**Code-switching**

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**Introduction**

Code-switching (CS) is one of the best-known and most widely researched language-contact phenomena. Languages do not come into contact; people do. When speakers of one language are exposed to another language over a sustained period of time, they will become bilingual to different extents. CS refers to "the alternating use of two languages in the same stretch of discourse by a bilingual speaker" (Bullock and Toribio 2009: xii). CS is analogous to style shifting, which takes place within one and the same language. For example, in Hong Kong, newscasters may be using formal Cantonese when reporting 'on air', but they may use colloquial Cantonese with each other during the commercial break. When similar shifts occur across language boundaries, this will result in CS. CS may occur in writing as well as in speech, but by far the bulk of CS research to date is based on the analysis of naturally occurring bilingual speech data. For convenient exposition, the term 'bilingual' is used synonymously with 'multilingual', making reference to 'two or more languages'.

While naturalistic CS has been researched using datasets from various language pairs, including typologically unrelated languages (Chan 2009), there continues to be widespread, popular beliefs in multilingual societies that CS is linguistically anomalous, symptomatic of some pathological language behavior, or simply bad as it reflects the speaker-writer's inability to express oneself properly in one 'pure' language or another. One interesting consequence is that where CS is common, pejorative labels tend to be ascribed to its speakers, e.g. *Spanglish, Tex-Mex* (Spanish-English), *Chinglish* (Chinese-English), *Japlish* (Japanese-English), and *franglais* (French-English), reflecting the bilingual community's disapproval of CS as a form of random, and disorderly mixing of languages.

**Terminologies**

Different terms have been used to refer to similar linguistic manifestations of bilingual speech behavior. By far the term 'code-switching' is most commonly used. Some scholars reserve the term code-switching (CS) for 'inter-sentential CS', i.e. switches at clause boundaries, and use the term code-mixing (CM) to designate switches which take place within a clause, i.e. 'intra-sentential CS'. Muysken (2000), for example, uses 'code-mixing' in his book-length treatise of "bilingual speech", on the grounds that the book deals primarily with intra- rather than inter-sentential CS. Other scholars prefer to use CS as a generic term to cover both inter- and intra-sentential CS, but they normally make it clear which type of switch is more prevalent in the dataset(s) being analyzed (e.g. Clyne 2003; Myers-Scotton 2002). In addition, the

term ‘code-alternation’ is often used by those scholars who want to maintain a systematic distinction between inter- and intra-sentential CS (e.g. Auer 1995). For our purpose in this paper, we will follow the general trend of using CS as the umbrella term for switching between clauses as well as switching within a clause. We will first examine the technical, analytical aspects of CS research, before turning to CS in one important context: classroom CS.

**Unit of analysis in CS research**

CS may be at work in constituents of various levels of complexity from single-word switch in a noun phrase (NP) to clause-level switch in a long sentence. Bilingual structures at a lower level, e.g. NP (noun phrase) and PP (prepositional phrase) are of course of interest to CS researchers, but in terms of theory-building toward a convincing and coherent account of a given CS theory or model, the preferred unit of analysis is the bilingual clause, which is defined as “a clause containing one or more morphemes from more than one language” (Deuchar 2006: 1987). This reflects, among other things, the centrality of the verb phrase (VP) in the theorizing of bilingual speech production processes. Indeed, no linguistic theory or model of CS is complete without a sound and adequate account of the complexities involved in CS within the bounds of a bilingual clause.

**Three fundamental issues in CS analysis: ‘Code-switching vs. lexical borrowing’, ‘congruence’, and ‘CS grammar(s): two grammars or one’?**

*Code-switching vs. lexical borrowing*. It is well-known that words from one language are often borrowed into another as a result of frequent contact between their speakers over a sustained period of time. In an increasingly globalized world, language use patterns and practices originating from one culture spread to others rapidly. This is why in cosmopolitan societies, pizza and sushi, both the referents (i.e. the food being referred to) that made them famous and the lexical exponents (i.e. the terms *pizza* and *sushi*) themselves, are seldom thought of as being uniquely Italian or Japanese. The frequency with which *pizza* and *sushi* are used by English-L1 speakers helps justify why these two words are listed in modern English dictionaries, in the same way that the brand name *McDonald's* gets indigenized in various local languages (e.g. *mak6 dong1 lou4* in Cantonese, *maì dāng náo* in Putonghua/Mandarin). When this happens, sociolinguists will speak of ‘lexical borrowing’, which refers to both the process (of borrowing) as well as the outcome (i.e. borrowings or loanwords). This language-contact phenomenon is similar to but distinct from CS. In general, when an L2 expression follows the L1 norm of pronunciation (e.g. Chinese speakers saying *mak6 dong1 lou4* or *maì dāng náo* when making reference to McDonald's; French speakers saying *le parking* with fellow French speakers), it is regarded as borrowing rather than switching. Conversely, in bilingual speech when an L2 expression is pronounced following the norm of pronunciation in L2 (e.g. Chinese speakers saying *McDonald's* when chatting in Chinese; French speakers saying *the parking* in English), then it is more appropriate to analyze it as CS.

