CODE-SWITCHING AND THE PROBLEM OF BILINGUAL COMPETENCE*

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The phenomenon of code-switching in bilingual speakers is of great significance to both linguists and psychologists; to the former, because it offers an insight into the workings of the underlying systems of language, and to the latter, because it permits further investigation into the question of the harmful or beneficial effects of bilingualism. Most studies of code-switching to date have focused on psychological/sociological aspects, or on elementary linguistic constraints of a very general nature. Often, code-switching is forced in unnatural situations (e.g., Kolers 1966) and the data are of questionable validity. The present study seeks to fill in some of the gaps in the investigation of code-switching, by dealing with purely linguistic constraints which appear to apply in cases of English-Spanish bilingualism in the United States. No attempt will be made to assess code-switching in terms of lack of lexical availability, since it has already been demonstrated (e.g., Lance 1975, Clyne, 1967, Hasselmo, 1970) that code-switching is possible even where both variants are available. Due to limitations of space, this note will be confined to a survey of typical examples of Spanish-English code-switching, with an eye toward formulating a working hypothesis governing the types of inter-linguistic constraints that the bilingual might use. These considerations in turn have implications for the much broader question of the linguistic competence of the bilingual speaker. In addition to observations by the present writer, the examples used come from the following sources: Espinosa (1917), Gumperz and Hernandez-Chavez (1970), Lance (1975), Redlinger (1976), Timm (1975), Valdés Fallis (1976).

Gumperz and Hernández-Chavez (1970) note that whole sentences are most easily borrowed, followed by sentence modifiers or phrases. They do posit, however, the impossibility of phrases like:

(1) *que have chamaquitos (who have kids)
(2) *he era regador (he was an irrigator).

In the first type, tentatively put on the prohibited list, the relative pronoun in Spanish is followed by an English verb and then a Spanish complement. It must be admitted that this type of switched expression does sound rather unlikely, but the issue is complicated by the fact that the regional colloquial word chamaquitos (or, for that matter, any other commonly-used noun

that might be put in its place) is frequently used in English, and thus might not be properly considered as exclusively part of the Spanish code; in such a case, the format would be, instead of SES, SEE, which is a type-form that does occur in spontaneous Spanish-English bilingual speech. The second case discussed above involves an English subject pronoun followed by a Spanish predicate. The bond between subject pronoun and verb is normally an indissoluble one in both English and Spanish, although the same does not hold for proper nouns, which may be switched freely.

Timm (1975) established several constraints on code-switching. The first category, similar to the one mentioned above, deals with switching of pronominal subjects or objects:

(3) *yo went, *ellos gave, *mira him, *dijo to them

with English word order and:

(4) *him mira, *to them dijo, etc.

with Spanish word order. Very few exceptions to this tendency have been noted, thus suggesting this as a cardinal rule governing code-switching.

A second restriction involves switching between a finite verb and an infinitive complement:

(5) *(they) want a venir, *quieren to come, etc.

The SSE sequences were judged universally inappropriate, while the sequences EES:

(6) he wants to bailar

were considered possible, although not common. Timm speculates that such a sequence is marginally permissable because "the E verb and preposition (or particle) seem to function as a subunit within the larger construction" (478). An alternative, or perhaps equivalent view, is that the Spanish infinitive contains a clear morphological suffix (-ar, -er, or -ir) and is thus susceptible to insertion in a phrase which demands an infinitival complement without introducing ambiguity. The English verb, in contrast, is not morphologically marked in the infinitive, and, thus, inserting such a verb in a Spanish phrase demanding an infinitival complement creates an ambiguous and bizarre construction.

In verb phrases containing auxiliaries, code-switching is normally prohibited:

(7) *(I) must esperar, *(he) has visto, *debo wait, *estaba walking, etc.

It was noted, however, that expressions such as they were chope-

ando, he was cachado, etc. were possible, utilizing in each case an English loanword which had been morphologically adapted to fit Spanish paradigms. One does, however, occasionally hear exceptions to this general rule; for example Redlinger (1976: 47) notes the example mi marido está working on his Masters.

