

# *Word order in German-English mixed discourse\**

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## **Abstract**

Intrasententially code-switched data pose an interesting problem for syntactic research as two grammars interact in one utterance. Constituent-based models have been shown to have difficulties accounting for mixing between SVO and SOV languages like English and German. In an analysis of code-switched and monolingual subordinate clauses, I show that code-mixing patterns can be studied productively in terms of a dependency analysis which recognises words but not phrases. That is, each word in a switched dependency satisfies the constraints imposed on it by its own language. Quantitative methodologies, in addition to the dependency analysis, are essential because some of the influences of code-switching are probabilistic rather than absolute.

## **1 Introduction**

If German-English bilinguals want to code-switch subordinate clauses, they need to resolve the problem of English being SVO and German finite verbs depending on lexical complementizers generally being placed in clause-final position<sup>1</sup>. How this word order contrast is resolved is relevant to the question underlying all grammatical code-switching research, i.e. whether there are syntactic constraints on code-mixing.

The first section will discuss the theoretical background to this controversy, followed by a description of the corpus and the theoretical assumptions this particular study is based on. The third section states the relevant word order rules for finite verbs in German and English, and the main sections present the data and the structural analyses. The analyses will highlight the importance of a quantitative analysis, and will show that

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\* I would like to thank Dick Hudson, Mark Sebba and Jeanine Treffers-Daller for their comments, Randall Jones for his data and David for making me laugh.

<sup>1</sup> In double-infinitive constructions the non-finite verbs can follow the finite auxiliary and extraposition can place certain constituents, but generally not direct objects, to the right of the finite verb.

the peculiarities of code-mixing syntax are probabilistic and lexical rather than of a general syntactic nature.

## **2 Code-mixing and syntax**

**2.0** In the first part of this section I will present the main issues of syntactic code-mixing research<sup>2</sup> and discuss the most important literature on this type of analysis in relation to them. In the second part I am going to outline the main components of this particular approach.

### **2.1 Grammatical and sociolinguistic issues relevant to code-switching**

The issues will be listed under separate bullet points. How interwoven they are will immediately become apparent.

- empirical vs. theoretical studies

Although some code-mixing models are entirely based on fabricated examples (Joshi 1985<sup>3</sup>, Sankoff 1998), the majority of research in this area is based on natural language corpora. A data-base is particularly important for studies of codes that do not have 'native' speakers as such who can provide fairly reliable grammaticality judgements. A corpus is an essential test for the theory constructed and corpora from a wide variety of language pairs and bilingual communities have shown that none of the syntactic constraints on code-switching proposed so far are able to account for the code-switching patterns emerging from natural speech data.

- descriptive vs. theory<sup>4</sup>-driven analysis

Some of the hypotheses on code-switching are formulated descriptively within a certain framework, others are derived from assumptions behind theories. An example of the former is the 'Equivalence Constraint'. Poplack (1980: 586), working in the variationist framework (Labov 1969, Sankoff & Labov 1979), proposes that 'code-switches will tend to occur at points in discourse where juxtaposition of L1 and L2 elements does not

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<sup>2</sup> Some of these issues are addressed in Muysken (1995).

<sup>3</sup> Joshi (1995) consulted Japanese-English bilinguals for grammaticality judgements.

<sup>4</sup> Most theories fall within Generative grammar: context-free phrase-structure grammar, government and binding, tree adjoining grammar, influences from cognitive grammar and head-driven phrase structure grammar; production models (Levelt 1989) are traceable in the literature (Myers-Scotton 1993).

violate a syntactic rule of either language, i.e. at points around which the surface structures of the two languages map onto each other’.

Reacting to criticism about the emphasis on linear sequence in intra-sententially mixed sentences, Sankoff & Mainville (1986: 6) formalised the equivalence constraint in context-free phrase-structure terms:

Given a ‘set E of immediate descendants of the node directly above the two constituents’, then ‘the symbols for any nodes in E to the left of the boundary between the two constituents must precede the symbols for all nodes in E to the right of the boundary, in the right side string of the two rules from the two grammars’.

This more formal definition of the word order equivalence constraint in terms of the immediate daughters of a given phrase structure node restricts switching between SVO and SOV languages, like English and German. A counterexample from my corpus would be

- (1) FEN: Jemand hat gesagt daß er ist **the father of her child.**  
 gloE: somebody has said that he is  
 gloG: daß er der Vater ihres Kindes ist.<sup>5</sup>

Since the rewrite rules for English and German are VP → V NP and VP → NP V respectively, switching would not be allowed under the more formal conception of equivalence. Note that example (1) also violates the linear conception of equivalence (Poplack 1980).

Similar problems arise with attempts at constraining code-switching by government relations, the traditional assumption behind X-bar theory. For code-switching purposes the government constraint was formalised in DiSciullo et al. (1986: 6) as  $[X^p Y^q]$ , where X governs Y, and p and q are language indices. The nodes in a tree must dominate elements drawn from the same language when there is a government relation holding between them.

The original inclusion of functional categories in the class of governors ruled out code-switches which actually are found frequently in the data, e.g. between complementizers and clauses, as in (2),

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<sup>5</sup> Note that extraposition of direct objects is ungrammatical in all varieties of German.

- (2) TRU: to buy yourself in means that +...  
 DOR: du kannst dich nochmal einkaufen.  
 %glo: you can yourself once more buy in

and the domain of government was too large. The above formulation of the 'Government Constraint' includes the whole maximal projection and thus e.g. bans switching between verbs and location adverbs, again contrary to the evidence.

Even the modified version of the government constraint (Muysken 1990: 124) in terms of L-marking is empirically not born out.

