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Structure Patterns of Code-Switching in English Classroom Discourse

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Abstract

This paper analyses the structure patterns of code-switching quantitatively and qualitatively based on EFL classroom discourse. Through the detailed analysis, the paper finds that there are different structure patterns in which teachers often switch their codes in English classroom. These structure patterns are reflected in different language levels: words and phrases level, clausal and sentence level. The functions of code-switching are determined by those structure patterns that teachers will choose for different purposes in the process of teaching.

Keywords: Code-switching; Structural patterns; English classroom discourse.

1. Introduction

Code-switching research can be traced back to 50s and 60s in 20th century, but as a real linguistic project, code-switching was studied in early 70s. Blom and Gumperz (1972), describe the CS patterns in Hemnesberget in Norway. Platt and Platt (1975), deal with the multilingual communities in Singapore. Some general reviews of the subject include Eastman (1992), Gumperz (1982), Heller (1988), Jacobson (1998). Other detailed analysis of individual cases of code-switching is seen in Hewitt (1986). To the purely linguistic study of code-switching, some scholars study code-switching from the purely linguistic approach (Di Sciullo, 1986; Poplack, 1980; Romaine, 1989; Woolford, 1983). The latter suggests two famous structural constraints on code-switching: the first is the free morpheme constraint which states that codes may be switched after any constituent in discourse, provided that the constituent is not a bound morpheme, and the second is the equivalent constraint, i.e. code-switching tends to occur at points in discourse where juxtaposition of two languages does not violate a surface syntactic rule of either language. Myers-Scotton (1993) proposed a Matrix Language Frame Model (MLF Model), which is built on the hypothesis that the two languages involved in code-switching do not participate equally, that is, one language is dominant and the other is subordinate and that the word structure of the dominant language determines the outcome in the subordinate language.

Researches on code-switching are more concerned with the natural discourse in bilingual or multilingual communities. Some of the above-mentioned studies focused more on the social meaning of code-switching during interaction, and thus highlighted its value as a communicative resource in the communities and its value as power and cultural capital. Some other studies focused on the structural meaning of code-switching through investigating the structural patterns in everyday discourse (Bentahila and Davies, 1983; Berk-Seligson, 1986; Gardner-Chloros, 1995; Lu, 1991). These structural patterns are related to sociolinguistic factors. To understand the possible impact of these factors on code-switching, the researchers have examined some of the sociolinguistic variables, such as age, gender, social status, and other factors affecting code-switching patterns (Ho-Dac, 2003). These researches describe and discuss the patterns of code-switching structures in the natural language communities. There are few studies on the structural pattern of code-switching in EFL classroom communities' discourse (Yao, 2007).

This paper describes and analyzes the structural patterns of EFL classroom code-switching qualitatively and quantitatively. With the analysis of the code-switching discourse structure, the research tries to explore how teachers and students in the EFL classroom can properly handle the use of language when using code-switching to improve the effectiveness of teacher's discourse use. Therefore, the research analysis mainly examines the structure of the switching parts. These structures are mainly analyzed in three levels: words, phrases and clauses or sentences. The structural part of the switching may be within the unit or between the units. Through the statistics of the teacher's discourse switching structure, the number of various types of switching and their proportion in the amount of teacher's discourse are calculated. The following sections mainly study the structure and characteristics of code-switching. The first is the switching of word classes and phrases, the second is the description of code-switching between clauses and sentences, and the third is the structural properties of different kinds of switches based on Myers-Scotton's MLF model.

2. Methodology and Data collection

The data of this study was collected through recording 10 teachers in 20 EFL classes of five middle schools. Before visiting each class, the course teachers were informed that their teaching would be recorded for the purpose of research. After class, the teachers and some students were interviewed to understand their perspective on code-switching in classroom. After collecting the recordings, they were transcribed and analyzed quantitatively and qualitatively. These transcripts are the base of the structural and functional analysis of teachers' code-switching.

According to the previous researches and our observation as well, we divided the teachers' talk into units of communication and categorized the units into four types:

    (E) Pure English units

    (C) Pure Chinese units

  E (C) Chinese embedded in English units

  C (E) English embedded in Chinese units.

The communication unit, according to Loban (1966), is defined as independent clauses along with attached or embedded subordinate clauses, also including the elliptical clauses. There are three types of code-switching in teachers' discourse, inter-unit code-switching, intra-unit code-switching and tag-unit code-switching. The analysis was determined by the position of the switching of the discourse structure.