Negation of verbal elements also poses an obstacle for code-switching, the normal rule being that the negative words must be in the same code as the verb being negated, thus impossible sequences would be:

(8) *I do not/do no/not/quiero, *I no want, *I not quiero, etc.

Finally, within noun phrases, there is considerably more flexibility as regards the possibilities of code-switching, although certain restrictions do appear. In phrases of the type D + N, switching occurs virtually without restraint, unless involving stereotyped combinations of noun and determiner, but once adjectives are involved, the situation becomes more complicated. The following D + A + N or D + N + A combinations were judged as unaccepted: English word order:

(9) (SSE) *su favorito spot, (SES) *su favorite lugar,
(ESS) *his favorito lugar, (ESE) *his favorito spot;

Spanish word order:

(10) (ESE) *his lugar favorite, (EES) *his spot favorito,
(SES) *su spot favorito.

The English-ordered EES sequence

(11) his favorite lugar

was considered acceptable, while SEE

(12) su favorite spot and ESS his lugar favorito

were, while less than totally acceptable, judged at least possible. It should be noted that in all such phrases, it is possible to interpret some of the elements as borrowed phrases, even though it is less likely to borrow a combination of noun and adjective. Even in some of the cases judged generally unacceptable, informants questioned by the present writer disagreed with each other, often adducing the same potential interpretation as containing borrowings; for example, su spot favorito, etc.

So far, the only general rules about code-switching are those prohibiting splitting main verbs from auxiliaries, subjects from verbs and adjectives from nouns and appear, in most cases, to be manifestations of some more general constraints, which dictate that, superficial morphological format notwithstanding, certain phrasal elements are atomic and, consequently,

unbreakable; verb + auxiliary and certain prepositional phrases appear to fall into these categories. It is perhaps significant that, for example, in the evolution of the Romance languages from Latin, there has frequently been interchange between synthetic single-word forms and analytic multi-word forms, with precisely the same semantic values; this alternation has involved such categories as the future, conditional, present and pluperfect forms as well as various subjunctive forms, also the value of certain prepositions. Prepositional phrases, too, appear to be in many instances regarded as being atomic entities, and are used as such in the function of adjectives, adverbs, and sometimes even nouns; this might help explain the extreme reluctance with which code-switching occurs within the boundaries of a prepositional phrase. The splitting of articles from nouns, except in cases of borrowed forms, appears also to violate a fundamental principle of linguistic structure, especially in Spanish. While the English article merely identifies the noun and supplies a varying degree of definition, depending upon whether a/an or the is chosen, the Spanish article adds the further information of gender and number. In most cases, the Spanish articles are redundant check-morphemes which serve to enhance the grammatical information already present in the morphological makeup of the noun, although in certain cases gender and/or number cannot be predicted from the superficial form of the noun. The fact that as many as three morphemes may unite the noun with the article in Spanish may well account for the extremely tight bond which normally exists between article and noun, a bond which usually resists attempts at code-switching. In a similar fashion, the bond between subject pronoun and conjugated verb is a natural one, especially in English, where the subject position, due to the slight degree of differentiation among verbal forms, may never remain empty. In English, either a pronoun or a noun must occur in subject position, while in Spanish, the subject position may, and, in the case of non-human nouns must, remain empty of a pronominal subject. Therefore, at least in English, each finite verb is automatically regarded as connected with a corresponding subject pronoun, in the absence of a noun; it may be this fundamental difference in the obligatory versus optional status of the subject pronoun between Spanish and English that accounts for the reluctance to code-switch between subject pronoun and finite verb or this restriction may simply be a factor of the indissoluble bond in English, which does, in fact, exist in Spanish as well, at a deeper level of structure, since every finite verb must have a subject at some point in the derivation.