\*[Xp Yq], where X L-marks Y, and p and q are language indices

- (3) TRU: Das ist **painful**.  
 %glo: this is

All versions of the 'Government Constraint' can therefore be seen to be over-generalising. Musyken (1995) acknowledges that both versions of this constraint are empirically not borne out.

A related question is whether code-switching is a 'surface' or a 'deep' structure phenomenon. Romaine (1989: 145) concludes her discussion of the government constraint with the following statement:

Data such as these [code-mixing data] have no bearing on abstract principles such as government [...] because code-switching sites are properties of S-structure, which are not base generated and therefore not determined by X-bar theory.

Most researchers agree with this conclusion. Again, for this particular study<sup>6</sup>, if code-switches between SOV and SVO languages were base generated, the movement transformations for creating a mixed S-structure would be extremely complex.

Another question related to linguistic theory is whether we can assume a 'hard-wired' human linguistic faculty evolving in prehistoric monolingualism as underlying bilingual competence and bilingual discourse. This seems specious because code-mixing

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<sup>6</sup> The issue at stake in my study is code-mixing between one language with fairly fixed word order and one with greater word order freedom. The striking variation for the order of finite verbs' complements and adjuncts in German, sometimes referred to as 'Scrambling' has given rise to a lot of controversy. The scrambling account I find most convincing (Haider 1990 & 1993) assumes that free word order is base generated, i.e. the D-structure base already provides us with all the various options of word order that show up at S-structure.

strategies have been shown to change in the lifetime of bilingual communities and only partly depend on linguistic typology of the two languages.

Finally, one of the most interesting questions concerning the relation between grammatical theory and code-switching is whether code-switching research can tell us anything about the division of labour between the lexicon and the grammar of the language.

The basic building blocks of intra-sententially switched sentences are items drawn from two lexicons. If we therefore based our analysis on a more lexically driven syntactic theory, we could study to what extent the sentence patterns derive from the interaction between these two lexicons. Mac Swan (1999) and the present study a steps into this direction. MacSwan (1999) uses a minimalist approach to code-switching which is lexically based but still preserves constituent structure. This study employs a word-based dependency grammar. Further research in this direction may eventually throw light on to what extent we rely on properties of individual words when we produce and comprehend mono- and bilingual utterances, and to what extent we rely on general rules of the language(s) we speak.

Theory-driven analysis is clearly preferable, however,

While formal theories of grammar may well account for monolingual language in terms of general linguistic principles, there is no reason to believe that processes which juxtapose two languages can be explained in exactly the same way. (Sankoff 1998: 40).

- monolingualism vs. bilingualism

One issue here is cross-linguistic categorial equivalence<sup>7</sup>, i.e. which facts concerning categories in different languages match and which do not. Sankoff and Poplack (1981) and Sankoff (1998) not only assume 'lexical translatability', but also 'categorical congruence', meaning that there is a one-to-one correspondence between the categories of the two languages and between the lexical slots of both languages. However, empirically this idealisation is unwarranted. Some categories, e.g. nouns, are clearly better candidates for cross-language congruence than others, e.g. clitic versus non-clitic pronouns or conjunctions<sup>8</sup>.

Furthermore the question arises whether there are two separate language systems involved in code-switching. Sankoff & Poplack (1981) assume that each code-switched

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<sup>7</sup> See Sebba (1998) for a detailed discussion.

<sup>8</sup> On pronouns see Sebba (1998: 8) and on conjunctions (Muysken 1995: 193).

sentence makes alternate reference to two monolingual grammars, Clyne (1987) observes convergence between already similar grammatical systems (German, Dutch and English), and Sebba (1998) argues that congruence is constructed by bilinguals.

A related issue is whether intra-sententially mixed utterances are alternational and symmetrical, involving lexical and syntactic properties of both languages, or insertional<sup>9</sup>, a process of embedding which is similar to lexical borrowing and thus primarily governed by features of one dominant language. From what we have already said about Sankoff and Poplack's assumptions and the 'Equivalence Constraint' it is obvious that they see code-switching as an alternation between two systems. Within Government and Binding, on the other hand, the governing element creates a matrix structure and the model thus implicitly assumes an asymmetry between a matrix and an embedded language.

The Matrix Language Frame Model (Myers-Scotton 1993) assumes that code-mixed configurations arise through an insertion process. In this model, "the matrix language determines the morpheme order and also supplies the syntactically relevant system morphemes." (Myers-Scotton 1993: 77). System morphemes are roughly equivalent to function morphemes, which are notoriously difficult to define<sup>10</sup>. Myers-Scotton (1995: 240f) employs the criteria of [+ Quantification], 'any lexical item belonging to a syntactic category which involves quantification across variables is a system morpheme', and for potential theta-role assigning/receiving categories [- Thematic Role Assigner] and [- Thematic Role Receiver] qualify as system morphemes. These criteria create a disparate set of system morphemes: subordinating conjunction and 'possibly some complementisers', e.g., are content morphemes because they 'signal such semantic content as REASON and MANNER'. As the Matrix Language Frame Model relies heavily on the distinction between system and content morphemes, its explanatory value is questionable.

Code-switching research so far has shown that code-mixing strategies are only partly dependent on linguistic typology of the two languages, but also on the parochial code-mixing strategies employed in bilingual communities.

- universal vs. parochial constraints & absolute vs. probabilistic restrictions

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<sup>9</sup> The distinction between alternational and insertional code-switching was introduced by Muysken (1995).

<sup>10</sup> Hudson (1997) even argues for a 'Syntax without functional categories'.

