

Code-switching

1. Linguistic manifestations of language contact

5 Code-switching (CS) is but one of a number of
the linguistic manifestations of language contact
and mixing, which variously include borrowing
on the lexical and syntactic levels, language
transfer, linguistic convergence, interference,
10 language attrition, language death, pidginization
and creolization, among others. There is little
consensus in the literature over which aspects
should be subsumed under the label *code-
switching*. In this article, CS refers to the
15 utterance-internal juxtaposition, in unintegrated
form, of overt linguistic elements from two or
more languages, with no necessary change of
interlocutor or topic.

Mixing may take place at any level of
20 linguistic structure, and a long research tradition
has grown up around questions of language
choice and language negotiation among
interlocutors in bilingual contexts (Gumperz
1976/1982; Heller 1982). But the combination of
25 languages within the confines of a single
sentence, constituent or even word, has proved
most intriguing to linguists. This article surveys
the treatment in the literature, linguistic and
social, of such intra-sentential CS.

30 2. Theories of CS

First dismissed as random and deviant (e.g.,
Weinreich 1953/1968); intra-sentential CS is now
35 known to be grammatically constrained. The
basis for this is the empirical observation that
bilinguals tend to switch intra-sententially at
certain (morpho)syntactic boundaries and not at
others. Early efforts to describe these tendencies
40 (e.g., Gumperz 1976/1982; Timm 1975) offered
taxonomies of sites in the sentence where CS
could and could not occur (e.g., between
pronominal subjects and verbs or between
conjunctions and their conjuncts), but these were
45 soon met with a host of counter-examples.

The first general account of the distribution of CS stemmed from the observation that CS is favored at the kinds of syntactic boundaries which occur in both languages. The *Equivalence Constraint* (Poplack 1980) states that switched sentences are made up of concatenated fragments of alternating languages, each of which is grammatical in the language of its provenance (see also Lipski 1978; Muysken 2000; Pfaff 1979). The boundary between adjacent fragments occurs between two constituents that are ordered in the same way in both languages, ensuring the linear coherence of sentence structure without omitting or duplicating lexical content.

That general principles, rather than atomistic constraints, govern CS is now widely accepted, though there is little consensus as to what they are or how they should be represented. Many theories assume that the mechanisms for language switching are directly predictable from general principles of (monolingual) grammar. As extensions of the formal linguistic theories successively in vogue, these tend to appeal to such abstract grammatical properties as inter-constituent relationships (e.g., government, case assignment) and/or language-specific features of lexical categories (i.e., subcategorization of grammatical arguments, inherent morphological features).

Di Sciullo, et al. (1986), for example, identified the relevant relations as C-command and government: CS cannot occur where a government relation holds. Replacement of the function of government in standard theory by the notion of feature agreement led to a parallel focus on feature matching in CS studies. The *Functional Head Constraint* (Belazi, et al. 1994) adds language choice to the features instantiated in functional and lexical categories, prohibiting CS where a mismatch occurs. MacSwan's (1999) adaptation of the Minimalist proposal restricts CS at structural sites showing cross-language differences in monolingual features.

The distinction between lexical and functional categories is a hallmark of theories invoking the

complement structure of individual lexical items
to characterize permissible CS sites (e.g., Joshi
1985 and its sequel, the *Null Theory of CS*
(Santorini and Mahootian 1995); see also
95 Bentahila and Davies' *Subcategorisation*
Constraint (1983)). Perhaps the most detailed
model involving the contrast between lexical
properties and functional (or "system")
morphemes is the *Matrix Language Frame* model
100 (Azuma 1993; Myers-Scotton 1993). Here,
structural constraints on CS result from a
complex interaction between a dominant matrix
language and the prohibition against embedding
"system" morphemes from the "embedded"
105 language in matrix language structure.

The assumption that bilingual syntax can be
explained by general principles of monolingual
grammar has not been substantiated. While such
formal theories of grammar may account well for
110 monolingual language structure (including that of
the monolingual fragments in CS discourse),
there is no evidence that the *juxtaposition* of two
languages can be explained in the same way. As
described in ensuing sections, bilingual
115 communities exhibit widely different patterns of
adapting monolingual resources in their code-
mixing strategies, and these are not predictable
through purely linguistic considerations. The
equivalence constraint, as formalized by Sankoff
120 (1998a; 1998b; Sankoff and Mainville 1986;
Sankoff and Poplack 1981), is a production-based
explanation of the facts of CS, which incorporates
the notions of structural hierarchy and linear
order, and accounts for a number of empirical
125 observations in addition to the equivalent word
order characterizing most actual switch sites.
These include the well-formedness of the
monolingual fragments, the conservation of
constituent structure, and the essential
130 unpredictability of CS at any potential CS site.