The reluctance to switch codes in infinitival constructions also may be a function of differing morphological systems: the Spanish infinitive is clearly marked with the final r, while in English, the preposition/particle to, used before the dictionary-form of the verb, is considered to be the "sign of the infinitive." Thus, the English substantival infinitive is an analytic construction whereas the Spanish infinitive is a synthetic form;

mediation between these two paradigms is particularly difficult, all the more so since in English the sign of the infinitive precedes the stem form, while in Spanish the infinitival morpheme comes at the end of the stem. It is, therefore, not surprising that little, if any, code-switching occurs in infinitival constructions, except where the entire verb has been borrowed from one language to the other. It is interesting to note that when English borrows a Spanish verb, normally the entire infinitive is taken, to which is prefixed the particle to: to bailar, to romper, etc. Spanish, on the other hand, normally takes the English dictionary-form and suffixes either -ar or -ear: watchear, workear, mopear, etc.

In all of the investigations carried out to date, the search for linguistic environments for code-switching has taken place in a unilingual setting; that is, one looks for features in the preceding (or occasionally, following) linguistic context, in most cases material from a single language, to predict the occurrence or non-occurrence of a switch. Alternatively, one speaks only in terms of abstract grammatical categories, such as noun phrases, prepositional phrases, etc. in assessing cases of code-switching, which automatically places that analysis at some level of deep structure at which both languages share a common structure. Few investigators who have dealt with the problem of code-switching have really gone beyond the boundaries of the individual language, although in many cases a purely surface-structure analysis has been performed. This appears to stem from the failure to distinguish between two distinct linguistic systems, as present, for example, in a bilingual dictionary, and the systems as present in the cognitive structures of truly balanced bilingual speakers. It is highly unlikely that the two languages are stored in a person's competence in the tabular form found in bilingual dictionaries or word-lists; the very fact of code-switching and interference seem to imply at least a certain amount of interconnection. If, therefore, one works from the hypothesis that bilingual competence is in fact a form of interlanguage, in the sense of Selinker (1969, 1972), it then becomes possible to examine instances of code-switching not only with regard to unilingual environments, but also as forming part of a truly bilingual, or interlingual set of surface structures.

Since the ways in which two distinct languages can mix to form an interlinguistic interface are virtually infinite, the possibilities for discovering a principled interaction between the two languages in the speech patterns of bilinguals is equally formidable. Nonetheless, an overview of the available data suggests at least some general directions which may be explored. Most significantly, it appears that, whatever the sufficient conditions may be, the necessary conditions for bilingual code-switching involve a certain form of homology between the superficial syntatic form of the utterances in the two languages. Put in other words, this means that the overall superficial form of a given utterance X must be essentially the same in L_1 and L_2, with

respect to the general arrangement of constituents and the deployment of the bonds of semantic structure in order to switch from one code to the other in the midst of the production of the sentence. In its strongest form, such a hypothesis would take the following form:

(A) Given an (underlying) semantic representation S, and given the superficial representations X_1 and X_2 of S in the languages L_1 and L_2, respectively, in order for a code-switch to occur in the production of S, it is necessary that the superficial syntatic structures of X_1 and X_2 be identical.

The establishment of such a hypothesis is, of course, impeded by an accurate definition of syntatic equivalence; nonetheless, in most cases, working rules may be established, even if a comprehensive definition of syntatic similarity or identity remains elusive. Hypothesis (A) could, of course, be successively weakened by replacing the word "identical" with "essentially similar," which in turn generates a host of new problems concerning the meaning of "similar." However, once again, since code-switching appears under the best of circumstances to be an idiosyncratic phenomenon, such an addition should not be regarded as theoretically objectionable, however difficult it may be in practical terms.

Consider the sentence

(13a) Terminé la escuela in the Navy

with the main subject-predicate clause in Spanish (I finished school) and the prepositional phrase in English. Sentence (13a) would, if presented totally in Spanish, be roughly

(13b) Terminé la escuela en la Marina

while in English, the phrase would become

(13c) I finished school in the Navy.