Early constraints on code-switching were relative to specific language pairs and linguistic communities (Timm 1975, Pfaff 1979). Clearly more universal accounts of code-switching are desirable, and researchers started looking for general hypotheses. The 'Equivalence Constraint', for example, is formulated as a general constraint which is supposed to hold for the majority of cases. Empirical data from some bilingual communities<sup>11</sup> support this constraint as a general tendency, others<sup>12</sup> yield a considerable number of counter-examples. The 'Government Constraint' was supposed to be universal and hold absolutely. We saw in a previous section that this is clearly not borne out.

At the present stage we know that different bilingual communities mixing typologically similar language pairs develop different code-mixing patterns. We therefore have to accept certain parochial conventions within universal explanations. As far as absolute vs. relative restrictions are concerned, it seems that the more types of data are brought to bear on the existing hypothesis, the more realistic probabilistic statements seem. However, even probabilistic statements on code-mixed data<sup>13</sup> have so far remained inconclusive although the nature of the data (performance data which are subject to a great variety of socio-linguistic factors) would lend itself to this type of analysis.

## 2.2 The Data & Assumptions

The discussion in this section follows the headings used in 2.1.

- the corpus of natural speech data

I am going to present an empirical study based on a corpus of German-English monolingual and code-mixed discourse. The data was collected from a German-English bilingual community in London. The informants are Austrian, predominantly Jewish, refugees from Nazi occupation. The majority settled in NW London in the late 1930s. We are therefore dealing with a community in which German and English - and the associated cultures - have been in contact for approximately sixty years. At the time of the audio-recordings (1993) all informants were in their late sixties or seventies.

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<sup>11</sup> Puerto Rican Spanish in New York (Poplack 1989), Finnish and English (Poplack, Wheeler and Westwood 1987), Tamil and English (Sankoff, Poplack & Vanniarajan 1990), Wolof and French, and Fongbe and French (Meechan & Poplack 1995).

<sup>12</sup> Farsi and English (Mahootian & Santorini 1996), Turkish and Dutch (Backus 1996).

<sup>13</sup> Sankoff and Poplack (1981), Treffers-Daller (1991).

The L1 of the informants, although occasionally interspersed with Yiddish lexical items and influenced by the Viennese variety, is the Standard German spoken by the highly educated Jewish communities in the urban centres of the Austro-Hungarian monarchy. Due to conditions of emigration and immigration, the age of onset of the L2 was during adolescence for most speakers. This affects the phonological inventory of the speakers' English but not their high proficiency in both languages as far as morphology and syntax are concerned. A close-knit network type of contact between a subset of the community facilitated the development of a bilingual mode of interaction, sometimes called 'Emigranto'. This mode of interaction is characterised by intra-sentential code-switching, and frequent switching at speaker turn boundaries.

For the present study a sample (8.5 hours) of the whole corpus was used. This sample consists of 46 minutes with the central informant DOR (German dominant); 36 minutes with DOR, her daughter and her grandson (English dominant); and 4 hours of group recordings involving the central informant, three of her friends from the refugee generation and the researcher. In the group recordings the general distribution of languages is approximately 10 000 German word tokens vs. approx. 7000 English word tokens. Apart from the 'central' informant who is heavily German dominant (3 000G : 500E), all other speakers use roughly the same amount of word tokens from each language. This set of data is supplemented by 95 minutes with a male (English dominant) and a female (German dominant) speaker who are friends; and 94 minutes of interview data with a male refugee (German dominant).

All eight and a half hours of monolingual German and English and code-mixed discourse were transcribed in the LIDES format which facilitates automated analysis of the data.

- descriptive vs. theory-driven analysis

In the following section I am going to outline why Word Grammar (Hudson 1990 & 1999) was chosen as a syntactic mode of analysis for this study. Word Grammar is a theory of language structure which takes the word as a central unit of analysis. Syntactic structures are analysed in terms of dependency relations between single words<sup>14</sup>. Phrases are defined by dependency structures which consist of a word plus the phrases rooted in any of its dependents. The head word is called 'parent' of each word that depends on it.

For intra-sententially switched data this is seen as an advantage over other syntactic theories because each parent only determines the properties of its immediate dependent. Therefore e.g. language specific requirements are satisfied if the particular pair of words,

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<sup>14</sup> Constituency analysis is applied only to coordinate structures.



i.e. the parent and the dependent, satisfy them. A word's requirements do not project to larger phrasal units. If we want to formulate constraints on code-switching within WG, they have to be formulated for individual types of dependency relations. Because they do not affect larger units, they might be less prone to over-generalisations than constraints affecting whole constituents<sup>15</sup>. Other advantages of WG over other linguistic theories are seen to be:

- Word Grammar requires less analysis than constituency-based modes because the only units that need to be processed are individual words. Larger units are built by dependency relations between two words which can be looked at individually.
- Word Grammar allows a single, completely surface analysis (with extra dependencies drawn below the sentence-words). We discussed in the previous section how code-mixing seems to be a surface-structure phenomenon.
- Knowledge of language is assumed to be a particular case of more general types of knowledge. Word Grammar allows the incorporation of sophisticated socio-linguistic information about speakers and speech communities.

- monolingualism vs. bilingualism

A consequence of presenting language as part of general knowledge is that the individual bilingual's competence, bilingual discourse and the linguistic theory need not rely on a 'hard-wired' linguistic faculty evolving from monolingualism.

Another consequence is that it is possible to include knowledge of any type, such as 'language', for example. That is each word 'has' a language, just as it has a meaning, pronunciation, words class, etc. Even in bi- or multi-lingual discourse words can usually be classified as belonging to one language or the other<sup>16</sup>. Properties of a word, especially its valency information, can be language-specific and there is no need to assume cross-linguistic lexical congruence.

