine" respectively; Latin American Spanish uses *ustedes* instead of the *vosotros* form of Spain.

Spanish and English DPs have the features CASE(ACCUSATIVE) and CASE(NOMINATIVE). If this is correct, then children acquiring a language should begin with an essentially morphologically uniform pronominal system, adding more detail (ACC and NOM) when positive evidence is encountered (in accordance with the Subset Principle).[75] Although the facts are complicated cross-linguistically, children appear to do precisely this (Radford, 1990: 203-205).[76]

If something like this is correct, then the presence of a Spanish pronoun indicates that T has been drawn from the lexicon with the features relevant for Spanish -- CASE(NOMINATIVE), not CASE. Otherwise the features of T and the raised DP would mismatch and the derivation would crash.

As Suñer (1994) points out, Spanish also requires that verbs move overtly, as in French (compare Pollock (1989)). As evidence for this, consider the relative positions of the verb *jugar (juega, jugaba)* 'play' and the VP-level adverb *limpio* 'clean' in her examples presented in (29).

(29a) Juan *juega limpio* a las cartas (todos los días).
'Juan plays clean at cards (every day)'

(29b) *Jugar* Juan *limpio* a las cartas es una contradicción.
'For Juan to play clean at cards is a contradiction.'

[75]Hyams (1995) develops the idea that child grammars differ from adult grammars due to "underspecification" in functional categories. If such underspecifications are attested in adult grammars, as I have proposed here for Nahuatl case, then we might think of the (possible) grammars which children select as related one to another in terms of a subset relation among elements of their feature matrices. See Stabler (1997b) for a detailed and technical discussion of the consequences of minimalist grammars for learnability theory.

[76]Although children begin with default case settings, in some instances they acquire morphological case distinctions extremely early. See Shütze (1997: §3.2.2) for some interesting discussion.

(29c) Aunque *jugaba* Juan *limpio* a las cartas, siempre ganaba.
Although played Juan clean at cards, he always won.

Spanish subjects may either remain in [Spec, V^{max}] or raise to [Spec, TP], deriving the well known SV/VS flexibility of Spanish. In (29b) and (29c), the verb *jugar* (*jugaba*) has moved past the VP-internal subject *Juan* to adjoin to T by head-movement.

By contrast, Nahuatl verbs appear to move covertly, like English verbs. Consider the examples in (30), parallel to Pollock's (1989) original French/English adverb tests.

(30a) In Juan nochipa kipipitzoa Maria
in Juan nochipa 0-ki-pipitz-oa Maria
IN Juan often 3S-3Os-kiss-VSF Maria
'Juan often kisses Maria'

(30b) *Juan kipipitzoa nochipa Maria
in Juan 0-ki-pipitz-oa nochipa Maria
IN Juan 3S-3Os-kiss-VSF often Maria
'Juan kisses often Maria'

Nahuatl adverbs pattern with English, as shown in (30), suggesting that the verb undergoes covert movement to T, contrasting with the overt movement requirements placed on Spanish verbs.

Now, recall Pollock's (1994) analysis of English verb morphology, in which he claimed that first- and second-person morphemes, rather than being empty, as is commonly assumed, simply do not exist, allowing an account of the interesting asymmetries in (22) and (23). As in English, assume that Nahuatl third-person agreement morphemes, being null, do not exist, and thus the verb does not undergo LF checking.

These facts may now suggest a solution to the puzzle in (16)-(19). As stated, the presence of Spanish pronouns in (16)-(19) suggests that T has the feature composition of

Spanish T, not Nahuatl T; otherwise the constructions would be ill-formed since the formal features CASE and CASE(NOMINATIVE) do not match. In (16) and (17), the presence of the subject agreement morpheme triggers movement of the verb to T; however, a conflict arises: Spanish T requires overt movement, while the Nahuatl verbs in (16) and (17) need to move covertly. We might propose that the strength of the features mismatch, and so the derivations crash. By contrast, in (18) and (19), the verb never raises to check its features since it has no subject agreement morpheme, and these derivations would therefore converge.

Some important questions arise in connection with the implementation of checking theory used in this account, however. Pollock's (1994) analysis of English verbs in (22) and (23) assumes that V in these constructions does not undergo LF checking, hence does not move to check its features with T. This analysis, extended here to Nahuatl bare forms in (16)-(19), appears to conflict with Chomsky's (1995a: 308) conclusion that a derivation will crash if its -Interpretable features are not checked. However, this conclusion may be evaded if we further assume, with Chomsky (1995a: 377), that "as T is drawn from the lexicon for the numeration, it too is optionally assigned ϕ-features." We assume, then, that Spanish T in (18) and (19) checks its case feature with the Spanish subject DP, but has no ϕ-features which require checking (it has been drawn from the lexicon without them). The Nahuatl verbs in these constructions, also lacking ϕ-features associated with a subject agreement morpheme, do not raise for LF checking. The derivation converges, with no unchecked features. In (16) and (17), however, a problem remains whether Spanish T has ϕ-features or not, as the data require:

the Nahuatl verbs either cannot check their ϕ-features (if T is selected without ϕ) or the weak φ-features of Nahuatl verbs mismatch the strong features of Spanish T (if T is selected with ϕ). Thus, (16) and (17) crash.

Chomsky (1995a: 309) uses the notion of feature "mismatch" to account for a range of facts, advancing the claim in (31).

(31) Mismatch of features cancels the derivation.

A canceled derivation is one for which a more optimal convergent derivation may not be considered: If features mismatch, further derivations are barred.[77] In the current analysis, I have so far assumed that the weak features of Nahuatl verbs *mismatch* the strong features of Spanish verbs, such that (16) and (17) do not converge.

While it is natural to regard "nominative" and "accusative" as a mismatch of case, the assumption that *strength* of a feature constitutes a mismatch will be problematic for later analyses (§5.3.1.8), and it is not a standard idea in the minimalist program. While the checker (T, in this case) is sensitive to whether an element moves covertly or overtly, the target of movement (V here) should not be. An analysis which avoids the notion that feature *strength* constitutes mismatch would therefore be preferred to this one.

Turning again to the Spanish-Nahuatl pronomials displayed in (28), assume that the languages actually differ in their feature matrices with respect to gender. This is a natural idea; its alternative, that languages like Nahuatl have covert gender markings, is

[77]Of course, "mismatch" is distinguished from "nonmatch." Nominative and accusative case mismatch, barring further derivations, but accusative case and categorial I "fail to match" so that further derivations may be considered (Chomsky, 1995a: 309).

highly implausible because it is unlearnable: there are no gender markings on Nahuatl DPs, so there is no way to know which DP is masculine and which feminine. I will assume, then, that Nahuatl gender is null, or one-valued, and that Spanish gender is two-valued (masculine, feminine).[78] Formally, this difference may be attributed to values of φ: for Spanish, φ = {person, number, gender}, but Nahuatl either has no gender feature or has a null gender feature (that is, ∅gender). The stipulation made earlier, that Nahuatl has no covert accusative/nominative distinction, may now be set aside as irrelevant.

A new account of (16)-(19) is now possible in terms of a mismatch in the Spanish and Nahuatl gender feature in φ. T in these constructions may only select a Spanish DP as its specifier if the φ-features of T match D's value for φ; thus, the presence of the Spanish pronouns in (16)-(19) indicate that T in these constructions has the Spanish values for φ, including ±gender, otherwise T and its specifier would mismatch in features. In (16) and (17), a subject prefix in the verb causes V to adjoin to T for feature checking. However, Nahuatl φ in V mismatches Spanish φ in T (more specifically, ±gender mismatches ∅gender) and the derivations are canceled, on (31). In the case of (18) and (19), again following Pollock (1994) with respect to English verb morphology, Nahuatl V does not undergo LF checking since it has no subject agreement morpheme. Since V does not enter into a checking relation with T (here drawn without ϕ-features),

[78]Other possibilities can be imagined. Perhaps Nahuatl just has *unmarked* gender, while Spanish has *marked* and *unmarked*. Many languages have a three-way gender system (German, Greek), so the Nahuatl gender feature might be neuter while the Spanish feature is masculine or feminine. Further investigation may lead to refinements; here, however, I will simply assume that the gender features of

[footnote continues on next page]

(18) and (19) converge. As before, a problem arises for (16) and (17) whether Spanish T has its optional ϕ-features or not: the Nahuatl verbs either cannot check their ϕ-features (if T is selected without ϕ) or the gender features mismatch with Spanish T (if T is selected with ϕ), again canceling (16) and (17).[79]

The approach developed here extends nicely to the code switching facts regarding object pronouns; Spanish object pronouns always make a Nahuatl construction ill-formed (§4.1.10), regardless of overt case marking:

(32) ??Niktlasojtla in *ella*
ni-k-tlasojtla in ella
1S-3Os-love IN her
'I love her'

(33) *Niktlasojtla *a ella*
ni-k-tlasojtla a ella
1S-3Os-love PRT her
'I love her'

(34) *Nimistlasojtla in *tí*
ni-mis-tlasojtla in tí
1S-2Os-love IN you/SING/ACC
'I love you'

(35) *Nimistlasojtla *a tí*
ni-mis-tlasojtla a tí
1S-2Os-love PRT you/SING/ACC
'I love you'

Spanish and Nahuatl are sufficiently different to cause a mismatch regardless of the setting of the Spanish feature (masculine, feminine).

[79]With the value of φ distinct for Spanish and Nahuatl, Everett's (1996) approach discussed earlier will now also derive these facts. For reasons stated, we assume that T is only compatible with Spanish pronouns if it has the right gender markings. Everett's insertion rules can now distinguish between Nahuatl and Spanish: [D^{max} [D^{0} ϕ-features]] is mapped to Spanish pronouns if the gender in φ is two-valued, mapped to Nahuatl if it is one-valued.

(36) *Titechtlasojtla in *mí*
ti-tech-tlasojtla in mí
2S-2Os-love IN me/ACC
'You love me'

(37) *Titechtlasojtla *a mí*
ti-tech-tlasojtla a mí
2S-2Os-love PRT me/ACC
'You love me'

(38) *Nimistlasojtla in *tú*
ni-mis-tlasojtla in tú
1S-2Os-love IN you/SING/NOM
'I love you'

(39) *Titechtlasojtla in *yo*
ti-tech-tlasojtla in yo
2S-1Os-love IN I/NOM
'You love me'

In (32)-(39), assume that Spanish T covertly selects an object pronoun as its specifier. If T has Nahuatl values for φ, the derivation will cancel since ±gender of φ in the Spanish pronouns mismatches ∅gender in Nahuatl φ. If T has Spanish values for φ, the derivations again will cancel when V raises to check its φ-features with T. In contrast with the subject cases, the derivations always cancel since the object agreement morpheme on the verb is always filled. Thus, there is no successful derivation for (32)-(39).

The facts I obtained regarding Spanish lexical DPs mixed with Nahuatl verbs are congruent with the analysis so far developed; these elements are always third person expressions, so they are predicted to be well-formed with Nahuatl verbs (§4.1.13), as the facts attest:

(40) Mi hermana *kitlasojtla in Juan*
mi hermana 0-ki-tlasojtla in Juan
my sister 3S-3Os-love IN Juan
'My sister loves Juan'

(41) Okipipitzo *el hermano de Maria*
o-0-ki-pipitzo el hermano de Maria
PAST-3S-3Os-kiss the brother of Maria
'Maria's brother kissed her'

However, (42) may be problematic for this analysis (§4.1.13). It suggests that a lexical object DP can occur with a Nahautl verb, barred by considerations above. However, it is reasonable to assume that the Spanish particle *a* (rather than the verb) in (42) assigns its patient θ-role to the object DP, much like English *by* assigns an agent θ-role to the subject. In other words, the object phrase in (42) is an adjunct in relation to the Nahuatl verb, just as an English *by*-phrase is an adjunct in its clause. Thus, (42) is acceptable because its object is not a true argument of the verb.

(42) Okipipitzo *al hermano de Maria*
o-0-ki-pipitzo a-el hermano de Maria
PAST-3S-3Os-kiss PRT-the brother of Maria
'He kissed Maria's brother'

The conclusion that Spanish DPs may not occur as objects of Nahuatl verbs is further strengthened by facts in (43) and (44) (§4.1.11); in (43), the Nahuatl object of Spanish *veo* 'see' makes the construction ill-formed, but additional inflectional material in (44) rescues the derivation. In section 5.2.2.2, I will discuss the interesting facts in (43) and (44) in more detail.

(43) *Veo (a) *in ichpochtle*
veo (a) in ichpochtle
see/3Ss/PRES (a) IN girl
'I see the girl'

(44) La veo *in ichpochtle*
la veo in ichpochtle
CLITIC see/3Ss/PRES IN girl
'I see the girl'

Note that there are no instances of Spanish lexical DPs as objects of Nahuatl verbs in the naturalistic data (§4.2).

Finally, the specific analyses developed here predict that Nahuatl subject pronouns should always render constructions with Spanish verbs ill-formed, since Spanish verbs are always marked for subject agreement. Unfortunately, I did not obtain ample data regarding the mixture of Nahuatl pronouns with Spanish verbs; the three cases I do have (§4.1.10, (115)-(117)) all involve the verb *tener* 'have' which has many idiosyncratic properties (Kliffer, 1983; Freezer, 1992; Kayne, 1993). In my sample, first person with *tengo* 'have' is slightly degraded, and second and third person are ill-formed. However, it seems as though more data involving other verbs are needed before a stronger conclusion may be drawn.

As it stands, the analysis further predicts that, other considerations aside, code switching between DPs (pronominal or lexical) and predicates in languages with like gender systems should be allowed, otherwise disallowed. As I will show in section 5.3.1.6, this prediction appears to be essentially correct.

The particular analyses pursued here are intended as an illustration of a research program for code switching. The analyses themselves will no doubt need to be revised as new, independent insights emerge. However, the current approach to the data in this section satisfies our basic requirement, expressed in 5.1, that the facts be accounted for

with no appeal to *ad hoc* mechanisms specific to code switching. The analyses developed here show that this goal may indeed be satisfied.

5.2.2.2 Clitics and Agreement Morphemes

Code switches between a Spanish verb and a Nahuatl direct object are not acceptable unless a Spanish clitic doubles the object, as in (46).

(45) *Veo (a) *in ichpochtle*
veo (a) in ichpochtle
see/3Ss/PRES (a) IN girl
'I see the girl'

(46) La veo *in ichpochtle*
la veo in ichpochtle
CLITIC see/3Ss/PRES IN girl
'I see the girl'

As reported in chapter 4, the consultants who produced the judgments shown in (45)-(46) do not speak a clitic-doubling variety of Spanish, such that (47) is acceptable but (48) is not (§4.1.11).

(47) Veo a la muchacha
veo a la muchacha
see/3Ss/PRES PRT the girl
'I see the girl'

(48) *La veo (a) la muchacha
la veo a la muchacha
CLITIC PRT see/3Ss/PRES the girl
'I see the girl'

We might briefly entertain the possibility that the object agreement morpheme *k-* in Nahuatl transitive verbs is an object clitic. Zwicky and Pullum (1983) present a number of tests to determine whether an element is a clitic or a morpheme, one of which is that once a clitic is attached to a verb, additional inflectional material may not be

added. If this is correct, then assuming Nahuatl object agreement morphemes to be clitics will have implications for the anlaysis in 5.2.2.1 where *ni-* and *ti-* (which attach to *k-*) are taken to be subject agreement morphemes. Others (Everett, 1996; Luján and Parodi, 1996) have argued that the distinction between clitics and object agreements is unimportant. If Nahuatl *k-* is a clitic, then Nahuatl is a clitic-doubling language.

Below I will review Sportiche's (1995a) recent approach to clitic-doubling phenomena, attempting to explain the facts exhibited in (45)-(46) in terms of the apparatus made available. The results of this analysis, together with a reconsideration of conclusions drawn in section 5.2.2.1 regarding (45)-(46), develop into a change of course away from the clitic analysis of these constructions.

Sportiche (1995a) attempts to reconcile two seemingly incompatible analyses of Romance clitic constructions which have appeared in the literature. Strozer (1976), Rivas (1977), Jaeggli (1982), Borer (1981), Sportiche (1983) and others have argued that clitics are base-generated in their surface position, whereas Kayne (1975, 1989) and Sportiche (1990) have argued that clitics move from object position to the position they occupy at surface structure.

Kayne's (1975) movement analysis is partly motivated by the complementary distribution between clitics and their associated XPs in French, as illustrated in (49). For Kayne (1975), the clitic moves from object position to Chomsky-adjoin to an appropriate verb in the tree.

(49a) Marie connaît Louis
Marie knows Louis

(49b) Marie le connaît
Marie ACC.CLITIC knows

(49c) *Marie le connaît (a) Louis
Marie ACC.CLITIC knows Louis

This analysis has been challenged on several grounds. First, Romanian, Greek and some varieties of Spanish violate the complementarity illustrated in (49):

(50a) L-am vazut pe Popescu (Romanian)
ACC.CLITIC-have/1S seen PRT Popuecu
'I saw Popescu'

(50b) Lo vimos a Juan (River Plate Spanish)
ACC.CLITIC saw/1Sp PRT Juan
'We saw Juan'

(50c) o Yiorghos tin-perimene [[tin Maria] na paraponiete] (Greek)
the George ACC.CLITIC-expected [[the Maria] SUBJ complain]
'George expected Maria to complain'

As Sportiche (1995a) points out, (50c) is especially problematic for Kayne's (1975) analysis since it exemplifies clitic doubling in a context (ECM) in which adjuncts are not generally tolerated.