A point-by-point comparison of the syntactic structures of the three sentences reveals a nearly perfect congruence among the three in terms of the placement and semantic functions of the superficial constituents. The only points of divergence are the optional use of the subject pronoun in Spanish, a topic which has already been discussed, and the use of the definite article la with escuela, and its omission in English. The placement of the article is dictated by rule in Spanish, and in fact the entire phrase terminé la escuela has a nearly fossilized format, in which native speakers of Spanish would automatically insert an article without further thought. Thus, a code switch involving either (13b) or (13c) could theoretically occur at any point in the production of one of the sentences without changing the over-

all superficial form of the final product; the only restrictions would involve specific intra-sentential bonds of the sort discussed earlier. Sentence (13a) can be further extended by the addition of a subordinate clause, as in

(13d) I finished school while I was in the Navy
(13e) Terminé la escuela mientras estaba en la Marina.

Again, the two expanded sentences have the same superficial structure, and code switches, as judged by native speakers, are also permissible in phrases such as

(13f) Terminé la escuela mientras I was in the Navy/while I was in the Navy
(13g) I finished school while estaba en la Marina/mientras estaba en la Marina.

Of these four possibilities, only the first variant of (13g) seems a bit anomalous, perhaps because Spanish requires no subject pronoun in the subordinate clause (since the subject is the same as that of the principal verb) while English demands a pronoun in this position; therefore, the transition from the English subordinating conjunction to the Spanish subjectless verb appears to be a bit strange.

Consider next the sentence

(14a) No creían en Jesús and then he sent este hombre...,

a combination of

(14b) They didn't believe in Jesus and then he sent this man, and
(14c) No creían en Jesús y entonces (luego) envió este hombre....

As in the preceding case, the English and Spanish sentences have nearly identical surface structures, with the exception of the optional subject pronouns in Spanish. Code-switching may therefore surmised to occur at several points in the sentence, and in fact other modifications such as

(14d) No creían en Jesús and then he sent this man...and
(14e) They didn't believe in Jesus y entonces envió este hombre...,

among others, were judged as acceptable code-switched examples.

Another example is

(15a) My Uncle Sam es el más agabachado,

a combination of

(15b) My Uncle Sam is the most Americanized and

(15c) Mi tío Sam es el más agabachado.

The three sentences have identical superficial structures, and, while the shortness of the sentences precludes much variation, alternative code-switching possibilities, involving a shift immediately after the copula, were judged acceptable in both directions.

A further example, this time involving slightly less than perfect syntactic equivalence, is

(16a) He is doing the best he can pa no quedarsi atras,

a combination of (eliminating dialectal variants)

(16b) He is doing the best he can so as to not fall behind and
(16c) Hace todo lo que puede para no quedarse atras.

Although Spanish quedarse is not normally rendered by fall in English, but rather by such verbs as be, remain, turn, etc., it still fits in a more or less one-to-one syntactic congruence with the English verbs in question; thus, the sentences (16b) and (16c) are, for all practical purposes, syntactically equivalent, and code-switches at other points in the phrase are also tolerated by native speakers:

(16d) He is doing lo mejor que puede...etc.
(16e) Hace the best he can..., etc.

In all the above cases, a nearly perfect syntactic congruence exists between the Spanish and English equivalent sentences, thus supporting the strong form of Hypothesis A as regards the permissible environments for code-switching. In the majority of cases, however, such a perfect congruence does not exist; in certain instances, there is nearly total disparity in syntactic structure between parts of the semantically equivalent English and Spanish phrases. This is especially true in the case of clitic pronouns, which normally precede the verb in Spanish and follow it in English. The same problem also arises with many verbal locutions, where the equivalent of a simple English infinitive pattern is a more complex Spanish phrase involving use of the subjunctive mood. However, an overview of the cases of code-switching in which there is a lack of total syntactic equivalence between the English and Spanish sentences nonetheless suggests that congruence is still maintained in that portion of both phrases which falls after the actual switch. Thus, one may propose to modify Hypothesis A as follows:

Hypothesis B: Given the underlying semantic representation S, let X_1 and X_2 be the actual realizations of S in L_1 and L_2 respectively. Furthermore, for any point p_n in X_n (where n = 1 or 2), let a_n indicate that portion of X_n lying to the left of point p_n and b_n that portion of X_n lying to the right of p_n. In order

to produce a code-switched utterance by combining X_1 and X_2 with a break at p_1 and p_2, it is necessary that b_1 and b_2 be syntactically equivalent.

