Structural relations and Finnish-English code switching*

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Abstract

While several initially convincing code-switching theories have been proposed, the introduction of a new pair of code-switched languages often seems to present puzzles to the earlier proposed constraints. In this paper I will present data from Finnish-English code switching, attempting to explain the constraints on intrasentential switches in this language, which relies heavily on inflectional morphology. I will suggest that, despite the fact that many of the earlier proposed code-switching constraints seem to fail to explain the Finnish-English data, no special new code-switching theory is needed to account for the Finnish-English facts, but the general syntactic principle of government can account for the constraints on intrasentential switching.

The most characteristic feature of Finnish-English code switching is morphological assimilation to Finnish. This can be explained by the government constraint: insertion of lexical items to terminal nodes from English is always possible, provided that case and agreement morphology are in Finnish when in government relation with Finnish elements.

This paper thus gives support to the basic idea of the government constraint proposed by Di Sciullo et al. (1986) and suggests a minor reformulation to their theory. The paper also provides independent evidence for the decomposed Finnish IP-structure (Mitchell 1991).

1. Introduction

The constrained nature of code-switching phenomena across languages has been widely recognized in the literature (e.g. Timm 1975; Pfaff 1979; Poplack 1980; Sridhar and Sridhar 1980; Woolford 1983; Joshi 1985; Klavans 1985; Singh 1985; Di Sciullo et al. 1986; Clyne 1987; Stenson 1990; Belazi et al. 1991, i.p.; Myers-Scotton 1992, 1993). To explain the

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constraints on code switching, several theories — promoting either specific constraints (e.g. Timm 1975; Pfaff 1979) or constraints deriving from independently necessary general principles (Woolford 1983; Di Sciullo et al. 1986; Belazi et al. 1991, i.p.) — have been proposed.[1]

Since code switching is a natural part of bilingual competence, the grammatical theory should be able to account for code-switching phenomena in various settings (Stenson 1990: 194). On the other hand, studies on code-switching constraints can provide evidence for the formulations of the grammatical theory itself (Woolford 1983: 520). However, since languages differ with regard to the internal structures of their grammars, it is possible that a code-switching theory that neatly explains the phenomenon in one pair of languages will not be able to account for various cross-linguistic code-switching data (Stenson 1990: 192–193), and this is why especially the proposed specific constraints have often failed. Specific constraints, while ingeniously explaining the phenomenon in restricted data, have often not been generalizable to other language pairs, and the solution should probably be looked for in the more general, independently necessary universal principles. Theories based on such principles have been proposed for instance by Woolford, who explains code-switching constraints in terms of "the constituent structure of noun phrases under X-bar theory and lexical projection of portions of the constituent structure under VP" (1983: 520); Belazi et al. (1991, i.p.), who explain code switching in terms of feature checking; and Di Sciullo et al. (1986), who resort to the principle of government.

Even though research on the syntactic constraints on code switching has accelerated considerably during the past ten years, and even though a considerable number of the code-switching patterns of typologically different language pairs have already been described and explained within the framework of one or another theory, I am still convinced that not quite enough is known of the workings of the phenomenon in differing language pairs in order to come up with a constraint or explanation that universally explains its full range. I am inclined to believe that most of the so far proposed constraints are "true" to a certain extent, always depending on "how the cake is being cut." I also want to emphasize that if we accept parametric variation in the syntactic structures of languages, it can be that more than one theory may explain the variety of data, and no one explanation is necessarily better or more true than the others.

I have here chosen to approach my Finnish-English code-switching data from the perspective of the hierarchical structure of language, specifically, the government relations. Most of my Finnish-English data can quite conveniently be explained in terms of the recently proposed code-switching theory, the *matrix language frame model* (Myers-Scotton 1992,

1993). However, while Myers-Scotton's theory is built on the important distinction between "system and content" morphemes and is thus a more lexically based model, "endors[ing] the view that crucial directions are contained in 'lemmas'" (Myers-Scotton 1992: 103), I find it interesting that my data — which are similar to those of Myers-Scotton in terms of the morphological richness of the languages involved — may be explained also from an alternative (and not necessarily contradicting) angle, that is, looking at the data strictly in terms of hierarchical relations.[2] While I subscribe to the main principle of Myers-Scotton's model, I simultaneously believe that code switching should also be explainable in terms of the current syntactic theory and hierarchical structure of language (see also Belazi et al. 1991, i.p.).

The goal of this paper is thus not to propose an absolute constraint that would off-hand universally explain all code-switching phenomena in any given language pair of the world. Instead, the purpose is to approach Finnish-English code-switching data from the perspective proposed by Di Sciullo et al. (1986), whose code-switching theory was based on the general principle of GOVERNMENT. Ample counterexamples against Di Sciullo et al.'s theory have been provided in the code-switching literature by authors who are proposing other theories (see e.g. Belazi et al. 1991, i.p.; Myers-Scotton 1992, 1993; Pandit 1990), and government as the principle constraining code switching has not been seriously defended by many (but see e.g. Stenson 1990). I would like to hypothesize that one of the reasons why the government constraint on code switching has not worked in all cross-linguistic data may partly be due to parametric variation in the manifestation of government relations (i.e. for instance if one element is a governor in one language, it is not necessarily a governing element in all languages). Since linguists have not agreed on the exact formulation of the notion of government, code-switching research might even help in shedding light on the possible parametric variation in the hierarchical structure of languages and the governing relations between various elements. Learning more about the structures of typologically different languages may lead to reformulations in the syntactic theory in general, and in particular in our views of what might constrain code switching (e.g. spec–head relations and functional categories may turn out to be very relevant). Since my belief is that the government constraint on code switching has not so far received its fair representation, I will here attempt to explore to what extent it could explain my Finnish-English data, and what kind of reformulations may be necessary.

By now it should be clear that the present paper should be viewed as an explorative approach, and not as an absolute proposal. Having said

that, I will proceed to test the applicability of Di Sciullo et al.'s theory. In order to account for the full range of my Finnish-English data, I will propose a minor modification in Di Sciullo et al.'s code-switching theory, and I will show that this modification is needed because of the supposedly different IP-structure of Finnish (cf. Mitchell 1991). My paper thus gives support also to Woolford's (1983) theory of the significance of structural similarity in code switching.