When everything that needs to be said about language structure can be said in terms of dependency relations between single words, drawn from two lexicons  $L_E$  and  $L_G$ , grammar rules can be stated in terms of one language (English words do this...) or in terms of any other language (German words do this....). In other words, when sentences are built up with items drawn from two lexicons, we can see to what extent the sentence patterns derive from the interaction between these two lexicons and there is no need to

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<sup>15</sup> Some constituency based models' problems, e.g. government chains in GB, were discussed in section 2.1.

<sup>16</sup> A notable exception are homophonous diamorphs (e.g. in in English, German and Dutch). The term was first introduced by Clyne (1987).

assume identity of higher-level categories across languages. The question whether there are two separate language systems involved in code-mixed discourse becomes irrelevant.

A consequence of this is that an insertional view of code-switching does not make sense within a dependency framework. There is no single-language matrix structure into which insertion of a lexical or phrasal category from another language can take place. If there is a code-switch, the language alternates in the dependency relation that holds between the parent and the dependent.

- universal vs. parochial constraints or none at all  
and absolute vs. probabilistic restrictions

We noted at the beginning of this paper that none of the constraints on code-switching proposed so far have been shown to be able to account for the structures found in empirical data. This had led some researchers (Mahootian 1997) to rule out constraints on code-switching and go back to “A Null Theory of Codeswitching” (Mahootian 1993). Although this is not very satisfying, this seems to be the sensible way to go. We therefore formulate the Null-Hypothesis in Word Grammar terms:

Each word in a dependency must satisfy the constraints imposed on it by its own language.

A return to the Null-Hypothesis does not affect the usefulness of a probabilistic account of code-switching patterns. I will combine qualitative structural and quantitative distributional analysis. Muysken's (1995: 185) contention that

we do not yet know enough about the relation between frequency distributions of specific grammatical patterns in monolingual speech data and properties of the grammar to handle frequency in bilingual data with any assurance

can be met in this study by a comparison with the monolingual data in the main corpus and with other monolingual corpora.

### **3 Word order rules for English and German finite verbs**

Subordination was chosen as an area of investigation for this study because the two languages in contact in this particular situation, German and English, display some interesting differences. The contrasting word order rules for English and German, stated in WG rules, are:

- E1) In English any verb follows its subject but precedes all its other dependents. This holds true for main as well as subordinate clauses and gives rise to SVO order in both clause types.
- E2) subordinators<sup>17</sup>, e.g. *because*, require a following finite verb as their complement. A word's complement generally follows it<sup>18</sup>.
- For German the most relevant rules concerning word order in main and subordinate clauses are:
- G1) A 'default' finite verb follows one of its dependents but precedes all other dependents. This gives rise to a verb second (V2) word order in German main clauses<sup>19</sup>.
- G2) A finite verb selected by a lexical complementizer/subordinator takes all its dependents to the left<sup>20</sup>, i.e. it is a 'late parent'.
- G3) Lexical complementizers/subordinators, e.g. *daß*, select a 'late' finite verb as their complement<sup>21</sup>. According to G2 finite 'late' verbs follow all their dependents.

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<sup>17</sup> Whether subordinators ought to be assimilated into the word class of prepositions makes no difference to the analysis proposed here.

<sup>18</sup> Default inheritance rules apply to the few English constructions in which the complement comes before the head.

<sup>19</sup> In most generative accounts of German, SOV, the word order found in subordinate clauses, is assumed to be the underlying order for all German sentences. Other verb positions are derived by movement. Some generativists (Den Besten 1983), however, propose an analysis very similar to the one presented here: V2 in the absence of lexical complementizers, and verb final if there is a subordinator present.

<sup>20</sup> The term 'late' was chosen instead of 'final' because finite dependent auxiliaries in double infinitive constructions can be followed by their non-finite dependents.

<sup>21</sup> support for this analysis comes from the fact that German subordinate clauses lacking a subordinator are V2 (or verb initial). Cf. *Sie sagte, sie sei der Aufgabe gewachsen. Sie sagte, daß sie der Aufgabe gewachsen sei.* According to G3, it's only lexical complemeizers/subordinators that select 'late' finite verbs. So if a verb depends directly on another verb (i.e. no *daß*) the default rule need not be overridden. Haegeman (1991: 530) claims the complementiser *daß* cannot be deleted in German subordinate declarative clauses and on that basis suggests the complementiser position must be filled in German. Since this runs counter to the empirical fact, this argument can not be used in support of the SOV analysis of German.

## 4 The empirical issues

### 4.1 Asymmetry between conjunctions of reason

We noted in section 3 that there is a fairly even distribution of German and English in the data this study is based on. If, however, we focus on *because* and the most likely candidate for a translation equivalent from the same word class, the subordinating conjunction *weil*, we get a very different picture. The whole corpus yields twice as many tokens of the English subordinator as of *weil*<sup>22</sup>. A typical use of *because*, especially for speaker DOR, is

- (4) DOR: es war unsere [...] Schuld **because** man fühlt  
 % glo: it was our fault one feels  
 sich mit den eigenen Leuten wohler.  
 oneself with the own people happier.

*Because* in the above example can be argued to be a single lexical item inserted in otherwise German discourse, i.e. a borrowed conjunction.

This particular usage of the English causal subordinator is not restricted to speaker DOR.

- (5) DOR: **really # why?**  
 LIL: **because** er ist ein aufbrausender **Irishman**.  
 % glo: he is a hot-blooded

*Because* also enters syntactic dependency relations where the word on which it depends is English and its dependent is German as in

- (6) DOR: **eat it with** der Hand **because** das schmeckt  
 % glo: your hand that tastes  
 ganz anders!  
 very differently

or vice versa, i.e. *because* has a German 'parent' but an English complement as in

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<sup>22</sup> The exact figures are presented in Table 1.

