Code Switching: Linguistic

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Abstract

Though code-switching (CS) has been exceptionally well researched, controversy continues to reign over its identity, structure, and the rules governing its use. This article relates the state of the field to epistemological differences among researchers with respect to data, methods, the nature of evidence, and principles of scientific proof. Progress toward developing accountable theories of CS will be achieved once greater efforts are made to distinguish (1) apparently homologous but fundamentally distinct manifestations of language contact (currently subsumed under the label of CS) and (2) robust community-based usage patterns from isolated counterexamples.

Introduction

No outcome of language contact has garnered more scholarly attention than code-switching (CS). In its broadest sense, CS refers to the mixing of two or more languages in discourse. What prompts bilingual speakers to engage in such mixing? A variety of different motivations have been identified (e.g., Auer, 1999; Bhatt and Bolonyai, 2011; Gumperz, 1976/1982), often involving the bilingual abilities of the interlocutors (speak Croatian to grandma because she doesn’t speak English), the context (call it pizza or latte, because there’s no good English word for it), or the establishment of identity (as in emblematic CS), among many other sociocultural determinants. These contrast with what some have called ‘true’ or ‘internally generated’ CS (Gullberg et al., 2009), which has the particularity that two (or more) languages are spontaneously brought to bear in a single utterance with no change in interlocutor, situation, or even topic, i.e., with no external trigger. In some tightly knit bilingual communities, particularly Spanish–English communities in the United States, CS actually functions as a discourse mode (Pfaff, 1979; Poplack, 1980; Torres Cacoullos and Travis, 2015). This article surveys the linguistic treatment of such intrasentential switching.

Languages may, in principle, be combined at any level of linguistic structure, but community studies reveal that three are favored. These display varying degrees of syntactic involvement of the languages involved, and therefore require differing degrees of bilingual proficiency to achieve a ‘felicitous’ outcome (Poplack, 1980). The other-language element may be a tag, as in the Finnish–English example in (1), which can typically be freely inserted anywhere in the sentence with few if any syntactic repercussions; it may consist of a full clause or major sentence constituent, as in the French–English example in (2), where the syntactic requirements of either language are not a consideration, or it may appear intrasententially within the confines of a single sentence or constituent, as in the Spanish–English example in (3). It is this last type of CS that has attracted the most linguistic attention.

1. Mutta en mà viittinyt, no way! (9b.134)
   But not-lp. I bothered
   “But I’m not bothered, no way!” (Poplack et al., 1987, p. 394)

2. Je vas voir la fille, je dis, ”You got two tickets for Ottawa?”
   (OH.105.3294)
   “I go see the girl, I say, ‘you got two tickets for Ottawa?’”
   (Poplack and Dion, 2012, p. 300)

3. Pero los grados are so hard también, oiga. (O88.10)
   “But the grades are so bad too, you know?” (Torres Cacoullos and Aaron, 2003, p. 291)

In combining languages intrasententially, various problems of incompatibility may arise. The most obvious ones derive from word order differences: under what conditions, if any, can the boundary between constituents ordered differently in two languages host a switch between them? Other potential combinatorial difficulties involve cross-language mismatches in grammatical categories, subcategorization patterns, and idiomatic expressions. Systematic examination of the spontaneous speech of bilinguals resident in a wide range of communities, however, suggests that the vast majority of sentences containing intrasentential CS remain ‘grammatical,’ in the sense that the appearance in them of two distinct languages does not contravene the syntax of either. This observation eventually led to the general consensus that these combinations are not effected randomly, as per earlier convictions (e.g., Weinreich, 1953/1968), but are rule governed. Discovery of the nature and locus of these rules, and the mechanisms by which they operate to produce well-formed, albeit mixed utterances, has been the major goal of linguistic research on CS. Central questions include locating permissible switch sites, ascertaining the nature (hierarchical or linear, variable or categorical) of the constraints on switching, and determining when other-language items of one language (La) come to assume the structure of another (Lb) into which they are incorporated, or alternatively, retain their original La identity.