Finnish, a non-Indo-European (Finno-Ugrian) language, is typologically very different from English. It has a rich case and agreement system, and inflectional morphology is heavily relied upon in the marking of grammatical relations (see e.g. Karlsson 1987).

I will first describe the main syntactic possibilities of code switching between Finnish and English and to a certain extent evaluate the applicability of some previously proposed code-switching constraints. I am inclined to believe that the notions of *case-assignment* and *agreement* – which are both closely tied with the general principle of *government* – can account for Finnish-English bilingual code switching. I suggest that these notions may be crucial in explaining code-switching phenomena in the cases where one of the switched languages has a rich morphological system, as Finnish has.

Before proceeding to the description and explanation of the possibilities of Finnish-English code switching, it is necessary to define certain key concepts of this paper. My focus is on INTRASENTENTIAL CODE SWITCHING IN FLUENT BILINGUAL DISCOURSE. With the term *code switching* I refer to the alternation between PHONOLOGICALLY UNASSIMILATED Finnish and English linguistic units within a sentence. In the literature this phenomenon has also been referred to by the term *code mixing*.[3] The conceptual difference between *code switching* and *borrowing* is also often emphasized (see e.g. Joshi 1985: 190; Di Sciullo et al. 1986: 2). One might argue that some of the cases that I prefer to treat as code switching could be classified also as nonce borrowings (cf. Poplack et al. 1989); for example,

(1) Se *story* kerto että ...
'The story told that ...' [48]

However, in this paper I will consider this as a genuine case of Finnish-English code switching. My motivations for this are the following: first, to be able to account for the phenomenon at hand, it is necessary to include all the instances of clear switches from one language to another, regardless of whether they involve individual lexical items, phrases, or larger constituents of a sentence. Second, switches of individual lexical items are THE MOST CHARACTERISTIC TYPE of language mixing in Finnish-English bilingual competence (see e.g. Poplack et al. 1989: 396), and thus

this phenomenon needs to be explained within the syntactic theory. Third, switches of the type illustrated in example (1) are phonologically unassimilated to Finnish.[4]

In order to study the constraints on code switching I find it necessary either (1) that the data on which the analysis is based should be authentic bilingual speech, or (2) that the acceptability of invented examples be judged by fluent bilinguals. In this study, I use both natural language data (eight-and-a-half hours of recorded spontaneous discourse by two Finnish-English bilingual children, eight and nine years of age),[5] and invented examples, the acceptability of which has been judged by Finnish L1 speakers who have resided in California for years, whose English is fully fluent, and whose conversation in bilingual settings is characterized by frequent code switching. The spontaneous conversations from which the bulk of the code-switching data in this paper have been drawn consist of breakfast-table conversations, taped by the author, in which the bilingual siblings actively participated, and conversations taped when the girls were playing together in their room. The recordings were made over a period of four months, between November 1990 and March 1991. At the time the data collection started, the subjects had lived in California for 17 months and had become fully fluent in their L2, English, but were also still able to carry out monolingual conversations in their L1, Finnish. The eight-and-a-half hours of recorded conversation contained 281 instances of intrasentential code switching.

2. Finnish-English code switching: describing the phenomenon

2.1. *Unidirectionality*

In this paper I am looking at Finnish-English code switching by bilingual Finns who live in the United States and whose L1 is Finnish.

As noted in the literature (Joshi 1985; Stenson 1990), intrasentential code switching tends to be UNIDIRECTIONAL: there is a pattern in the switches so that one language (the *matrix language*) provides the frame for the switches, which come from the other language (the *embedded language*). In my data the intrasentential switches happen from Finnish to English within the framework of a Finnish sentence, thus also conforming to the rules of Myers-Scotton's (1992, 1993) matrix language frame model. Finnish is the matrix language and English is the embedded language:

(2) Mää oon sii + nä *green costum* + i + ssa.
I am it + INESS[6] + i + INESS
'I am in that green costume.' [101]

This sentence is typical of Finnish-English bilingual speech. The English elements are phonologically unassimilated, except for the phoneme /i/, which comes before the Finnish case ending to facilitate pronunciation when the Finnish case morpheme is added to the otherwise unassimilated English stem. Lehtinen (1966: 140) calls this /i/ "the Finnish stem formant."

Joshi (1985) considers unidirectionality (or asymmetry, as he calls it) a constraint, and it certainly describes intrasentential code switching well. The few instances in my data where the switch happens from English to Finnish are either not true instances of intrasentential code switching, the switch taking place after a conjunct, as in (3):

(3) *A long way from here. But*, me ajettiin tonne päin.
'But we drove into that direction.' [158]

or the switch is preceded by disfluency ([4], [5]) or translation of the structure from English into Finnish ([4], [6]) (cf. the phenomenon of flagging in Poplack's [1988] work on French-English conversations in Ottawa-Hull, and in Poplack et al.'s work on Finnish-English [1989]):

(4) *You're supposed to give them like meat, like* tota lihaa
well meat
.. *and stuff.* [160]

(5) *Write down your name e:r* tällai päin.
this way [59]

(6) *Are we–* mennääks me vai vahamuseoon.
'are we like going to the wax museum' [113]

While unidirectionality is a fact in fluent Finnish-English code switching, I consider it as describing a surface feature (not a constraint itself), which is a consequence of prevailing constraints. I argue that when a sentence is started in English, it cannot continue fluently in Finnish, not because unidirectionality is a general constraint, but because the English syntax "lacks" certain properties that need to be present if the sentence is to be fluently switched into Finnish (cf. Myers-Scotton's matrix language frame model: 1992, 1993). Below, I will suggest that the properties that need to be present are *Finnish case assignment* and *Finnish agreement properties*, which can be combined under a more general principle of government.