One instructive contrastive example may be found in Muysken (2000: 70). Research in Dutch-French

bilingualism in Brussels shows that some speakers of Dutch would say *autootje* for 'cars', a loan or borrowing from French *auto*, e.g. *Wat een te gek autootje* (pronounced: ['★wtotj★]), 'What a terrific car'. Muysken explains why *autootje* should be regarded as borrowing rather than 'code-mixing':

> "It is only one word, it is pronounced with a Dutch diphthong, it has the Dutch diminutive suffix and the specifically Dutch neutral gender. It is used very frequently and it is the word used most when referring to cars. It is probably recognized as Dutch by most speakers…" (Muysken 2000: 70)

On the other hand, in bilingual speech Dutch-French bilinguals sometimes refer to cars using "the slightly more posh [o:to:]" (p.70), which would make this word sound more French (*auto*) than Dutch. In such cases it would be more appropriate to analyze them as CS (or code-mixing according to Muysken). Above all, whereas borrowings may be used by monolingual or bilingual speakers of the recipient language alike, "not all the speakers who use borrowed forms (loanwords) need to be bilingual in the donor language" (Myers-Scotton 2002: 41). Further, CS forms and borrowings differ in terms of predictability, in that unlike borrowings, CS forms may or may not re-occur (ibid.). While the distinction between lexical borrowing and CS appears to be intuitively clear, indeterminate cases in bilingual speech are not uncommon (see Deuchar 2006: 1988ff, Myers-Scotton 2002: 41ff, and Muysken 2000: 70ff for more discussion).

*Congruence*. An instructive example of 'congruence' may be found in one of the seminal articles on CS: "Sometimes I'll start in Spanish *Y TERMINO EN ESPAÑOL*" ('…and I finish in Spanish'; Poplack 1980). One of the observations Poplack makes is that:

> "Switches will tend to occur at points in discourse where juxtaposition of L1 and L2 elements does not violate a syntactic rule of either language, i.e. at points around which the surface structures of the two languages map onto each other." (Poplack 1980: 586; emphasis added)

Poplack's observation amounts to a testable hypothesis which came to be known as the 'Equivalence Constraint', which predicts that switches at points where the grammatical structures of the language pair in question are not congruent will be difficult, if not impossible. As stated in the quote, the 'Equivalence Constraint' is a tendency rather than a rule. In other words, counterexamples, while predictably uncommon, do not constitute its falsification. Indeed, plenty of CS examples have been found across many language pairs where structural congruence does facilitate CS, as shown in the French-Moroccan Arabic NP *cette xubza* 'this bread' (Sebba 2009: 44). *Xubza* ('bread') is a noun with feminine gender in Moroccan Arabic, which is probably why it attracts the feminine definite article *cette* in French (masculine *ce*), suggesting that the speaker is operating with some rule of congruence in terms of gender agreement. Sebba (2009: 50f) discusses three possible explanations how this might come about. Similarly, example (1) is a CS expression which is very commonly heard among office workers in the white-collar workplace in Hong Kong. The CS version is clearly modeled on the English PP 'for your information', with *your* being substituted for by its equivalent in Cantonese *nei5 ge3*.:

(1) for **nei5 ge3** information (Cantonese-English, Hong Kong)
for 2SG POSS information
'for your information'

Sometimes congruence may affect only part of a complex structure such as 'Auxiliary + Participle', as in (2), where English *is promising* may be structurally mapped onto Spanish *está halagüeño*:

(2) Siempre está **promising** cosas. (Spanish-English)
always be-PRES3SG promising things
'He's always promising things.' (Sebba 2009: 46)

Even though the mapping of the Spanish structure ('Auxiliary + Participle') onto English and vice versa may or may not be felicitous semantically speaking (Sebba 2009), such examples nevertheless suggest that if the two languages in contact share the same grammatical structure, CS tends to be facilitated. This is why CS involving congruent grammatical structures in various language pairs continues to be among the most commonly found in research, even though CS in non-congruent grammatical structures has been widely attested (see, e.g., Clyne 1987, 2003). Sebba (2009) likens CS to playing a hybrid game of football and basketball with both sets of rules prevailing, and observes that where the grammatical structures in the language pair are incongruent, the bilingual speaker may use various strategies, such as 'strategies of harmonization', 'strategies of neutralization', and 'compromise strategies' to overcome the (perceived) grammatical anomaly (Sebba 2009: 48-51).

*CS grammar(s): two grammars or one?* The third fundamental concept concerns the nature of the speaker's grammatical knowledge or performance. When CS takes place, are two monolingual grammars simultaneously activated, or is there one composite grammar operating resulting from the two 'contributing' grammars of the language pair interacting in some way? Interestingly, the term 'code-switching' (among others such as 'code-mixing' and 'code-alternation') itself betrays a long-standing bias in the field toward the two-grammar view, for it suggests that in bilingual speech production the bilingual speaker 'switches' from one language to another/the other. But if the grammatical structure of a CS constituent conforms to neither of the grammars of the participating languages, this will provide evidence for a discrete 'CS grammar'. There is some evidence for a mixed, hybrid grammatical system in CS structures. One such example, though untypical, may be found in Welsh-English CS data:

(3) fi 'di bod i'r **bus** lle (Deuchar 2006: 1996)
PRO.1S PRT be.NONFIN to-DET bus place
'I've been to the bus place.'