Put in other words, the revised hypothesis states that, whereas the portion of a code-switched utterance that falls before the code-switch may indeed contain syntactically divergent elements, those portions falling after the switch must be essentially identical syntactically. The data from Spanish-English code-switching strongly support this revised hypothesis.

The sentence

(17a) No sé, porque I never used it,

is a combination of

(17b) No sé, porque nunca lo usé, and
(17c) I don't know, because I never used it.

With the exception of the placement of the clitic pronoun in Spanish, an automatic rule-governed phenomenon, the two sentences are essentially identical following the switch, although they are somewhat different in the initial portions. More examples are

(18a) A Sotero le gusta mucho cocinar barbecue every Sunday,

a combination of

(18b) A Sotero le gusta mucho cocinar barbecue cada domingo, and
(18c) Sotero likes to cook barbecue every Sunday.

The inherent syntactic difference in the first portion of the sentences, involving the contrast between Spanish gustar and English like, is a significant one that plagues students of the two languages for long periods of time. However, following the switch, the order of the constituents is identical. Attempts at placing the switch at virtually any other point in the sentence, where the elements following the switch would not be identical in the two languages, were rejected as anomalous by native speakers.

(19a) 'Tonces salió eso que she wanted to take mechanics,

a combination of

(19b) Entonces salió eso que (ella) quería seguir (coger) mecánica
(19c) Then it turned out that she wanted to take mechanics.

Once again, the two sentences are virtually identical following the switch, although major syntactic differences do exist in the initial portions. The same holds for

(20a) I think I was mopping y me pegué asina,

a combination of

(20b) Creo que estaba limpiando el piso y me pegué así, and
(20c) I think I was mopping and I hit myself like this.

(21a) That has nothing to do con que le hagan esta

is combined from

(21b) Eso no tiene nada que ver con que le hagan esta, and
(21c) That doesn't have anything to do with them doing that to (him?).

In the first portion of the sentence, the idiomatic expressions have to do with and tener que ver con disallow a code-switch in their midst, while the final portion, consisting of regular, rule-governed verbal forms, although slightly different in superficial form, are regarded as sufficiently similar to permit a code-switch from one language to the other. Another example:

(22a) They only use English when they have to, like cuando van de compras;
(22b) Sólo usan inglés cuando les hace falta, como cuando van de compras;
(22c) They only use English when they have to, like when they go shopping.

While there are several ways of rendering the initial part of the sentence in Spanish, all differ considerably from the common equivalents in English. Not so with the final portion, which is virtually identical in the two languages, thereby facilitating a code-switch at the indicated point.

Other useful examples of code-switching that conform to the pattern of Hypothesis B are:

(23a) Me duelen las manos porque las traigo tan quemadas from holding the steering wheel;
(23b) Me duelen las manos porque las traigo tan quemadas de (por) agarrar el timón (el volante);
(23c) My hands hurt because they're so scorched from holding the steering wheel.

The initial segments of the two sentences contain two radically differing expressions, marking one of the major syntactic differences between English and Spanish; the final portions, however, are nearly identical in each of the two languages. A code-switch at any point before the actual switch would be highly inappropriate and unacceptable because of the two differing syntactic constructions: the use of the intransitive verb doler (to

pain + indirect object) corresponding to English (to have something) hurt (someone) and the use of the verb traer (to carry) plus the definite article, lit. "I carry (have) them so scorched," where English would simply say my hands are scorched. Only after production of the sentence has passed the point where transfer to the other language would not entail a radical shift of syntactic structure does the actual code-switch occur.

