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Code switching: Linguistic

Code-switching (CS) refers to the mixing, by bilinguals (or multilinguals), of two or more languages in discourse, often with no change of interlocutor or topic. Such mixing may take place at any level of linguistic structure, but its occurrence within the confines of a single sentence, constituent, or even word, has attracted most linguistic attention. This article surveys the linguistic treatment of such *intrasentential* switching.

In combining languages intrasententially, various problems of incompatibility may arise. The most obvious derive from word order differences: under what conditions, if any, can the boundary between constituents ordered differently in two languages host a switch? Other potential combinatorial difficulties involve mismatches in grammatical categories, subcategorization patterns, morphology, and idiomatic expressions. Systematic examination of the spontaneous speech of bilinguals resident in a wide range of

communities suggests, however, that speakers generally manage to circumvent these difficulties. CS tends not to produce utterances that contain monolingually ungrammatical sentence fragments. Discovery of the mechanisms enabling such 'grammatical' CS is the major goal of current research. Central questions include locating permissible switch sites and ascertaining the nature (hierarchical or linear, variable or categorical) of the constraints on switching.

1. Background

Though CS is apparently a hallmark of bilingual communities world-wide, it has only begun to attract serious scholarly attention in the last few decades. Researchers first dismissed intrasentential code-switching as random and deviant (e.g., Weinreich 1953/1968) but are now unanimous in the conviction that it is grammatically constrained. The basis for this conviction is the empirical observation that bilinguals tend to switch intrasententially at certain (morpho) syntactic boundaries and not at others. Early efforts to explain these preferences proceeded by proscribing certain switch sites, for example, between pronominal subjects and verbs or between conjunctions and their conjuncts. However, these particular sites were soon reported to figure among the regular CS patterns of some bilingual communities.

The first more 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 Muysken 2000). 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. Much current research assumes unquestioningly that the mechanisms for language switching follow directly from general principles of (monolingual) grammar. Theories based on this assumption 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).

Since Klavans's (1985) proposal that CS was constrained by structural relations, the formal linguistic theories successively in vogue have each been extended to encompass the data of CS. 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. A more recent Minimalist proposal (MacSwan 1999) restricts CS at structural sites showing cross-language differences in monolingual features.

This distinction between lexical and functional categories is not new to CS research. It 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 Bentahila and Davies's *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 (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' language in matrix language structure.

The assumption that bilingual syntax can be explained by general principles inferred from the study of monolingual grammar has not yet been substantiated. While formal theories of grammar may account well for monolingual language structure, including that of the monolingual fragments in CS discourse, there is no evidence to suggest that the *juxtaposition* of two languages can be explained in the same way. Bilingual 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 (1998), 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 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 unpredictability of CS at any potential CS site. The mechanisms of monolingual and bilingual grammars are not assumed *a priori* to be identical.

2. Evaluating CS Theories

There has been remarkably little cross-fertilization among CS theories; indeed, each has been greeted with a host of counter-examples. Testing the fit of competing models against the data of CS should be a straightforward matter since they often make com-

peting predictions. But their disparate assumptions, goals, and domains of application have hindered such efforts. Assessment of the descriptive adequacy of a theory of CS requires that at least two methodological issues be resolved. One involves classification of other-language phenomena, the other, confronting the predictions of the theory with the data of actual bilingual behavior.

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, who access them normally 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 lexifier language.

Recent research has shown that borrowing is actually much more productive than implied above (see the papers in Poplack and Meechan 1998). In particular, the social characteristics of recurrence and diffusion are not always satisfied. This results in what has been called, after Weinreich (1953/1968), *nonce borrowing* (Sankoff et al. 1990). Like its established counterpart, the nonce loan tends to involve lone lexical items, generally major-class content words, and to assume the morphological, syntactic, and often, phonological identity of the recipient language. Like CS, on the other hand, nonce borrowing is neither recurrent nor widespread, and necessarily requires a certain level of bilingual competence. Distinguishing nonce borrowings from single-word CS is conceptually easy but methodologically difficult, especially when they surface bare, giving no apparent indication of language membership.

The classification of lone items is at the heart of a fundamental disagreement among CS researchers over (a) whether the distinction between CS and borrowing should be formally recognized in a theory of CS, (b) whether these and other manifestations of language contact can be unambiguously identified in bilingual discourse, and (c) criteria for determining whether a given item was switched or borrowed. Researchers who consider lone other-language items to be 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). Where the class of CS is (in the first instance) limited to unambiguous *multiword* fragments, both languages are postulated to play a role (Belazi et al. 1994, Sankoff 1998, Woolford 1983). Muysken (2000) admits the possibility of both strategies.

The appropriateness of data is also relevant to evaluating CS theories. The literature on CS largely is

characterized by the 'rule-and-exception' paradigm. Despite the onslaught of counter-examples provoked by successive CS theories, very few have in fact been tested systematically against the data of spontaneous bilingual usage. Instead, both the theories and tests of their applicability tend to be based on isolated examples, drawn from judgments, informant elicitation, and linguist introspection. The relation between such data and actual usage is not known; nor do they permit us to distinguish between the recurrent and systematic patterns of everyday interaction and examples which may be judged 'acceptable' in some sense, but which rarely or never occur.