- (7) MEL: ich hab's nicht einmal gezählt **because I know I'm going to loose.**  
 %glo: I have it not even counted

The German subordinator of reason, *weil*, on the other hand, only enters into monolingual dependency relations.

- (8) DOR: dann ist sie, weil sie so unglücklich war,  
 %glo: then has she, because she so unhappy was,  
 dort gestorben.  
 there died.

So there is not only an asymmetry in the number of tokens each subordinator yields but also in the language distribution of the immediate syntactic relations which *because* and *weil* enter into, i.e. their matrix clause 'parent' verb and the subordinate dependent verb. Although the majority of parents and complements of *because* are English, there are 16 instances<sup>23</sup> where both the parent and the dependent of this subordinator are German verbs, 5 cases where the parent is English and the dependent German, and six cases where the parent is German and the complement English. The results are summarised in Table 1.

	par E - dep E	par E - dep G	par G - dep G	par G - dep E	total
<i>Because</i>	86	5	16	6	123
<i>Weil</i>	0	0	59	0	59

Table 1. language of parent and dependent of *because* and *weil*

The phenomenon of 'borrowed', i.e. single lexical item, subordinate conjunctions is not uncommon in code-mixing literature (Clyne 1987, Gardner-Chloros 1984, Salomons 1990, Treffers-Daller 1994). The 16 English subordinators in a predominantly German context in the 'Emigranto' corpus, however, are in sharp contrast with the findings of Clyne (1973) who studies German-English code-mixing among the Jewish refugee community in Melbourne, Australia. He reports that "the words transferred from German to English are mainly conjunctions (*denn, ob, und, weil, wie, wo*)" (Clyne 1973: 104). The corpus from the refugee community in London also shows a high propensity for switching conjunctions<sup>24</sup>, however the vast majority of them are English

<sup>23</sup> Note that 14 out of 16 examples originate from one speaker (DOR).

<sup>24</sup> This comparison is based on the whole London corpus.

conjunctions in otherwise German discourse. Lexical transfer of the same word class thus seems to work in the opposite direction in two bilingual communities with a very similar sociolinguistic profile mixing the same language pair.

Could *because* also translate into other conjunctions of reason? Yes, it could also translate into *da*, another subordinator, or the coordinating conjunction *denn*. The corpus yields one example of German *da* used as a conjunction. *Denn* was used once by a speaker from the group recordings (not DOR) and three times by a speaker of the Austrian Standard recorded in a more formal setting. *Denn* has increasingly gone out of use in colloquial German (Uhmann 1998: 132), however, since it is used by my informants, we need to consider it as a possible translation equivalent of *because*. This possibility is interesting because it involves word order issues: as a coordinating conjunction, *denn* always takes V2 order in the clause following it. I will discuss the relations between *weil* and *denn* in section 5.2. on word order.

#### 4.2 Verb second word order after *because* and *weil*

The second peculiarity of this corpus is illustrated in examples 4 - 6: German finite verbs in predominantly German subordinate clauses introduced by *because* occur in second position (as in German main clauses). In actual fact not one German finite verb depending on *because* is in clause final position as in German monolingual subordinate clauses with an overt German subordinator and as required by rule G2 (see example 8).

Furthermore, not all finite dependent verbs follow their subject, as would be required by rule E1. Some of them follow the direct object as in (9), others follow time and place adverbials as in (10) and (11).

- (9) DOR: **because** dem Computer brauchst' es nicht zeigen.  
 % glo: the computer need you it not show.
- (10) TRU: **because** früher haben wir gespielt +...  
 % glo: formerly have we played
- (11) MEL: **because** bei mir hat schon +...<sup>25</sup>  
 % glo: at my place has already

The word order in subordinate clauses after *because* is summarised in Table 2. As the language of the matrix verb was found to have no effect on the word order position of the dependent verb, columns parent E and parent G were conflated.

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<sup>25</sup> Examples (10) and (11) are incomplete subordinate clauses. This, however, does not effect the analysis because the word order position of the relevant finite dependent verb is clear.

	par G/E - dep E		par G/E - dep G		
	SVX	XVS <sup>26</sup>	SVX	XVS	SOV
<i>Because</i>	91	1	15	6	0

Table 2: word order in subordinate clauses after *because*

We illustrated above that what are supposed to be German ‘late’ verbs occur in second position after the English subordinator *because*.

Let us now look at the German subordinator *weil*. From Table 1. we can deduce that *weil* only has German ‘parents’ and complements. According to the rules of Standard German (rules G2 & G3) finite verbs depending on an overt subordinator should follow all their dependents, i.e. be ‘late’ or final. This is not borne out in the corpus. Note, however, that more dependent verbs are in final position after *weil* than after *because*. Table 3. summarises the position of the dependent finite verb in *weil* clauses from my corpus. In order to see whether verb second after *weil* is a parochial convention of ‘Emigranto’ or not, we also give figures from the Brigham Young University<sup>27</sup>, the Uhmman<sup>28</sup> (1998) and the Scheutz<sup>29</sup> (1998) corpora of spoken German for comparison.

<i>Weil</i>	Vf	V2	Vf	V2
Emigranto	34	25	58%	42%
BYU	62	11	85%	15%
Uhmman	24	19	56%	44%
Scheutz	248	113	31%	69%

Table 3: verb position after *weil*

Table 3 shows that between 15 and 69% of dependent ‘late’ verbs in these corpora are not in accordance with G2. These percentages are far too high to be explained away by

<sup>26</sup> See example (16) section 5.2 for a discussion.