An interesting example showing how a unified idiomatic expression may be considered as syntactically equivalent during code-switching despite radical differences in surface structure is found in the following:

(24a) And it's the first shag que se me hace que looks nice on a girl;

the Spanish equivalent would be

(24b) Y es el primer shag que se me hace que le va bien a una muchacha.

The idiomatic (Mexican) Spanish expression se me hace roughly corresponds to English it seems to me, and both require a following relative pronoun that/que. English looks good on, which is semantically an idiomatic expression (by Chafe's criteria) also corresponds to several slightly different Spanish expressions, the most common of which has been placed in (24b). A similar example would be:

(25a) But your complexion se ha compuesto mucho,

combined from

(25b) Pero tu complexión se ha compuesto mucho;
(25c) But your complexion has improved a lot.

While the portions of the sentences (25b) and (25c) following the switching point that yielded (25a) are syntactically different, due to the use of the reflexive verb in Spanish, the two verbs, componerse and improve/get better, are evidently felt to be semantically equivalent and it is this equivalence that permits the shift to another language. In both the English and Spanish versions, the portion of the sentences following the switch may be represented schematically as:

aux + verb + adv (intensifying);

the addition of the reflexive pronoun in Spanish is another instance of automatic, rule-governed insertion which in most cases does not interfere in any fashion with code-switching.

The preceding examples have offered only a rudimentary picture of the tremendous degree of complexity involved in the study of bilingual code-switching. A definitive examination of the

issues at hand will require a voluminous compilation of data, which would far exceed the bound of the present report. With the data currently available, however, it is possible to propose, in a highly tentative fashion to be sure, some conclusions regarding the cognitive structures which may underlie the sort of bilingual abilities that are conducive to code-switching. Ultimately, some sort of attempt must be made to integrate the linguistic and the extra-linguistic investigations of code-switching, to correlate the choice of purely linguistic environments which permit switches with the sociolinguistic and individual psychological parameters which, in effect, stimulate particular shifts. However, given the substantial lack of useful data on the latter issue, we must at present be content with an ennumeration of certain necessary conditions for the occurrence of a code-switch, and leave for future investigation the determination of sufficient conditions. Indeed, since the role of individual idiosyncratic factors seems to be an important aspect of code-switching, in that among groups of approximately equal bilingual abilities, some code-switch more than others, a complete determination of the sufficient conditions for code-switching probably lies beyond the reach of the behavioral sciences. With regard to the linguistic constraints, however, the path toward an eventual model seems more clearly indicated. First of all, it is clear that, despite the superficial appearance of random and unprincipled behavior, bilingual code-switching does seem to obey a rather stringent set of sentential constraints. These constraints are of two fundamental types, intralinguistic constraints and interlinguistic constraints. The latter are more difficult to isolate, but they also offer greater interest to the psycholinguist. Perhaps the most general constraint, and the one most difficult to precisely specify, involves the actual quantity of code shifts that may be accommodated within a given stretch of discourse. Within a given linguistic community, there appears to be no single set of norms that determines how often, within a single sentence, languages may be shifted, nor how many words or syllables must intervene between switches. In general, more than one word normally occurs between switches, thus rendering less than totally acceptable combinations such as ESE or SES in three-word prepositional phrases, as noted earlier. Beyond such an almost trivial generalization, however, it becomes nearly impossible to offer more precise characteristics. Even careful observations of the speech patterns of a single person usually reveals no consistent behavior in terms of code-switching, although the most common tendency is for the sentence to begin in one language and, if it is reasonably short, to switch only once and end in the other language. In longer phrases, two or more switches are not uncommon, and, if one chooses to include examples of switched nouns, as noted above, the average number becomes even greater.