3. *Fitting theory to data*

Which of these competing (and often
135 conflicting) models offers the best account of

bilingual CS? Testing the fit of theory with the data of CS should be a straightforward matter; however, disparate assumptions, goals and domains of application have thus far hindered such efforts. Assessment of the descriptive adequacy of a theory of CS requires that at least two methodological issues be resolved. One involves identification and principled classification of language mixing phenomena, the other, confronting the predictions of the theory with the data of actual bilingual behavior.

3.1. CS vs. borrowing

It is uncontroversial that CS differs from the other major manifestation of language contact: *lexical borrowing*. Despite etymological identity with the donor language, established loanwords assume the morphological, syntactic, and often, phonological, identity of the recipient language. They tend to be recurrent in the speech of the individual and widespread across the community. The stock of established loanwords is available to monolingual speakers of the recipient language, along with the remainder of the recipient-language lexicon. Loanwords further differ from CS in that there is no involvement of the morphology, syntax or phonology of the donor language.

3.2. Borrowing vs. nonce borrowing

Recent research on borrowing as a synchronic *process* (e.g., the papers in Poplack and Meechan 1998a; Poplack, et al. 1988) has shown it to be far more productive than its result (established loanwords) would imply. Crucially, the social characteristics of recurrence and diffusion need not be satisfied, resulting in what has been called, after Weinreich (1953/1968), *nonce borrowing* (Sankoff, et al. 1990). Like its established counterpart, the nonce borrowing tends to involve lone lexical items, generally major-class content words, and to assume the morphological, syntactic, and optionally, phonological identity of the recipient language. Like CS, on the other hand, particular nonce borrowings are neither

recurrent nor widespread, and nonce borrowing necessarily requires a certain level of bilingual competence. Distinguishing a nonce borrowing from CS of a lone lexical item is conceptually
185 easy but methodologically difficult, especially when this item surfaces bare (i.e., morphologically uninflected, or in a syntactic slot shared by both languages), giving no apparent indication of language membership.

190 The classification of such *lone other-language items* is at the heart of a fundamental disagreement among CS researchers over 1) whether the distinction between CS and borrowing should be formally recognized in a
195 theory of CS, 2) whether these and other manifestations of language contact can be identified in bilingual discourse, and 3) criteria for determining whether a given item was switched or borrowed. Researchers who classify
200 lone other-language items as CS tend to posit an *asymmetrical* relationship, in which one language dominates and other-language items are inserted (e.g., Joshi 1985; Myers-Scotton 1993). On the other hand, for those who focus only on the class
205 of (unambiguous) *multiword* CS, both languages are postulated to play a role (Belazi, et al. 1994; Sankoff 1998a, 1998b; Woolford 1983). Muysken (2000) admits the possibility of both strategies.

210 3.3. Identifying the results of language contact

Quantitative analyses of language mixing phenomena in a wide variety of language pairs have now established that such lone other-
215 language items are by far the most important—in some cases, virtually the only!—component of mixed discourse (e.g., Backus 1992; Berk-Seligson 1986; Budzhak-Jones 1998a; Nortier 1989; Pfaff 1979; Poplack 1989; Poplack, et al.
220 1987; Treffers-Daller 1994). In comparison, CS of *multiword* other-language fragments, other than tags and other frozen forms, while frequent in some communities, is in the aggregate relatively rare.

225 Both CS and borrowing are based on

principled combination of elements of the monolingual vernaculars of the bilingual community. Recent research suggests that the structure of these *source* vernaculars can reveal whether a code-mixed element is behaving like one or the other. Focussing on the structural variability inherent in CS *qua* oral phenomenon, Poplack and Meechan (1998b) developed a method, adumbrated in Sankoff et al. (1990), to compare bilingual structures with the monolingual source languages of the same speakers. Making use of the framework of linguistic variation theory (Labov 1969; Sankoff 1988), the variable patterning of such forms is discovered, and used to determine their status. The method involves cross-linguistic comparison, on a given diagnostic criterion, of the ambiguous lone other-language item, with its counterparts in both the donor and recipient languages, as well as with established loanwords and unambiguous CS.