Nonetheless, there are a number of very strong arguments in favor of a movement analysis of these constructions. In particular, clitics appear to behave precisely like other moved elements with respect to SSC effects, CED/ECP effects, and French participle agreement. Regarding the latter, note that the construction in (51b), a relative clause, behaves just like (51c), a clitic construction; (51a), on the other hand, requires the French feminine morpheme *-e* to be absent from the participle due to the presence of the DP *la porte*.

(51a) Jean a peint(*e) la porte
Jean has painted(FEM) the door
'Jean painted the door'

(51b) La porte que Jean a peint(e) *t*
'The door that Jean painted'

(51c) Jean l'a peint(e) *e*
Jean it has painted(FEM)
'John painted it'

In addition to the argument from clitic doubling, base-generation proponents have also put forward what Sportiche (1995a) calls the "lack of source" argument: clitics appear in constructions in which there is no corresponding DP-site from which they may reasonably be said to have moved. Two such constructions are the ethical dative shown in (52a) and the inherent clitic shown in (52b).

(52a) Je t'acheterais un cadeau à Pierre
I you-would-buy a present to Peter
'I tell ya, I would buy Peter a present'

(52b) Pierre en a bavé
Peter of-it drooled
'Peter suffered.'

In an effort to obtain a uniform analysis, proponents of a movement approach would be hard pressed to identify an extraction site for the clitics in question here.

Sportiche (1995a) also reviews a number of other interesting facts regarding clitics which I have not touched upon here. The overall picture, pre-analytically, is that clitic constructions behave strikingly like constructions involving movement on the one hand, and like elements which have been base-generated in their surface positions on the other hand.

Sportiche (1995a) reconciles these apparently incompatible views by assuming that the clitic is base-generated in its surface position and selects the object DP as its specifier. The basic insight, then, is that the object of the verb moves, not the clitic itself, thus explaining the range of facts favoring both of the previously contending analyses. Hence, on this account, the object DP moves into the specifier position of the clitic, a functional category heading its own projection, in order to check its agreement features of case, number, gender and person with the clitic.

Three parameters affecting language variation with respect to clitics emerge, then, on Sportiche's (1995a) analysis. These are shown in (53).

(53) i. Movement of XP* to XP^ occurs overtly or covertly[80]
ii. The clitic head is overt or covert
iii. XP* is overt or covert

Some effects of setting these parameters are given in the table in (54).

(54) *Some parametric variation in clitic constructions*

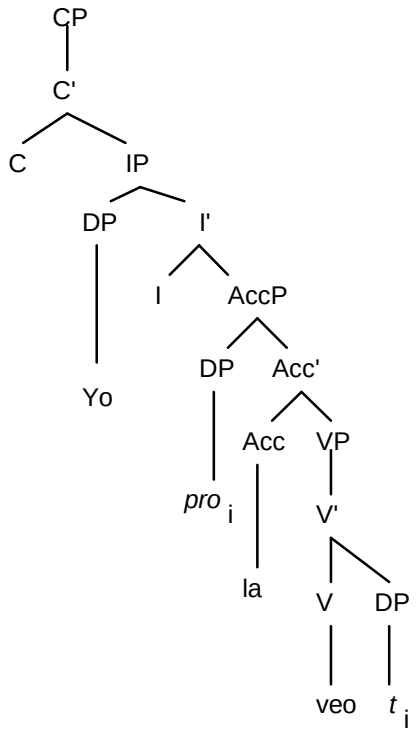
*mvt of XP**	*head*	*XP**	*typology*
covert	overt	overt or covert	clitic doubling languages (some Spanish, Romanian, Greek, ...)
overt	overt or covert	overt or covert	non-clitic doubling languages (most Spanish, French, Italian, ...)

Because it shares properties with pronouns, Sportiche (1995a) assumes covert XP* to be an instance of *pro* ([-anaphoric, +pronominal]). The structure of Spanish (55a) would therefore be something like (55b), where I have used Acc as the syntactic category for accusative clitics, specified as part of their lexical entries.

[80]As in other works, Sportiche uses XP* to refer to the D-structure position of XP and XP^ to refer to its S-structure position.

(55a) Yo la veo

(55b)



In Sportiche's system, movement of XP* is caused by the Clitic Criterion, an extension of the Wh-Criterion of Rizzi (1991) (May, 1985; Chomsky, 1986), where the feature [+F] represents a particular property which clitics license in XPs.

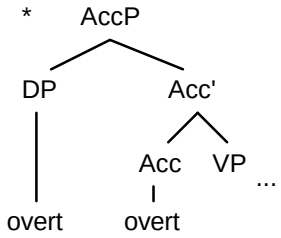
(56) *Clitic Criterion*
At LF
i. A clitic must be in a spec-head relationship with a [+F] XP
ii. A [+F] XP must be in a spec-head relationship with a clitic.

Sportiche develops the Doubly Filled Voice Filter in (57) as a principle of economy, a principle which Koopman (1996) has recently attempted to reconcile with the Doubly Filled Comp Filter and Kayne's (1995) Linear Correspondence Axiom (LCA). The function of (57) is to prohibit both a head and its specifier from being phonetically filled.

(57) *Doubly Filled Voice Filter*
*[$_{HP}$XP [H ...]]
where H is a functional head licensing some property P and both XP and H overtly encode P.

Thus, on (57), the configuration in (58) is barred.

(58)



In the case of undoubled Spanish constructions, XP* may be overt or covert (*pro*); if covert, this element may then move overtly to the specifier position of the overt head Acc, as required by (56), resulting in a configuration in which a covert DP is in the specifier position of an overt head, fine by (57). If XP* is overt, it may move overtly to the specifier position of a covert head, also a configuration licensed by (57).[81] However, note that an overt XP* moved overtly to the specifier position of an overt head results in a configuration like (58), so that constructions like (48) are correctly barred for these languages.

In clitic-doubling varieties of Spanish, however, the Acc head is always overt and XP*-movement always covert. If XP* is overt (a lexical DP), then covert movement of XP* to the specifier position of Acc results in a licit configuration, a covert specifier and an overt head. If XP* is *pro*, the same configuration results.

[81]Subsequent raising of V places the object in postverbal position.

Let us now review the facts under analysis.

(45) *Veo (a) *in ichpochtle*
veo (a) in ichpochtle
see/3Ss/PRES (a) IN girl
'I see the girl'

(46) La veo *in ichpochtle*
la veo in ichpochtle
CLITIC see/3Ss/PRES IN girl
'I see the girl'

A generalization for (45)-(46) might be that the Nahuatl DP requires a clitic doubled construction.

It is natural within a minimalist framework to relate the overtness or covertness of the movement of XP* in Sportiche's (1995a) system to the strength of φ-features in the Acc head. If Nahuatl *k-* is an accusative clitic, then its φ-features are weak. For most varieties of Spanish, φ-features in Acc are strong and movement of XP* to the specifier position of Acc is overt, as discussed. Furthermore, Spanish Acc has the property that it may be covert or overt, while Nahuatl Acc must be overt. On this view, whether or not a construction doubles should be strictly a property of Acc. However, in (46), the doubling is related to XP*, not Acc. On the theory developed here, then, (46) is predicted to be well-formed and (45) ill-formed, contrary to the facts.

Recall, too, the conclusion in section 5.2.2.1 that Spanish DPs with Nahuatl Vs conflict by virtue of a mismatch in their gender features. If the analysis presented there is correct, then no Spanish subject may occur in a construction with a Nahuatl verb if the verb bears a subject agreement morpheme (*ni-* first person, *ti-* second person), and no

Spanish object may occur in a construction with a Nahuatl verb. And vice versa: No Nahuatl DPs are allowed with Spanish verbs. The same considerations bar (45).[82]

But why should (46) be well-formed? If the DP in (46) is analyzed as an adjunct, then this construction should indeed converge. Spanish regularly allows clitic-right dislocation of this sort, as illustrated in (59).[83]

(59) Yo la vi, (a) la muchacha
I ACC.CLITIC see/PAST/1Ss, (PRT) the girl
'I saw her, the girl'

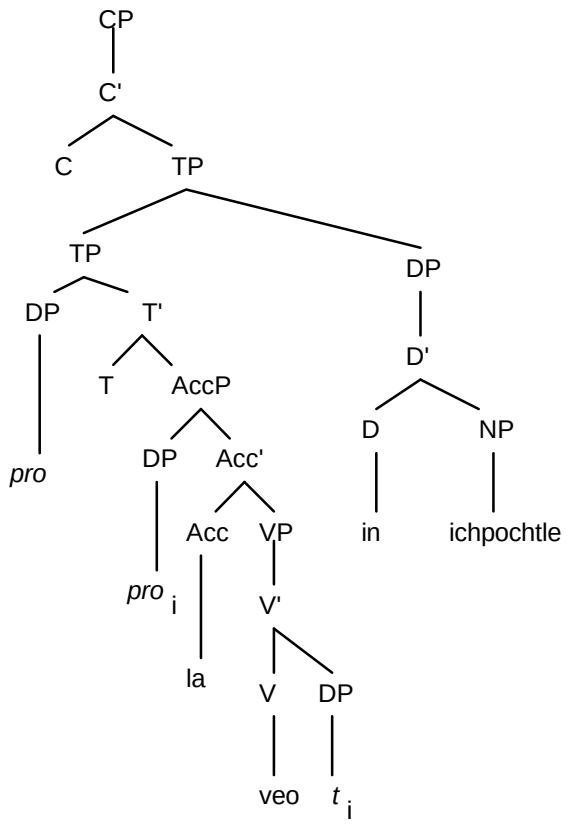
Nahuatl also allows dislocation.[84] The structure of (46) may be analyzed as (60), then, where *in ichpochtle*, as a non-argument, bears no structural agreement relation with any element in the tree. The clitic is required by the Spanish verb, as when no object DP is present.

[82]Following work by Chomsky (1995a) and Ura (1996), Luján and Parodi (1996) argue that clitic doubling constructions result from multiple feature checking phenomena. A doubled construction, then, is simply one for which features have been checked twice, once with the clitic head and once with T. However, this approach will also become problematic for my data, since the facts established in section 5.2.2.1 remain: a fundamental conflict in gender features prevents convergence when a Nahuatl object is mixed in with a Spanish construction.

[83](59) is due to Manuel Español-Echevarría.

[84]Indeed, dislocation is commonplace cross-linguistically for purposes of focus and contrast. Thus, the claim here that Nahuatl allows dislocation is not surprising, and it in no way suggests that Nahuatl *requires* all NPs to be adjuncts, as Baker (1996) argues. See section 2.5.3.

(60)



The representation in (60) respects Sportiche's economy principle stated in (57) since XP* is covert. In addition, it allows us to maintain the analysis in section 5.2.2.1 regarding gender and feature mismatch; some additional evidence for this view will be added in section 5.3.1.6.

5.2.2.3 Embedded Clauses

In section 4.1.2 we saw that Spanish verbs of speaking may take a Nahuatl CP complement, and that Nahuatl verbs of speaking may take Spanish CP complements, as expected from reports on other code switching corpora. Hence, consultants in the present study confirmed that the switches in (61) and (62) are licit (§4.1.2).

(61) Le dije *ke kitlasojtla in Juan sikpanoah*
le dije ke 0-ki-tlasojtla that in Juan sikpanoah
DAT.CLITIC PAST/1Ss/say that 3S-3Os-love IN Juan a.lot
'I told him that she loves Juan a lot'

(62) Onikili *que la quiere Juan*
o-ni-k-ili que la quier-e Juan
PAST-1S-3Os-say that ACC.CLITIC love-PRES/3Ss Juan
'I told him that Juan loves her'

Furthermore, Nahuatl, unlike Spanish, allows a null complementizer in this context; (63) suggests that a switch may occur between the complementizer and IP, contrary to the claims of Belazi, Rubin and Toribio (1994).

(63) Onikili *la quiere Juan*
o-ni-k-ili la quiere Juan
PAST-1S-3Os-say ACC.CLITIC love-PRES/3Ss Juan
'I told him Juan loves her'

These findings are not surprising on the assumption that each lexical item introduces features into the derivation which must be checked. The verbs in these constructions bear the selection feature [C] which is checked under merger with the CP complement.

However, switched IP complements are always ill-formed in the data presented in chapter 4. Consider, for example, (64)-(66).

(64a) *Nio (*a) ver (a) mi hermana*
ni-o (a) ver (a) mi hermana
1Ss-go (PRT) INF/see (PRT) my sister
'I'm going to see my sister'

(64b) *Nio *veo (a) mi hermana*
ni-o veo (a) mi hermana
1S-go PRES/1Ss/see PRT my sister
'I'm going to see my sister'

(65a) *Nikneki *compro ropa*
ni-k-neki compr-o ropa
1S-3Os-want buy-1Ss/PRES clothing
'I want to buy some clothes'

(65b) *Nikneki *compraré ropa*
ni-k-neki compr-aré ropa
1S-3Os-want buy-1Ss/FUT clothing
'I want to buy some clothes'

(66) ??Quiero *nikoas tlakemetl*
ni-k-neki ni-k-koa-s tlakemetl
1S-3Os-want 1S-3Os-buy-FUT clothing
'I want to buy some clothes'

From the perspective of phrase structure and selectional requirements alone, many of these judgments come as a surprise. The Nahuatl verb in (65b), for instance, selects a tensed IP complement, and [*compraré ropa*] is a tensed IP complement. Unlike examples (61)-(63), this Nahuatl construction will not tolerate a complementizer (see (67)), suggesting that the complement is indeed an IP, not a CP.

(67) *Nikneki ke nikoas tlakemetl
ni-k-neki ke ni-k-koa-s tlakemetl
1S-3Os-want that 1S-3Os-buy-FUT clothing
'I want that I will buy some clothes.'

The bar on a switch at V-V is even more surprising when other corpora are considered. This structure is widely reported to be ill-formed in mixtures from a variety of language pairs, a topic I will return to in section 5.3.1.2.

Considerable attention has been given to V-V sequences in the syntactic literature as well, sequences which Zwicky (1990) has called "intimate combinations." In particular, a specific subclass of verbs which enter into V-(P)-V configurations have been identified as *restructuring* or *verb-incorporating* (VI) verbs.

Rizzi (1982) analyzed Italian modals,[85] aspectuals and motion verbs as "restructuring" verbs as a way of accounting for (among some other peculiarities) the contrasts in (68)-(69).

(68a) Finalmente si comincerà a costruire le nuove case popolari
Finally *si* begin/FUT to build the new houses people/GEN
'Finally we'll begin to build the new houses for the poor.'

(68b) Finalmente le nuove case popolari si cominceranno a costruire
(Same as (68a).)

(69a) Finalmente si otterrà di costruire le nuove case popolari
Finally *si* get.permission/FUT to build the new houses people/GEN
'Finally we'll get permission to build the new houses for the poor.'

(69b) *Finalmente le nuove case popolari si otterranno di costruire
(Same as (69a).)

In Rizzi's (1982) analysis, *comincerà* 'will begin,' but not *otterrà* 'will get permission,' triggers an optional reanalysis of the form V*x* (P) $V_2 \Rightarrow$ V, where V*x* is a verb of the restructuring class, (P) an optional intervening preposition, and V_2 is the verb of the embedded sentence. This restructuring process is essentially a type of compounding. In (68) a reanalysis of the constituents allows the object of the embedded clause in an impersonal *si* construction to move to the subject position of the matrix clause; in (69) this promotion is barred because reanalysis cannot apply for *otterrà*.

Aspectual *essere* is used with a past participle in Italian passive impersonal *si* constructions. In constructions such as (70a), *essere* too may be viewed as a restructuring

[85]Rizzi (1983: 41, n5) uses the term *modal* "as a simple mnemonic label for a homogeneous, small class of main verbs," regarding them (in Italian) to be of the same lexical category as other Vs.

verb, allowing promotion of the embedded object to matrix subject position, shown in (70b).

(70a) Si è dato un regalo
si essere given a gift
'A gift is given.'

(70b) Un regalo si è dato
a gift *si* essere given
'A gift is given.'

On Rizzi's (1982) analysis, restructuring has applied to (70b) but not to (70a), forcing the promotion of [$_{NP}$ *un regalo*] in the former.

However, note that a very different pattern of judgments emerges when code switching is involved in (70). Consider the French-Italian facts in (71).[86, 87]

(71a) Si è *donné un cadeau*
si essere given a gift

(71b) **Un cadeau* si è *donné*
a gift *si* essere given

The movement of [$_{NP}$ *un cadeau*] suggests that reanalysis has occurred in (71b), just as it did in (70b). The verbal complexes are identical in (71a) and (71b): A mixture of the Italian aspectual auxiliary *è* immediately adjacent to the French past participle *donné*. Thus, the unacceptability of (71b) indicates that restructuring correlates with the ban on language mixture in V-V sequences.