Close inspection of intrasentential mixing actually produced by bilingual speakers shows that the vast majority of other-language material appears in two major forms and results from two distinct processes. It may consist of a lone content word, such as those italicized in the Turkish–English example in (4) or be part of a multiword fragment of La in otherwise Lb discourse, as are the French and Wolof portions of (5). (All examples are reproduced verbatim from actual speaker utterances.)
4. ... you go to visit your family ... and visit your nene
('grandmother') and your amas ('uncle-PL') and your teyzes
('aunt-PL') and that's about it really (ElI:153.5B) (Adalar
and Tagliamonte, 1998, p. 154)
5. des fois da nga y xool un film avec des sous-titres en
français (1.319)
sometimes AUX you ASP watch a film with IND subtitles in
French
"Sometimes you watch a film with subtitles in French"
(Poplack and Meechan, 1995, p. 213)

Lone grammatical elements (e.g., affixes, determiners, pre-
positions) are not generally involved. The La content words may
have been actively drawn from La by the bilingual in the course of
speaking Lb, or simply retrieved from an Lb lexical stock
containing elements drawn from La at some point in the past,
but now fully incorporated into the native Lb lexicon.
(These are in fact equally accessible to monolingual speakers
of Lb.) This is illustrated in (6), in which every 'English'
noun is etymologically French. Such items, known as loanwords,
are exceedingly common in languages of the world (e.g.,
Haspelmath and Tadmor, 2009).

6. The judge called on the jury, lawyers, and other members of the
court to stand.

Loanwords are particularly instructive to students of
language contact because of their evidence they provide on
the synchronic result of the diachronic process of borrowing,
which turns out to be the major strategy for language mixing.
That evidence converges overwhelmingly on the fact that
established loanwords come to assume the (morphosyntactic)
properties of the language into which they were borrowed (the
recipient language), following its morphological requirements
and adopting its word order, while retaining none of their
donor-language identity other than their etymology, and
optionally, some elements of the phonology. Moreover, the
available evidence suggests that this outcome is universal:
identity with recipient-language morphosyntax is virtually
always achieved, regardless of the typological features of the
languages involved. CS, in contrast, retains the distinctive
grammatical properties of its language of origin. As such,
loanwords offer a crucial structural benchmark against which
to identify mixed elements whose status is not so clear
(see Section Evaluating CS Theories). (Because phonological
integration is gradient, in both long-attested (e.g., bar [ba])
and more recent borrowings (Poplack, 2012; Poplack and
Dion, 2012; Poplack et al., 1988), as well as in CS and
unmixed speech more generally, on its own it is a poor
predictor of language status.)

A 'Grammar' of CS

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,
e.g., between pronounal subjects and verbs or between
However, these particular sites were soon
reported to figure among the regular CS patterns of some bilin-
gual communities (e.g., Pfaff, 1979; Poplack, 1981).

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, 1981) states that
switched sentences are made up of concatenated fragments of
alternating languages, each of which is grammatical in its
respective language of origin. The boundary between adjacent
fragments occurs between two elements that are ordered in
the same way in both languages, ensuring the linear coherence
of sentence structure without omitting or duplicating lexical
content (see also Lipski, 1977; Muysken, 2000; Pfaff, 1979).

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 repre-
seed. Some research assumes that the mechanisms for
language switching follow directly from general principles of
(monolingual) grammar. Theories based on this assumption
may tend to appeal to abstract grammatical properties; since
Klavs's (1985) proposal that CS was constrained by structural
relations, the formal linguistic theories successively in vogue
in the monolingual arena have each been extended to encompass
CS, di Sciuillo et al. (1986), for example, identified the relevant
relations as C-command and government: CS cannot occur
where a government relation holds, e.g., between verb and
object, or preposition and NP complement. Later, the notion
of feature agreement led to a parallel focus on feature
matching in CS studies, as in the Functional Head Constraint
(Belazi et al., 1994, 1995), which adds language choice to the
features instantiated in functional and lexical categories,
prohibiting CS where a mismatch occurs.