2.2. *Intrasententially switchable items*

The items that can be switched into English are nouns, adjectives, verbs, adverbs, and embedded clauses. Examples (7)–(10) below illustrate

switches within DPs. In (7)–(8) the switch involves the nouns *eagle* and *story*:

(7) *Noun:*
Joo, toisessa oli *eagle* ja toisessa oli ...
yeah other + INESS was and other + INESS was
'Yeah, one had an eagle and the other had ..' [40]

(8) *Noun within DP:*
... oli kertonu sille yhen *story*'n.
had told it + ALL one + ACC + ACC
'[Grandpa] had told her a story.' [48]

In example (9) both the adjective and the noun have been switched. In (10) the switch involves only the adjective within DP. (11) is an example of the switch of an AP:

(9) *Adjective + Noun:*
Siinä oli se .. *brown topping*.
there was it
'There was the .. brown topping.' [95]

(10) *Adjective within DP:*
Sää oot semmonen *angry* kääpiö.
you are such dwarf
'You are such an angry dwarf.' [74]

(11) *AP:*
Sitten kekään ei ollu *happy* enään.
then anybody NEG was any more
'Then nobody was happy any more.' [31]

Verbs can also be taken from English and inserted into the Finnish syntactic frame ([12]–[13]):

(12) *Verb:*
Me *pretend*attiin olevan elefantteja.
we + PAST + 1PL to + be elephant + PL + PART
'We pretend to be elephants.' [183]

(13) *Verb within VP:*
Me oltiin *rollerskat*taamassa.
we were + ing
'We were rollerskating.' [184]

Example (14) illustrates an adverb switch (note also the switch of the noun *bookmark*):

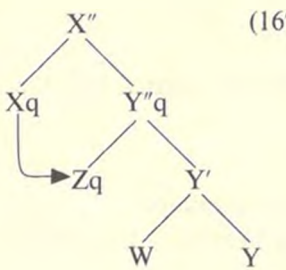
(14) *Adverb:*
Otan sen *bookmark*in sieltä pois
take + 1SG it + ACC + ACC there + ABL away
upside down.
'I will take the bookmark away from there upside down.' [37]

In (15), the main clause is in Finnish, but the embedded clause has been switched to English:

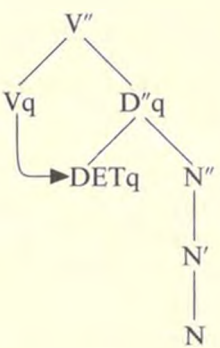
(15) *Embedded clause:*
Sitten se sano että *do you like me.*
then it said that
'Then he said that do you like me.' [125]

According to the government constraint proposed by Di Sciullo et al. (1986), code switching is NOT possible between a lexical governor and the highest (asymmetrically c-commanding) lexical element of the maximal projection that it governs; these two elements need to be in the same language. The highest lexical element of a maximal projection that carries over the language of its governor is called the Lq-carrier. In example (16), the elements X and Z have to have the same language index (marked with the same language index *q*), while W and Y could be in either language. The Lq index percolates from the terminal node Zq to the maximal projection Y″ (Di Sciullo et al. 1986: 5, 21–22). (16′) is an example of how this constraint explains why the language of determiners matches the language of the governing V (adapted from Stenson 1990: 185):[7]

(16)



(16′)



The government constraint explains well, for instance, example (8) above: the governing verb *told* and the determinerlike element *one* (the Lq-carrier) of the governed DP *one story* are both in Finnish, while the

N *story* is switched to English. Also in (14) the switch between the determiner and the noun *bookmark* is licensed by the determiner *se* 'it/that/the' being the Lq-carrier (highest, asymmetrically c-commanding lexical element within the maximal projection DP) having the same language index as its governing verb *take*. Example (15) can be explained by government factors as well: the complementizer is in the same language as the verb that governs it.

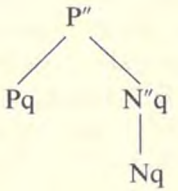
All the other instances in examples (7)–(15) above where the switch has taken place are licensed within Di Sciullo et al.'s theory, assuming that no government relation holds between the items from Finnish and English. As to (7) and (11), Di Sciullo et al. suggest that the copula could be analyzed "as a non-governing V" (1986: 15). I will suggest that in Finnish this assumption does not have to be made: even if the copula is analyzed as a governing V, my formulation of the constraint will explain the switches in (7) and (11). In example (9) the determiner *se* 'it' and in example (10) the determiner *semmonen* 'such' may be analyzed as Lq-carriers. They themselves are not governors (neither is the determiner *yksi* 'one' in example [8]), assuming that determiners are too "weak" to govern. Examples (12)–(13) would also be fine according to Di Sciullo et al. (1986: 12), who assume that switching is possible between the subject NP and VP. (My assumption is that the subject position is governed, and I will return to examples [12]–[13] below.) In (14) the adverb *upside down* is in an adjunct position, is not governed, and thus can be switched.

It thus seems that Di Sciullo et al.'s theory would be able to account for the above examples. However, I will show below that an important specification to the formulation is needed in order to make it account for obiligatory Finnish case and agreement marking.

2.3. *Some problems for earlier constraints*

While Stenson regards government relations as a likely constraint on code switching, she also provides counterexamples from her Irish-English data (1990: 186–187). A great deal of my natural language data can be seen as conforming to Di Sciullo et al.'s analysis in its exact formulation; however, there are some questionable points as well. According to Di Sciullo et al. (1986: 8–9), the preposition and the NP — more specifically the Lq-carrier of the NP — governed by the P should be in the same language:

(17)



Finnish has postpostions, but the same constraint could be assumed to hold. However, in example (18) the postposition *alla* 'before' and the noun *lunch* come from different languages:

(18) Meidän opettaja aina *lunch*in alla kysyy että ...
our teacher always + GEN under asks that ...
'Our teacher always asks before lunch that ...' [117]

I will return to this in section 3.1 to show that this is not a problem to Di Sciullo et al.'s theory, while it is a problem to some other code-switching theories. Sankoff and Poplack (1981) have suggested that the *equivalence constraint* could account for code switching. This constraint requires that "the order of sentence constituents immediately adjacent to and on both sides of the switch point must be grammatical with respect to both languages involved simultaneously" (Sankoff and Poplack 1981: 5). The constraint thus rules out switches in cases where the order of the elements is different in the two languages. Thus, we could not have English items in the Finnish adpositional phrases, consisting of Noun + Postposition, since the corresponding English structure would be Preposition + Noun. Woolford (1983: 528) also suggests that when PS-rules are not shared in terms of the linear ordering of elements, code switching cannot take place. However, despite these proposed constraints, (18) is possible. An explanation for its grammaticality within Di Sciullo et al.'s theory will be provided in section 3.1.