[86]The data and judgments in (70)-(71) are due to Anastella Vester.

[87]The examples in (71) may be structurally different from those in (68) and (69); however, as I will point out in section 5.3.1.2, a verbal particle such as *a* or *di* greatly improves code switching judgments in these constructions, so a code-switched example like (68) would not make the point that (71) does. While the structural difference may play a role with respect to Rizzi's (1981) original analysis (but see his note 7, page 41), it does not appear to do so for Roberts' (1997) recent account of this phenomenon.

Baker (1988) analyzes certain causatives, and Li (1990a) certain "serial verb" constructions,[88] on the assumption that V-V compounding is obligatory for the language data of concern in their respective analyses. Pollock (1994) analyzes English motion verbs *come* and *go,* as well as English causatives, as involving verb incorporation too, with still other morphological reanalysis available for idiolectic variation in these constructions. Accordingly, I will assume that verb incorporation (VI) is sometimes optional, sometimes obligatory, and sometimes unavailable, accounting for a range of linguistic variation. The Nahuatl verbs in (64)-(65), being verbs of motion, aspectuals and modals,[89] all fall within Rizzi's restructuring verb class. Therefore, given (71), I will assume that restructuring is obligatory in Nahuatl and accounts for the unacceptability judgments in (64)-(66). To explain (71), I assume with Rizzi (1983) that restructuring is optional in Italian. That Spanish *querer* 'want' in (66) is a restructuring verb is suggested by its ability to trigger clitic climbing (Rizzi, 1983):

(72) Lo quiero comprar
ACC.CLITIC want/1Ss buy/INF
'I want to buy it'

[88]Serial verb constructions might be quite different from restructuring constructions, but Campbell (1989) argues that serial verb constructions are similar to European perfective constructions (a type of restructuring, on Rizzi's analysis). Such constructions, which indeed share many properties with restructuring verbs, are analyzed in Li (1990a) and Collins (1997) under principles of θ-grid merger. Still, it seems that any application of these conclusions to code switching will necessarily be left with a generalization that languages cannot share inflectional material, an idea that will be developed in the remainder of this section.

[89]Like Italian, Nahuatl may not have modals per se; however, I will take *nikneki* 'want' to belong to this class of verbs, just as Rizzi (1983: 4) expressly includes Italian *volere* 'want.' See note 85 (page 221, this volume) for additional clarification.

In summary, the correct descriptive generalization regarding (64)-(66), as well as (71), appears to be (73).

(73) Languages cannot be switched in V-V compounds.

The remaining question is why. Below I will briefly review some treatments of the structure of restructuring configurations before developing an answer to this question.

Serial verb constructions, which might be regarded as a subclass of restructuring constructions, allow verbs to share objects and subjects, and they often require that only one of the verbal heads bear inflectional material. However, Schachter (1974) provides examples of verb serialization from Akan in which both verbal heads carry inflectional material:

(74) Me-yɛɛ adwuma me-maa Amma
1Ss-do work 1Ss-give Amma
'I work for Amma.'

In the Nahuatl examples, too, the verbs share a common subject. The matrix verb θ-marks the embedded clause while the embedded verb θ-marks its object; however, both verbs appear to bear some structural relation to the object DP much as in (74). Like (74), the Nahuatl example has full agreement on both verbs, as shown in (75).

(75) Nikneki nikoas tlakemetl
ni-k-neki ni-k-koa-s tlakemetl
1S-3Os-want 1S-3Os-buy-FUT clothing
'I want to buy something.'

Baker (1988) proposed that in VI constructions such as these the lower V climbs into the higher V position by cyclic head-movement through the C^0 of the embedded clause (but see Baker (1989) where the VP is analyzed as "doubly-headed"). Li (1990b) argues that these constructions may be derived by assuming that the complement of the

matrix verb is a VP. In these three approaches, the lower V moves to the higher V by head-movement, forming a V-V compound. In Rizzi's (1982) and Haegeman and van Riemsdijk's (1986) approaches to these constructions, the V-V sequence is merged by a syntactic reanalysis rule. Working primarily with German, Wurmbrand (1997) analyzes restructuring verbs as having complements which lack independent tense and subjects.

In a recent proposal by Roberts (1997), V-movement in Italian restructuring cases is governed by (76).

(76a) Head movement is copying.
(76b) *[$_{X0}$ W_1 W_2], where W_n are morphological words.
(76c) A head is spelled out in the highest position of its chain, subject to (76b).

In cases such as Rizzi's (68) and (69), on Roberts' analysis, the lower infinitival V_{inf} raises by head movement through Agr^S on its way to the lower T, there forming (minimally) [V_{inf} + T]; this complex incorporates to the higher restructuring verb V_R (by way of the embedded C^0) and continues up to matrix T. The conditions in (76b)-(76c) determine where these elements may be pronounced. In particular, since both Vs are "morphological words" (presumably, stems with inflectional affixes attached), (76b) bans both heads from being pronounced in the matrix V. Instead, V_{inf} is pronounced in its highest position prior to incorporation, at Agr^S of the lower clause (as required by (76c)). V_R is spelled out at the head of its chain, generally the matrix Agr^S.

Roberts further assumes that movement occurs to satisfy a checking relation between some formal features ([FF]). On this approach, the code switches in (64)-(66) might be analyzed as ill-formed just in case the values of [FF] mismatch or fail to be met in some way. However, as I will point out in section 5.3.1.2, the restriction against code

switching in VI configurations is attested in a wide variety of language pairs, nearly approaching a universal. The definition of [FF] would therefore have to be highly language-specific, approaching the spurious "language feature" rejected in section 2.2.2.5 and elsewhere. If independent justification is available, it may therefore be reasonable to relate this particular restriction to a component of grammar within the minimalist framework which remains highly language-specific, namely, the morphological component.

To accomplish this goal with respect to Roberts' system in (76), we need only make the plausible assumption that (76b) is a restriction within the *morphological* component of the grammar which is applied in the mapping to PF, not a constraint on syntactic movement. In fact, this is Roberts' (1997) idea; he regards (76b) to be "a condition on Spell-Out .... that dictates the upper limit of the morphological material that can be spelled out under an X^0" (426).

The need to restrict code switching at some morphological level is also related to Poplack's (1981) observations; she stipulated a ban on code switching between a root and a bound morpheme in such examples as (77a).

(77a) *Juan está *eat*-iendo
Juan be/1Ss eat-DUR
'Juan is eating.'

Notice similarly the severely degraded structures in (77b)-(77d).

(77b) *Juan *eat*-ó
Juan eat-PAST/3Ss
'Juan ate.'

(77c) *Juan *com*ed
Juan eat-PAST
'Juan ate.'

(77d) *Juan eat*ará*
Juan be/1Ss eat-FUT/3Ss
'Juan will eat.'

The idea that the morphological system is *different in kind* from syntactic operations is an important assumption in Chomsky's minimalist program. As he puts it, at the point of Spell-Out,

> ... the computation splits into two parts, one forming π and the other forming λ. The simplest assumptions are (1) that there is no further interaction between computations and (2) that computational procedures are uniform throughout: any operation can apply at any point. We adopt (1), and assume (2) for the computation from N to λ, though not for the computation from N to π; the latter modifies structures (including the internal structure of lexical entries) by processes very different from those that take place in the N → λ computation [Chomsky, 1995: 229].[90]

Elsewhere Chomsky (1995a) similarly comments that "phonology, unlike the rest of C_{HL}, is rule-based" and involves "processes very different from those that take place in the N→λ computation" (380, 229).

As a lexicalist model, the minimalist program assumes that morphologically complex elements like *walked* and *went* are stored in the lexicon along with features associated with their inflectional morphology (PAST and φ, in this case).[91] However, although these elements are stored whole in the lexicon prior to selection into the

[90]π is PF (Phonetic Form), λ is LF (Logical Form), and N is the Numeration; see section 2.4.3.

[91]Note, for instance, the treatment of affix lowering/raising in chapter 1 of Chomsky (1995) (coauthored with Howard Lasnik).

numeration, standard arguments from the poverty of the stimulus suggest that principles of word formation (morphological rules) build them up. Otherwise the uniformity of inflectional morphology would be unexpected within languages, and over-generalizations (**goed*, **comed*) would not occur. Chomsky (1995a: 20) adopts the position that "processes internal to the lexicon (*redundancy rules*) form the word *walked* with the properties [walk] and [past] already specified." Thus, a morphological component must form items for the lexicon before they can be selected for the numeration (otherwise these will not have the relevant features required for convergence). Note that these morphological principles of word formation must be highly language-specific, capturing the *patterned differences* between languages (past tense is usually *-ed* on English verbs, usually *o-* on Nahautl verbs).

In addition, it is well known that certain phonological operations are sensitive to morphological affixation (Halle and Mohanan, 1985), suggesting that morphological structure is relevant to some rules or principles of PF. These post-syntactic operations in the PF component often refer to specific inflectional material, as demonstrated in work by Halle and Mohanan (1985) and Mohanan (1986). Indeed, Halle and Marantz (1993) place an additional level of representation, called MS (their "morphological structure"), between S-Structure and PF, and stress that MS serves as "the interface between syntax and phonology."

In addition, as Bromberger and Halle (1989) point out, phonological rules are ordered with respect to one another, and the orders of rules differ cross-linguistically. (In Optimality Theory, "constraints" are "ranked," or ordered in relative importance, and

these rankings vary cross-linguistically.) This fact, Bromberger and Halle (1989) argue, makes phonology crucially different from syntax.

There are other differences between syntax and phonology, but this particular difference is one which might be easily exploited to rule out code switching within the PF component. We have been assuming that code switching is formally the *union* of two grammars, captured in Figure 8 (page 179), where the numeration may draw elements from the union of two (or more) lexicons. Each lexical item imposes certain requirements on the derivation in terms of lexically-encoded features; syntactic operations need take no notice of what particular language a lexical item is associated with.

However, suppose that in a PF system PF_x rules are ordered such that R1 > R2 and R3 > R4, and suppose that in a PF system PF_y rules are ordered such that R1 < R2 and R3 < R4. Then the union of PF_x and PF_y ($PF_x \cup PF_y$) will have no ordering relations for R*n*. In other words, under union (code switching), the PF components cannot meet their requirement that they have (partially) ordered rules or constraints. I will take this formal property, then, to bar code switching at PF, stated succinctly in (78) as the PF Disjunction Theorem.

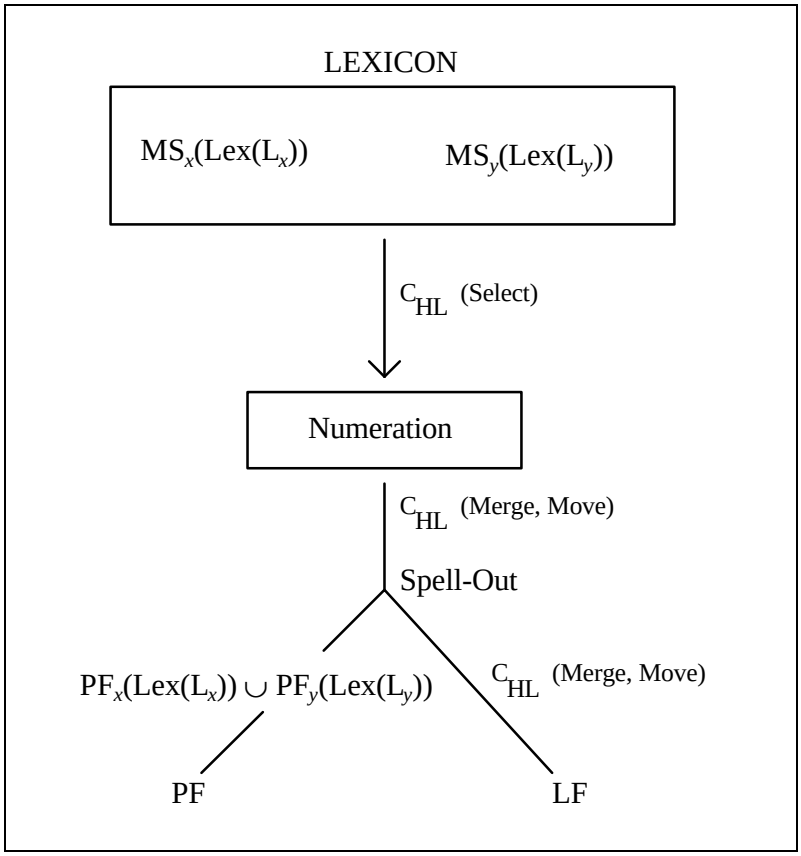
(78) *PF Disjunction Theorem*
(i) The PF component consists of rules which must be (partially) ordered with respect to each other, and these orders vary cross-linguistically.[92]
(ii) Code switching entails the union of at least two (lexically-encoded) grammars.
(iii) Ordering relations are not preserved under union.
(iv) Therefore, code switching within a PF component is not possible.

Because (78) may be deduced from independently discovered facts about the language faculty, it is termed a "theorem" rather than a "principle."

It appears, then, that a bilingual speaker has a grammar organized as in Figure 9, a slightly enriched version of Figure 8 (page 179). In Figure 9, $MS(Lex(L_n))$ is the lexicon of L_n after morphological principles of word formation have applied. PF, also sensitive to inflectional material, applies after Spell-Out, but its application is restricted to the "morphological words" (stems with affixal material) of its own system. Thus, in $(PF_x(Lex(L_x)) \cup PF_y(Lex(L_y)))$, $Lex(L_x)$ is the lexicon of language *x*, identified in terms of its inflectional material, and $Lex(L_y)$ is the lexicon of language *y*, also so identified. Both of the rule systems PF_x and PF_y may apply in the mapping of the derivation to PF, but they cannot apply to elements from each other's lexicons.

[92] Alternatively, within Optimality Theory, the PF component consists of constraints which must be *ranked* with respect to one another. Thus, (78) is not dependent upon a particular phonological framework.

Figure 9: A Bilingual Minimalist Grammar with Disjoint Morphological Components



Let us further assume, along with Chomsky (1995a), that X^0s are inputs to PF.

Now the facts in (64)-(66), as well as Poplack's observations regarding constructions in (77), follow straightforwardly. In the complex $[_{X0}\ W_1\ W_2]$, (76b) applies at PF. However, since elements cannot be mixed at PF, the result is ill-formed; an undefined term (affix) remains regardless of whether the complex is analyzed by PF*x* or PF*y*. Similarly, (77) is ill-formed because code switching occurs below X^0: the stem is

analyzed by the phonological system of PF_x but the morphological material belongs to PF_y.[93]

Once again, in the foregoing discussion and throughout, specific analyses presented for code switching data in this dissertation are intended to lend general support to the basic research agenda discussed in section 5.1. Refinements are surely necessary. However, as in previous sections, the facts addressed here have been explained by reference to independently motivated principles of grammar, including general properties of rule systems, suggesting once again that there are no statements of grammar specific to code switching constructions, as claimed in section 5.1.

5.2.2.4 Duratives

The facts in (79) are striking. Both Nahuatl and Spanish have durative constructions, as shown in (80); the Nahuatl version differs in that it does not use an auxiliary before the present participle as Spanish does (*estar* 'to be,' as in English). Also, the Nahuatl durative form ending in *-toc* requires appropriate agreement prefixes, as (80b) illustrates (*ni-*, in this case). However, (79) indicates that Spanish *estar* may use a

[93]Note that matters are different if the stem is borrowed into the language of the inflectional morphology. So, for example, *Juan eat-ó todo* sounds much better if pronounced with full Spanish phonology, with the verb produced as [itió]. It is almost impossible to pronounce the inflectional morpheme with Spanish phonology and the stem with English, unless a pause is inserted. We might imagine a variant of Spanish in which the English stem *eat* has been borrowed, allowing such constructions as *Juan iteó todo*, *Voy a itear ahora*, and so on. Such a variant would not be radically different from, say, Mexican Spanish expressions like *Necesito parquear mi coche* ('I need to park my car'), *Mi bicicleta no tiene brecas* ('My bike doesn't have brakes'), or *Voy a checar eso* (or in U.S. Spanish, *Voy a chequear eso*, 'I'm going to check this'). A similar analysis is possible for *yeka* in example (143) of section 4.2.2 (page 164): *Tlami yeka y estudio* 'And then I arrive and study.' I will return to some of these observations in section 5.3.1.7 where further refinements will be made.

Nahuatl present participle only if it does *not* have a subject agreeement prefix. Moreover, code switching in this context is ruled out regardless of which agreement morphemes appear on the verb, subject or object, as the transitive constructions in (81) illustrate. Note, too, that noun incorporation (NI) also makes the construction ill-formed, as shown in (82).