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., Bentahila and Davies, 1983; Joshi, 1985; Mahootian,
1993). Perhaps the most detailed such model is the Matrix
Language Frame model (e.g., Azuma, 1993; Myers-Scotton,
1993, 2002). Here, structural constraints on CS result from
a complex interaction between a dominant 'matrix' language,
which determines word order and supplies 'system'
phrases, and an 'embedded' language, which may only
contribute content elements. The many exceptions to this
generalization, notably those consisting of 'embedded
language islands' (i.e., the multiword fragments of La), are
treated by a large number of subsidiary principles.

A more recent proposal in the minimalist framework
dismisses the foregoing theories, not only as 'descriptively
invalid,' but also as theoretically undesirable, because they
post CS-specific mechanisms. The 'Null Theory' (Mahootian,
1993; Mahootian and Santorini, 1996), like the minimalist
approach (Chan, 2003, 2009; MacSwan, 1999, 2009), holds
that there are no constraints or principles specific to CS in
the language faculty of bilinguals. Following the dictate that only
the 'minimal theoretical assumptions may be made to account
for linguistic data,' and 'privileging more simplistic and elegant
accounts over complex and cumbersome ones,' MacSwan
(2009, p. 325) proposed the Phonetic Form Interface Condition
(PFIC) to account for a purported 'ban' on CS in word-
internal and head-movement contexts.

The PFIC was rapidly deemed descriptively invalid in its
own right, on the basis of counter evidence brought by
Schindler et al. (2008) and Legendre and Schindler (2010), who in turn adopt the Optimality-Theoretic (OT) framework advocated by Bhatt (1997) for bilingual syntax to propose that “CS emerges from the resolution of conflicting constraints,” and that different patterns of CS result from alternative rankings of a small set of universal but violable constraints. According to its proponents, Optimality Theory would explain why certain language pairs seem to violate constraints that account for CS in other language pairs. Though the methodology and specific assumptions differ, the Optimality-Theoretic approach is closest in spirit to the variationist perspective (e.g., Poplack, 1993), according to which a prediction like that made by the Equivalence Constraint is seen as universally applicable, but differentially instantiated according to the specific properties of the language pair – allowing CS between DET and noun in French–English (both of which feature DET+N order), for example, but prohibiting it between Swedish (N+DET) and English – and variably implemented.

As of this writing, however, not only is there no general consensus on what linguistic conditions constrain CS, but some scholars insist that the very search for them is futile (e.g., Bokamba, 1989; Gardner-Chloros and Edwards, 2004); others maintain that there are none (Chan, 2009; MacSwan, 1999; Mahootian, 1993), and still others, that constraints on CS may vary from one community to another (Bhatt, 1997; Muysken, 2000; Schindler et al., 2008).

There has been remarkably little cross-fertilization among these theories, and few researchers have accepted, let alone built upon, existing findings. Instead, scholarship in this field has consisted largely of successive dismissals of previous proposals, often on the basis of counter-evidence of uncertain provenance. Should the field proceed along the path of the last several decades, new models for CS will continue to be proposed and discarded, in tandem with new developments in (monolingual) syntactic theory. Whether any of these will come any closer than their predecessors to accounting for the data of actual CS productions will depend on the extent to which they succeed in addressing and resolving the following core issues, as well as the considerations outlined in Section Why Consensus Remains Elusive.

- Are all types of language mixture instantiations of the same process or do they result from different processes with distinct outcomes?
- Do lone other-language elements and multiword fragments behave in the same way and can they all be accommodated under a single theory?
- Is the process giving rise to multiword CS best characterized as alternation, insertion, or something else?
- Under what conditions are other-language elements integrated into a recipient language, and why do some of them resist integration?
- Are CS and borrowing related in the sense that the former gives rise to the latter?

**Why Consensus Remains Elusive**

Testing the fit of competing models against the data of CS should be a straightforward matter, especially since they often make competing predictions. But their disparate assumptions, goals, and domains of application have hindered such efforts. In what follows we attempt to pinpoint some of the reasons why consensus remains so elusive, despite decades of intense scholarly attention.

**The Quest for an ‘Optimal’ Theory of CS**

Lack of a widely accepted evaluation metric for CS theories, coupled with the range of their predictions, their volatility, and pervasive doubt over the extent to which they account for the data (and if so, which portions thereof), have all conspired in the general failure of any one to gain widespread acceptance. Section A ‘Grammar’ of CS detailed the tradition of appealing to the syntactic theories currently in vogue as models for CS behavior. But 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 act of combining two languages can be explained in the same way.