<sup>27</sup> The Brigham Young Corpus was collected between 1989 and 1992. Audio-recorded interviews were conducted in locations all over the German speaking area, i.e. Germany, Austria and Switzerland. Since all ‘Emigranto’ informants are speakers of Viennese German, I only used examples from the 10 Viennese informants of the BYU corpus. I would like to thank Randall Jones, Brigham Young University, Utah, USA for access to his data.

<sup>28</sup> Uhmman’s (1998: 96) corpus is ‘alemannisch bzw. bairisch’.

<sup>29</sup> Scheutz’s (1998:10) informants speak a ‘dialektale Variante des Ostmittelbairisch’.

production difficulties and suggest that there is something peculiar about this particular German subordinator.

We thus have two problems to solve: 1) the asymmetrical distribution of *because* and *weil* in the 'Emigranto' corpus and 2) the word order irregularities in both mixed and monolingual causal clauses introduced by *because* and *weil*. In the next section I will suggest possible solutions to these two problems.

## 5 Possible explanations for the asymmetry of *because* and *weil*

**5.0** The frequencies with which *because* and *weil* occur in dependency relations (summarised in Table 1.) suggest that for the asymmetry between *because* and *weil* a probabilistic perspective is required.

We noted (footnote 22) that 14 out of the 16 tokens of *because* with a German parent and complement were produced by one speaker. This is even more significant if we remember that this speaker and the corpus collected from this speaker is heavily German dominant (approx. 8 000 German vs. 500 English word tokens). This abundance of German data from this speaker only contains 7 tokens of the German subordinator *weil* (and no *denn*). The English causal subordinator thus seems to replace the German translation equivalents in the speech of this speaker. This parochial use of causal conjunctions seems to have spread to the close-knit network of bilinguals who use the mixed code as a discourse mode (in the present corpus represented the circle of friends including speakers DOR, TRU, MEL and LIL, see examples 9 - 11) but not further. There is no significant asymmetrical relation between *because* and *weil* in the rest of the corpus<sup>30</sup>. *Because* and *weil* furthermore only occur in their respective monolingual contexts in the speech of the five other speakers.

Reasons for the discrepancy between the British and Australian corpora remain speculative. Why German speaking refugees in Australia incorporate German subordinators in their English and the directionality of lexical transfer is reversed among the same speakers in Britain could possibly be due to the Australian corpus having been collected approximately twenty years before the London corpus. Prolonged exposure to English might be a possible explanation<sup>31</sup>. Salomon's (1990) data from American-German dialects lend support to this assumption. See example (12).

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<sup>30</sup> 44 tokens of *because* in over an hour of base language English discourse vs. 37 tokens of *weil* in approx. two hours of base language German discourse.

<sup>31</sup> However, the speaker in whose language the transfer is most marked was characterised as German dominant, not only quantitatively but also structurally, as we will show in the next section.



- (12) **Almost** jedes moi is Suppe gewen, **because** mir han kei  
           every time is it soup be we have no  
 Zeit khat fer Supper recht essen.  
 time had for soup properly to eat

Gardner-Chloros's (1985) French-Alsatian data also offer interesting examples of subordinate clauses that are introduced by a subordinator from the other language.

- (13) Un noh isch de Kleinmann nunter, **parce que** ich hab  
 And now is the Kleinmann down there I have  
 mi dort mue melde.  
 myself there must check in.

Note, furthermore that the German verbs selected by the English and French subordinators in examples (12) and (13) follow just one dependent, in these cases their subjects.

So far we have not dealt with the question whether these examples should best be analysed as alternational code-switching or insertional and hence governed by features of one language. This question is best answered on the basis of the dependency relations the subordinators enter. I will therefore discuss it in the next section.

### 5.1 V2 after *because* and *weil*

The clearest result of the quantitative analysis presented in Table 2. is that all German finite verbs in subordinate clauses after *because* are in second position and none in clause final position.

Do the Word Grammar rules stated in section 4 account for the empirical data? Yes, they do because rule E2 requires a following finite verb as its complement. although the English subordinator requires its complement to be a finite 'default' verb.

Due to the identical word order in English main and subordinate clauses (E1) English does not require an automatic overriding rule which refers to a more specific proposition. German complementizers/subordinators (G3), on the other hand, provide a specific context which 'triggers' an overriding of the default rule G1 and rule G2, which requires a non-default, i.e. 'late' verb to take all its dependents to the left, applies. As *because* is an English subordinator which does not specify that its complement has to be a 'late' verb the default rule (G1) applies.

Supporting evidence for this interpretation comes from the six instances where the finite verb follows a dependent other than their subject (cf. examples 8-10) and (14) below.

(14) DOR: **I lost because** dreimal gab sie mir drei Könige.  
 three times gave she me three kings.

In the above example the verb is in second position, but the subordinate clause is clearly not SVO (rule E1). The finite verb is preceded by an adverbial, a grammatical possibility according to G1, but followed by the subject. In other words, the subordinate clause displays the ordinary V2 order expected in standard German main clauses.

This can be explained as follows: *because* is an English subordinator which requires a following finite verb as its complement (E1). In code-mixed discourse, *because* has got two options: an English or a German finite verb. An English complement would have to follow its subject and precede all other dependents (E2). In example (14), however, there is no appropriate English candidate for a complement of *because* BUT there is a German verb that fulfils the requirement of being ‘final’ so rule G1 applies. In other words, *because* is an English subordinator which does not impose ‘late’ on its complement. Therefore it defaults to V2 as in main clauses.