(79a) *Estoy *nitlajtohtoc*
estoy ni-tla-toh-toc
be/PRES/1Ss 1S-INDEF-speak-DUR
'I'm speaking'

(79b) Estoy *tlajtohtoc*
estoy tla-toh-toc
be/1Ss INDEF-speak-DUR
'I'm speaking'

(80a) (Yo) estoy ayudando a Juan
(yo) estoy ayud-ando a Juan
(I) be/PRES/1Ss help-DUR PRT Juan
'I'm helping Juan'

(80b) (Ne) nikpalewijtoc in Juan
(ne) ni-k-palewij-toc in Juan
(I) 1S-3Os-help-DUR IN Juan
'I'm helping Juan'

(81a) *Estoy *nikijtohtoc*
estoy ni-ki-toh-toc
be/PRES/1Ss 1S-3Os-speak-DUR
'I'm saying it'

(81b) *Estoy *kijtohtoc*
estoy ki-toh-toc
be/PRES/1Ss 3Os-speak-DUR
'I'm saying it'

(82a) *Estoy *ninakakuajtoc*
estoy ni-naka-cuaj-toc
be/PRES/1Ss 1S-meat-eat-DUR
'I'm eating meat'

(82b) *Estoy *nakakuajtoc*
estoy naka-cuaj-toc
be/PRES/1Ss meat-eat-DUR
'I'm eating meat'

Other examples are given in section 4.1.3.

With certain reasonable assumptions about the structure of Spanish and Nahuatl duratives, the facts in (79)-(82) will follow from some conclusions reached in previous discussions (§5.2.2.1, §5.2.2.3). Below I will discuss the structure of (83), then highlight some important facts regarding (79)-(82). The analysis will then be shown to relate to (a) the PF Disjunction Theorem (78) and (b) the relationship between verb movement and inflectional morphemes.

(83a) (Yo) estoy ayudando a Juan
(yo) estoy ayud-ando a Juan
(I) be/PRES/1Ss help-DUR PRT Juan
'I'm helping Juan'

(83b) (Ne) nikpalewijtoc in Juan
(ne) ni-k-palewij-toc in Juan
(I) 1S-3Os-help-DUR IN Juan
'I'm helping Juan'

(83c) I am helping Juan
I am help-ing Juan
I be/PRES/1Ss help-DUR Juan
'I'm helping Juan'

A leading idea in contemporary work in comparative syntax is that, in the absence of (learnable) evidence to the contrary, languages do not differ. In this spirit, I will assume that the basic structure of Spanish, Nahuatl and English duratives is essentially the same. Spanish uses its copula *estar* with the present participle form *ayudando* in (83a), just as English uses an appropriate form of *be* with *helping* in (83c). In Nahuatl,

some uses of the copula appear to be null, as in many other languages. Note, for instance, the constructions in (84).

(84a) (Ne) nimexicatl
(ne) ni-mexic-tl
(I) 1S-Mexican-NSF
'I'm a Mexican/Mexica."

(84b) (Te) titlakatl
(ne) ti-tlaka-tl
(I) 2S-man-NSF
'You're a man.'

(84c) (Ye) tlakatl
(ne) tlaka-tl
(I) man-NSF
'He's a man'

(84d) Tisemeh
ti-se-meh
2S-one-PL
'We are one.'

I will assume that Nahuatl has a null copula in (84) and in (83b); in the latter case, it subcategorizes for a gerundive form *nikpalewijtoc,* just as English *be* and Spanish *estar* subcategorize for *helping* and *ayudando* respectively. On these assumptions, the gerund in (83) is selected by the copula (of category V^{94}) in the same way that some verbs may select an interrogative or subjunctive C^0 complement.[95] In minimalist terms, the copula

[94]The argument developed here is unaffected if the copula is assumed to be of some other lexical category (Inf, Aux, Aspect, ...). The crucial assumption is that the lower V incorporates with the copula if and only if its inflectional morphology requires it to move. This idea will be developed below.

[95]For instance, English *wonder* and *know* may select an interrogative C^0 complement in *He wonders what time it is* or *You know what to say*. Spanish *esperar* 'hope' and Nahuatl *nikchia* 'hope' take subjunctive complements: *Espero que compres ropa* or *Nikchia ke (te) xikoa tlakemetl,* 'I hope that you buy some clothes.'

joins with a [+DUR] verb by the operation merge. No checking is therefore required, hence no movement.[96]

However, as discussed in section 5.2.2.1 (Pronouns and Agreement Morphemes), verbs will undergo LF checking with T if and only if they bear φ-features associated with an inflectional affix. Thus, in (79a), (81) and (82a), a subject or object agreement morpheme triggers checking of the verb with T by way of the intervening aspectual verb *estar*. As a result, $[_{T^0}\ V_1\ V_2]$ is formed, an instantiation of the PF filter $*[_{X^0}\ W_1\ W_2]$ in (76b). Again, (76b) applies at X^0. On the PF Disjunction Theorem (78), there is no derivation for $[_{X^0}\ V_{Nahuatl}\ V_{Spanish}]$ or $[_{X^0}\ V_{Spanish}\ V_{Nahuatl}]$ since neither PF system can interpret these structures (an undefined term remains in either case, $V_{Spanish}$ for $PF_{Nahuatl}$ or $V_{Nahuatl}$ for $PF_{Spanish}$).

[96]The idea that the order of the English auxiliaries is determined by subcategorization is suggested in Radford (1988) and McCawley (1988) (among others) with some interesting discussion. I make this assumption here primarily for reasons of simplicity and expository convenience. As pointed out in note 100, adopting a checking theory for *-ing* forms does not affect my argument in this section.

In (82b), however, the construction is ill-formed as a result of NI.[97] Ferguson (1996) argues that nouns incorporate into verbs in order to check their case features. Hence, in addition to φ-features, Ns are assumed to bear a case feature that may be checked directly with V by head-movement. However, once the complex $[_{V0}\ N^0\ V^0]$ is formed by NI, V^0 is a carrier of N's φ-features. Just as when V bears φ-features as a result of the presence of an inflectional morpheme (*ni-* or *ti-*), the φ-features in V must be checked with T; $[_{V0}\ N^0\ V^0]$ therefore raises by head-movement to T, forming $[_{V0}\ T\ [_{V0}\ N^0\ V^0]]$. The morphological filter (76c) then applies; however, due to the PF Disjunction Theorem (78), the application of (76c) to (82b) causes it to crash at PF.

Perhaps more surprising than these ill-formed constructions is the well-formed version, (79b).[98] Other such examples are given in (85) (again from §4.1.3). The amazing fact here is that Nahuatl verbs bearing "null" affixes, generally associated with third-person subjects, may co-occur with a Spanish auxiliary conjugated for the first-person; moreover, it may *only* occur with a Spanish auxiliary if it bears no affix.

(85a) Estoy *tekititoc*
estoy tekiti-toc
be/PRES/1Ss work-DUR
'I'm working'

[97]NI may itself be an instantiation of $[_{X0}\ W_1\ W_2]$, much like the V-V compounds discussed earlier. However, I have been assuming that a W (a morphological word) is one which contains inflectional morphemes, and the Ns which can incorporate do not bear such morphemes; in addition, I do not have independent evidence that NI is barred in Spanish-Nahuatl code switching. For this reason, I will pursue an alternative account which relies again on the presence of ϕ-features.

[98]I assume that the "indefinite suffix" *tla* in (79b) *Estoy tlajtohtoc* is inserted into certain verbs prelexically to derive intransitives from transitives (Launey's (1992) basic idea). It appears to have no features which require checking, and plays no role in the syntax.

(85b) Estoy *yajtoc*
estoy ya-toc
be/PRES/1Ss go-DUR
'I'm going'

Recall Shütze's (1997) Accord Maximization Principle (AMP) alluded to in section 5.2.2.1 (note 69, page 192), repeated here as (86).

(86) *Accord Maximization Principle (AMP*)
Among a set of convergent derivations *S* that result from numerations that are identical except for uninterpretable phi- and case-features, such that the members of *S* satisfy other relevant constraints, those members of *S* where the greatest number of Accord relations are established block all other derivations in *S*.

In minimalist syntax, principles of economy select among convergent derivations; (86) picks one convergent derivation (the one with maximal agreement morphology) from a class of convergent derivations *S* and privileges it, barring all others in *S*.

Pollock's (1994) idea that bare verbs in English (*go, love, speak*, ...) do not undergo LF checking had an undesirable consequence in that it did not prevent (87a) from converging.[99]

(87a) *He like Mary

(87b) He likes Mary

The AMP, however, will indeed block (87a) because the verb does not have maximal agreement morphemes, as in (87b). By extension, Nahuatl (88a) is blocked in the same way; *nikoas*, as in (88b), must be used to maximize agreement.

[99]It should be noted that Shütze (1997) developed AMP to deal with certain Icelandic data. (See especially his chapter 4.) The extension of AMP to Pollock (1994) and the Nahuatl data here independently shows the usefulness of the mechanism.

(88a) *Ne kikoas tlakemetl
ne ki-koa-s tlake-me-tl
I 3Os-buy-FUT garment-PL-NSF
'I'll buy some clothes.'

(88b) Ne nikoas tlakemetl
ne ni-k-koa-s tlake-me-tl
I 1S-3Os-buy-FUT garment-PL-NSF
'I'll buy some clothes.'

Note that (88a) and (88b) are both convergent derivations, members of the class *S*; (86) picks the member of *S* with maximal agreement, assigning a star to (88a).

Now consider once again the data in (79)-(82) and (85). I have argued that the inflected versions crash for the same reason other restructuring constructions do: switches in V-V compounds are not allowed on (78), for reasons given in section 5.2.2.3. In (87) and (88), both a-type and b-type constructions are convergent; however, AMP selects the b-type derivations and bars the a-type. In (79)-(82) and (85), all of the constructions with inflected duratives are ill-formed due to restructuring, leaving only the uninflected constructions as members of the class *S* of convergent derivations. AMP selects from *S* the construction with maximal agreement morphology, in this case (79b) and (85), constructions with *minimal* inflectional material (since all of the inflected forms are nonconvergent).[100]

[100]In an excellent discussion of language impairment data, Schaeffer (1996) assumes that Vs marked with the *-ing* inflection raise to Agr_O for checking in a tree like Chomsky's early minimalist version (1995a: 173, (2)), where Agr_SP dominates TP, TP dominates Agr_OP, and Agr_OP dominates VP. This view is not inconsistent with the analysis presented here, so long as V_{PART}, lacking agreement morphology, may check its *-ing* feature with Agr_O without moving on to T or Agr_S. This will prevent it from being in an X^0 position adjoined to V_{COPULA}, resulting in a violation of the morphological ban on V-V compounds expressed in (78).

Again, many refinements and alternatives may be constructed. However, while none of the code switching theories reviewed in sections 2.2.2 and 5.2.1 may account for the facts discussed here, the claim that code switching data can be explained in precisely the same terms as monolingual data (expressed in section 5.1) has again been borne out.

5.2.2.5 Negatives

The facts presented in section 4.1.4 suggest that a Spanish negation (*no* 'not') before a Nahuatl verb results in an unacceptable code switch, but when a Nahuatl negation (*amo*) is placed before a Spanish verb no problem arises. Consider the examples in (89).

(89a) *No *nitekititoc*
no ni-tekiti-toc
not 1S-work-DUR
'I'm not working'

(89b) Amo *estoy* tekititoc
amo estoy tekiti-toc
not be/PRES/1Ss work-DUR
'I'm not working'

(89c) Amo *le dije*
amo le dije
not DAT.CLITIC tell/PAST/1Ss
'I didn't tell him'

The switch between *estoy* and *tekititoc* in (89b) was accounted for in the previous section. Here I will only address the curious asymmetries involving negation and its complement in (89), highlighting some independently motivated differences between Spanish and Nahuatl negation and then moving on to an analysis.

Following Pollock (1989), I will assume a phrase structure (derived by operations of C_{HL}) in which TP dominates NegP. In French syntax, *ne* 'not' is always assumed to be a clitic element in constructions like (90)[101] (see Kayne (1975)).

(90) N'avait-il pas mangé?
not have-he PAS eaten
'Didn't he eat?'

The evidence for the clitic nature of *ne* is quite limited. However, in (90), note that the vowel in *ne* is phonologically deleted before *avait,* and *ne* is preposed along with the verb to the front of the construction.

There is evidence that Spanish *no* is also a clitic, even though there are no phonological reflexes of its cliticization as in (90) for French. Zagona (1988) argues precisely this, claiming that Spanish *no* is part of the Spanish verbal complex, a clitic on V. To make a case for this analysis, Zagona points out that Spanish *no* must be fronted with the verb in (91), unlike the adverbs in (92).

(91) ¿Qué no dijo Juan?
what not say/1Ss/PAST Juan
'What didn't Juan say?'

(92a) *¿Qué sólo leyó Juan?
what only read/1Ss/PAST Juan
'What did Juan only read?'

(92b) *¿Qué meramente leyó Juan?
what merely read/1Ss/PAST Juan
'What did Juan merely read?'

[101]The data in (90) is due to Dominique Sportiche.

Also, Zagona (1988) points out that Spanish *no* cannot be contrastively stressed in (93) as its English counterpart in (94) can be, owing to the fact that "clitics are inherently unstressable" (156). The example in (94) shows that in English, in contrast to Spanish, the negative element is not required to be a clitic.

(93) *Juan no ha *no* hecho la tarea
Juan not has not done the task
'Juan hasn't *not* done the task'

(94) Juan hasn't *not* done the task

These facts suggest that in Spanish, as in French, the verb is a host for a cliticized negation. For concreteness, I will assume that some property of Neg in French and Spanish attracts V, just as T attracts V.

Nahuatl behaves differently from French and Spanish with regard to negation. A test similar to the one Zagona uses in (93) yields very different results, as shown in (95).[102, 103]

(95a) Amo nio niktati nowelti
amo ni-o ni-k-tati no-welti
not 1S-go 1S-3Os-see my-sister
'I'm not going to see my sister'

(95b) Amo nio *amo* niktati nowelti
amo ni-o amo ni-k-tati no-welti
not 1S-go amo 1S-3Os-see my-sister
'I'm not going to *not* see my sister'

[102]The facts in (95) are due to Fidel González and David Martínez.

[103]Of course, in (93)-(95), *italics* represents stress, not code switching as in previous examples.

Nahuatl patterns with English in this regard. Since clitics are inherently unstressable, we may conclude from (95b) that *amo* is not a clitic in Nahuatl. In addition, note that *amo* is bisyllabic (unlike *not*, *no* and *ne*) and may resist cliticization for phonological reasons.

Recall Roberts' (1997) treatment of restructuring constructions, repeated here.

(76a) Head movement is copying.
(76b) *[$_{X0}$ W_1 W_2], where W_n are morphological words.
(76c) A head is spelled out in the highest position of its chain, subject to (76b).

Remember that (76b) is a filter at PF. The formulation in (76) is general enough that it should apply to any configuration derived by head-movement in which a complex [$_{X0}$ W_1 W_2], consisting of morphological words (W_n), is formed.

Roberts (1997) is not precise about which words count as "morphological words" and which do not. In section 5.2.2.3, I suggested that the set of morphological words minimally includes stems with inflectional morphology (formed in the lexicon before entering the numeration). English *not,* as well as Spanish *no* and Nahuatl *amo,* share certain properties with verbal inflection; negation intimately interacts with the checking domain of inflected verbs (T, or in other systems, T, Agr_O and Agr_S), and it constitutes a closed class of just one member as do verbal affixes (*-ed* and *-s,* irregular verbs aside). Also, just as some inflectional affixes are free (*could*, *might*) and others bound (*-ing, -ed*), Southeast Puebla Nahuatl has both free (*amo*) and bound (*mach-*, *x-* in Guerrero Nahuatl) negation. It therefore seems reasonable to add *not* to the class of "morphological words."

In section 5.2.2.3, it was argued that a general restriction exists against code switches involving the computation N→π due to the special nature of the PF component, as summed up in (78); this had the effect of (correctly) barring code switches in

restructuring configurations since these involve the PF filter (76b). This restriction was invoked again to account for a related phenomenon in durative constructions in section 5.2.2.4.

The code switching judgments in (89) now follow. Recall that those switches involving Spanish *no* are ill-formed but those which involve Nahuatl *amo* are not. If Spanish *no* is an incorporating element, it forms a unit with V by head-movement, specifically, the complex [$_{X0}$ Neg V]. Since the PF Disjunction Theorem (78) bars switches at X^0, complexes thus formed are illicit in code switching. (Note too that [$_{X0}$ Neg V], in the normal course of a derivation, would raise to T for feature checking, producing [$_{T0}$ T [Neg V]], another violation of (78).) These considerations correctly rule out (89a). The cases involving Nahuatl *amo*, (89c) or (89b), are well-formed because *amo* does not attract V in these constructions, forming no compounds.

Again, refinements may follow. However, the discussion presented shows once again that code switching data can be explained in the same way as monolingual data, suggesting that no theories which identify specific grammatical relations as underlying constraints on code switching are necessary, desirable, or likely to be correct (as discussed in section 5.1).

5.2.2.6 Gender Features in DPs and Modification Structures

Consider the facts in (96) and (97) (§4.1.6-4.1.8).