Theory-internal constraints play a more insidious role. For example, blind adherence to Occam’s razor (e.g., Chan, 2009; MacSwan, 1999) and the quest for a ‘unified account’ (Gardner-Chloros, 2009; Myers Scotton, 2006; Winford, 2009) enjoin us to ignore fundamental differences among different manifestations of language contact, and to treat them all – at our peril! – as one and the same. The arbitrary requirement that an optimal theory must necessarily eschew CS-specific mechanisms diverts researchers from recognizing and attending to community trends. Different patterns of adapting monolingual resources in code-mixing strategies have been reported in different bilingual communities, even when the same language pair is involved; these are not predictable through purely linguistic considerations (Poplack, 1987; Muysken, 2000; Torres Cacoullos and Travis, 2015).

**Variability, Probability, and Quantitative Reasoning**

The field of contact linguistics has not fully acknowledged that the property of *inherent variability* (Labov, 1969), now generally accepted to characterize spoken language, extends as well to the bilingual context. The existence of variability renders the quest for ‘categorical’ constraints (obeyed 100% of the time) on CS futile. Instead, the behavior of bilingual speakers will be characterized by patterns, some very pervasive, others far more tenuous, as well as any number of outlier tokens, slips of the tongue, miscommunications, and even the odd speech error, just as is the speech of monolinguals. Distinguishing robust community patterns from the idiosyncratic utterance of any provenance requires in the first instance identifying a stable bilingual community where CS occurs regularly, and second, conducting accountable quantitative analyses of sufficiently large corpora of spontaneous CS production.
The Data

The data on which theories of CS have been built derive from a wide variety of (often incommensurable or even unidentified) sources. They may be intuitively, invented, overheard, remembered, elicited in a laboratory setting, or observed during regular interactions among bilinguals in a bilingual speech community. The provenance of the many purportedly ‘prohibited’ CS which figure so prominently in CS theory building and demolition is likewise often unstated. Clearly, all kinds of data (with the exception of outright fabrications) have their place in CS research (e.g., Gullberg et al., 2009), but crucially, they are not interchangeable. The gold standard remains the (standard sociolinguistic-style) bilingual corpus: a principled assemblage of actual spontaneous productions of systematically sampled bilingual speakers resident in a well-defined bilingual speech community. Where these are stratified, randomized, and subjected to other basic requirements of social science research they yield invaluable information not only about the types and distribution of bilingual mixing strategies, but also about the associations they entertain with different sectors of the society and types of interaction.

A further consideration is that, from an analytical perspective, corpus data will almost always contain a variety of different types of language mixture. As detailed in Section Evaluating CS Theories, these do not necessarily behave in the same way. We cannot evaluate a theory of CS if we cannot assess its fit to a well-circumscribed body of unambiguous CS data.

Methods: Cherry-Picking versus Accountability

To be sure, many scholars of language contact have elicited bilingual data of varying degrees of spontaneity, and some have even constructed sizable corpora. But exploitation of this material is too often restricted to a few selected examples, or to declarations in lieu of demonstrations that all the data satisfy some constraint.

The real value of a corpus can be realized only through the principle of accountability (Labov, 1972), where every token of all constructions carrying out a certain role is counted and placed in statistical context. Only then are patterns discernable and general trends emergent from the complex production of spontaneous discourse. With few exceptions, however, linguistic analyses of CS have not been characterized by quantitative reasoning (in marked contrast to many psycholinguistic and neurolinguistic studies of the same topic). Remarkably, some linguistic researchers actually advocate against the use of quantitative methodology in the study of CS (Gardner Chloros, 2009). This is unfortunate, because where accountable analyses are replicated, striking commonalities have emerged (cf. the papers in Poplack and Meechan, 1998a; Torres Cacoullos and Travis, 2015). These regularities are obscured by the emphasis accorded exceptions by the anecdotal reports that pervade the field.