Of greater interest to the problem of bilingual competence is the general sort of syntactic constraint that appears to govern the global possibilities for code-switching. One such syn-

tactic constraint has been stated as Hypothesis B. While further investigation will be needed to refine and characterize the nature of bilingual code-switching, all available data on Spanish-English bilingualism appear to support at least a general version of Hypothesis B. It appears that, immediately preceding a code-switch, there occurs a brief moment of anticipation, in which, at some subliminal level, the basic syntactic structures of the remaining portions of the sentences in the two languages are compared and tested for congruence. The overall motivation behind such a comparison seems to be the achievement of a unified superficial syntactic pattern, regardless of the linguistic code in which the individual elements are represented. Therefore, code-switches which would in effect combine incompatible syntactic structures are normally avoided, and, when presented to native speakers in experimental situations, are routinely rejected as meaningless or absurd. Nonetheless, one may from time to time observe code-switches in which the post-switch portions of the sentences in the two languages exhibit less than perfect syntactic congruence. Again, it is too early to offer any definitive statement regarding the amount of congruence necessary to facilitate switching; this again may be a purely individual factor. The fact that perfect conformity is not normally required may be due to the nature of the anticipatory mechanism itself. It is in fact quite possible that this mechanism of anticipation, if it exists, does not proceed as a full-fledged syntactic analysis system, but rather as a sort of general pre-linguistic strategy, one which "chunks" the comparative phrases in the two languages for some overall measure of syntactic congruence but which is not fine enough to insure complete syntactic identy (cf. Cook 1969). That such may be the case does appear to be indicated by the failure of code-switches to consistently insure complete syntactic conformity; in those cases where radical departures from the dictum of syntactic congruence do in fact crop up, one is tempted to ascribe the deviations simply to personal idiosyncratic lapses, of the same sort that quite frequently occasion lack of grammatical concord, pronominal reference, etc. As such, code-switches of such a deviant nature could be regarded as production or performance errors and would not necessarily have a devastating effect on theories claiming the necessity for a higher degree of syntactic compability.

The data which have been surveyed suggest that the true model of bilingual competence may lie somewhere between the two diametrically opposite poles, being neither two completely distinct language systems nor one homogeneous amalgam. Those bilingual speakers capable of engaging in spontaneous code-switching apparently possess the ability to mentally compare equivalent sentences in the two languages for degree of syntactic compatability and to code-switch only in those instances where such compability would be preserved (cf. Clyne 1967, Rayfield 1970). Macnamara (1967: 71) speculates that "a language system can be made ready for a response even before the response has been determined." He also remarks (70) that "The most likely explanation [for code switching] is that [the bilingual] has the capacity to activate the L_2 system, carry out the semantic encoding, the selection of words and the syntactic organization while more or less mechanically producing in L_1 material which has already been prepared for production." Such a view is not contradicted by the present remarks, and yet Macnamara's view of code-switching as the combination of an active process of sentence generation and an automistic playback of a previously generated phrase does not really account for the high degree of syntactic conformity exhibited between L_1 and L_2 sentences following a code-switch. It is true that bilingual speakers seem to be able to manipulate the two language systems independently, and Macnamara's description quite adequately fits code-switching across sentence boundaries, that is, where one sentence is produced in L_1 and the following sentence in L_2. In those cases where code-switching occurs intrasententially, however, it is impossible to speak of generating one sentence while mechanically producing another, since neither sentence is in fact produced in its entirety. A more plausible model would speak of the internal comparison, perhaps only in a very superficial fashion, of two simultaneously or rapidly-sequenced utterances, one in each language. The high degree of syntactic compatability evident in cases of code-switching argues for a more nearly simultaneous comparison of variants, rather than a linearly-ordered production as suggested by Macnamara. If such simultaneous comparison does in fact occur in the cognitive structures underlying bilingual code-switching, this militates for the consideration of bilingual competence as more integral than two separate grammars. It is necessary to add some sort of additional stage, a comparator which juxtaposes the two systems simultaneously and allows for a change in the production code in mid-stream, as it were.

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