As all but one of the morphemes in (3) are Welsh, there is little doubt that the matrix language which provides the grammatical structure of (3) is Welsh. Of interest here is the word order of the bilingual NP *bus lle* ('bus place'), which is embedded in the PP, *i'r bus lle* ('to the bus place') and follows the English

modifier-head word order. The Welsh word order, however, is head-modifier, which would predict the string *lle bus* (‘place bus’). CS in (3) thus exhibits a mixed or hybrid structure, in that it does not conform to the grammar of either of the participating languages: it is clearly not an English sentence, nor can it be regarded as a Welsh sentence on grammatical grounds. In other words, this structure appears to be possible only in ‘mixed code’. Under these circumstances CS researchers would speak of convergence (also ‘grammatical convergence’ or ‘linguistic convergence’). Research has shown that the more widespread this CS pattern is in the local community, the more likely new community norms will develop over time, and their perceived oddity (when they first appeared) will gradually give way to normative use in society. This is manifestly what has happened to the community languages Dutch and German in Australia. As Clyne (1987: 753) reports, ‘local syntactic convergence’ is commonly observed in German-English / Dutch-English bilingual interactions among speakers in these two migrant communities, suggesting new speech norms have evolved, which make Australian Dutch and Australia German increasingly different from their respective standard varieties in Europe morpho-syntactically. In short, there is enough empirical evidence to show that in the process of producing bilingual speech, much more is involved than two (or more) monolingual grammars being activated separately in the bilingual mind.

**Key concepts in morphosyntactic analyses of CS patterns**

There are two main competing theoretical models used to account for the linguistic or morpho-syntactic patterns of CS structures: the Matrix Language Frame (MLF) model (Myers-Scotton 1993a, 2002), and the tripartite classification of code-mixing strategies (Muysken 2000). The MLF model is guided by three main principles or testable hypotheses: the Matrix Language Principle, the Asymmetry Principle, and the Uniform Structure Principle. The Matrix Language Principle predicts that in ‘classic CS’, i.e. “speech for which the speakers are proficient enough in the participating languages that they can produce well-formed monolingual utterances in the variety which becomes the source of what is called the Matrix Language (ML)” (Myers-Scotton 2002: 8), it is always possible to identify the ML, which is the language which provides the abstract morpho-syntactic frame of the bilingual utterance (ibid.) and supplies the system morphemes – closed class items – such as determiners and tense morphemes (for the distinction between ‘classic CS’ and ‘composite CS’, see Myers-Scotton 2002: 105). The bilingual utterance may be structurally a ‘bilingual Complementiser Phrase’ (e.g. the head-modifier prepositional phrase PP in (1)) or a bilingual clause, among others (e.g. (2)), into which elements of the embedded language (EL) are inserted. EL elements are normally content morphemes from open class items such as nouns, verbs, adjectives and adverbs.

Both the Asymmetry Principle and the Uniform Structure Principle may be regarded as correlates of the Matrix Language Principle. The former stipulates that the languages involved in bilingual speech participate to different extents, with the ML having a higher degree of participation than the EL. One consequence is that the morpho-syntactic frame of the ML is always identifiable because of its greater participation. As for the Uniform Structure Principle, since the ML provides the abstract morpho-syntactic frame of a bilingual utterance, it is natural that the morpho-syntactic structure of an ML constituent is

preferred (Myers-Scotton 2002: 8-9). The MLF model has been tested against CS data in many language pairs, and the three principles or premises are held to be largely valid (see, e.g., Deuchar 2006 for the case of classic Welsh-English CS in Wales).

According to Myers-Scotton (2002: 121f), the Uniform Structure Principle helps account for some apparent structural discrepancies in similar language pairs. For example, in Moroccan Arabic/Dutch CS, Dutch determiners rarely occur in the mixed Complementiser Phrase (4). In contrast, in Moroccan Arabic/French CS, French determiners (e.g. definite articles *le*, *la* or *les*) occur commonly in the mixed Complementiser Phrase (5):

(4) ka-n-tebbe⌦ dak ehm ⚐ opleiding dyal leraar-opleiding
ASP-1S-follow DEM er training of teacher-training
'I follow that training, the teacher training.'
(Moroccan Arabic/Dutch; from Boumans 1998; cited in Myers-Scotton 2002: 115)

(5) y★-t-haka-w wa⇨ed **les histoires**, wa⇨ed **les histoires** ta⌦ **le temps passé**
3-MP-tell-PL INDEF DEF/PL stories INDEF DEF/PL stories of DEF/M time past
'They tell each other some (fantastic) stories, stories of past times.'
(Algerian Arabic/French; from Boumans and Caubet 2000; cited in Myers-Scotton 2002: 116)

Without a Dutch determiner, the embedded Dutch NPs *opleiding* and *leraar-opleiding* in (6) appear like 'bare forms', while in (7), the embedded French NPs *les histoires* and *le temps passé* are Complementiser Phrases of their respective heads in Algerian Arabic *wa⇨ed* and *ta⌦*. Examples of well-formed NPs in the EL as in (5) are analyzed as 'Embedded Language islands', which are defined as "full constituents consisting only of Embedded Language morphemes occurring in a bilingual CP that is otherwise framed by the Matrix Language" (Myers-Scotton 2002: 58, 139). One common type of EL island consists of set collocations in the embedded language which often do not have a counterpart in the matrix language, e.g. *a-na-i-tumi-a <u>for personal purposes</u>* (Swahili-English CS: 'He uses it for personal purposes', p.99).

The MLF model has been significantly revised and supplemented by 'the 4-M model'. Owing to space limitation, the reader is referred to Myers-Scotton (2002) and Myers-Scotton and Jake (2009) for details. For a discussion of the linguistic constraints approach to analyzing CS patterns involving typologically distinct languages and the limitations of the MLF model, see Chan (2009).