Di Sciullo et al. do not include INFL in their list of governors (1986: 6), and thus their theory predicts that a switch is possible between the subject NP and VP (1986: 12), and indeed, there are some instances of this in my data:

(19) Me *pretend*attiin olevan elefantteja.
we + PAST + 1PL to + be elephant + PL + PART
'We pretend to be elephants.' [183]

However, since the following ([20], [21]) would be impossible, there is

clearly something that needs to be modified in Di Sciullo et al.'s theory to account for (19)–(21):

(20) *Me *pretended* olevan elefantteja.
we to be elephants.
(21) *Me *pretended to be elephants*.

According to Di Sciullo et al., no government relation holds between the subject NP and VP in (20) and (21); yet, code switching at this point is not possible. Woolford (1983) has proposed that code switching becomes possible when the PS-rules of the two languages match, and consequently, code switching is frequent on major constituent breaks. Here we have supposedly matching structures in Finnish and English (NP + VP), and this is clearly a major constituent break; yet, (20) and (21) are impossible. I will argue that if INFL is regarded as a governor, governing the tensed sentence subject (Chomsky 1988 [1981]: 50), we will be able to account for the grammaticality of (19) on the one hand and the ungrammaticality of (20) and (21) on the other within the general government constraint.

Regarding INFL as a governor would be a problem to Di Sciullo et al. since they claim that in some of their data switches between the subject NP and VP are possible. They note the obvious problem, pointing to earlier studies that report constraints on the switching site between the subject and the verb of the sentence. Klavans, for instance (1985: 214), states that "switching subjects between [languages] with different features of INFL is constrained" and according to Pfaff (1976: 251), switching between a Spanish subject NP and an English verb is acceptable if "the relevant agreement and tense–mood information is given on a preceding Spanish verb." It is possible that when the subject NP is a pronoun, switching may be blocked because pronouns per se may behave differently in terms of code switching if compared with other NPs, which can be switched more easily (cf. Joshi 1985; Myers-Scotton 1992, 1993). However, it is also possible that the IP structures of languages differ, and it can be claimed — in the spirit of Woolford (1983) — that when structures do not match, switching becomes impossible. The example cited by Di Sciullo et al. (1986: 6) in favor of switching between the subject NP and VP seems to me unconvincing:

(22) Mary (English) trabaja (Sp).

Here we have an English name, which I would not regard as being part of a genuine switch. In languages where genuine switches occur between

subject NPs and VPs it should be determined whether the possible switching sites can be explained in terms of government and Lq-carriers. The Finnish data suggest that this is in fact the case (see section 3.3 below, examples [43], [48]–[49]).

In the following, I will present more language data in order to point out the characteristic properties of Finnish-English code switching, and I will show that while many of the current code-switching theories cannot be directly applied to the Finnish-English data, Di Sciullo et al.'s government constraint can, in a slightly modified form, explain Finnish-English code switching.

2.4. *Morphological assimilation to Finnish*

In the above examples (1) and (7) the nouns (*story*, *eagle*), in (9) the adjective and noun (*brown topping*), in (10) and (11) the adjectives (*angry*, *happy*), and in (14) the adverb (*upside down*) have conveniently been switched into the Finnish frame in their original English form. Here we could suggest that Woolford's (1983) theory of matching structures works: when the PS-rules of the two languages are identical, lexical insertion of items of the embedded language becomes possible. However, the nouns in examples (2) (*costumissa*), (8) (*storyn*), and (14) (*bookmarkin*), and verbs in examples (12)–(13) (*pretendattiin*, *rollerskattaamassa*) illustrate the prevailing phenomenon in Finnish-English code switching: morphological assimilation to Finnish. These are cases of code switching where an English lexical item has been inserted into the Finnish syntax, without distorting the typically Finnish syntactic structure.[8] Examples (23)–(28) are illustrations of English nouns in the Finnish syntactic frame:

(23) Se on kahen *month*in vanha.
it is two + GEN + GEN old
'It is two months old.' [109]

(24) Se oli semmosesta *land*istä.
it was such + ELAT + ELAT
'It was about a land.' [48]

(25) Kerran sä olit pannu sitä mun *lunchbox*iin.
once you had put it + PART my + ILL
'You had once put it in my lunchbox.' [107]

(26) Joo missä kummassa ne *rul*it on?
yeah where ever they + PL are?
'Yeah, where on earth are those rules?' [63]

(27) Mää aina kerron sille *joke*ja.
I always tell it + ALL + PL + PART
'I always tell him jokes.' [136]

(28) Mistä *rule*eista te puhuitte sillon?
what + ELAT + PL + ELAT you spoke then
'What rules were you talking about then?' [62]

In the above examples, the English lexical item is smoothly combined with Finnish case affixes: (23) with the genitive case, (24) with elative, (25) with illative, (26) plural nominative, (27) plural partitive, and (28) plural elative.

English verbs can be fitted into the Finnish syntactic frame just as easily as nouns, as shown by examples (12) and (13) above and in the following additional illustrations:

(29) ... kun ne *rhym*aa.
because they + 3PL
'because they rhyme' [171]

(30) ... ei saa *measur*ata.
NEG allow + INF
'must not measure' [146]

In (29) the English verb is combined with the Finnish third person plural morpheme, and in (30) with the infinitive morpheme.

In addition to the equivalence constraint mentioned above, Sankoff and Poplack (1981: 5) have suggested another specific constraint to explain code switching: the free morpheme constraint, which would prohibit a switch between a bound morpheme (such as all the case and verb morphology in the above examples) and the phonologically unassimilated lexical item (the italicized English items above). The Finnish data show clearly that the free morpheme constraint cannot be a universal constraint.[9] The English elements have not been phonologically integrated into the Finnish sound system; yet, they are smoothly combined with Finnish case and verb morphology.