The Pre-Eminence of the Counterexample

Indeed, the literature on CS is largely characterized by the ‘rule-and-exception’ paradigm. Each successive theory has been greeted with an onslaught of counterexamples, but very few have been systematically tested against principled collections of data of any sort. Even more rarely have the counterexamples been shown to represent quantitatively meaningful patterns of language use in a well-defined bilingual speech community. Instead, not only the theories but also tests of their applicability tend to be based on isolated examples, drawn from judgments, informant elicitation, and linguist introspection. Such data do not permit us to distinguish between the recurrent and systematic patterns of everyday interaction and utterances which may have been judged ‘acceptable’ in some sense, but which rarely or never occur. Even where theories are enthusiastically received, they seldom inspire the type of quantitative empirical work required to test their predictions on novel data sets. This lacuna, coupled with the tolerance for isolated counterexamples as a surrogate for proof, and the relative paucity of systematic quantitative analyses of large data sets and associated measures of significance and goodness of fit, is another key contributor to the lack of consensus. Failure to get on the bandwagon of replicable quantitative studies of spontaneous CS dooms the field to an endless round of rule-and-exception, minimizes our chances of arriving at cumulative findings, and hinders advancement of our understanding of CS.

Evaluating CS Theories

Assessment of the descriptive adequacy of a theory of CS requires that at least two methodological issues be resolved. One involves the proper classification of other-language phenomena; the other, systematic quantitative confrontation of the predictions of the theory with the data of actual bilingual behavior.

CS versus Borrowing

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.

Nonsense Borrowing

It has now been established that borrowing is actually much more productive than implied above (e.g., Poplack and Dion, 2012; the papers in Poplack and Meechan, 1998a; Poplack et al., 1988). In particular, the social characteristics of recurrence and diffusion are not always satisfied. This results in what has been called, after Weinreich (1953/1968), nonse borrowing (Sankoff et al. 1990). Like its established counterpart, the nonsense borrowing tends to involve lone lexical items,
generally major class content words, from La (acting here as donor language), and to assume the morphological, syntactic, and optionally, phonological identity of Lb, the recipient. Like CS, on the other hand, nonce borrowing is neither recurrent nor widespread, and involves actively drawing from La, necessarily requiring a certain level of bilingual competence. The Nonce Borrowing Hypothesis (Poplack, 2012; Sankoff et al. 1990) captures the empirical observation that speakers not only CS spontaneously, but may also borrow spontaneously, and these spontaneous borrowings assume the morphological and syntactic, and, optionally, phonological, identity of the recipient language prior to and independently of achieving the social characteristics of established loanwords (recurrence in the speech of the individual and diffusion across the community). The example in (7) illustrates how the nonce borrowing copor (<Eng. cope) is fully adapted morphologically and syntactically into French, despite having been unattested at the time of utterance, and produced only once by a single speaker.

7. Je serais pas capable de copor avec. (OH.037.1086)
   "I wouldn't be able to cope with it" (Poplack et al., 1988, p. 52)

In this, nonce borrowings mirror the linguistic behavior not only of established loanwords (e.g., uploader 'to upgrade'), but of native counterparts (e.g., échouer 'to fail'). As noted in the Introduction, phonological integration, by virtue of its variability, is not diagnostic here.

Distinguishing Language Contact Phenomena

The classification of lone items is at the heart of a fundamental disagreement among CS researchers over (1) whether there is a distinction between CS and borrowing, (2) whether this should be formally recognized in a theory of CS, (3) whether these and other manifestations of language contact can even be identified in bilingual discourse, and (4) operational criteria for determining whether a given item was switched or borrowed. Researchers who consider lone other-language items to be CS tend to posit - for all CS - 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, the languages are seen to alternate (Belazi et al., 1994; Sankoff, 1998a,b; Sankoff and Poplack, 1981; Woolford, 1983). Muysken (2000) admits both insertion and alternation as strategies.