Muysken (2000) proposes a tripartite classification of 'code-mixing' strategies of the bilingual speaker. The first type of 'code-mixing' strategies is 'insertion', where a single word or a phrase from one language is inserted into another. "In insertional code-mixing what is inserted is a constituent" (Muysken 2000: 62), e.g., NP constituents.

(6) a-na-ku-l-a **plate** m-bili z-a murram

3SG-PRS-NFIN-eat-IND CLM 10-two CLM 10-of maize
'He eats two plates of maize.'
(Swahili/English, Myers-Scotton 1993a: 86; cited from Deuchar et al. 2007: 303)

Here, the word order is clearly Swahili, including the insertion of *plate* in the bilingual NP *plate m-bili* ('two plates'). Muysken's "insertion" is similar to Poplack's (1980) "constituent insertion" or "(nonce) borrowing". Compared with the Matrix Language Frame (MLF) model (Myers-Scotton 1993a, 2002), two distinct MLF clause structures are subsumed under insertion: 'ML + EL constituents', and 'EL islands' (see Figure 1.3, Muysken 2000: 32). Similar to the Matrix Language Principle in the MLF model (Myers-Scotton 1993a, 2002), "[I]n the insertion pattern, one language determines the overall structure into which constituents from the other language are inserted" (Deuchar et al. 2007: 303).

Muysken's (2000) second code-mixing strategy, 'alternation', occurs when a switched string or fragment in Language B is preceded and followed by elements from Language A, resulting in a nested sequence A…B…A. This may be illustrated using an example of Dutch-French code-mixing in Brussels:

(7) Bij mijn broer ***y a un ascenseur*** en alles.
at my brother there is DET elevator and everything
'At my brother's place, there is an elevator, and everything.' (Muysken 2000: 97)

The third strategy is called 'congruent lexicalization'. It occurs when a grammatical structure of the languages in contact are the same, either partially or fully. One consequence in bilingual speech is that the congruent structure may be filled by elements from either language, without violating the integrity of that grammatical structure. As Muysken observes, this is possibly a result of grammatical convergence due to language change, which in turn may be a cause and/or consequence of frequent code-mixing. Congruent lexicalization is typically found in those language pairs which are typologically close, such as Frisian and Dutch, and is rather commonly found in standard-with-dialect types of 'code-mixing', which is apparently rather common in Southern Min–Mandarin CS in Taiwan (Deuchar et al. 2007:331).

**Why do bilinguals code-switch?**

The social meanings of CS in bilingual interactions represent an important part of research in "interactional sociolinguistics" (e.g. Gumperz 1982; 1986). Early research on CS motivations identified an important distinction between 'metaphorical CS' and 'situational CS' (Blom and Gumperz 1972). Sometimes a switch redefines the situation, as when Flemish-French bilingual employees in a Belgian bank greet and chat with one another before office hours in Flemish, their shared vernacular, but conduct formal banking business in French. This CS pattern is so common in diglossic communities that a switch triggered by a change in situation is almost predictable, hence 'situational CS'. Where there is no perceptible change in situation, bilingual speakers may sometimes switch to another language due to a change in topic or because the target expression in that language alludes to special social meanings.

Holmes (1992: 48) cites an example in Papua New Guinea where a bilingual code-switches between Tok Pisin and Buang to demonstrate his double identity: being a businessman (Tok Pisin) and a member of the Buang community. Such instances of CS are known as ‘metaphorical CS’.

In terms of theory-building, there are two main approaches to addressing this research question: the markedness model (Myers-Scotton 1993b, 1998) and conversation analysis (CA, Auer 1995; W. Li 1994, 2002). On the basis of extensive data obtained in East Africa, Myers-Scotton (1998) argues that in any bilingual speech community, code choice is rational based on three inter-related postulates: (a) all speakers are rational actors eager to “optimize” their own interactional outcomes; (b) a speaker’s linguistic repertoire constitutes an “opportunity set” from which code choices are made through “interaction-specific cognitive calculations”; and (c) communication is goal-directed, guided cognitively and rationally by a cost-benefit analysis of different “readings of markedness” indexed by discrete “rights and obligations sets”, which explains how a speaker comes to know that “making marked choices has different consequences from making unmarked choices” (Myers-Scotton 1998: 16-22; cf. Li and Tse 2002: 148). The key construct is “markedness”, which consists in the opposition between unmarked versus marked code choices, and functions as a heuristic explaining a bilingual’s social and psychological motivations for making one code choice over another.

Myers-Scotton’s approach may be characterized as analyzing CS motivations using socio-psychological factors external to specific contexts in which CS take place. Advocates of the conversation analysis (CA) approach, however, insist that all attributions of CS motivations should be dynamic, constructivist, and grounded in fine-grained turn-by-turn analysis, taking into account all pertinent contextualization cues such as prosodic features and the duration of pauses, which contribute significantly to meaning-making in bilingual interactions. According to this view, the research question, ‘What does the code-switcher want to do or accomplish with CS?’ cannot be adequately addressed without examining all relevant contextualization cues in bilingual interactions, which helps explain CA analysts’ insistence that rigorous protocols must be met when recording and transcribing naturally occurring CS data.