3.3.1. Morphological measures

If the rate and distribution of morphological marking and/or syntactic positioning of the lone other-language items show quantitative parallels to those of their counterparts in the recipient language, while at the same time differing from relevant patterns in the donor language, the lone other-language items can be considered to have been *borrowed*, since only the grammar of the recipient language is operative. If they pattern with their counterparts in the monolingual donor language, while at the same time differing from the patterns of the unmixed recipient language, the lone other-language items must result from CS.

3.3.2. Bare forms

Even where lone other-language items surface bare, the comparative method can determine their status. Bare forms have figured prominently in the formulation of code-mixing theories, where they are frequently cited as examples of exceptional or ungrammatical ways of incorporating foreign material (Jake and Myers-

275 Scotton 1997; Picone 1994). Quantitative analysis of actual CS discourse, in contrast, shows that bare other-language forms occur overwhelmingly in just those contexts where they are permitted in the recipient language, and more strikingly, at the same rate (Budzhak-Jones and Poplack 1997; Eze 1998; Ghafar Samar and Meechan 1998; Sankoff, et al. 1990; Turpin 1998).

280 Indeed, code-mixed structures that appear exceptional when compared with an idealized version of the source language generally turn out to conform closely to counterparts in the *spoken* vernaculars of the bilinguals under study. Lack of
285 *productivity* in the recipient language may also explain apparently unusual morphological strategies for incorporating lone other-language items (Poplack and Meechan 1998). Where the status of bare forms is pursued systematically, they are seen to mirror productive use in the
290 recipient language.

Empirical analyses of lone other-language items, marked and bare, with their source-language counterparts (Adalar and Tagliamonte 1998; Budzhak-Jones 1998a; Eze 1998; Ghafar
295 Samar and Meechan 1998; Poplack and Meechan 1998; Turpin 1998) confirm their quantitative parallels with dictionary-attested loanwords. And both pattern like their unmixed counterparts in the recipient language, regardless of the typological
300 properties of the language pair. This is evidence that most lone items are borrowed, if only for the nonce. The same method shows CS, on the other hand, to pattern like *donor-language* counterparts, in terms of the same linguistic
305 criteria. Thus a first imperative in developing a theory of CS capable of accounting for the data of CS is to determine the status of the linguistic elements involved.

310 Most of the voluminous literature on intra-sentential CS, however, especially of the “insertional” type (Muysken 2000), is based on data which represents, properly speaking, lexical borrowing. It follows that many of the theories applying to *both* types of language mixing (e.g.,
315 Mahootian 1993; Myers-Scotton 1993) are more

properly theories of borrowing. This in turn explains on the one hand, why some *seem* to account for many of the facts of code-mixing (since most of the mixed items are in fact borrowings), and on the other, why their handling of (multiword) CS may appear unwieldy and/or descriptively inadequate (e.g., Myers-Scotton 1993 and many others).

325 4. *The data of CS*

The data of CS are relevant both to evaluating theories and to understanding the social role of CS within the community. With respect to evaluation, the literature on CS is largely characterized by the “rule-and-exception” paradigm. Despite the onslaught of counter-examples provoked by successive CS theories, as of this writing, few have been tested systematically against the data of spontaneous bilingual usage. Instead, both the theories and assessments of their applicability tend to be based on isolated examples, drawn from judgements, informant elicitation, linguist introspection or the published literature. The relation between such examples and the recurrent and systematic patterns of everyday interaction is tenuous or non-existent.

In many bilingual communities, speakers conventionally make use of both languages with the same interlocutors, in the same domains, and within the same conversational topic. To understand the social role of CS in such communities, the analyst must observe, uncover and document those conventions, as instantiated in everyday situations in which spontaneous CS is a discourse norm. This requires first identifying a community in which such situations regularly arise, and characterizing its social structure in terms of language knowledge and language use. Second, samples of sustained discourse including CS must be obtained from enough community members in quantities sufficient to detect recurrent *patterns* of speech behaviour. It is in these steps, prior to any linguistic analysis, that

social, political, historical and demographic knowledge of the community are most pertinent. These characteristics could then be related to its members' linguistic production to arrive at a community profile, or "social meaning" of CS.

365 Curiously, however, although the last three or four decades of research have produced a wealth of data from a wide range of bilingual interactions world-wide, relatively little is known of the bilingual *norms* of the communities from which they are drawn. Nor is it clear how the social forces typically described in such detail (Backus 1996; Gardner-Chloros 1991; Nortier 1989) shaped those norms, let alone the structural form of the language mixes, beyond the fact that two or three languages ended up being spoken. As detailed below, in most bilingual communities empirically studied, one or another manifestation of language contact is (inexplicably) preferred to the detriment of others; thus the social "meaning" of the languages, individually or in combination, reveals little about the differential use of linguistic resources in the social life of a given community. This is because the patterning of utterances containing elements from more than one language is not predictable from community or language typologies. It emerges only from systematic examination of how the languages are *used* by community members.