3. Overt constraints: case assignment and agreement

In this section I will claim that Di Sciullo et al.'s government constraint can, in a slightly modified form, account for the Finnish-English code-switching constraints. My Finnish-English code-switching data also give support to an IP-internal element as governing the subject NP (*INFL* in

Chomsky 1988 [1981]: 50; *tense* in van Riemsdijk and Williams 1989 [1986]: 230) and give independent evidence for the decomposed IP structure of Finnish as proposed by Mitchell (1991), where AgrP is the highest node.

In (31) below I have listed the logical possibilities where code switching could take place in the basic SVO sentence. Only (e), (f), and (g) are possible. The meaning is "I cleaned the building":

(31) a. *Minä siivos + i + n *the building.*
I clean + PAST + 1SG

b. *Minä *cleaned the building.*
I

c. **I* siivos + i + n rakennukse + n.
clean + PAST + 1SG building + ACC

d. **I cleaned* rakennukse + n.
building + ACC

e. Minä siivosin *building* + in.
I cleaned building + ACC

f. Minä *clean* + as + i + n
I clean + VERBMARKER + PAST + 1SG
building + in.
building + ACC

g. Minä *clean* + as + i + n
I clean + VERBMARKER + PAST + 1SG
rakennukse + n.
building + ACC

h. **I clean* + as + i + n *building* + in.
clean + VERBMARKER + PAST + 1SG building + ACC

i. **I cleaned building* + in.
building + ACC

Two overt constraints seem to be at work here. (1) Sentences are ungrammatical, when the *case-assigning verb* and the *object DP* are in different languages ([a], [d]). However, the sentence becomes grammatical when Finnish case morphology is added to the English noun, as in (e). Also, when the English verb is morphologically assimilated to Finnish morphosyntax, it can assign Finnish case to its object DP and thus produce grammatical sentences ([f], [g]). When the Finnish verb, or an English verb stem showing Finnish verb morphology, assigns Finnish accusative case to its object DP, the sentence is grammatical, but when there is a mismatch between the language of the case assigner and the case ([a], [d], [i]), ungrammaticality follows. Thus, the Finnish verb

obligatorily assigns overt Finnish case. (2) The other overt constraint seems to be connected with *subject–verb agreement*. Sentences are ungrammatical when there is a mismatch between the subject phrase and verb morphology ([b], [c], [h]). An English verb stem can be inserted into the sentence, provided that it overtly shows agreement with the Finnish subject ([f], [g]).

Thus, case assignment and agreement together seem to be the relevant notions constraining Finnish-English code switching. However, I do not want to posit these as universal constraints, thus adding another nongeneralizable theory of constraints to the code-switching literature. Fortunately, the specific constraints of case assignment and agreement can be combined under the more general notion of government. As stated by Chomsky, "Case is assigned to an NP by a category that governs it" (1988 [1981]: 50). I suggest that when, on the one hand, a case morpheme in Finnish needs to be overt, this Finnish case morpheme needs to be OVERT in the code-switched object DPs as well and, on the other hand, since agreement is overtly shown in Finnish morphosyntax, this needs to be OVERTLY shown even when code switching of a lexical element (verb stem) from English is involved. Both constraints can be explained within the notion of government.

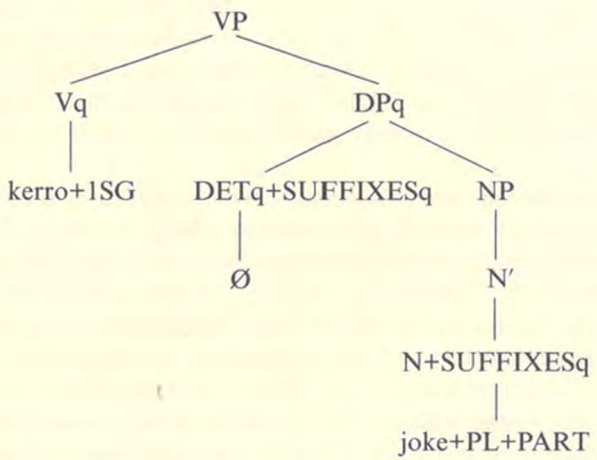
3.1. *Accounting for object DPs: the role of case assignment*

I assume that Finnish transitive verbs (governors of the following DPs) OBLIGATORILY ASSIGN FINNISH CASE (accusative or partitive) to their object DPs. The governing case assigner and the case itself need to be overtly in the same language. This explains the grammaticality of (31e)–(31g). To look at how this works, let us repeat example (27) as (32) below:

(32) Mää aina kerron sille *joke*ja.
I always tell it + ALL + PL + PART
'I always tell him jokes.' [136]

The Finnish verb *kertoa* 'tell' governs its direct object DP *joke* + *ja* 'jokes', and since the verb is in its Finnish form, it obligatorily assigns Finnish case to the direct object DP, even though the item itself is taken from the English lexicon. In Di Sciullo et al.'s terms, the case morpheme acts as the Lq-carrier. Since it is in the same language as its governor, code switching in the rest of the DP becomes possible. In (33) this relationship is represented in terms of Di Sciullo et al.'s schema (see [16] above), where *q* is the "same language" index:

(33)



Kerro+n joke+j+a 'I tell jokes'

According to Di Sciullo et al.'s definition, a lexical governor and the highest lexical element of the governed maximal projection need to be in the same language. Clearly, this definition has to be somewhat modified to account for Finnish-English code switching:

(34) The lexical governor, the highest lexical nongoverning element of the governed maximal projection, and the CASE of the governed maximal projection need to be in the same language.