This WG analysis also has implications for whether we view the mixed examples as alternational and symmetrical or insertional. The code-mixed utterances exhibit properties of both languages involved which suggest alternation. If *because* affected the word order in the subordinate clause, i.e. if all subordinate clauses following *because* were SVO, code-switching would be governed by features from English and would therefore have to be regarded as insertional. The German V2 word order (G1) in examples (9) to (11) and (14) is evidence for code-switching being alternational in these examples.<sup>32</sup>

Furthermore, *because* is not seem to have been 'reclassified' as a German subordinator. It does not impose ‘late’ on its finite verb complement, otherwise G3 would apply and the empirical data should at least yield one example of a clause final subordinate verb. In short, the word order found after *because* is significantly different from that found after *weil*, as can be seen in Table 4. below (chi-square = 21.046, df = 1, p = 0).

	Vf	V2	total
<i>because</i>	0	21	21

<sup>32</sup> This interpretation of course rests on the assumption that *because* is a ‘proper’ English subordinate conjunction has not ‘become’ a coordinating conjunction, an analysis suggested by Treffers-Daller (1984: 192 & 195).

<i>weil</i>	34	25	59
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Table 4. Position of German verbs after *because* and *weil* in Emigranto

The examples discussed so far and their analysis within the theory of Word Grammar also does not provide evidence for syntactic transfer, relexification or over-generalisation of SVO (cf. Clyne 1987).

The WG rules stated in section 4 can account for the code-mixed data discussed so far and lead to interesting theory driven suggestions as to whether we are dealing with alternational or insertional code-switching. However, we also need to consider the monolingual data.

Table 2. illustrates that all but one English subordinate clause after *because* has SVO word order, i.e. the structure required by rule E1. Even complex examples involving topicalisation are grammatical according to English WG rules.

(15) ALA: **because the ordinary soldiers we wanted to get rid of.**

The example that necessitated the introduction of the, for English, odd column XVS into Table 2. is given below (see also footnote 26).

(16) DOR: \*if you want, we can go earlier **because # at four thirty starts the quiz.**

Example (16) violates E1 which requires any verb to follow its subject. The only way one could render this example grammatical according to the rules of the lexifier language would be to interpret the pause (#) as a production difficulty and to argue that DOR abandoned the subordinate clause after the subordinator and started a main clause at *at*. This interpretation, however, seems contrived, especially since the corpus yields several examples (9-12) of this construction type in German. So alternatively we need to assume some influence from the speaker's L<sub>1</sub>, in the direction of syntactic transfer (Clyne 1987) and relexification, i.e. application of rule G1 instead of E1<sup>33</sup>.

The monolingual German 'Emigranto' data are more worrying at first sight: we counted 59 tokens of German subordinate clauses introduced by the subordinator *weil*. According to rule G3 complementizers/subordinators require a following finite 'late' verb as their complement and as stated in rule G2, verbs selected by an overt

<sup>33</sup> or in more standard terminology topicalisation in combination with 'subject hopping' (Hawkins 1986: 37) a German 'movement rule effecting word order arrangements which are without parallels in English' and which places the subject to the right of the V2 verb.

complementizer have to be in clause final position. Are these grammar rules adhered to by the speakers of 'Emigranto' and 'continental' German? No, not strictly. Only 58% of the finite dependent verbs in the 'Emigranto' comply with rules G3 and G2. Table 3, which compares the 'Emigranto' corpus with other corpora of similar German varieties, shows that even in 'continental' German only 31 - 85% of the subordinate clauses introduced by *weil* are grammatical according to the rules as stated in section 3.

The German literature on *weil* constructions points us in two directions: one involves dialectal variation in German (Wiesinger 1990) and the second one involves language change the direction of polysemy of *weil* in colloquial German (Uhmann 1989).

Discussing the syntax of central and southern Bavarian, Wiesinger (1990: 455) states that "while in most subordinate clauses the verb occurs in final position, in causal clauses introduced by *weil* the finite verb occurs in second place as in a main clause". Table 3. shows that the generality of this statement is clearly not borne out by the empirical data. However, since all speakers whose causal clauses introduced by *weil* are summarised in Table 3 ARE speakers of more or less<sup>34</sup> standard Bavarian varieties, Wiesinger's observation clearly contributes to the explanation for V2 after *weil*, especially since it seems to be linked to the second possible explanation.

Language change in progress is another possibility for the interpretation of the figures in Table 3. Farrar (1999: 1) notes "an increasing tendency to have V2 in dependent clauses [...], especially those introduced by *weil*" in contemporary German. Trying to account for the reasons behind this change she links it to the "higher frequency of use of *weil*+V2 in the South" and argues "an apparent logical assumption would therefore be that *weil*+V2 is a dialectal feature that is spreading from the South" (Farrar 1999: 22). Uhmann (1998: 134) also attests a higher level of V2 use after *weil* in southern German varieties, even in the 1950s (31%<sup>35</sup>), and notes a further increase (up to 64 - 69%) in the 1970s and 1980s.

Uhmann's (1998) hypothesises a lexical split of *weil* into two, syntactically as well as semantically distinct, lexical entries *weil*<sub>1</sub> and *weil*<sub>2</sub>. *Weil*<sub>1</sub> is a complementizer and is illocutionary integrated within the matrix clause. *Weil*<sub>2</sub> is analysed as coordinating conjunction and the two clauses of the resulting paratactic constructions are illocutionary independent (see also Günthner 1993). *Weil*<sub>2</sub> is said to have taken the position of *denn* in the system of conjunctions of reason in colloquial German (see also Schlobinky 1992).