390 5. *Community Strategies for CS*

When two languages are combined in a single sentence, various problems of incompatibility may arise. The most obvious derive from word-order differences, but incompatibilities may affect any level of linguistic structure, especially in typologically distinct language pairs. Nonetheless, it has been observed repeatedly in systematic studies of bilingual communities that speakers tend to circumvent these difficulties, producing bilingual structures which are felicitous for the grammars of both languages simultaneously. This is achieved through participation in prevailing community norms,

relating to both the overall rate and type of language mixing. In what follows we detail four empirically established community-wide strategies for combining languages intra-sententially: smooth code-switching at equivalence sites, flagged code-switching, constituent insertion and nonce borrowing.

5.1. Equivalence-based CS

The New York Puerto Rican community, with a high degree of Spanish-English bilingualism, favours smooth intra-sentential CS, grammatically constrained by the equivalence constraint (Poplack 1980). Characteristics of smooth CS include copious occurrences, smooth transitions between languages, and lack of rhetorical effect. Also documented as a norm in other Spanish-English bilingual communities (e.g., Pfaff 1979), this pattern is sometimes attributed to the many typological similarities enjoyed by the Spanish-English pair. However, the operation of the equivalence constraint has been empirically verified in communities featuring such typologically distinct language pairs as Finnish-English (Poplack, et al. 1987), Arabic-French (Naït M'Barek and Sankoff 1988), Tamil-English (Sankoff, et al. 1990), Fongbe-French and Wolof-French (Meechan and Poplack 1995), Igbo-English (Eze 1998), French-English (Turpin 1998) and Ukrainian-English (Budzhak-Jones 1998a).

5.2. Flagged CS

It is logical that typologically similar language pairs should be particularly propitious to intra-sentential CS, but its occurrence in them is by no means a foregone conclusion. The French/English situation in the bilingual Ottawa-Hull region of Canada is a case in point. Instead of engaging in smooth intra-sentential CS at the many available equivalence sites, French-English bilinguals prefer to *flag* CS and use them for specific rhetorical purposes (Poplack 1985). *Flagged* switches are marked at the discourse level by repetition, metalinguistic commentary, and other

means of drawing attention to the switch. One result is the interruption of the speech flow at the switch point, rendering a grammaticality requirement irrelevant. Although an explanation
455 was originally sought in data collection strategies (Poplack 1981) it is now clear that community norms of language mixing are the overriding factor.

Flagging is also a hallmark of the Finnish-
460 English community studied by Poplack, et al. (1987). Here, English-origin material tends to be associated with a disproportionate rate of pauses, hesitation phenomena, ratification markers and flags, which in some conversations seem to be
465 entirely confined to a switch-signalling function. The distribution of case-marking and discourse flagging of English-origin single nouns shows that these are in near complementary distribution. In contrast to the functional flagging in the
470 typologically similar French-English pair, in the Finnish-English materials, flagging is associated with production difficulties, despite the fact that all the informants are fluent first-generation speakers of Finnish, as well as of English. In their
475 bilingual community, however, neither nonce borrowing nor CS (whether smooth as in the Spanish-English case, or flagged as in the French-English case) is a discourse *norm*.

480 5.3. Constituent insertion

The role of particular community history is even more apparent in the case of Moroccan Arabic-French bilinguals. Naït M'Barek and Sankoff (1988) documented a large number of
485 bidirectional switches at equivalence sites, as well as many unidirectional borrowings from French into Arabic. By far the most frequent type of intra-sentential language mixture here, however, is insertion of a French NP, including at least
490 determiner and noun (both inflected for person, number and gender) and optionally other elements, in a syntactic slot for an Arabic NP. There are ten times as many NP insertions in all as there are switches at the equivalence site
495 between Arabic determiner and French noun.

(That the process responsible for these patterns is *constituent insertion* rather than the *equivalence switching* predominant in the New York Puerto Rican community is further confirmed by a clear
500 statistical tendency for a switch back to Arabic after the French noun, providing the latter is in NP-final position.) This pattern was independently documented for the same language pair by Bentahila and Davies (1983). On the other
505 hand, in the structurally identical *Lebanese Arabic/French* language pair, constituent insertions were almost entirely absent! Nor were they reported for Moroccan Arabic in contact with Dutch (Nortier 1989). This confirms that
510 these patterns are dependent on the particular community, rather than on community (or language) typology.