The equivalence constraint has been verified as a general tendency in Spanish-English (Poplack 1980); 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 1998) bilingual communities. But most of the voluminous literature on CS, especially of the 'insertional' type, is based on data which represents, properly speaking, lexical borrowing. As only the grammar and word order of the recipient language are pertinent to borrowing, attempts to understand the structure of CS based on a mixture of borrowing and true CS (e.g., Myers-Scotton 1993 and many others) appear unwieldy or descriptively inadequate.

3. Identifying the Results of Language Contact

Insofar as CS and borrowing are based on some principled combination of elements of the monolingual (i.e., *unmixed*) vernaculars of the bilingual community, it is important to have as explicit an idea as possible of the nature of these vernaculars before concluding that a code-mixed element is behaving like one or the other. The analysis of code-mixing as a discourse mode requires access to the grammars of the contact languages as they are spoken, and spoken language is characterized by structural variability. In confronting, rather than evading this variability, Sankoff et al. (1990) and Poplack and Meechan (1998) developed a method to compare bilingual structures with the unmixed source languages of the same speakers. Making use of the framework of linguistic variation theory (Labov 1969), the inherent variability of such forms is used to determine their status. If the rate and distribution of, for example, case-marking of the contentious lone other-language items show quantitative parallels to those of their counterparts in the (unmixed) recipient language, while at the same time differing from relevant patterns in the donor language, the lone other-language items are inferred to be *borrowed*, since only the grammar of the recipient language is operative. If they pattern with their counterparts in the (unmixed) donor language, while

at the same time differing from the patterning in the unmixed recipient language, the lone other-language items must result from CS.

Quantitative analysis of language mixing phenomena in typologically distinct language pairs shows that lone other-language items, especially major-class content words, are by far the most important component of mixed discourse. These lone items show the same fine details of quantitative conditioning of phonological, morphological, and syntactic variability as dictionary-attested loanwords, both of which in turn parallel their unmixed counterparts in the recipient language (Poplack and Meechan 1998). This tendency is apparent regardless of the linguistic properties of the language pair. This is evidence that most lone items are borrowed, even if only for the nonce, despite the lack, in some cases, of dictionary attestation or diffusion within the community.

4. Future Directions

Lack of consensus characterizing the discipline is related to a number of methodological problems. Foremost among them is failure to distinguish code-switching from other types of language mixture, which, despite similarities in surface manifestation, are fundamentally different mechanisms for combining languages. The current state of knowledge suggests that borrowing, nonce or established, is the major manifestation of language contact in most bilingual communities. Its linguistic structure is well accounted for in the traditional language contact literature (Weinreich 1953/1968). Intrasentential CS involving multiword fragments of two or more languages is also attested in some communities. Achievement of consensus on an empirically verifiable characterization of the rules for juxtaposing these fragments within the sentence remains an important goal for CS research. Fit between theories and data could be improved by a broader empirical base. This would permit researchers to situate bilingual behavior with respect to the monolingual vernaculars implicated in language mixing, account for the disparate CS strategies that have evolved in different bilingual communities, and distinguish among incommensurable manifestations of bilingual language contact.

See also: Bilingual Education: International Perspectives; Bilingualism and Multilingualism; Bilingualism: Cognitive Aspects; First Language Acquisition: Cross-linguistic; Second Language Acquisition; Sociolinguistics

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Coeducation and Single-sex Schooling

Coeducation or single-sex schooling does not only refer to an organizational form of separating or mixing girls and boys, but also refers to such questions as: should there be different goals, curricula, rights, and outcomes for the two genders? Equality is not perceived in all countries and not always an important principle for men and women. For a long time, education was oriented to prepare girls and boys for their different spheres in adult life. Today, equality is the goal, but it is not at all clear whether separation or coeducation is the better way to reach this goal.

1. A Brief History of Coeducation

The history of educational systems shows, for most countries, that especially for education beyond elementary levels, single-sex schools have been the preferred form, although coeducation was not unusual. Financial restrictions in mass education forced coeducational schooling, but for ideological reasons, separation was preferred by the authorities. While this is mainly true for Europe, in the United States, soon after establishing public schools, coeducation became the norm. David Tyack and Elisabeth Hansot describe the beginning as ‘smuggling in the girls’ which led to the adoption of coeducation by gradually moving from ‘why to why not’ (Tyack and Hansot 1992, p. 47). Even in secondary education, only 12 cities out of 628 reported that they had single-sex high schools at the end of the nineteenth century. The European secondary education was for boys only—especially in Germany; girls received secondary education only on a private basis and were not allowed to attend higher education at all. Prussian universities enrolled women, but not before 1908.

Democratic movements in all countries valued equality of education and therefore pledged for coeducation. The debates emphasized the question of difference or similarity of women and men as human beings. While the assumption of similarity historically was associated with the preference for coeducation, those who postulated differences were divided in advocates and opponents to coeducation. The advocates thought coeducation would ensure that girls and boys themselves would make sure they behaved like girls and boys. The opponents feared that girls and boys together would encourage the loss of their engendered behavior.

In most European countries, the years between 1960 and 1980 brought big educational reforms, and coeducation was one of those (Wilson 1991, p. 203)—although it was more of a side-effect of the reforms, and astonishingly, after the heated discussions in the first half of the twentieth century, a change nearly without debate. Efforts to establish ‘schools for all’

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