(96a) Neka *hombre* kikoas se kalli
neka hombre 0-ki-koa-s se kalli
that man 3S-3Os-buy-FUT a house
'That man will buy a house'

(96b) Se *hombre* kikoas se kalli
se hombre 0-ki-koa-s se kalli
a man 3S-3Os-buy-FUT a house
'A man will buy a house'

(96c) Okitilanili in *vestido* non de Maria
o-0-ki-tilanili in *vestido* non de Maria
PAST-3S-3Os-pull IN dress which of Maria
'She pulled on Maria's dress'

(97a) ??Este *tlakatl kitlasojtla in Maria*
este tlaka-tl 0-ki-tlasojtla in Maria
this man-NSF 3S-3Os-love IN Maria
'This (here) man loves Maria'

(97b) ??Aquel *tlakatl kitlasojtla in Maria*
aquel tlaka-tl 0-ki-tlasojtla in Maria
that man-NSF 3S-3Os-love IN Maria
'That man loves Maria'

(97c) *Neka tlakatl kikoas *aquella* kalli
neka tlaka-tl 0-ki-koa-s aquella kalli
that man-NSF 3S-3Os-buy-FUT that house
'That man will buy that house'

Descriptively, the facts are these: A Nahuatl determiner or demonstrative before a Spanish noun is well-formed, but a Spanish determiner or demonstrative before a Nahuatl noun is not; this latter case is bad with masculine nouns, worse with feminine.

Baker (1996: 252-256) argues that Nahuatl, like other polysynthetic languages, does not have "true determiners." Rather, elements like *in* and *se* in Nahuatl, which in some respects behave like the determiners of European languages, are adjuncts to NP since "they can appear either before or after a noun they are associated with" (255). In sections 2.5.3 and 5.2.2.1, I concluded that Baker's idea that modern Nahuatl is a pronominal argument language is misguided. However, it may nonetheless be true that Nahuatl, like other polysynthetic languages, is a "determinerless language."

If so, the facts in (96) and (97) would follow. In (96), the Nahuatl elements *neka*, *se* and *in*, if adjuncts, would bear no agreement relation to the nouns they are associated with, so the constructions in (96) would be well-formed, as the facts require. In contrast, the Spanish determiners in (97) select a complement of category N; since these Ns are Nahuatl, the φ-features of the determiners will not agree with their φ-features after a checking domain is established by head-movement.[104] The judgments in (97) follow, since Nahuatl and Spanish clash with respect to their gender systems (see section 5.2.2.1).

However, there are some basic problems with Baker's (1996) proposal regarding determiners in Nahuatl. Although some of the descriptive grammars emphasize the flexibility of word order for classical Nahuatl, the elements *in* and *se* are in fact quite fixed in relation to NPs in the modern varieties: they may occur only before nouns, never after them.[105] The element *neka*, which also has the adverbial meaning 'here,' appears to have greater flexibility than, say, an English demonstrative, but this is due to its use as an adverbial. Furthermore, unlike in the other polysynthetic languages Baker surveys, Nahuatl *se* is systematically indefinite and *in*, when used as a determiner, is always definite.

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[104]Longobardi (1994) proposes that N moves to D to check (at least) its ±R (referential) feature. More will be said about Longobardi's system below.

[105]Grammars of other modern varieties concur that demonstratives precede the noun. See Tuggy (1979: 67) on Tetelcingo Nahuatl, Brockway (1979: 160-161) on North Puebla Nahuatl, and Beller and Beller (1979: 211-233) on Huasteca Nahuatl. However, Launey's (1981, 1993) introduction to classical Nahuatl does indeed provide examples of postnominal *in* in some constructions. Thus, Nahuatl word order internal to DP may have once been considerably more flexible than it is in the modern varieties.

The core motivation for suggesting that these elements are adjuncts is to explain their flexibility in word order; since there is in fact little or no flexibility in word order for these elements in modern Nahuatl, I will assume that these elements are like their counterparts in well-studied languages, that is, that they are of category D and select NP complements. Given this assumption, the facts in (96) and (97) will require an alternative explanation, beginning with some inquiry into the structure of DP and the nature of feature-checking within this phrasal domain.

There is a long history in generative grammar of attempts to bring the basic structure of the nominal system into a parallelism with the clausal system. Szabolcsi (1983) and Abney (1987) developed a theory, now widely accepted, that NPs are dominated by a functional projection DP. In constructions like (98a), *Nero* is in [Spec, DP], just as it is in [Spec, TP] in (98b).

(98a) [$_{DP}$ Nero's destruction of Rome] took us all by surprise.

(98b) [$_{CP}$ Nero destroyed Rome]

To account for a number of typological differences between Germanic and Romance, Longobardi (1994) proposed a further parallelism between CPs and DPs: Just as V checks features in T, N checks features in D. Moreover, just as in Pollock's (1989) classic treatment of V-movement, whether N moves covertly or overtly accounts for a range of differences between languages.[106]

[106]Pollock's (1989) system, which postulated a difference in affix-lowering vs. affix-raising, was actually revised in terms of covert/overt movement in Chomsky (1995a). In this respect Pollock's observations constituted an extremely important contribution to the development of the minimalist program.

In previous sections, we adopted Pollock's (1994) idea that an uninflected verb does not undergo LF checking with T. It was suggested that uninflected V did not move because it had no "need" to check φ-features, having none (since it had no agreement morphology). This conception suggests that the burden to move is upon the element to be displaced, not the target of movement, a notion at odds with Chomsky's (1995a: 297) conception of movement evident in the operation *Attract F*, defined in (99).

(99) *Attract F*
K attracts F if F is the closest feature that can enter into a checking relation with a sublabel of K.

Here movement occurs to satisfy features of the target of movement, not the displaced element.

However, if we adopt (99), Vs may still remain in situ if uninflected. We assume, as before, that T may be drawn from the lexicon optionally without φ-features. If T has no φ-features, it does not attract V, and V remains in situ, since on (99) only F (a feature) in T can trigger movement. If T has φ-features and V is inflected, V is attracted to T and raises. Note that V will not be able to discharge its φ-features if T has none, and T (with φ) will not be able to check off its φ-features if V has none. However, in Chomsky's (1995a) system, the φ-features of V and T are -Interpretable and must be deleted (by means of checking) by LF. There are therefore four logically possible configurations, but only the first two are licit: [T+φ[V+φ]], [T-φ[V-φ]], *[T+φ[V-φ]], and *[T-φ[V+φ]]. We have exactly one convergent derivation corresponding to the presence of an inflected verb ([T+φ[V+φ]]) and exactly one convergent derivation corresponding to the presence of a bare verb ([T-φ[V-φ]]), a desirable outcome on minimalist assumptions.

Furthermore, in keeping with the desire for parallelism between V-movement and N-movement, we might suggest that N moves to check features with D if and only if D has φ-features which require checking. In Chomsky's system, the +Interpretable features are categorial features plus φ-features of nominals (Chomsky, 1995a: 278). Since +Interpretable features are not deleted even if checked, no problem arises if D, being barren of φ, cannot check φ-features in N. Here an asymmetry emerges between the T-system and the D-system.

Now consider again the facts in (96) and (97). Nahuatl Ds are uninflected for person, number and gender. Note that they may occur before elements of any person (before *ne* 'I', *te* 'you', *ye* 'he/she') and are unaffected by nominal plurals. As mentioned before, Nahuatl Ns do not bear gender markings, and neither do Ds. I will therefore make the plausible assumption that Nahuatl Ds, unlike Spanish Ds, may be (and possibly *must* be) drawn from the lexicon without φ-features. Thus, just as Pollock (1994) took the lack of inflection on English Vs to correspond to an absence of φ in these Vs, I will take the lack of inflection on Nahuatl Ds to correspond to the absence of φ in these Ds, further maintaining a parallelism between the nominal system and the clausal system.

In the case of V-movement, we said that T does not attract V if it has no φ-features. Suppose now that the Spanish Ns in (96) do not raise to Nahuatl Ds to check features either, since Nahuatl Ds do not bear φ-features and hence do not attract Ns. That being so, no conflict in gender parallel to that discussed in section 5.2.2.1 occurs, and no violation of the ban on code switching in compounds occurs (§5.2.2.3-5.2.2.5). Since φ-features of nominals do not require checking, no problem arises if the Spanish Ns do

not have their features checked with D. The code switches in (96) are therefore convergent.

In contrast to (96), the examples in (97) crash. Having φ-features corresponding to their rich morphology, the Spanish Ds attract Nahuatl Ns. These constructions are ill-formed for two reasons: A conflict in gender features occurs, parallel to the conflict discussed in section 5.2.2.1 in relation to restrictions on mixtures with pronouns, and a compound involving "morphological words" is formed, disallowed for code switches by the PF Disjunction Theorem in (78) of sections 5.2.2.3.

Note too that those constructions in (97) which involve Spanish feminine Ds are worse than those with masculine Ds. We might speculate that Spanish uses masculine gender as a sort of "default" or unmarked form which is somehow more acceptable to Nahuatl's single-valued (or null) gender system. This idea fits with the fact that nearly all of the Nahuatl borrowings into Spanish take masculine gender.[107] Thus, the constructions in (97) with masculine Ds are degraded because they bear masculine gender, and they are ill-formed because they involve a morphological conflict in the mapping to PF. Those with feminine Ds are ill-formed on two counts, forcing stronger judgments in this case. This relative improvement arises again in connection with modification constructions discussed below.

[107]This is an informal observation. Interested parties might look carefully at the lists of vocabulary items in Cabrera (1974) and Santamaria (1978). Participants in the Nahuatl electronic discussion list could think of only one feminine borrowing, *la viznaga* (from *huitznakatl*) (due to Chuco).

Notice that this analysis also further expands the notion of a "morphological word" in a reasonable way. Ds are to the nominal system what Ts are to the clausal system; if Ts correspond to the inflectional content of morphological words, Ds might too. Some Ts are free (*will, can*) while others are bound (*-ed, -s*); similarly, Ds appear to be free in English and Spanish but are bound in Romanian and Hebrew. Ds share a further property with inflectional affixes as well: They form a very small closed class. Morphological words, then, are inflected stems plus Negs and Ds. (Regarding Negs, see section 5.2.2.5.)

Finally, while the analysis presented here appears very plausible, there are some apparent counter-examples to the descriptive generalization to which some attention should be directed. Consider (100), a slightly degraded construction in which Nahuatl *in* 'a/the,' a determiner, precedes a Spanish N *hombre* 'man' (§4.1.7-4.1.8).

(100) ?In *hombre* kikoas se kalli
in hombre 0-ki-koa-s se kalli
IN man 3S-3Os-buy-FUT a house
'The man will buy a house'

As briefly noted in section 3.3.3, Nahuatl *in* phonologically cliticizes to an element which follows it for convergence at PF (to meet the requirements of syllabification) if that element begins with a vowel sound, as *hombre* does. Therefore, (100) is degraded because Spanish and Nahuatl phonological components are forced to interact in the computation $N \rightarrow \pi$. Note that (100) is not as strongly ruled out as cases involving code switches below X^0.

Also consider (101), another apparent counter-example to the descriptive generalization reached here.

(101a) *El* teopixke kipia se coche
el teopixke 0-ki-pia se coche
the priest 3S-3Os-have a car
'The priest has a car'

(101b) *El* teopixke kipia *un* coche
el teopixke 0-ki-pia un coche
the priest 3S-3Os-have a car
'The priest has a car'

(101c) Tengo *un* konetl
tengo un kone-tl
have/PRES/3Ss a son-NSF
'I have a son'

I will have little to say about these constructions, except to note that they involve a very special verb, 'have' (*kipia* in (101a)-(101b), *tengo* in (101c)), whose properties are not well understood. On the idiosyncratic nature of this verb, see Kliffer (1983), Freezer (1992), and especially Kayne (1993). Also note that (101) all have Spanish *el* and *un*, forms which were assumed to be identical to the demonstratives in (97) in terms of their syntactic properties (their formal features); this assumption too may be false. More data and further inquiry are required to resolve this issue.

Finally, we turn to the modification structures in (102), which again involve the idiosyncratic *kipia* 'have' (§4.1.9).

(102a) *Ye kipia se *blanca* kalli
ye 0-ki-pia se blanca kalli
she 3S-3Os-have a white house
'She has a white house'

(102b) *Ye kipia se kalli *blanca*
ye 0-ki-pia se kalli blanca
she 3S-3Os-have a house white
'She has a white house'

(102c) *Ye kipia se *blanco* kalli
ye 0-ki-pia se blanca kalli
she 3S-3Os-have a house white
'She has a white house'

(102d) ??Ye kipia se kalli *blanco*
ye 0-ki-pia se kalli blanco
she 3S-3Os-have a house white
'She has a white house'

Once again, all of the constructions in (102) are degraded because of a conflict in the gender systems of Spanish and Nahuatl; in whatever configuration Spanish adjectives check their φ-features, these will conflict with Nahuatl nominal φ-features in terms of gender.

However, also notice that (102c) is worse than (102d). In Nahuatl, adjectives may occur on either side of the noun they modify, as in (103), while in Spanish adjectives only follow nouns (unless used non-restrictively).

(103a) Ye kipia se kalli iztak
ye 0-ki-pia se kalli izta
she 3S-3Os-have a house white
'She has a white house'

(103b) Ye kipia se iztak kalli
ye 0-ki-pia se iztak kalli
she 3S-3Os-have a white house
'She has a white house'

The difference in acceptability might relate to the fact that (102d) respects Spanish word order, the language of the adjective *blanco* 'white.'

Santorini and Mahootian (1995) surveyed a wide range of data regarding adjective-noun code switching, and concluded on the basis of work by Svenonius (1993) and Bernstein (1992, 1993) that adnominal adjectives (the ones that can be used as

predicates) may occur in code switching either in the word order of the adjective or the word order of the noun. I will return to this question in section 5.3.1.5 and briefly discuss Santorini and Mahootian's observations in relation to (102c)-(102d).

The analysis presented here again shows that a focus on complement relations will not suffice to derive the facts of code switching. In (96), a functional category D subcategorizes for an N, and the constructions are well-formed; in (97) too, a functional category D subcategorizes for N, but here the constructions are ill-formed. However, some attention to movement properties and morphology allow a plausible explanation of the data. While progress in syntactic theory will surely deem refinements appropriate, the research program endorsed here, which claims that code switching phenomena can be explained in terms of general syntactic theory just as monolingual language data can, again seems promising.

5.2.3 Preliminary Conclusions

Focusing attention on Spanish-Nahuatl code switches parallel to those of other language pairs reported in Table 1 (page 68), I have analyzed a number of interesting findings strictly in terms of mechanisms independently motivated for the analysis of monolingual data.[108] In some of these cases, a principle of strict separation in L*x* and L*y* PF rules was used (formalized as the PF Disjunction Theorem), but this too was

[108]Perhaps conspicuously absent is an analysis of the data reported in section 4.1.5 (Quantifiers and Nonreferential Quantified NPs). An explanation of this data will fall out of an understanding of the licensing mechanisms of negative polarity items in Spanish and Nahuatl. However, since this data does not correspond to any of the findings in Table 1, I will defer its analysis to future work and/or other interested scholars.

motivated by independent considerations involving the nature of the operations of C_{HL} which map $N \rightarrow \pi$. Therefore, in a reasonable sampling of cases, I have shown that code switching phenomena may be explained without appealing to *ad hoc* constraints specific to code switching. On minimalist assumptions, and in line with general scientific conventions of parsimony, it may be safely assumed that such constraints do not exist, confirming the hypothesis stated in section 1.6 and section 5.1, repeated here as (104).

(104) Nothing constrains code switching apart from the requirements of the mixed grammars.

However, while I have motivated (104) with respect to the Spanish-Nahuatl corpus presented here, questions remain regarding other corpora and conflictive findings reported in Table 1 (page 68). I now turn to these.

5.3 Other Corpora and Some Prospects for Further Research

In this section I will consider some conflicting findings in other code switching corpora, addressing how these relate to conclusions reached in section 5.2.2 regarding the Spanish-Nahuatl corpus. In doing so, I will proceed through each item listed in Table 1. In some cases, I offer little more than a few speculative comments about the direction which further research might take, but in other cases corroborating evidence from other corpora both affirm the analyses of section 5.2.2 and reveal some apparent conflicts to have been illusory. The purpose is to focus the code switching research agenda on explicating data, even when the facts appear to be incoherent and contradictory.

As a preview, consider

Table 7 (page 257). Here I list the descriptive constraints enumerated in Table 1, adding notes about how they relate to findings presented in chapter 4. These are then discussed in turn, as is the "disputed" nature of the findings in Table 1.

5.3.1.1 Conjunctions and that (Table 1, (1)-(2))

In testing Gumperz' (1976) claim that a code switch may not occur after a conjunction, I presented several constructions to my consultants in which a switch occurred (a) before Spanish *y*, (b) after Spanish *y*, (c) before Nahuatl *iwan*, and (d) after Nahuatl *iwan* (§4.1.1, §4.2.2).