Quantitative analysis of language mixing phenomena in both typologically similar and distinct language pairs shows that lone other-language items, especially major-class content words, are typically the most important component of mixed discourse by far (e.g., Berk-Seligson, 1986; Nortier, 1989; Treffers-Daller, 1994; Shin, 2002; among many others). The severe quantitative disproportions among single-word and multiword other-language items, coupled with the recent discovery (Poplack and Dion, 2012) that the vast majority of the former are integrated abruptly into recipient-language grammar, renders any analysis treating them as the same in effect a study of borrowing. They also explain the persistence of (descriptively inadequate) insertion analyses as blanket models for both CS and (nonce) borrowing. They do account for the bulk of the language mixing data, but not for the data of the less common multiword CS.

Contextualizing Language Contact Phenomena with Respect to Relevant Benchmarks

Distinguishing nonce borrowings from single-word CS is conceptually easy but methodologically difficult, especially when they surface bare or uninflected, giving no apparent indication of language membership. 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 crucial to have as explicit an idea as possible of the structure of these vernaculars before concluding that a code-mixed element is behaving like one or the other. Such contextualization is usually omitted from CS research. The relevant monolingual benchmarks are not prescribed standards but the (unmixed) contact languages as they are actually spoken, and as noted above, spoken language is characterized by structural variability. In dealing with, rather than evading this variability, Sankoff et al. (1990) and Poplack and Meechan (1998b) 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 patterning of variant choice 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 varying from relevant patterns in the donor language, the lone other-language items are inferred to be largely 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.

The last several decades have witnessed the accumulation of a coherent body of variationist studies on a large number of language pairs, involving large corpora of spontaneous bilingual speech, and a rich variety of morphosyntactic diagnostics such as determiner expression, adjectival placement, case-marking, word order, and verb formation, among many others. These have demonstrated that the vast majority of lone items show the same fine details of quantitative conditioning of morphological and syntactic variability as dictionary-attested loanwords, both of which in turn parallel their unmixed counterparts in the recipient language (e.g., Aaron, 2014; Adalar and Tagliamonte, 1998; Blas Arroyo and Tricker, 2000; Ghafar Samar and Meechan, 1998; Poplack and Dion, 2012; Shin, 2002; Torres Cacoullos and Aaron, 2003; Torres Cacoullos and Travis, to appear). This tendency is apparent, regardless of the typological properties of the languages involved.

These quantitative studies have confirmed beyond any doubt that CS and borrowing are indeed two distinct processes, which are governed by different rules, and which - using the appropriate methodology - may be operationally distinguished as such (except in inherently language-neutral constructions). They have also converged on two
groundbreaking discoveries, correcting widely espoused assumptions in the field:

- Morphosyntactic integration of other-language items is independent of phonological integration. (Phonology, of both CS and borrowing, is variable, and thus cannot reliably be used to distinguish between them.)
- Morphosyntactic integration is not contingent on frequency and diffusion (i.e., achievement of loanword status), but rather occurs abruptly at the nonce borrowing phase.

Other recent findings to emerge from the systematic quantitative analysis of tens of thousands of tokens of spontaneous bilingual production data are

- the vast majority of all instances of language mixing are single other-language items and
- nearly all of them are immediately integrated morphologically and syntactically into the recipient language.

This means that a disproportionate number of lone other-language items have the linguistic features of established loanwords, independent of their social characteristics of frequency in the individual or recurrence across the community. Single-word CS, on the other hand, is exceedingly rare. (This finding does not license the a priori identification of all lone items as borrowings; however, the variationist literature offers clear discovery procedures to determine their status). Most important, the linguistic properties of CS – of whatever length – have been consistently shown in quantitative studies to contrast diametrically with those of borrowings: both the internal constituency and positioning in the clause of borrowed words come from the recipient language, while the internal constituency of CS is that of the language of origin, but its placement in the sentence tends to respect the word order requirements of both languages in the mix. This is the basic insight behind the Equivalence Constraint.