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<sup>34</sup> Scheutz (1998: 10) whose corpus yields 69% V2 after *weil* describes the variety of German spoken by her informants a "eine umgangssprachliche, z.T. auch stärker dialektale Variante des Ostmittelbairischen im nördlichen Oberösterreich".

<sup>35</sup> Uhmann (1998) does not provide a source of reference for this figure.

If we adopt this analysis, what do the findings from the monolingual German data mean for rules G1 to G3? *Weil*<sub>1</sub> is a subordinator and rules G2 and G3 apply. *Weil*<sub>2</sub> is a coordinating conjunction and therefore rule G1 applies. We can therefore conclude that G1 to G3 account for the monolingual German data as well.

Uhmann's (1998) proposal is interesting as it opens the possibility that speakers of 'Emigranto' treat English *because* as the translation equivalent of *weil*<sub>2</sub>. Since *weil*<sub>2</sub> is not a subordinating conjunction, rules G2 and G3 would not have to apply and the finite verb in the clause following this conjunction is not a post-dependent. Let us therefore revisit the 'Emigranto' corpus and see if Uhmann's (1998) syntactic and semantic criteria point us towards *weil*<sub>1</sub> or *weil*<sub>2</sub> as a possible translation equivalent for *because*. The strongest restriction on *weil*<sub>2</sub> is that it cannot occur before, in or embedded in the 'Vorfeld', i.e. has to introduce the rightmost of the two clauses. The 'Emigranto' corpus yields a counterexample to this restriction.

- (17) **Because**<sup>36</sup> früher haben wir gespielt, da kann man  
 in the past have we played part. can one  
 sich nur zweimal einkaufen **and then you have to watch.**  
 one-self only twice buy-in

In (17) the *because*-introduced clause is construction-initial, which speaks for *weil*<sub>1</sub>, but the finite auxiliary is in second position after a time adverbial, which speaks for *weil*<sub>2</sub>. The subject-auxiliary/modal inversion in the following clause, however, can only have been triggered by a preceding subordinate clause. This means that the first clause must be considered as subordinate by the speaker and consequently *because* in (15) must be a subordinating, i.e. *weil*<sub>1</sub>, and not a coordinating conjunction.

Uhmann (1998) furthermore claims that *weil*<sub>2</sub> - because it is in the 'Vorfeld' - more easily combines with extracted/topicalised elements than *weil*<sub>1</sub>, which is always in C-position. Examples (9) - (11) and (14) would therefore speak for a *weil*<sub>2</sub> interpretation of *because*. More solid syntactic criteria<sup>37</sup> like the ungrammaticality of left dislocation with *weil*<sub>1</sub>, and the restriction against two consecutive coordinating conjunctions, e.g. *und because*, cannot be tested on the 'Emigranto' corpus.

The semantic criteria for distinguishing *weil*<sub>1</sub> and *weil*<sub>2</sub> proposed in the literature (Uhmann 1998, Günthner 1993), i.e. that *weil*-clauses with V2 may contain a new

<sup>36</sup> It is not clear whether *because* is a subordinator of reason in this example; it may well function as a turn-taking device (cf. Gaumann 1983 & Günthner 1993).

<sup>37</sup> Cliticising a personal pronoun to *because* = *weil*<sub>2</sub>, e.g. *Peter hat das Buch gelesen, because's ihm von der Helga empfohlen wurde*, seems to be more of a phonological impossibility.

illocutionary act, are not unequivocal. In examples like the following, however, there is a clear cause-effect relationship between the main and the subordinate clause with V2 order

- (16) Ich habe        lauter    österreichische Freunde, **hardly any** Engländer  
 I    have        all        Austrian        friends  
**because**        mein    Mann        war    auch    ein        Wiener.  
                   my        husband    was    too    a        Viennese.

According to syntactic criteria *because* in (16) should be *weil*<sub>2</sub>, according to the semantic criteria, on the other hand, it seems to be *weil*<sub>1</sub>.

Finally, *weil*<sub>2</sub> introduced clauses should, according to Uhmann's semantic hypothesis (1998: 118) not be used in response to wh-questions. I refer the reader back to example (5) in which speaker LIL starts her reply to a wh-question with *because*.

For all these reasons it seems unlikely that my informants treat English *because* as German *denn* or *weil*<sub>2</sub>. Furthermore, as my informants employ a relatively Standard variety of German and left Austria roundabout 1940<sup>38</sup>, this recent polysemy of *weil* is unlikely to have had much effect on their speech patterns. The Viennese speakers represented in the BYU corpus on the other hand, may well be affected by this change in progress. Dialectal variation and language change in progress are therefore more likely to account for the more recently collected corpora of German presented in Table 3. than for the 'Emigranto' data.

## 6 Conclusion

Returning to the general issues concerning the relation between syntax and code-switching we have demonstrated how important quantitative analysis based on a corpus of natural speech data is for this type of research. The two languages in contact were found to exert some influence on each other: The English subordinator *because* partially replaces the German translation equivalent *weil* in the speech of the 'central' informant and the close-knit network around her. However, there is no evidence for cross-linguistic categorial equivalence. Rather the opposite: the different requirements the English and German subordinators impose on their finite verb dependents explain the word order found in code-mixed as well as monolingual clauses introduced by this subordinator. The syntactic model used for the analysis proved advantageous in several respects: the hypothesis that each word in a dependency must satisfy the constraints imposed on it by

<sup>38</sup> The Jewish refugees have very little contact with contemporary German.

its own language is borne out and does not over- or under-generalise, at least not in this data set. We demonstrated that sentence patterns derive from the interaction between words from two different lexicons, and ‘Emigranto’ is shown to be alternational rather than insertional code-mixed discourse.

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