Table 7: Summary of Basic Findings in Relation to Other Studies

Item ref #	*Descriptive boundaries* (+ = code switch)	*Status*	*Spanish-Nahuatl Findings*
1a	*because* + CP	disputed	Cannot tell because Nahuatl and Spanish use the same word for 'because' (*porke* and *porque*).
1b	conj + CP	disputed	Slightly degraded without a pause.
2	*that* + IP	disputed	Nahuatl and Spanish use the same word for 'that' (*ke* and *que*), but Nahuatl allows a null complementizer. Tests with null complementizer indicate that there is no constraint on switches at this boundary.
3a	*have* + VP	disputed	Nahuatl has no auxiliaries like European 'have' and, of course, no past participle, so this test could not be done.
3b	*modal* + VP	disputed	Nahuatl and Spanish do not have elements like English modals, so this test could not be done.
3c	*to* + V	disputed	No code switches were allowed in either direction between adjacent verbs when the matrix verb was a restructuring verb.
3d	Aux + V	disputed	Code switches between Spanish *estar* and a Nahuatl present participle are allowed only if the present participle has no agreement affixes and does not include an incorporated noun.
3e	Neg + V	undisputed	Code switches were allowed between Nahuatl negation and a Spanish verb, but not between Spanish negation and a Nahuatl verb.
4a	Q + NP	disputed	Many Spanish quantifiers have been borrowed into Nahuatl, so this case is difficult to test. No results to report.
4b	Demonstrative + NP	disputed	A code switch between a Nahuatl demonstrative (*neka*) and a Spanish noun is allowed, but not between a Spanish demonstrative and a Nahuatl noun.
4c	Article + NP	disputed	A code switch between a Nahuatl article (*in, se*) and a Spanish noun is allowed, but not between a Spanish article and a Nahuatl noun.
4d	Complex D + NP	disputed	No results to report.
5a	N + Adj (Adj from Adj-N language, N from N-Adj language)	disputed	Nahuatl allows adnominal adjectives to follow or precede their nouns. With a Spanish adjective and a Nahuatl noun in code switching contexts, there appears to be a slight preference for N-Adj word order.
5b	Adj + N (Adj from N-Adj language, N from Adj-N language)	disputed	
6a	Subject pronoun + V	disputed	Spanish subject pronouns before Nahuatl verbs are allowed for third person but not for first or second; Nahuatl subject pronouns with Spanish verbs are not allowed, but more data are needed for a conclusive finding.
6b	V + object pronoun	disputed	Spanish object pronouns cannot be mixed with Nahuatl verbs.
6c	clitic + V *or* V + clitic	undisputed	Nahuatl verbal prefixes (*ni-, ti-, ki-, k-*, and so on) are analyzed as agreements rather than clitics, so this case cannot be tested (but see §4.1.11 and §5.2.2.2).
6d	Gapping constructions with Aux second V switched (marginal)	disputed	No results to report.
7	A switch involving a bound morpheme	disputed	Severely restricted.

Sentences were slightly degraded in two instances. In one case, *iwan* was followed by a Spanish word that began with /b/, a sound that is not part of the phonemic inventory of Nahuatl (Launey, 1992; Tuggy, 1979; Brockway, 1979; Beller and Beller, 1979). We might seek independent evidence, then, that Nahuatl *iwan* (and maybe also Spanish *y*) cliticizes to an element which follows it, and that a clash of some sort occurs in the Spanish-Nahuatl phonological systems, as I argued in the case of (100) in section 5.2.2.6.

In another instance in my data, a construction was slightly degraded when there was competition to interpret Spanish *y* as the Nahuatl adverbial prefix *y-* 'already.' A similar "garden path" occurred in section 4.1.4, when Nahuatl *amo* 'not' was used to negate Spanish *amo* 'I love.' Thus, some bilinguals may rule out constructions of this sort for the same reason that some monolinguals rule out (105a), a classic example of garden pathing: Understood as (105b), (105a) is acceptable; understood as (105c), it is not.

(105a) The horse raced past the barn fell

(105b) $[_{CP}\ [_{DP}$ The horse$]\ [_{CP}$ (which) raced past the barn$]]\ [_{VP}$ fell$]]$

(105c) $*[_{CP}\ [_{DP}$ The horse$]\ [_{VP}$ raced past the barn$]]$ fell

These facts suggest that aspects of parsing theory must enter into the analysis of code switching data too, just as they enter into the analysis of human understanding of

(105).[109] To resolve the apparent conflicts in Table 1, then, we may need to move beyond syntactic theory into other domains of knowledge of language, as suggested at various points in section 5.2.2.

Regarding the ban on code switching after complementizing that (Table 1, (2)), I know only of the proposal in Belazi, Rubin and Toribio (1994: 224) that expressions such as (106b) are ill-formed in comparison to (106a).

(106a) El profesor dijo *that the student had received an A*
'The professor said that the student had received an A'

(106b) *El profesor dijo que *the student had received an A*
'The professor said that the student had received an A'

Spanish-English bilinguals whom I have consulted regarding (106) disagree with the judgments in Belazi, Rubin and Toribio's paper.[110] Although it has been suggested that our linguistic intuitions might sometimes be rightfully influenced by our theory (Chomsky, 1957), the strong evidence against the description generalization proposed in Belazi, Rubin and Toribio now compels us to reject (106) as erroneous data. Again, other factors may be involved, as with the morphophonological issues mentioned earlier. However, given my own conclusions regarding Spanish-Nahuatl findings in other corpora, and the judgments of Spanish-English bilinguals regarding (106) (that both are well-formed), I will conclude here that there is no ban on switches at this juncture.

[109]In other words, there are aspects of code switching which must be explained in terms of a theory of parsing/production, as Myers-Scotton (1993b) and others have attempted. However, a much more precise theory is required; see the discussion in 2.2.2.6.

[110]These judgments are due to Concepción M. Valadez and Reynaldo F. Macías, among others.

5.3.1.2 Embedded Verbs (Table 1, (3a)-(3d))

There has been some disagreement in the code switching literature with respect to the question of whether a switch may occur between a matrix verb and an embedded verb adjacent to it. Di Sciullo, Muysken and Singh (1986) provide an interesting example which suggests that switching between an Italian auxiliary and an embedded French verb is allowed:

(107) No, *parce que* hanno *donné des cours*
no, because have given of the lectures
'No, because they have given the lectures'

In section 5.2.2.3, I suggested that this constraint applies only to restructuring contexts, and is derived from the ban on mixing morphological rules. French-Italian examples presented there strongly suggest this to be the correct generalization. In (108b), the embedded object is raised to the subject position, before impersonal *si*. The fronting of the embedded object indicates that optional restructuring has occurred in (108b), whereas in (108a) no restructuring has taken place.

(108a) Si è dato un regalo
si essere given a gift
'A gift is given.'

(108b) Un regalo si è dato
a gift *si* essere given
'A gift is given.'

When restructuring is forced in the Italian-French mixture in (109b), an ungrammatical string results, unlike the mixture in (109a) where restructuring has not been forced.

(109a) Si è *donné un cadeau*
si essere given a gift
(Same as (108).)

(109b) **Un cadeau* si è *donné*
a gift *si* essere given
(Same as (108).)

The examples which suggest that switching is banned between aspectuals/modals and their complements come from Di Sciullo, Muysken and Singh's (1986) Italian-French corpus and contain constructions like (107); all these constructions involve matrix Italian restructuring verbs. I will assume that these code-switched constructions converge if and only if restructuring is not forced by movement, as in (109). If correct, this observation reconciles the disagreements in Table 1 with respect to (3a) and (3b).

Similar remarks are appropriate for (3c) and (3d) of Table 1. Poplack (1977), Lipski (1978) and McClure's (1981) counter-examples to Timm's (1975) constraint on switching between adjacent verbs all involve matrix verbs of the restructuring class. These authors found ample examples of code switches between restructuring verbs and an infinitival complement in their naturalistic English-Spanish data, but these were consistently of the form (110a), never like (110b)-(110f). On the other hand, Timm's (1975) experimental data, upon which she formulated this restriction, only applies to switches like (110b)-(110f).

(110a) He wants to *hacer la cena*
He want-s to hac-er la cena
he want-3Ss INF hac-INF the dinner
'He wants to make dinner.'

(110b) *He wants *hacer la cena*
he want-s hac-er la cena
he want-3Ss hac-INF the dinner
'He wants to make dinner.'

(110c) *He wants *a hacer la cena*
he want-s a hac-er la cena
he want-3Ss PRT hac-INF the dinner
'He wants to make dinner.'

(110d) *Quiere *make dinner*
quiere make dinner
quiere/3Ss make dinner
'He wants to make dinner.'

(110e) *Quiere *to make dinner*
quiere to make dinner
quiere/3Ss INF make dinner
'He wants to make dinner.'

It is no surprise that (110c) is ill-formed, since *querer* requires an infinitival complement and here has a simple VP (or small clause) complement. However, the subcategorization requirements for (110b) and (110d) have been met, yet these sentences are ill-formed. Surprisingly, the one mixture in (110) that is well-formed happens to be the one in which the infinitive is represented *twice*, once with *to* and once with *-er*. I will return to this observation in a moment.

Descriptively, (110a) is a restructuring context in which a verb particle of the same language as the restructuring verb (*to* in this case) intervenes before a switched embedded clause. Indeed, there is evidence that this generalization correctly distinguishes acceptable and unacceptable switches at this boundary cross-linguistically. In relative judgments from a Spanish-Catalan-Greek trilingual, the Spanish-Catalan switch in (111a) was regarded as severely degraded, while the Spanish-Greek switch in

(111b) was deemed well-formed.[111] This is especially surprising given the apparent similarity between Spanish and Catalan infinitival morphology.[112]

(111a) *Quiero *mengar el dinar*
quier-o meng-ar el dinar
want-1Ss eat-INF the dinner
'I want to eat dinner.'

(111b) Quiero *na fao vradino*
quier-o na fa-o vradino
want-1Ss NA fa-1Ss dinner
'I want to eat dinner.'

Similarly, (112a) is much better than (112b) in French-English code switching.[113]

(112a) I want to *acheter le lait*
I want to achet-er le lait
I want INF buy-INF the milk
'I want to buy milk.'

(112b) *I want *acheter le lait*
I want achet-er le lait
I want buy-INF the milk
'I want to buy milk.'

Finally, note that switches in Italian-French examples parallel to (109) are acceptable if a verb particle intervenes, as shown in (113).[114]

[111]Judgments due to Manuel Español-Echevarría.

[112]See Terzi (1992) on the special characteristics of embedded clauses in Greek, Romanian and Albanian.

[113]Judgments due to Dominique Sportiche. Sportiche (personal communication) notes that judgments also improve when the matrix verb is not of the restructuring class, but then the particle must be in the language of the embedded verb: I refuse *d'acheter le lait* / I promised *d'acheter le lait*. I will not comment on these facts here.

[114]Judgments due to Anastella Vester.

(113a) Finalmente si comincerà a *construire les nouvelles maisons*
finally SI begin/FUT PRT build/INF the new houses
'Finally they'll begin to build the new houses.'

(113b) Finalmente *les nouvelles maisons* si cominceranno a *construire*
finally the new houses SI begin/FUT PRT build/INF
'Finally they'll begin to build the new houses.'

Goodall (1991) and Roberts (1997) have noted that English restructuring verbs may undergo *to*-contraction (*wanna, hafta, sposta, usedta, gonna,* so on). It is well known that contractions of this sort are only possible if a *t* (=trace) does not intervene (Jaeggli, 1980), as in (114).

(114a) Who do you wanna dance with *t*?

(114b) *Who do you wanna *t* dance?

I will assume that restructuring verbs incorporate an adjacent infinitival particle, if present, and if *t* does not intervene. Otherwise the matrix verb incorporates the V inside its complement. If this is correct, then the facts observed in (110) through (113) are accounted for in light of the ban on mixing PF rules (developed in sections 5.2.2.3-5.2.2.5), and the apparent conflict in findings reported in (3a)-(3d) of Table 1 are reconciled. In (110a), then, *want* may satisfy its requirement to incorporate by attracting *to*, and *hacer* may raise to adjoin to T to check its [-finite] feature. Whether this analysis will extend naturally to Rizzi's (1982) original corpus of restructuring problems remains to be seen.

Certainly, further inquiry into these topics will lead to refinements. However, the discussion suggests that conflicts in basic findings spelled out in (3d) of Table 1 are much

more apparent than actual, once data has been analyzed beyond simple merger relations (subcategorization requirements).

5.3.1.3 Negation (Table 1, (3e))

The ban on switching between a negative and its verb is undisputed in Table 1, but the Spanish-Nahuatl corpus analyzed in section 5.2.2.5 indicates that a switch between Nahuatl *amo* 'not' and a Spanish verb is acceptable. Yet it is widely attested that switches of this nature are ill-formed, even when the languages involved appear quite similar on the surface with respect to the position of negation. Consider, for instance, the Greek-Spanish code switches in (115),[115] where Greek *then* and Spanish *no* both occupy the same structural position.

(115a) *No *thelo na fao vradino*
no thel-o na fa-o vradino
no want-1Ss NA fa-1Ss dinner
'I don't want to eat dinner.'

(115b) *Then *quiero comer la cena*
no quier-o com-er la cena
no want-1Ss com-er the dinner
'I don't want to eat dinner.'

Again, Spanish-Nahuatl data previously presented indicates that a switch between Nahuatl *amo* 'not' and a Spanish verb is acceptable, a clear counter-example to the descriptive generalization of Belazi, Rubin and Toribio (1994), while a switch between Spanish *no* 'not' and a Nahuatl verb is not acceptable. I claimed in section 5.2.2.5 that these facts follow from the assumption, independently motivated, that Spanish *no* is a

clitic element while *amo* is not. Clearly, more than simple merger relations must be considered in this case as well. Further inquiry into this matter, involving other language pairs, will be helpful in confirming, disconfirming or refining the analysis presented in section 5.2.2.5.

5.3.1.4 D-Matter (Table 1, (4))

Although Belazi, Rubin and Toribio (1994) claim that code switches may not occur between a D and its complement, this generalization is not consistent with many other corpora, including the corpus presented in this dissertation. In particular, the Spanish-Nahuatl mixtures reveal that Nahuatl Ds may be followed by Spanish nominal complements, but Spanish Ds may not be followed by Nahuatl Ns. This difference was accounted for in terms of an inability in the morphologically impoverished Nahautl Ds to attract Spanish Ns for φ-feature checking (§5.2.2.6).

Belazi, Rubin and Toribio (1994) claim that (116a) is ill-formed; however, other Spanish-English bilinguals with whom I have consulted claim that a short pause before the code switch, as in (116b),[116] improves the judgment considerably, and others have observed that contracting the English copula, as in (116c),[117] also greatly improves the construction. (I assign (116a) a star, following Belazi, Rubin and Toribio (1994), but many Spanish-English bilinguals I have consulted judge it to be only slightly degraded.)

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[115]The data in (115) is due to Manuel Español-Echevarría.

[116]Judgment and observation due to Reynaldo F. Macías.

[117]Judgment and observation due to Tara Joy Yosso.

(116a) *He is a *demonio*
'He is a devil.'

(116b) He is a -- *demonio*
'He is a -- devil.'

(116c) He's a *demonio*
'He's a devil.'

These facts again may suggest that phonological cliticization is responsible for degrading (116a), to whatever extent it is ill-formed, and that English articles optionally do not attract nouns for LF checking. Note that the English indefinite article has an alternative, phonologically conditioned form *an* which is used only before vowel sounds. The pause in (116b) and the contraction in (116c) change syllabification in (116a) so that phonology does not have to build syllables across language boundaries. If correct, this analysis brings (116a) into line with the analysis of (100) in section 5.2.2.6, and with the analysis of cliticization of conjunctions in section 5.3.1.1, and suggests a further role for the PF Disjunction Theorem presented in section 5.2.2.3. Further inquiry and comparisons with additional data may bring other relevant facts to light.

5.3.1.5 Modification Structures (Table 1, (5))

Santorini and Mahootian (1995) survey a wide range of code switching data involving adjectival constructions and show that, while adjectives sometimes determine word order in code switching contexts, constructions in which the noun appears to determine word order have also been attested. Consider the AdaNme-English code switch in (117), reported in Nartey (1982).

(117) e hé *house red* ò
(s)he bought house red the
'(S)he bought the red house.'

Santorini and Mahootian (1995) analyze (117) in terms of a Tree Adjoining Grammar (TAG) in which lexical items are stored with trees which give partial structure. In the grammar given by Santorini and Mahootian, an auxiliary tree corresponding to the word order requirements of AdaNme adjectives is presented, but it is not lexically filled with an AdaNme adjective; presumably another such tree exists to derive (monolingual, at least) English adjective-noun word order, also lexically empty. This leads to their generalization that "all possible codeswitching combinations are attested" in noun-adjective contexts.