The Equivalence Constraint has been quantitatively verified as a major tendency in a number of language pairs, both typologically similar and different (e.g., Spanish–English (Poplack, 1980), Finnish–English (Poplack et al., 1987), Arabic–French (Naït M'Barek and Sankoff, 1988), Tamil–English (Sankoff, Poplack and Vanniarajan 1990), Fongbe–French, Wolof–French (Meechan and Poplack, 1995; Poplack and Meechan, 1995), Igbo–English (Eze, 1998), French–English (Turpin, 1998), and Ukrainian–English (Budzhal-Jones, 1998)). But most of the voluminous literature on CS, especially of the ‘insertional’ type, is based on data which represents, properly speaking, lexical borrowing. Thus, virtually all the published ‘counterexamples’ to the Equivalence Constraint involve single content words, which of course do not display the homologous word order that characterizes most true CS, but instead pattern syntactically and morphologically with the recipient language, just as predicted by the Nonsense Borrowing Hypothesis (Poplack, 2012; Sankoff et al. 1990). Once the data of language mixing have been accurately circumscribed, and accountable analyses of large bodies of bilingual production data undertaken, nonce borrowing and CS under equivalence emerge as the quantitatively preponderent active mixing strategies employed in bilingual communities.

Future Directions

Over the past half-century, interest in CS has not only not abated, but to judge by the now vast amount of literature on the topic, it seems in fact to be growing. In welcome and instructive developments, approaches to its study have spread across linguistic subdisciplines from sociolinguistics to syntax to psycholinguistics, neurolinguistics, and beyond. In this context it is most disconcerting to the discipline that answers to the core linguistic questions continue to elude us.

This article has related the lack of consensus characterizing the linguistic study of CS to a number of epistemological problems. Foremost among them is failure to distinguish multiword CS from other types of language mixture, which, despite some 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. Intrasentential CS involving multiword fragments of two or more languages is also attested in some communities. Achievement of consensus regarding an empirically verifiable characterization of the rules for combining such fragments within the sentence remains an important goal for CS research. To achieve it, we must improve the fit between theories and data. This would be facilitated by a broader empirical base.

In the first instance, existing theoretical, experimental, and anecdotal accounts of CS should be supplemented with many more large-scale empirical studies of actual bilingual behavior in a much wider variety of well-defined bilingual communities. As has been amply documented in the monolingual case, bilingual communities may exhibit widely different patterns of adapting monolingual resources in their code-mixing strategies, and these are not predictable through purely linguistic considerations. Thus, language pairs with the same typological characteristics do not necessarily display the same CS patterns in different communities (Poplack, 1987), the same language may behave differently when combined with different languages (Meechan and Poplack, 1995; Nait M'Barek and Sankoff, 1988; Nortier, 1989), and even the same language pair may display different patterning from one community to the next (Pfaff, 1979; Poplack, 1980; Torres Cacoullos and Travis, 2015). To account for these unruly facts, much more speaker-, context-, and community-based information must be incorporated into our analyses than has heretofore been the case. Consideration of the data of actual bilingual interactions in the context of the speech community in which they were produced 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. Many more such studies are accumulating, but they are still in the minority.

To develop a theory of CS that is truly accountable to the facts, greater efforts must be made to tease apart the idiosyncratic and/or exceptional uses of individuals from community strategies. This can only be achieved via more accountable analyses of principled collections of naturally occurring bilingual data,
using accepted social-science standards of proof, including data-driven reports of rates of occurrence, conditioning of variant choice, and measures of statistical significance. This will necessarily involve distinguishing among the different manifestations of language contact and contextualizing the different mixing strategies with respect not only to each other, but crucially, to the monolingual benchmark varieties actually involved in the process (as opposed to some standard varieties thereof) as well.

We would then be in a position to carry out more linguistic analyses of the type of CS that all analysts can agree to constitute CS (i.e., multiword fragments of one language alternating with multiword fragments of another), free of the distorting effects of other manifestations of language contact. As detailed above, the latter, in particular, lexical borrowing, have been demonstrated to far exceed unambiguous CS, and more importantly, display different linguistic behaviors from them, with the predictable result that including them in the pool of CS can only blur their structure. Recall that the major goal of linguistic analyses is to uncover, not the constitution of CS, which is already well understood (it corresponds exactly to that of its language of origin), but rather the positioning of CS in the sentence. Only by paying close attention to the directions outlined above, in conjunction with more experimental studies on multiword fragments, can we hope to achieve a true understanding of this endlessly fascinating recourse uniquely available to bilinguals.

See also: Diglossia; Language Contact; Language and Society; Multilingualism; Quantitative Linguistics; Sociolinguistics.

Bibliography