The highest lexical nongoverning elements of the governed maximal projection are, for example, sisters of NP, such as determiners (*se* 'it' in [35] and *yksi* 'one' in [36]):

(35) otan sen *bookmark*in sieltä pois
take + 1sg it + ACC + ACC there + ABL away
'I'll take the bookmark away from there.' [37]

(36) yhen tytön grandpa oli kertonu sille
one + GEN girl + GEN had told it + ALL
yhen *story*n
one + ACC + ACC
'A girl's grandpa had told her a story.' [48]

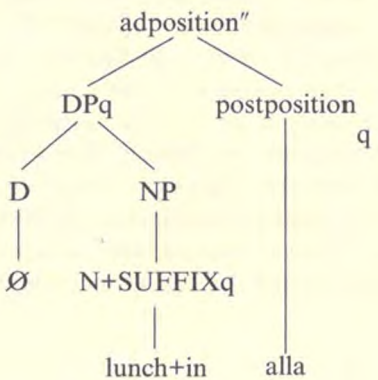
The formulation of the government constraint so that it requires the language of the governor and the language of the case assigned by the governor to be the same explains the switch of languages within the Finnish adpositional phrases as well. Example (18) above was mentioned

as a possible problem to Di Sciullo et al.'s theory. It is repeated here as (37):

(37) Meidän opettaja aina *lunch*in alla kysyy että ...
our teacher always + GEN under asks that ...
'Our teacher always asks us before lunch that ...' [117]

In the adpositional phrase *lunchin alla* 'before lunch' the governor is the postposition *alla*, and the governed phrase is *lunch* + *GEN*, the governing postposition assigning the genitive case. (38), a modification of Di Sciullo et al.'s schema expressed earlier in (17), indicates how government can explain code switching within the Finnish adpositional phrase:

(38)



(34) explains the switch in this adpositional phrase: the lexical governor *alla* and the case of the governed maximal projection are both in Finnish, the case morpheme acting thus as the Lq-carrier.

3.2. *Accounting for subject–verb agreement*

The ungrammaticality of (31b), (31c), and (31h) above is not due to a mismatch between the languages of the case-assigning verb and the language of the case, assigned to the governed object DP. The ungrammaticality is caused by a mismatch of the language of the subject and the verb. However, when the verb itself is in English but is morphologically assimilated to Finnish, carrying Finnish agreement morphology, the sentence becomes grammatical American Finnish ([31f], [31g]). The relevant part of the sentence is repeated here as (39):

(39) Minä *clean* + as + i + n
I VERBMARKER + PAST + 1SG

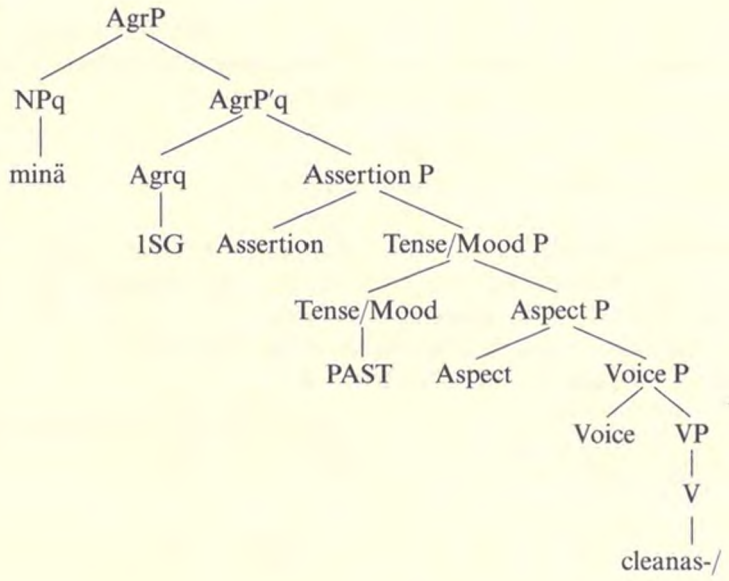
As pointed out above with examples (19)–(21), this type of code switching would not provide a problem to Di Sciullo et al.'s analysis, since according to them INFL is not a governor, and thus a switch would be possible between the subject phrase and VP. However, this would rule in also the ungrammatical (20)–(21), and (31b)–(31c), repeated here as (40)–(41):

(40) *Minä *cleaned*
I

(41) **I* siivos + i + n
clean + PAST + 1SG

However, if we assume that the subject is governed, we can explain the grammaticality of (39) and the ungrammaticality of (40)–(41). I am adopting Mitchell's (1991) decomposed Finnish IP-structure. Mitchell argues that 'there may be parametric variation in the construction of TP" (1991: 373) and, basing her analysis on Finnish morphosyntactic facts, proposes an elaborated IP structure for Finnish. This structure is consistent with the general idea proposed by Pollock (1989), even though the order of the nodes for Finnish seems to be different (Mitchell 1991: 373, 378). As an illustration, I have inserted the sentence *minä cleanas + i + n* 'I cleaned' into the structure. Lq-carrier indexes have also been indicated:

(42)



As stated by Di Sciullo et al., "when a government relation holds between elements, there can be no mixing; when that relation is absent, mixing is possible" (1986: 4). From earlier examples in this paper it is obvious that when the language of the subject and the language of the morphosyntactic form of the verb match, the verb root itself can be in either language (examples [12]–[13], [19], [29]–[30] above). Agreement could thus be suggested as a code-switching constraint; however, if we assume the Finnish IP structure as proposed by Mitchell ([42]), this constraint can conveniently be included in the more general government constraint on code switching. In (42) Agr is in Finnish. Since in Finnish agreement is phonologically realized, we can regard it as "lexical," and in fact a governing element, which governs the subject position.

Assuming Mitchell's decomposed structure for the Finnish IP where AgrP is the highest node ([42]), our Finnish data strongly support the government constraint for code switching. Above we have thus shown that a government relation holds between Finnish Agr (Lq-carrier) and the subject phrase, and thus, following Di Sciullo et al., these two elements have to be in the same language.[10] It is the language of Agr that counts, not the language of the root V itself. (40) and (41) are rendered ungrammatical since there is a mismatch between the language of Agr and the language of the subject NP.