But this is not an uncontroversial claim. With respect to Spanish-English, for instance, Gumperz (1976), Lipski (1978), and Belazi, Rubin and Toribio (1994) claim that Adj-N order is determined by the language of the adjective, Poplack (1980) claims that the order is unconstrained, and Timm (1974) found that no Adj-N switches were allowed. Even confining the discussion to a small subclass of adjectives, adnomials, as in Santorini and Mahootian (1995), the data is not clear. In section 5.2.2.6, with respect to (102), I also suggested that the word order requirements of the adjective are favored in Spanish-Nahuatl (noting idiosyncratic properties of *nikpia* 'have').

To properly solve this puzzle, at least two currently missing pieces must be put in place. Because Santorini and Mahootian (1995), following Mahootian (1993), reject all data obtained through elicited judgment tasks (see section 2.2.2.4), many of their claims cannot be falsified. In particular, it is not possible to evaluate their claim that word order

in N-Adj pairs is unconstrained, since no starred sentences are ever available for analysis in their system. Therefore, to gain a better grasp of the descriptive facts, much more experimental data must be obtained, controlling for conflicts in agreement systems such as those discovered in section 5.2.2.6, and for marginal unacceptability due to phonological cliticization,[118] such as the cases discussed in sections 5.2.2.6 and 5.3.1.1.

In addition, the question of what parameterized properties of DPs account for noun-adjective word order remains somewhat open in the syntactic literature. Longobardi (1994) suggests that a D-N-Adj order results from overt movement of N to D in which N crosses AP in [Spec, NP]. Covert movement results in D-Adj-N word order. If that is on the right track, and if some version of Attract-F discussed in 5.2.2.6 is correct, then the requirements of the *determiner* should dictate word order in Adj-N sequences. In the fourteen examples Santorini and Mahootian (1995) collected[119] for review, in five cases the Adj-N order indeed corresponded to the requirements of the language of the determiner, while in two cases it did not, and in seven cases no overt determiner was present. The two cases in which the Adj-N word order did not correspond to the language of the determiner are from English-Italian and English-French; but note that both French and Italian allow Adj-N word order under certain semantic conditions (Longobardi, 1994). My own data, however, weaken this analysis, since *se kalli blanco* 'a house white' favors Spanish word order but bears a Nahuatl

[118]As Bruce Hayes (personal communication) has pointed out, the role of phonology in code switching is greatly underinvestigated. More work in this arena would constitute an important contribution.

determiner. Other factors may be involved (conflict in agreement, Nahuatl Ns may not raise to check features, the use of *nikpia* 'have,' and so on). As a clearer picture emerges in the syntactic literature regarding which properties of DP account for DP-internal variations in word order, and as more experimental code switching data become available, a clearer and more sure-footed analysis of this phenomenon might also be developed.

5.3.1.6 Pronouns and Clitics (Table 1, (6))

Timm (1975) and others found very strong, negative judgments when consultants were presented with Spanish-English constructions such as (118).

(118a) *Yo *went*
'I went'

(118a) *Él *wants*
'He wants'

(118c) *He *quiere*
'He wants'

(118d) *I *fui*
'I go

However, Poplack (1981) reports Spanish-English mixtures in naturalistic data at this juncture, in (119a), as does Woolford (1983) in (119b).

(119a) There was this guy, you know, *que* he *se montó* ...
there was this guy, you know, that he REF get.up/PAST/3Ss ...
'There was this guy, you know; he got up ...'

[119]Their fourteen examples are collected from papers by Di Sciullo, Muysken and Singh (1986), Bokamba (1989), Poplack (1980, 1981), Stenson (1990, 1991), Myers-Scotton (1993b), and Nartey (1982).

(119b) ... but you *usastes más pa' ir pa' llá*
... but you used more to go there
'... but you used more (gas) to go there.'

Certainly, the constructions in (118) and (119) might differ from one another in some respect that will account for the facts presented. However, it could also be that the interjection of pronouns in (119) has the character of false starts, marking a conversational repair at TP. If this is so, then no agreement relations would be established between the pronoun and its verb, and no unacceptability judgments would follow. Given the analysis presented in section 5.2.2.1, Spanish-English code switching at this juncture should be disallowed.[120] There is a considerable amount of data available on this question, however, and reconciling it all is no small task (see Jake (1994) for some interesting examples).

However, in support of the analysis presented in section 5.2.2.1, in which I claimed that a mismatch in the gender feature of Spanish and Nahuatl was responsible for some of the ungrammaticality effects, consider the switches in (120) and (121).[121] A Spanish-Catalan-Greek trilingual reported that the switches in (120), involving Spanish and Catalan, both two-valued systems, are relatively well-formed; however, when Greek, a three-valued system, is mixed with either Spanish or Catalan the constructions are severely ill-formed.

[120]It is not entirely clear that the gender system of English is single-valued. Unlike, say, Nahuatl, English uses distinct pronouns for masculine and feminine third person singular (*he* and *she*) but, like Nahuatl, has no gender markings on nouns, adjectives or determiners. The question of whether English is one-valued or two-valued in its gender system certainly impacts upon the theory developed in section 5.2.2.1 with respect to English-Spanish code switching.

[121]The data in (120) and (121) is due to Manuel Español-Echevarría.

(120a) Yo *vull mengar el dinar* (Spanish/Catalan)
I want eat/INF the dinner
'I want to eat dinner.'

(120b) El *vol mengar el dinar* (Spanish/Catalan)
he wants eat/INF the dinner
'He wants to eat dinner.'

(120c) Jo *quiero comer la cena* (Catalan/Spanish)
I want eat/INF the dinner
'I want to eat dinner.'

(121a) *Ego *vull mengar el dinar* (Greek/Catalan)
I want eat/INF the dinner
'I want to eat dinner.'

(121b) *Ego *quiero comer la cena* (Greek/Spanish)
I want eat/INF the dinner
'I want to eat dinner.'

(121c) *Aftos *vol mengar el dinar* (Greek/Catalan)
he wants eat/INF the dinner
'He wants to eat dinner.'

(121d) *Aftos *quiere comer la cena* (Greek/Spanish)
he wants eat/INF the dinner
'He wants to eat dinner.'

In section 5.2.2.1, it was noted that the data required that we posit a very tight relationship between T and V. This was articulated in terms of a conflict in gender too. However, this tight relationship may now be derived from the ban on switching within X^0 compounds, proposed in section 5.2.2.3. Yet, as (120) and (121) show, an important role for feature mismatch within φ in spec-head configurations still remains.

Similarly, the ungrammaticality of Spanish object pronouns mixed in with Nahuatl verbs was derived from a conflict in φ-features when the verb adjoined to T in order to check its features. Unacceptability in such constructions may also relate to

phonological cliticization, as in other cases discussed. In addition, apparent conflicts in the ample Spanish-English corpora may be resolved by a careful analysis of possible performance factors influencing the data. Similar comments are in order for the gapping constraint mentioned in (6d) of Table 1.

Finally, the ban on switching between a verb and its clitic in Romance is undisputed, as mentioned in (6c) of Table 1. This fact falls out of the ban on code switching within morphological compounds if clitics are viewed as a kind of affix. In the next section, I will discuss the ban on switching within an X^0 in more detail.

5.3.1.7 Morphological Switches (Table 1, (7))

In sections 2.2.2.1 and 5.2.1, Poplack's (1980, 1981) Free Morpheme Constraint, which stipulates that a code switch may not occur at the boundary of a free morpheme, was reviewed and rejected on empirical grounds. Later, in section 5.2.2.3, I claimed that certain morphological switches are prohibited. This conclusion was forced by the fact that switching in V-V compounds appears to be universally ruled out, so far as I have been able to tell, and there are no obvious feature mismatches to which the ill-formedness can be attributed (parallel, say, to the conclusion reached regarding pronominal switches in section 5.2.2.1). The ban on V-V compounding was attributed to the nature of the PF rule system -- in particular, to its ordered rules, which are sensitive to morphological structure -- and the PF Disjunction Theorem was proposed. Morphological rules of word formation apply to items before they are selected for the numeration, building such forms as *walked, came, speaks, going* (to use English examples). After spell out, PF rules apply in the computation $N \rightarrow \pi$ to map the set of lexical items selected for the numeration to a

PF representation. But code switching is not allowed at PF, for reasons discussed in section 5.2.2.3 relative to the PF Disjunction Theorem.

In section 5.2.2.3, some attention was given to the Spanish-English examples in (122), constructions which are all morphologically similar to Poplack's (122a).

(122a) *Juan está *eat*-iendo
Juan be/1Ss eat-DUR
'Juan is eating.'

(122b) *Juan *eat*-ó
Juan eat-PAST/3Ss
'Juan ate.'

(122c) *Juan eat*ará*
Juan be/1Ss eat-FUT/3Ss
'Juan will eat.'

As previously suggested (note 93, page 230), these constructions become well-formed if we imagine that Spanish has borrowed the English verb *eat*, just as American Spanish has borrowed English *parquear*.[122] Since verbs borrowed into Spanish generally take *a* as a thematic vowel (Harris, 1991, 1996), I will assume an *-ar* ending for our imagined borrowing *eat*, spelled *it* in Spanish, with an intervening *-e-* introduced by the morphophonological system, just as in *parquear*.

(123a) Juan está iteando su pozole
Juan be/1Ss it-DUR su pozole
'Juan is eating his pozole.'

(123b) Juan iteó su pozole
Juan eat-PAST/3Ss su pozole
'Juan ate his pozole.'

[122]Other examples include *taypear* 'type,' *quitar* 'quit,' *chequear/checar* 'check,' and *lonchar* '(to) lunch.' On the English origin of these words in American Spanish, see de Gámez (1973).

(123c) Juan iteará su pozole
Juan be/1Ss eat-FUT/3Ss su pozole
'Juan will eat his pozole.'

The differences between (122) and (123) now reduce to a clear, single difference in morphophonology: (123) is well-formed because the verb stem is analyzed by the PF system of the inflectional material; that is, in (123), there is no mixture of rules involving the PF components. The forms in (122), however, violate the PF Disjunction Theorem, repeated here:

(124) *PF Disjunction Theorem*
(i) The PF component consists of rules which must be (partially) ordered with respect to each other, and these orders vary cross-linguistically.[123]
(ii) Code switching entails the union of at least two (lexically-encoded) grammars.
(iii) Ordering relations are not preserved under union.
(iv) Therefore, code switching within a PF component is not possible.

In this light, we may now reconsider the counter-examples used in the discussion of Poplack's work, repeated below in (125). Three Spanish verbs (*amar, tratar* and *rescatar*) are used in combination with Nahuatl bound affixes *nik-*, *mo-*, *ki-* and *-oa*. We may now give a clear sense to borrowing, given concepts developed here and represented graphically in Figure 9 (page 231): Before items are selected for the numeration, Nahuatl rules of word formation apply to the Spanish base forms in (125) to attach appropriate affixes; X^0s, thus formed, respect (124) just as the imagined borrowing in (123) does, and

[123]Alternatively, within Optimality Theory, the PF component consists of constraints which must be *ranked* with respect to one another. Thus, (78) is not dependent upon a particular phonological framework.

(125) converge; here, however, the verbs are assumed to be phonologically incorporated into Nahuatl. Informally, we say that these cases involve "loan words" rather than code switches.

(125a) Ne nikamaroa in Maria
ne ni-k-amar-oa in Maria
I 1S-3Ss-love-VSF IN Maria
'I love Maria'

(125b) Motrataroa de nin kirescataroa n Pocajontas
mo-tratar-oa de nin 0-ki-rescatar-oa in Pocajontas
REF-treat-VSF about this 3S-3Os-escape-VSF IN Pocahontas
'It deals with Pocahontas, the one who escaped.'

With respect to morphological switches, then, it appears that Poplack's constraint is essentially correct as a descriptive generalization, with refinements noted above. Slightly reformulated, Poplack's constraint may be stated as a descriptive generalization as in (126), derived from (124) on the assumption that X^0s are inputs to PF.

(126) *A descriptive generalization*
Code switches below X^0 are ungrammatical.

As much of the data discussed in this dissertation show, however, X^0s may often elude us. Apparent morphological compounds may not be true X^0s, as in (127) (§4.1.12), in which Nahuatl *no-* 'my' does not attract Spanish *hermana* 'sister' for feature checking (see section 5.2.2.6).

(127) Nowelti okimak no*hermano*
no-welti o-0-ki-mak no-hermano
my-sister PAST-3S-3Os-give my-brother
'My sister hit my brother'

In addition, X^0s may be formed by covert movement, as in (128) where a V-V compound has been formed in a restructuring context, discussed in section 5.2.2.3.

(128) *Nikneki *compraré ropa*
ni-k-neki compr-aré ropa
1S-3Os-want buy-1Ss/FUT clothing
'I want to buy some clothes'

Whether or not an element forms an X^0 is an empirical question, determined by linguistic argument; orthographic conventions have no bearing on the matter.

Hence, special attention to the apparent counter-examples in Nishimura (1985), Mahootian (1993) and Myers-Scotton (1993b), presented in Table 1, may reveal that these cases, too, do not represent code switches below true X^0s. I leave the matter here and invite others to investigate further.

5.3.1.8 Code Switching and Basic Word Orders

Because Spanish and Southeast Puebla Nahuatl are both SVO languages, as discussed in section 2.5, it was not possible to observe the effects of mixing lexical items from languages which differ with respect to basic word order in the corpus presented here. However, other corpora have rich findings in this regard. Below I will sketch a minimalist approach to word order typology, then examine ways in which English, an SVO language, interacts in code switching with SOV Farsi (Mahootian, 1993), Japanese (Nishimura, 1986) and Korean (Lee, 1991); there is a limited amount of data available from English SVO and Irish VSO (Stenson, 1990) as well, and this will also be briefly considered.

One of the most interesting features of the minimalist program is its ability to derive differences in attested word orders from a single underlying phrase structure; this aspect of minimalist grammar is explored in recent work by Stabler (1997a, 1997b).

Stabler introduces a computational formalism for minimalist grammars which is sufficiently different from, say, Chomsky (1995a) to have unique empirical effects,[124] and is also especially concerned with the nature of the human parser and the formal mechanisms of language acquisition (learnability). However, for expository convenience, where no substantive issues are at stake, I will translate Stabler's formalism into a traditional $\overline{X}$-theoretic schema in the presentation which follows.

Consider (129), an English SVO construction.

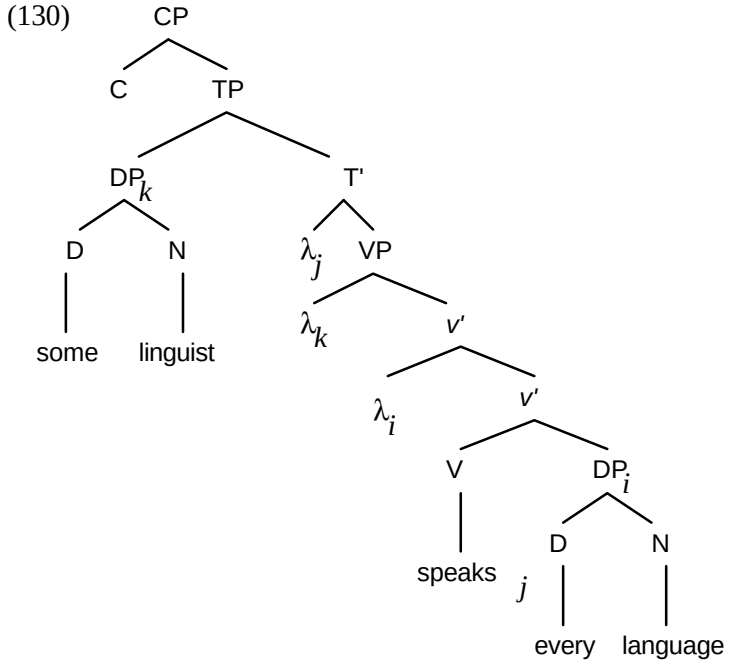
(129) Some linguist speaks every language

The phrase [$_{v'}$ speaks [$_{DP}$ every language]] is formed by two applications of merge: The D *every* merges with the N *language* to form the DP [$_{DP}$ every language], which in turn is merged with V *speaks* to form the *v'* [$_{v'}$ speaks [$_{DP}$ every language]]. *Speaks,* the head of this phrase, must assign case to its specifier, and there is only one item within the phrase which requires case -- [$_{DP}$ every language]. Having a weak case feature, the DP raises covertly to the specifier of *v'*, forming [$_{v'}$ (every language) [$_{v'}$ speaks [$_{DP}$ every language]]], where parenthetical elements have moved covertly. The subject, formed by merging *some* and *linguist*, is merged with *v'* to form the VP shell [$_{VP}$ some linguist [$_{v'}$ (every language) [$_{v'}$ speaks [$_{DP}$ every language]]]]. This structure is then merged with the phonetically null category T which must (strongly) assign case to its specifier; the move operation overtly raises the subject DP and assigns case in [Spec, TP]. Merge may

[124]A major difference in Stabler's (1997a, 1997b) system is that all features (-Interpretable and +Interpretable) are deleted when checked, while Chomsky (1995a) assumes that only -Interpretable features delete. For the purposes of code switching data discussed in this section, however, these differences are unimportant.