5.4. Nonce borrowing

515 Lone other-language items are widely documented as the most prevalent type of code-mixing in a wide variety of communities worldwide. Despite their controversial status in much of the literature (owing in part to their inherent
520 ambiguity *in isolation*), there is now little doubt as to their classification as a set. Whatever the linguistic properties of the language pair examined, ranging from typologically distinct to nearly identical, and the diagnostic employed—
525 phonological, morphological or syntactic, lone other-language items overwhelmingly surface with the *patterns* of the language in which they are incorporated (Adalar and Tagliamonte 1998; Budzhak-Jones 1998a; Eze 1998; Ghafar Samar and Meechan 1998; Poplack and Meechan 1998b; Turpin 1998). This is true not only of the grosser
530 linguistic structures, but more remarkably of the fine details of the quantitative conditioning of linguistic variability. Such parallels can only be construed as evidence that they have been
535 borrowed, despite the lack of dictionary attestation of diffusion across the community.

Other attested community preferences include the prevalence of lone other-language items in the
540 Moroccan-Dutch community (Nortier 1989), the

dearth of tag switches in Igbo-English (Eze 1997), the preference for flagging in Ukrainian-English (Budzhak-Jones 1998b), and for constituent insertion in Fongbe-French (Poplack and Meechan 1995). In some bilingual communities (e.g., the Finnish-English community in Canada (Poplack, et al. 1987) or the Ukrainian-English community in Pennsylvania (Budzhak-Jones 1998b)), CS is simply *not* a community norm.

6. Summary

The intriguing facts of CS have incited much theorizing, linguistic and social, but less attention has been paid to confronting the tenets of the theories with bilinguals' use of two or more languages in context. Successive linguistic theories of CS have reflected the monolingual theories in vogue, and social theories are following the same route (Heller 1995; Milroy and Wei 1995; Myers-Scotton and Bolonyai 2001). But although the desirability of linking individual instances of CS to the wider context of language use in the community has become a leitmotif in recent work, this goal is rarely pursued. Yet, despite the proliferation of linguistic and social categories, which have increased exponentially over the duration, empirical studies of bilingual language *use* show only a few factors to correlate with the production of CS, over and above the grammatical constraints which constrain the location in the sentence of the CS. These require little recourse to deep theorizing.

One recurrent, and perhaps overriding, factor is bilingual ability: those with greater proficiency in both languages not only switch more, they switch more intra-sententially, and at a wider variety of permissible CS sites (Berk-Seligson 1986; Poplack 1988; Poplack, et al. 1988; Treffers-Daller 1994). Those who are less proficient in one of the two languages on the other hand, do not eschew CS altogether, as might be the case were CS not the eminently

social tool that it is, but rather restrict their CS—
in number, type and/or discourse location—
according to their bilingual ability. The less-
590 proficient thus favor switch sites and types
requiring little or even no productive knowledge
of the other language, such as tags, routines or
frozen phrases. Bilingual proficiency is in no way
causative of CS. Rather, given the appropriate
discourse and social circumstances, speakers who
595 engage in the most complex type of intra-
sentential CS generally turn out to be the most
proficient in both of the contact languages.

Another recurrent factor is prestige,
instantiated at the community level by group
600 membership (often correlated with social class).
In contrast to language proficiency, whose effect
seems to be universal, the contribution of the
prestige factor varies from community to
community and may act to promote or inhibit CS:
605 its effect must be established on a case-by-case
basis. In one community CS per se may not
constitute prestigious behavior, though bilingual
display, appropriately flagged, may be. In
another, the opposite may hold true.

610 Why is it that after so many decades of
research attention by practitioners of so many
fields (including linguists of all stripes,
sociologists, anthropologists, educationalists and
psychologists), so much controversy continues to
615 reign over such basic facts as who code-switches,
where and why? We suggest that the current
impasse is directly linked to prevailing
methodologies in the study of CS (both linguistic
and social) which favor theorizing and post-hoc
620 interpretation of the meaning of isolated code-
switches of uncertain provenance over systematic
and exhaustive consideration of actual code-
switching behavior in the speech of the individual
in the context of her community.

625 The patterning of CS within a community is a
historical development over time, but the actual
structural form it takes is arbitrary. The literature
implies that the type of social history (colonial,
immigrant, border, etc.) of the community
630 explains the type of CS observable in it. But even

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though a wealth of ethnographic and sociological information is now available, and even some data counting, it has not yet elucidated why some communities prefer one pattern and others, in like
635 circumstances, prefer another.

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