3.3. *Switchable places*

Where the government constraint does not hold, switching is possible. An English lexical item can be inserted in the terminal node, provided that when a government relation is involved, Finnish morphosyntactic rules are not violated. (43) below exemplifies this:

(43) Yhe + n tytö + n *grandpa* ol + i + Ø kertonu
one + GEN girl + GEN have + PAST + 3sg told
sille yhe + n *story* + n.
it + ALL one + ACC + ACC
'A girl's grandpa had told her a story.' [48]

Here Finnish agreement governs the subject *yhen tytön grandpa* 'a girl's grandpa'. Since the highest lexical item in this governed subject phrase is in Finnish (the articlelike determiner *yhen*), the items below this Lq-carrier in that maximal projection can be in either language. The nominative case is not overt in Finnish; even though it is assigned by the governing agreement, it is not phonologically realized. If it were, it would need to be in Finnish. Note that agreement in Finnish is phonologically

realized, and this might justify its classification together with other governors that are lexical (verbs and prepositions). However, since the governing relation, whether it is lexical or government by agreement, is always crucial in Finnish-English code switching, we could generalize the rule given in (34) to render a slightly more general (44):

(44) The governor, the highest lexical nongoverning element in the governed maximal projection, and the case of the governed maximal projection need to be in the same language.

This explains why in real-language code-switched sentences, in the governed phrase where lexical insertion of an English attributive adjective or noun has taken place, the NP is very often preceded by a determiner, even though Finnish generally does not have an article system, and written Finnish would not have a determiner in a corresponding position; for example,

(45) Siellä oli semmonen *river.*
there was such
'There was a river.' [2]

On the other hand, we also have examples where the same-language determiner is missing, but in my data, these are always after a copula:

(46) Susan on *moose.*
is
'Susan is a moose.' [29]

As pointed out earlier, Di Sciullo et al. suggest that copulas could be analyzed as nongoverning verbs (1986: 15) to account for these phenomena. However, I suggest that when the Finnish case is not phonologically realized (the nominative case), the switch to English can take place, even if the position is governed. I argue that in (46) the N *moose* indeed has Finnish nominative case (which is zero), and the sentence thus conforms to the formulation of (44), because the language of the governing verb and case of the governed complement are in the same language. The noun itself can come from either language.

Example (2), here repeated as (47), is still problematic:

(47) Mä oon sii + nä *green costum* + issa.
I am in + INESS + INESS
'I am in that green costume.' [101]

Since Finnish would have the attributive adjective *green* also in the inessive case, I would like to assume that the case needs to be attached

to all parts of NP where it "belongs." However, it seems to be enough that Finnish case is attached only to the head noun, provided there is some lexical element above the NP (i.e. within the DP) that is in Finnish and is the Lq-carrier together with the case (here this Lq-carrier is the determiner *siinä*, which again has to show overt Finnish case).[11]

In the example sentences in (31), the subject phrase is a pronoun. It is true that pronouns might behave differently in terms of code switching. However, in my natural language data I have no examples where code switching would violate the government constraint as stated in (44), so that the whole (nonpronominal) subject phrase would be in Finnish and a switch to English VP (without Finnish agreement morphology) would take place at the subject phrase–verb phrase boundary; for example,

(48) *Yhe + n tytö + n isoisä *had told her a story.*
one + GEN girl + GEN grandpa
'A girl's grandpa had told her a story.'

Here a fluent switch is impossible because Finnish agreement is missing: the governing English element (let us call it INFL here) is incapable of assigning Finnish nominative case to the Finnish subject phrase. When bilinguals are asked how likely they would be to produce a sentence such as (48), they either answer that they would not accept it, or that they would accept it, but there would be a pause of some length between the subject and the VP — some kind of word search. Thus, the following would be possible:

(49) Yhen tytön isoisä e:r .. *had told her a story.*

This is clearly not a FLUENT bilingual sentence and is out of the scope of this paper. However, it introduces an interesting question, which calls for further research: when does a bilingual cease to be fluent? Based on the clear government constraint formulated in this paper, it would be possible to use these constraints as determiners or indicators of possible loss of Finnish in the so-called bilingual population. I would assume that if government relations cease to constrain code-switched speech, we could assume that a serious deterioration of Finnish morphology is going on.

3.4. *Further evidence of the government constraint: backtracking*

As pointed out by Lehtinen (1966: 144), false starts are common in bilingual speech. They are often accompanied by a code-switched "backtrack": the speaker rephrases the false start in the other language. I argue that such backtracking can provide further evidence of the government

constraint in code switching. If the speaker wishes to switch to the other language, but such a switch would violate the government constraint, the sentence is started all over again in the other language. For example, in sentence (50), backtracking happens so that the Finnish subject of the sentence is repeated in English, and thus a full subject phrase + verb phrase sequence is created in a uniform language:

(50) Se ei– se ei– *she doesn't care anything else*
she NEG + 3SG she NEG + 3SG
than the bank stuff.
'She doesn't, she doesn't, she doesn't care about anything else than the bank stuff.' [96]

The following sentences ([51]–[52]) illustrate the same phenomenon in the other direction, from English into Finnish:

(51) *They get mixed up and they* ne on ihan tota niin kun
they be + 3SG just well as like
siiamilaiset kissat.
Siamese cats
'They get mixed up and they are ... just like Siamese cats.' [160]

(52) *Mommy, I wa–* mä haluun olla oma-alotteinen
I want + 1SG be + INF self-helping
joskus.
sometimes
'Mommy, I want to do things myself sometimes.' [152]

I argue that repetition of the subject as in (50)–(52) is necessary because if the subject were not repeated and the sentence were continued by adding the English VP after the Finnish subject phrase, or vice versa, the government constraint — requiring in all these cases the pronoun subject to be in the same language as its governing verb — would be violated. The discourse reason why a switch needs to take place is probably that the complements of VPs contain lexical elements that are more familiar to the speaker in the language into which she switches. While *bank stuff* in (50) is a more familiar expression in English, the subject probably does not know the English equivalent for *Siamese cats* in (51), and the idea expressed in (52) — "self-helping" — does not have a good equivalent in English and thus a switch to Finnish, in which the concept can be better expressed, has to take place. Thus, also in the cases where a discourse constraint forces the switch, the syntactic constraint of government cannot be overlooked, and this is why backtracking is such a common phenomenon in bilingual speech.