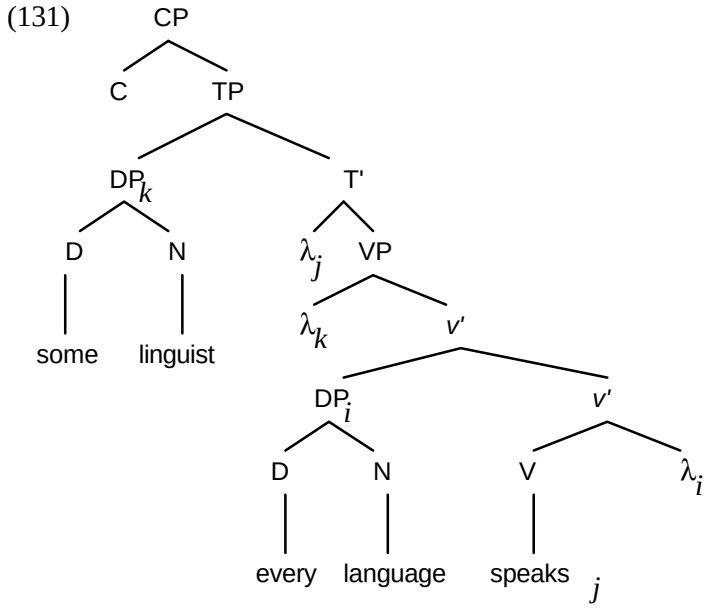
then apply to add a complementizer C to this structure, now complete with only a single unchecked categorial feature C (which, Stabler suggests, is somehow checked when inserted into discourse). The final SVO structure is represented in (130), where I have once again used conventional $\overline{X}$-type notation for convenience; λ represents an empty node, and its subscript indicates the position to which it has been moved.

(130)



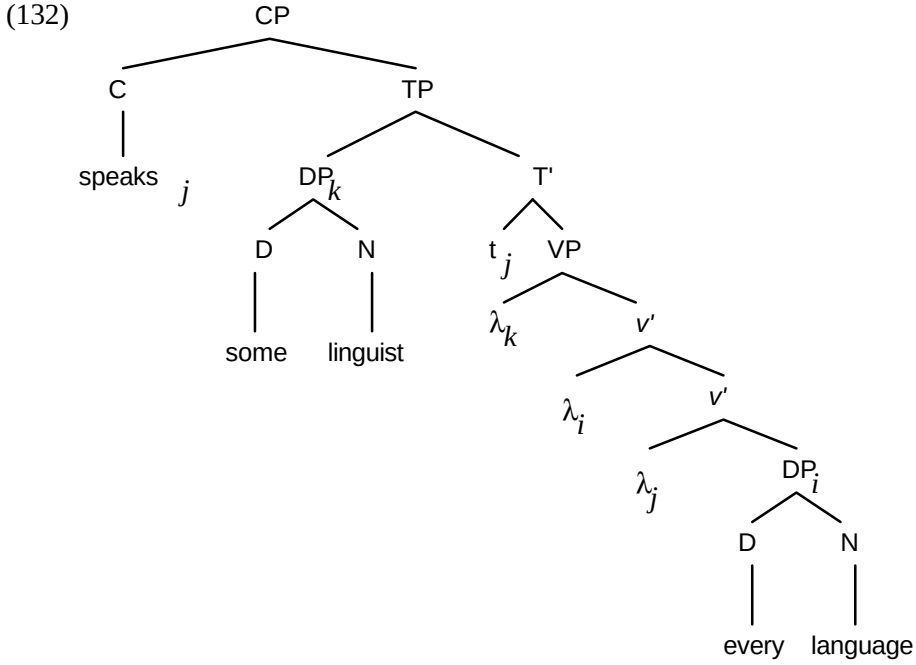
An SOV language may now be derived by simply stipulating that its Vs are strong case assigners (whereas in (130) they were weak case assigners). As Stabler (1997a) does, we will continue to use the English phonetic content in (130) for readability rather than substituting lexical tags from Farsi or Japanese. The derivation of the SOV structure is presented in (131), where the object strongly checks case in the specifier position of V, resulting in overt movement.

(131)



Finally, VSO word order may be derived by positing overt movement of the verb through T up to C. The intermediate movement of V is annotated *t* in (132).

(132)



To summarize, SVO, SOV and VSO word orders have been derived by positing the parametric differences in (133).

(133)	*Word orders*	*Lexically-encoded parameter values*
	SVO	V is a weak case assigner T and C have weak *v*-features
	SOV	V is a strong case assigner T and C have weak *v*-features
	VSO	V is a strong case assigner T and C have strong *v*-features

In the three derivations discussed above, head-movement occurred from V to T and, in one case, higher up to C. Given the ban on code switches below X^0 discussed in the preceding section, those derivations in which V, T and (in the case of (132)) C are not from the same language will crash at PF. Therefore, in any convergent derivation, V, T and C will be from the same language if they are related by head-movement. Therefore, we predict that the language of the verb will uniformly determine the position of subjects and objects in code switching.

Consider the position of objects first, a topic addressed at length in Mahootian (1993). In SVO-SOV code switching, subjects should occur uniformly in preverbal position, but objects should occur preverbally or postverbally in accordance with the requirements of the language of the verb, if the prediction made here is correct. Consider the following examples of SVO-SOV code switching from Farsi-English, Japanese-English and Korean-English.

(134a) VO verb: Farsi-English (Mahootian, 1993: 152)
Tell them you'll buy *xune-ye jaedid* when you sell your own house
Tell them you'll buy house-POSS new when you sell your own house
'Tell them you'll buy a new house when you sell your own house.'

(134b) OV verb: Farsi-English (Mahootian, 1993: 150)
Ten dollars *dad-e*
ten dollars give-PERF
'She gave ten dollars.'

(135a) VO verb: Japanese-English (Nishimura, 1986: 76)
... we never knew *anna koto nanka*
... we never knew such thing sarcasm
'... we never knew such a thing as sarcasm.'

(135b) OV verb: Japanese-English (Nishimura, 1986: 129)
In addition, his wife *ni yattara*
in addition, his wife DAT give-COND
'In addition, if we give it to his wife.'

(136a) VO verb: Korean-English (Lee, 1991: 130)
I ate *ceonyek* quickly
'I ate dinner quickly.'

(136b) OV verb: Korean-English (Lee, 1991: 129)
Na-nun *dinner*-lul pali meokeotta
I-SM dinner-OM quickly ate
'I ate dinner quickly.'

As expected, the language of the verb determines the position of the object.[125]

Matters are not so clear in SVO-VSO code switching. I have been able to find just one clear example, from Irish-English, in which an object occurs *after* an English verb, contrary to the prediction made above. Consider Stenson's (1990) example in (137).

[125]Mahootian (1993) obtains this result with an alternative formalism. Using a Tree Adjoining Grammar, in which branching direction is represented in lexically-stored subtrees, she shows that verbal heads determine the branching direction of their objects. See sections 2.2.2.4 and 5.2.2.6 for comments on this approach.

(137) SV verb (English), VS subject (Irish) (Stenson, 1990: 174)
Decided *Aer Lingus go raibh sé ro-chancy*
decided Aer Lingus that be-PA it too-chancy
'Aer Lingus decided that it was too chancy.'

However, it is not clear that all of Stenson's data should be regarded as true cases of code switching. She reports, for instance, that the Irish-English bilinguals used in her studies all had "at least a working knowledge of English" (1991: 575). If the person who uttered (137) was not truly a proficient bilingual, in the sense expressed in section 2.1, then (137) might better be excluded from consideration. In any case, considerably more data will be needed to test this prediction. Once again, I leave the matter here and invite others to investigate further.

5.4 Some General Patterns and Conclusions

After discussion of a number of alternatives, the data in section 5.2.2 were analyzed using just a handful of syntactic mechanisms. Each of these mechanisms was independently motivated with monolingual data, then the grammaticality facts observed in the code switching data were derived from them. In section 5.3, these and other mechanisms were discussed in relation to the data of other code switching corpora outlined in Table 1 (page 68). In many cases apparent conflicts were reconciled in light of some of the ideas developed in 5.2.2. These analyses are summed up in Table 8.

Table 8: Summary of Findings, Explanations Presented, and Corroborating Evidence from Other Language Pairs

Findings	*Explanation Presented*	*Corroborating Evidence*
A switch between a Spanish pronoun and a Nahuatl verb is allowed for third person but not for first and second. (§4.1.10, 5.2.2.1.)	In the case of first and second person, the Spanish 2-valued gender feature and the Nahuatl 1-valued gender feature mismatch when V raises to T to check ϕ-features and DP raises to [Spec, TP] to check case. No such conflict occurs for third person, however, since the bare Nahuatl stem may remain in situ in this instance. (§5.2.2.1.)	• English-Spanish switches are ill-formed. • Spanish-Catalan switches are well-formed. • Greek-Spanish switches are ill-formed. (§5.3.1.6.)
Switching between a verb and its CP complement is allowed, whether the complementizer is in the language of the matrix clause or the embedded clauses. However, switching between a restructuring verb and its complement is not allowed. (§4.1.2-4.1.3, 5.2.2.3.)	Restructuring forms an X^0-level V-V compound, and X^0s are inputs to PF. Code switching within PF is not allowed on the PF Disjunction Theorem. It is therefore not possible to switch in a restructuring configuration. (§5.2.2.3; cf. §5.3.1.7.)	• In Italian, restructuring is optional, but forced when the object of an embedded clause raises to the subject position of an impersonal *si*-construction; accordingly, Italian restructuring verbs with French complements are ill-formed if and only if restructuring is forced. • Restructuring may occur with an intervening verbal particle, such as English *to*; accordingly, Spanish complements of English *want to* are well-formed in comparison to complements of *want*. Similar generalizations hold for Spanish-Greek and English-French. (§5.3.1.2.)
A switch is allowed between Spanish *estar* and a Nahuatl durative (or present participle) only if the Nahuatl durative is bare of all inflectional material. These forms remain well-formed even if agreement relations appear to have broken down. (§4.1.3, 5.2.2.4.)	If and only if they are inflected, the Nahuatl duratives undergo LF checking with T by way of aspectual *estar*. This creates a restructuring configuration within which no switch is tolerated due to the PF Disjunction Theorem. If uninflected, the Nahuatl duratives remain in situ and are selected by the Accord Maximization Principle as the maximally inflected convergent derivations. (§5.2.2.4; cf. §5.3.1.7.)	Lipski (1978), Poplack (1981) and McClure (1981) present naturalistic Spanish-English data in which switching between the auxiliary (*estar* or *be*) and the durative form (uninflected in both Spanish and English) is allowed. However, Timm (1975) presents two Spanish-English examples from an experimental corpus in which such switches are regarded as ill-formed. (§5.3.1.2.)

Findings (continued)	*Explanation Presented (continued)*	*Corroborating Evidence (continued)*
A switch is allowed between Nahuatl *amo* 'not' and a Spanish verb, but not between Spanish *no* 'not' and a Nahuatl verb. (§4.2.4, 5.2.2.5.)	On independent evidence, Spanish *no* may be analyzed as a clitic of its verb, like French *ne*, whereas Nahuatl *amo* cannot. Only those cases in which cliticization are involved (Spanish *no* followed by a Nahuatl verb), that is, cases in which X^0-level compounds are formed, are ill-formed. On the PF Disjunction Theorem, code switching within an X^0 is not allowed, correctly ruling out the cliticization cases. (§5.2.2.5; cf. §5.3.1.7.)	• English-Spanish switching at this juncture is disallowed. • Greek-Spanish switching at this juncture is disallowed.. (§5.3.1.3.)
Nahuatl determiners may occur before Spanish nouns, but not vice versa. (§4.1.6-4.1.8, 4.2.8, 5.2.2.6.)	Being barren of ϕ-features, Nahuatl Ds do not attract Spanish Ns; these Ns therefore remain in situ (just as bare verb stems may remain in situ). However, Spanish Ds have ϕ-features and attract their nominal complements, forming X^0-level compounds. These latter configurations are out for two reasons: a mismatch between the Spanish 2-value gender feature and the Nahuatl 1-value gender feature occurs, as in the case of the pronominals; and a switch occurs within an X^0, disallowed by the PF Disjunction Theorem. (§5.2.2.6; cf. §5.3.1.7.)	• English-Spanish switches (??*He is a* demonio) improve at this juncture with a pause (*He is a* -- demonio) or resyllabification (*He's a* demonio). (§5.3.1.4.) • A switch between a Spanish or Nahuatl conjunction and a clause in the other language is not allowed unless a pause is inserted. (§5.3.1.1.)
In (adnominal) modification constructions, N-Adj word order is preferred but ill-formed, probably due to gender conflict. (Nahuatl has free word order for N-Adj, and Spanish has unmarked N-Adj.) (§4.2.3, 5.2.2.6, 5.3.1.5.)	No explanation is offered for this subtle difference in judgments in Spanish-Nahuatl, but some conjectures are made in §5.3.1.5 regarding code switching within modification structures in other language pairs.	A review of several other cases suggests that the language of the determiner might determine word order in these configurations, following suggestions by Longobardi (1994). (§5.3.1.5.)
A switch between Nahuatl *amo* 'not' and Spanish *amo* 'I love' is not allowed; neither is a switch between Spanish *y* 'and' and a clause (§4.1.1, 4.1.3, 5.3.1.1.)	Spanish *y* 'and' cliticizes to an element which follows it, and may be mis-analyzed as Nahuatl *y-* 'already.' This and the *amo* case suggest that code switching sometimes creates garden-paths, just as some monolingual constructions do. (§5.3.1.1).	Monolingual cases considered. (§5.3.1.1.)

Findings (continued)	*Explanation Presented (continued)*	*Corroborating Evidence (continued)*
In OV/VO code switching, the language of the verb determines the position of the object. (§5.3.1.8.)	V and T must be in the same language, as required by the PF Disjunction Theorem. In a VO language, the object is attracted weakly (covertly) by the case feature of T, resulting in VO word order, whether the object is from a VO or an OV language. In a VO language, the object is attracted strongly (overtly) by the case feature of T, resulting in OV word order, whether the object is from a VO or an OV language. (§5.3.1.8.)	• Examples presented from Farsi-English. • Examples presented from Korean-English. • Examples presented from Japanese-English. (§5.3.1.8.)
There is not enough data to know what occurs in VS/SV code switching. (§5.3.1.8.)	If the subject checks its case feature in T, then the verb should also determine the word order of the subject. (§5.3.1.8.)	One Irish-English example considered, but there are reasons to doubt its status. (§5.3.1.8.)

A general pattern has indeed emerged. No code switching-specific constraints which have been posited in the literature can account for the range of facts considered in this dissertation, and those which focus on merger relations (subcategorization) have also been shown to be inadequate. Moreover, all of the Spanish-Nahuatl data analyzed in section 5.2.2 has been accounted for in terms of principles motivated to explain monolingual data, and the discussion in section 5.3 shows that the approach outlined extends naturally to data reported in other corpora. Since it has been shown that code switching-specific constraints cannot account for the data under analysis, and since the data under analysis may be explained without reference to such constraints, they may be assumed not to exist by general principles of scientific parsimony. I therefore conclude, as anticipated, that

(138) Nothing constrains code switching apart from the requirements of the mixed grammars.

I have also established (139), since it has been shown that native bilingual code switchers are exquisitely sensitive to the subtle requirements of the languages they use, just as non-code switchers are.

(139) code switchers have the same grammatical competence as monolinguals for the languages they use.

That is, monolinguals and bilingual code switchers avail themselves of the same grammatical mechanisms. I will explore some important policy implications of (139) in the next chapter, together with other important considerations in curriculum and teaching.

Before moving on, however, a note is in order regarding the extensive use of the assumption that the absence of overt morphology corresponds to a structural difference

that is lexically represented. Pollock (1994) made this proposal regarding a few marginal cases of English verbs of motion *go* and *come*, claiming that *goes/comes* differs structurally from *go/come*. This assumption moves against the grain of a long history of linguistic analysis which assumes that morphological distinctions among genders and persons, for instance, may be efficiently encoded with one null affix; so three distinctions need only two overt markings since one may be null.

However, the tendency to assume that null affixes exist which correspond to phonetically filled affixes is generally made in the interest of morphological uniformity, with essentially no evidence to decide the matter. Since, in terms of current syntactic theory, the presence of inflectional affixes generally results in head-movement, and hence X^0-level compounding, code switching provides a new window of evidence regarding the existence of null affixes since switching at PF (below X^0) is not allowed. Thus, contrasts such as those presented in sections 5.2.2.1, 5.2.2.3, 5.2.2.4, 5.2.2.5 and 5.2.2.6 may be used to enlighten us with respect to these matters.

Finally, a word on the direction of future work. Rather than attempting to develop principles which account for all of the facts of code switching in all known corpora, work on code switching should tackle broad cross-sections of data by theme. For instance, a future study might attempt to reconcile all of the data available on switches between pronouns and verbs, or all of the data available on switches before embedded IP-complements. Such inquiry will lead to greater understanding in the theory of grammar, the nature of bilingualism and the architecture of the bilingual language faculty, and a multitude of other topics.