Above is an overview of the linguistic aspects of CS research, and how it differs from other similar but sociolinguistically distinct phenomena such as lexical borrowing. Regardless of how such language-contact phenomena are analyzed by researchers of CS or borrowing, they constitute part of the linguistic resources of the bilingual, whose main concern in bilingual interaction is typically the moment-by-moment meaning-making when conversing with someone with a similar linguistic background or repertoire. Below, we will elucidate how CS is used by bilingual teachers in the classroom context. Classroom CS is complex and often controversial, especially in those contexts where there is a tension between using the mother tongue as the medium of instruction to facilitate students’ understanding, and to use the target language (TL) as MoI to give students more exposure to the TL.

## Classroom code-switching

While classroom CS studies have been diverse, the often-quoted early studies chiefly have been conducted in North American settings in two main kinds of contexts: second language contexts (e.g., ESL classrooms), and bilingual education classrooms. The research methods largely drew on quantitative and functional coding analysis. Research interest has mainly been directed at two aspects: the relative quantities of first language (L1) and second language (L2) use in different activity settings, and the functional distribution of L1 and L2. Below is a review of the research methods used in some early studies.

### Early studies on relative amounts of L1/L2 use across activity types and settings

This type of research has largely been conducted in North American settings with children in bilingual education programmes (e.g., Wong-Fillmore, 1980). The main emphasis of such work is to investigate whether linguistic minority children's L1 (e.g., Spanish, Chinese) and the wider, societal language (English) are given equal emphasis by calculating the relative quantities of use in the classroom (in terms of the number of utterances in each code or the time spent on it). Data for such studies is typically collected through class visits and observations with subsequent analysis of field notes and audio/videotapes. It is found that a greater amount of L1 tends to be used in less formal, more intimate participant structures.

In another study (Frohlich et al., 1985) on the communicative orientation of L2 classrooms in four different programmes in Canada (e.g., core French, French immersion, extended French with subject matter courses, ESL classrooms), teacher talk in all four programmes was found to reflect very high L2 use (96%). However, the researchers noted that students generally used the target language only while the teacher exercised control over classroom activities. During seatwork most interaction occurred in the students' L1.

While the interactive sociolinguistic notion of 'participant structure' (Goffman, 1974; Heller, 2001) was not used in these early studies, they relied instead on the related notion of activity type or setting (e.g., individual seatwork, group work, whole-class instruction) as an important factor affecting the relative amounts of L1/L2 use in both studies above. In contrast, other work used functional coding systems in their analysis to develop categories of functions for which L1 is used.

### Early studies on functional distribution of L1/L2 use

Many of the functional studies were conducted in bilingual content classrooms in the U.S. and only a few on second and foreign language classrooms. In these studies classroom utterances were usually coded by the observer with a functional system (e.g., Flanders, 1970) yielding frequency counts of distribution of L1 and L2 over different functional categories. For instance, in a study based on observations of five kindergartens in Spanish bilingual programmes and using an adaptation of Flanders' Multiple Coding System, Legarreta (1977) reported on the functional distribution of Spanish (L1) and English (L2) in two

different models: the Concurrent Translation (CT) and Alternative Days (AD). She found that the AD model generated an equal distribution of Spanish and English by teachers and children overall, with more Spanish used for "warming" and "directing" functions and English as the primary choice for disciplining children. However, in the CT model, instead of using the L1 (Spanish) of the majority of the pupils to express solidarity (warming, accepting, amplifying), the teachers and aides predominantly used English for these functions.

In another study, Milk (1981) coded teacher talk in a twelfth grade bilingual civics lesson according to eight basic pedagogical functions (e.g., informative, directive, humor-expressive) based on Sinclair and Coulthard (1975). English (L2) was found to dominate the teacher's directives (92%) and meta-statements (63%) while there was a greater balance between L1 and L2 in other functions (e.g., elicitation, expressive, reply, informative). In addition, Milk described the skillful manner in which the bilingual teacher employed extensive switching between Spanish and English to create humour, both as a means of social control (via the creation of a sense of solidarity) and as a way to arouse students' interest.

Guthrie (1984) used similar research methods in a study of an ESL lesson attended by 11 first-grade Cantonese-American students (ranging from limited-English proficiency to fluent). Two types of lessons were analysed: reading in English with a Cantonese-English bilingual teacher, and oral language with an English monolingual teacher. Field notes and audio-recording of six hours of lessons were obtained and coded by two bilingual observers. The functions of the bilingual teacher's L1 use reported by Guthrie can be summarized as: (a) to act as a "we-code" for solidarity, (b) to clarify or check for understanding, (c) to contrast variable meanings in L1 and L2 and to anticipate likely sources of confusion for students.

So, while the functional coding approach dominated early work in some studies (e.g., Milk, 1981; Guthrie, 1984), preliminary use of ethnographic interviews and interactional sociolinguistic methods were incorporated, a trend which continued in later works.

**The interpretive and critical turns in classroom CS research**

Many early studies seemed to have worked with the assumption that functional categories were stable, valid categories of classroom speech and that analysts could reliably assign utterances to each category. Yet the functional coding approach in early studies in fact involved a lot of sociolinguistic interpretive work on the part of the coder. This interpretive work was, however, not made explicit but taken for granted in the form of final frequency counts of L1 and L2 distributed across different functional categories.