In (53) the government constraint forces backtracking in an adpositional phrase:

(53) *Mom, what happens if you barf on the* siihen tietokoneen
it + ILL computer + GEN
näppäilemisjuttuun?
keyboard + ILL
'Mom, what happens if you barf on the computer keyboard?' [152]

Here the eight-year-old speaker evidently does not know the word *keyboard* in English, and this is why she has to switch to Finnish. Since she has already started the PP in English (*on the*) but cannot continue with an English noun, since it is unknown to her, she would have to switch to a Finnish noun, but because the Finnish noun would have to carry the Finnish case, there would be a mismatch between the governing and case-assigning English P and the Finnish case. To avoid this violation, the subject backtracks, creating a pure Finnish phrase (*sii + hen tietokone + en näppäilemisjuttu + un* 'on the computer keyboard'), where the determiner and the noun both show the Finnish locative case illative.

4. Conclusion

In this paper I have described and analyzed Finnish-English bilingual code switching and evaluated some previously proposed constraints. I argue that the basic idea of the government constraint on code switching, proposed by Di Sciullo et al. (1986), is the one out of the many proposed constraints that, with minor modifications, best accounts for the structural aspect of Finnish-English code switching. An IP internal element (in Finnish Agr) needs to be added to Di Sciullo et al.'s list of governors in addition to V and P. This modification explains the constraints on code switching between the subject phrase and VP in the Finnish-English data. More research in other languages with regard to INFL as governor is needed, but I assume that when the constraint is properly formulated, taking into account possible parametric variation in the structures of IPs, INFL as a governor could account for switchability between the subject NP and VP. Thus, another general constraint — that proposed by Woolford (1983) of switchability of identical structures — could also be incorporated within the government constraint: languages with differing IP structures might exhibit constraints on code switching if government relations are different. My Finnish-English code-switching data provide independent evidence for the decomposed Finnish IP structure proposed by Mitchell (1991), where the agreement phrase is the highest node.

Another modification that needs to be added to Di Sciullo et al.'s theory on code switching is due to the special nature of languages such as Finnish, where case and agreement morphology is usually phonologically realized. When case or agreement morphology is overt, it needs to be in the same language as the element with which it is in the government relation. Thus, in addition to the Lq-carrier within the governed phrase, as determined by Di Sciullo et al., case and agreement morphology also needs to have the same language index as the governor or may indeed be the main Lq-carrier. In phrases where case morphology is not overt (such as the nominative case) the switchability of lexical items seems to be relatively flexible, but even here, I argue, the "invisible" case has to be in Finnish if the governor is in Finnish, even though the head noun within the DP-internal NP can be in English. To summarize the overt constraints, (1) at least the Lq-carrier of the subject phrase and the agreement morphology of the VP need to be in the same language; (2) the case-assigning V (or at least its morphological form) and the case-assigning adposition need to be in the same language as the case that they assign; and (3) insertion of lexical items to terminal nodes from English is always possible, provided that case and agreement morphology are in Finnish when in government relation with Finnish elements. These overt constraints for switching in Finnish, connected with case assignment and agreement, can all be accounted for under the notion of government, an independently needed, general, and central concept in syntactic theory.

Several questions remain. For instance, the status of adjectives has not been addressed, and the exact nature of the highest nongoverning lexical element needs to be clarified. However, despite the nonfinal nature of this investigation, I would like to suggest that in languages with rich case and agreement morphology similar constraints may be found. I argue for a certain degree of generalizability of Di Sciullo et al.'s government constraint on code switching, hoping that further research on different types of languages will confirm the results arising from my Finnish-English code-switching data.

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Notes

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1. For an overview of different code-switching constraints see for example Clyne (1987); Park (1990: 10–37).
2. The fact that language use is subject to constraints in lexical access and processing does not mean that it would not be subject to syntactic constraints, and vice versa.
3. Some writers draw a strict distinction between the terms *code switching* and *code mixing*, reserving *code switching* for instances of shifts of language either "accompanied by a shift in the speech situation" (Sridhar and Sridhar 1980: 408–409), or "instances when the speaker alternates units from different codes that are higher level constituents, at least grammatical clauses or sentences" (Olshtain and Blum-Kulka 1989: 60), while *code mixing* is used to refer to shifts of "smaller units, usually words or idiomatic expressions" (Olshtain and Blum-Kulka 1989: 61).
4. For an in-depth account on differentiating between code switching and borrowing in Finnish-English bilingualism, see Halmari (1993). For a different view, see Poplack et al. (1989).
5. The examples of authentic language data can be identified by a bracketed reference to the page of the example in the original transcript.
6. The following abbreviations for Finnish cases are used: GEN = genitive, PART = partitive, ACC = accusative, INESS = inessive, ELAT = elative, ILL = illative, ABL = ablative, ALL = allative. The nominative in Finnish has a zero ending and is not indicated in the glosses.
7. I here assume a DP analysis, with the determiner outside the NP. The place of the determiner can be occupied by zero (Finnish does not have articles [Karlsson 1987: 13]) but is very often occupied by a "determinerlike" element, such as *yksi* 'one', *semmonen* 'such', or *se* 'it/that'.
8. As stated earlier, these instances could be analyzed as borrowings; however, since no phonological assimilation to Finnish is present, I do not regard these as instances of borrowing (Halmari 1993). Further, since this is probably the most commonly used strategy in Finnish-English intrasentential code switching, it is begging for hierarchical/structural explanation. (As pointed out earlier, Myers-Scotton [1992, 1993] has provided a lexically based explanation, according to which all system morphemes, such as inflectional suffixes, have to come from the matrix language and only content morphemes can be inserted from the embedded language.)
9. For an alternative account, see Poplack et al. (1989), who, by looking at morphologically assimilated English items as "nonce borrowings" (i.e. by ruling them out as code switching proper) are able to analyze the Finnish-English data in terms of the free morpheme and equivalence constraints.
10. Whether the Lq-carrier is the governor (as for example in the case of agreement) or a part of the governed maximal projection is not relevant; what is relevant is that it conforms to the language identity constraint. Whether the governor, when following the subject phrase it governs, can be called an Lq-carrier is a terminological question that I will not address here.
11. In fact, further research on the phenomenon should show to what extent the highest element within the governed maximal projection has to be in the same language as the governor, and to what extent the case markers themselves could solely be regarded as the Lq-carriers.

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