Later studies (e.g., Lin, 1990, 1996, 1999; Adendorff, 1993; Polio & Duff, 1994; Eldridge, 1996; Martin-Jones, 1995, 2001; Heller, 1999, 2001; Jacobson, 2001; Martin, 1996, 1999, 2003; Creese, 2005; Li & Martin, 2009) have, to varying degrees, dispensed with a priori lists of functional categories and drawn on research approaches from interactional sociolinguistics and ethnography of communication (e.g., Goffman, 1974; Gumperz, 1982; 1986); conversation analysis (Sacks, 1965/1992); interpretive

research paradigms; critical social theory (Bourdieu and Passeron, 1977); and critical research paradigms to study classroom CS.

Just as interactional sociolinguistics (IS) and ethnography of communication (EC) provide the most useful analytic tools for researching and understanding CS in different settings in society, their concepts and methods have been drawn upon in classroom studies on CS. For instance, the most frequently and fruitfully used ones are: CS as contextualization cues (Gumperz, 1984) to signal a shift in the frame or footing (Goffman, 1974) of the current interaction (e.g., see Adendorff, 1993). Frame or footing is the definition of what is happening and it is constantly being negotiated, proposed (signaled) and re-defined by the speakers engaged in interaction. Different frames or footings that are being evoked (or signaled and proposed by a speaker) involve the simultaneous negotiation of different role-relationships and the associated sets of rights/obligations. Lin's studies (1990, 1996), for instance, drew on these interactional sociolinguistic concepts to analyse CS in Hong Kong classrooms. Below is an example from Lin's (1996) reanalysis of Johnson's (1985) data in Hong Kong secondary schools, using IS analytic concepts. The data presentation format is as in Johnson's: Tape-recorder counter numbers precede utterances; bold italics indicate originally Cantonese utterances, and only teacher's utterances have been transcribed.

Example (1)

A junior secondary math teacher in Hong Kong begins his lesson in English and then breaks off and switches to Cantonese to deal with late-comers; once they are settled, he switches back to English to continue with the lesson work ("Example 1" in Johnson, 1985, p. 47):

008 Close all your text book and class work book.

012 ***There are some classmates not back yet. Be quick!***

017 Now, any problem about the class work?

Johnson (1985) analyses the Cantonese utterance as an example of an informal aside done in Cantonese. While agreeing partially with this analysis, we note, however, that if it is to mark out a mere topical digression, the teacher can well have done this by means other than code-switches, e.g., intonational changes, hand-claps or pauses to bracket the aside (see example in Lin, 1990, pp. 32-36). The use of these contextualization cues (Gumperz, 1984) does not involve a violation of the institutional "use-English-only" constraint which teachers in Anglo-Chinese secondary schools in Hong Kong were well aware of. It can, therefore, be argued that what is being signalled here is not only a topical aside, but also a radical break in the English pedagogic frame and an urgent change in the teacher's concerns. This break in the English pedagogic frame to highlight a different, urgent set of concerns cannot have been achieved without the teacher's switch from English (L2) to Cantonese (L1).

The key to understanding the implicit meanings signalled by code-switches, therefore, lies in a recognition

of the sociolinguistic fact that whenever Hong Kong Cantonese have something urgent and earnest to relay to one another, they do so in their shared native language; whenever Hong Kong Cantonese speak to one another in English despite their having a common native language, it is usually because of some institutionally given reasons, for instance, to teach and learn the English language in an English immersion classroom. When teachers want to establish a less distanced and non-institutionally defined relationship with their students, they will also find it necessary to switch to their shared native language, Cantonese.

In studies along this line, IS and EC analytical concepts and methods are drawn upon to analyse instances of classroom code-switching. The findings look remarkably similar across different sociocultural contexts. CS is seen as an additional resource in the bilingual teacher's communicative repertoire enabling her/him to signal and negotiate different frames and footings, role-relationships, cultural values, identities and so on in the classroom (e.g., Li & Martin, 2009). These studies have the effect of uncovering the good sense or the local rationality (or functions) of classroom CS. To summarize by drawing on the functional framework of language from Halliday (1994), CS can be seen as a communicative resource readily drawn upon by classroom participants (usually the teacher but sometimes also students) to achieve three kinds of purposes as follows:

1. *Ideational functions*: Providing limited-L2-proficiency students with access to the L2-mediated curriculum by switching to the students' L1 (or stronger language) to translate or annotate (e.g., key L2 terms), explain, elaborate or exemplify L2 academic content (e.g., drawing on students' familiar lifeworld experiences as examples to explain a science concept in the L2 textbook/curriculum). This is very important in mediating the meaning of academic texts which are written in a poorly understood language – the L2 of the students.
2. *Textual functions*: Highlighting (signalling) topic shifts, marking out transitions between different activity types or different focuses (e.g., focusing on technical definitions of terms vs. exemplifications of the terms in students' everyday life).
3. *Interpersonal functions*: Signalling and negotiating shifts in frames and footings, role-relationships and identities, change in social distance/closeness (e.g., negotiating for in-group solidarity), and appealing to shared cultural values or institutional norms.

Apart from the above studies which draw on interpretive research paradigms, there is also a major trend of studies led by Monica Heller and Marilyn Martin-Jones (e.g., in their edited 2001 book, *Voices of Authority: Education and Linguistic Difference*), which draws on both interpretive and critical research paradigms and they relate micro interactional functions of classroom CS to larger societal issues, such as the reproduction or sometimes contestation of linguistic ideologies in the larger society (e.g., which/whose language counts as standard and valued language; which/whose language counts as inferior or not-valued language).

Heller and Martin-Jones (2001) provided some examples on how micro ethnographic studies of

classroom CS are not actually 'micro' in their implications if we see the classroom as a discursive site for reproduction or contestation of linguistic ideologies and hierarchies. The discursive construction/negotiation of what counts as front stage and back stage (Goffman, 1974) and the legitimation of what goes on in the front stage (largely controlled and set up by the teacher) as legitimate, standard, valued language vs. what gets marginalized, reproduced as inferior, non/sub-standard language in the back stage. Usually the societal dominant L2 occupies the former position and students' L1 occupies the latter position. For instance, in Ndayipfukamiye's (2001) study of Kirundi-French CS in Burundi classrooms, the bilingual teacher is seen to be using Kirundi (students' familiar language) to annotate, explain and exemplify French (L2) terms and academic content. While the linguistic brokering functions of CS is affirmed (i.e., the value of providing students with access to the educationally dominant language, French), the linguistic hierarchy as institutionalized in the French immersion education policy in Burundi is largely reproduced in these CS practices.

However, not all studies are about reproduction of linguistic ideologies and practices. For instance, Canagarajah (2001) shows how ESL teachers and students in Jaffna (the northern peninsula of Sri Lanka that has been the political centre of the Tamils) negotiated hybrid identities through CS between Tamil and English, defying both the Tamil-only ideology in the public domains and institutions, and the English-only ideology from the ESL/TESOL pedagogical prescriptions from the West. Canagarajah argued that both teachers and students, by switching comfortably between these two languages are also constructing their bilingual cosmopolitan identities, refusing to be pigeonholed by essentializing political ideologies (of Tamil nationalism) or English-only pedagogical ideologies.

Lin (1999) also showed that by skilfully intertwining the use of L1 (Cantonese) for a story focus with the use of L2 (English) for a language focus, a bilingual teacher in a Hong Kong English language classroom successfully got her students interested in learning English and gaining confidence in reading English storybooks, and thus transforming the habitus of these working class students for whom English had been an alien language irrelevant to their daily life. Drawing on the discourse-analytical methods of conversation analysis applied to educational settings (Heap, 1985), Lin (1999) offered a fine-grained analysis of how L1-L2 CS was built into two kinds of Initiation-Response-Feedback discourse formats to enable the teacher (Teacher D) to engage students in both enjoying the story and in learning English through this process ("L1/L2" denotes "L1 or L2"):

Teacher D uses two different IRF formats in the following cycle in the reading lesson:
(1) Story-Focus-IRF:

Teacher-Initiation [ L1 ]
Student-Response [ L1 ]
Teacher-Feedback [ L1 ]

(2) Language-Focus-IRF:

Teacher-Initiation [ L1/L2 ]

Student-Response [ L1/L2 ]
Teacher-Feedback [ L2 ], or use (2) again until Student-Response is in L2

(3) Start (2) again to focus on another linguistic aspect of the L2 response elicited in (2); or return to (1) to focus on the story again.

This kind of discourse practice allows the teacher to interlock a story focus with a language focus in the reading lesson. There can be enjoyment of the story, via the use of the story-focus IRF, intertwined with a language-learning focus, via the use of the language-focus IRF. We have noted above that the teacher never starts an initiation in L2. She always starts in L1. This stands in sharp contrast with the discourse practices of Teacher C (another teacher in the study) who always starts with L2 texts or questions in her initiations. It appears that by always starting in L1, Teacher D always starts from where the student is – from what the student can fully understand and is familiar with. On the other hand, by using the language-focus IRF format immediately after the story-focus IRF format, she can also push the students to move from what they are familiar with (e.g., L1 expressions) to what they need to become more familiar with (e.g., L2 counterparts of the L1 expressions) (see Lin, 1999).

**Difficulties in researching classroom CS**

Researching CS in the classroom, unlike researching other kinds of related classroom phenomena (e.g., classroom discourse, classroom interactions), has often been associated, consciously or unconsciously, with either apologetic or corrective motives. Given the official pedagogical principle of prescribing the use of only one language in the classroom in some contexts (Lin & Martin, 2005; Haroon, 2005), many researchers have studied classroom CS practices either to seek out their 'good sense' and local rationality or to document their pitfalls or pedagogical inefficacy. These two (implicit) aims have often shaped the research questions and research approaches used in classroom CS studies.

Because of these (implicit) 'legitimating' concerns of researchers the studies in the literature tend to stop short of pointing to ways forward for analyzing how CS practices can be further improved to achieve better pedagogical and social critical purposes. They tend to be descriptive rather than interventionist; i.e., they describe existing practices (either approving of or condemning them) rather than experiment with innovative ways of CS practices as ways both to provide access to L2 and to critique linguistic ideologies and hierarchies in the larger society and institutions. Because of a lack of critical, interventionist research questions, the majority of studies in the classroom CS literature tend to offer little new insight into how existing classroom CS can be further changed to achieve more: e.g., more of the transformation (as hinted at by Lin, 1999 and Canagarajah, 2001), and avoid the reproduction consequences (e.g., reproducing societal ideologies about linguistic hierarchies, marginalizing the students' familiar languages while privileging the dominant societal languages). The findings of the existing research literature thus seem to be variations on similar themes (as summarized above) without providing new research questions and research approaches to achieve new findings beyond what has already been known (and

repeated frequently) in the literature on classroom CS.

**Future directions for research on classroom CS**

To the author's knowledge, there have been no published studies of the longitudinal, interventionist type. Also, most studies were conducted by a sociolinguist or a discourse analyst, usually an outsider coming into the classroom studying the interactional practices of classroom participants. As discussed here, many studies draw mainly on the interpretive research paradigms (IS, EC and CA research approaches). These limitations in existing studies make it difficult for us to know what will happen if classroom participants (e.g., teachers, students) themselves become researchers of their own classroom practices, and what will happen if they embark on systematic study of their own practices, getting a deeper understanding of their own practices through their own research and then modify their own practices with systematic action plans and study the consequences, much like the kind of action-research carried out by the teacher-researcher. Below I outline what a future study might look like in order to achieve new insights into classroom CS:

1. Longitudinal research: Instead of one-shot classroom video/audio-taping studies, we need to have studies that follow the same classroom for a longer period of time; e.g., a whole course, a whole semester.
2. Interventionist research agenda: We need to integrate the sociolinguistic interpretive and conversation analytic with the action-research approaches so that the teacher becomes conscious of trying out specific bilingual classroom strategies with respect to achieving specific sets of goals. We also need to build into the research design ways of ascertaining the degree to which these goals are achieved. This is similar to the mode of teacher action research. Close collaboration between teacher and researcher is also needed; e.g., the teacher is the researcher or there is close collaboration between the teacher and the researcher. Likewise, depending on the readiness of the students, they can also be solicited to become researchers in the study of their own bilingual classroom practices.
3. Drawing up specific goals and designing specific bilingual classroom strategies to achieve those goals: This will require the teacher and researcher to understand the specific situated needs and goals of the educational context in which they find themselves. These educational goals need to be set up with reference to the needs and choices of participants in specific contexts, and not taken to mean any universal set of goals.
4. Drawing on research methods of genre analysis of domain-specific academic discourses and literacies: For instance, we need to know what the specific genre features and discourse structures of a biology course are in order to design bilingual strategies to provide students with access to biology discourses through familiar everyday discourses. There will be frequent inter-weaving between academic discourses (mostly mediated in a less familiar language to the students such as the L2 or the 'standard' dialect) and students' familiar discourses (e.g., everyday life examples and experiences mediated in students' familiar languages such as their L1 or a community dialect; e.g., as described in McGlynn & Martin, 2009). How the teacher provides access to the formal, academic (often L2) discourses through the informal, everyday, familiar (often L1) discourses of the students will become a

key research question.

5. To systematically study the effectiveness of different bilingual classroom strategies, it will require a carefully planned integration of different research paradigms (including interventionist action-research, interpretive, critical) and research approaches (including those from sociolinguistics, academic genre analysis, pedagogical analysis, analysis of students' spoken and written samples of academic work, plus assessment of students' mastery of genre-specific features and skills in performing academic tasks using the appropriate registers).
6. Taking a holistic, contextualized approach: We need to situate the classroom in its larger socioeconomic and political contexts and to re-examine the pedagogic goals of the classroom to see if they are really serving the interests of the students. Then we need to find out/explore possible ways to achieve these goals including (but not limited to) bilingual classroom strategies. Both traditional (e.g., teacher whole-class instruction) and progressive pedagogies (student-inquiry groups) need to be used in conjunction with a consideration of which CS patterns can be intertwined with which pedagogical patterns and participant structures. All these require an approach that allows for a healthy cycle: try-and-see and then document; re-try another pattern and see what happens and re-design future action plans that will progressively better achieve the goals through both bilingual and other pedagogical practices.

The above suggestions might sound like an 'unholy' eclectic approach to the linguistic or research methodological purist. However, to have breakthroughs in our current state of affairs in researching classroom CS, we need to be both pragmatic and flexible in our research paradigms and approaches. As CS is still seen as a negative practice in the classroom in many mainstream educational contexts, we need concrete designs of bilingual classroom strategies and research studies that can systematically develop these designs and show their effectiveness (with respect to the situated goals of the classroom). Without designing these systematic longitudinal, interventionist studies that can work on refining bilingual classroom strategies and pedagogies to achieve the goals deemed worthwhile in specific contexts, our research literature on classroom CS might be seen as repetitive of apologetic statements about the good sense or diverse functions of classroom participants' practices, without advancing our knowledge of how they can do better what they are already doing with different degrees of success and failure, as the studies reviewed above show.

**Further Reading**

On the linguistic aspects of CS Bullock and Toribio (2009) is an up-to-date and accessible edited volume covering all of the important topics related to code-switching research, as shown in the titles from Parts I-V: 'Conceptual and methodological considerations in code-switching research', 'Social aspects of code-switching', 'The structural implications of code-switching', 'Psycholinguistics and code-switching', and 'Formal models of code-switching'. Clyne (2003) is a comprehensive account of language contact phenomena, including competing explanatory models of CS patterns in various bilingual societies,

especially CS data obtained from different community languages in Australia.

On classroom CS, Li & Martin (2009) is a collection of most recent studies. Creese (2005) provides a good account of teacher collaboration and talk in multilingual classrooms. Luk & Lin (2006) provides some good analysis of classroom verbal play by students who engage in CS creatively as a resource to have fun. Heller & Martin-Jones (2001) remains a classic volume of studies that sets out the major approaches and problematics in this area. Finally, Martin-Jones (1995) provides a good review of early classroom CS research in the 1970s-80s.

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