3. Results

The statistics of the code-switching structure include all the structural parts where the switching occurs, words, phrases and clauses. Table 1 shows the distribution of code-switching at all levels. In the entire teachers' discourse, there were a total of 4681 switches, of which 1262 were lexical-level switches, which accounted for nearly 27% of the total switches, and 483 were switches of phrases or phrases, accounting for 10.32%, and the switching of clauses and sentences reached 2936 times, accounting for 62.72% of the total number of switching.

Table-1. Frequency of switching in different levels

Rank	Language levels	frequency	percentage
1	Word level	1 262	26.96
2	Phrase level	483	10.32
3	Clause and Sentences level	2 936	62.72
Total		4681	100

The switches in the Table 1 include the switching from English to Chinese and from Chinese to English. The most frequent switching of teachers' discourse is the switch between English and Chinese clauses. This result is different from the code-switching of fluent bilinguals in other verbal communities (Ho-Dac, 2003).

3.1. Switching at Word and Phrase Levels

Table 1 also demonstrates that teachers use a large number of word-level switching in the teaching process, either from English to Chinese or from Chinese to English, accounting for 26.96% of the total number of code-switches. Table 2 shows the frequency distribution of switches in different word classes.

Table-2. Word-level Switches Distribution

Rank	Word class	Switches No.	Percentage (%)
1	Noun	449	35.6
2	Adverb	324	25.6
3	Verb	170	13.5
4	Interjection	103	8.2
5	Adjective	101	8.0
6	Preposition	55	4.4
7	conjunction	32	2.5
8	pronoun	28	2.2
Total		**1 262**	**100**

Note No. =number

In the English classes, the most frequent switching of a single word is nouns, which account for 35.6% of the total number of word class switches, more than one-third. This finding is similar to the noun-level switching in some other studies (Gardner-Chloros, 1995; Ho-Dac, 2003). In his Spanish-English code-switching study, Poplack (1980) reported that single nouns are more likely to be switched than other word classes. In other English classroom code-switching studies, nouns are also the most widely used word class for code-switching (Berk-Seligson, 1986; Nishimura, 1985; Poplack and Sankoff, 1988; Treffers-Daller, 1991).

The second most commonly used switching part of speech is not a verb, but adverbs with 25.6% of the total word-class switches followed by verbs, which constitutes 13.5 percent of the total switches. Verbs in code-switching occur much less often than the first two, accounting for only 170 cases of the total switches in the corpus.

Interjections and Adjectives constitute 8.20 percent and 8 percent respectively while the least frequent switches are Prepositions, Pronouns and Conjunctions, which constitute 4.4 percent, 2.5 percent and 2.2 percent respectively.

In the quantification of switches, nouns, proper nouns such as names of persons, places, countries, names of minorities are included. Some letters, technical terms and word translations (English to Chinese or Chinese to English) are also included. The incident of code-switching to English or Chinese nouns is higher than that of other word classes. This figure, constituting 35.6 % of the total switches in word classes, is not compatible with that in other studies (Berk-Seligson, 1986; Poplack, 1980; Treffers-Daller, 1991). Many of the switched nouns are words which refer to the functions the teachers want to express, for reference specification (directive function), lexical explanation, and term translation.

Directive function usually refers to excluding some hearers and including others in interaction. However, in classroom where teachers and students share the same native language, teachers could not use code-switching to specifically address one student while excluding others. In EFL classes, teachers call on specific students to respond to questions. These name-callings are often inserted in English. For example (In the following examples, T= teacher, S=student, Ss = more than one student, the italics are originally in Chinese):

    1. T: Now, *Huang jian ping* (Chinese name)
      S: Mother is dressing the son.
    2. T: How many tiers made of the earth?
    In Chinese, OK, in Chinese
    Now, *Li Qingyuan*, could you say, tiers.
    This is the earth
    Now, this is one world

Other nouns used by teachers serve to explain or translate the target language terms or words. For example:

    3. S: and *mantle*.
      T: Yeah, very good, *mantle*.
    Where is the mantle?   E   EL
    M-A-N-T-L-E, *mantle*
    4. T: And it is also called banner dress
    Banner dress
    And it was called *cheongsam*.

With verbs, they comprise only 13.5 percent of the total 4681 switches. Most of the switched English verbs are inserted in Chinese utterance unit for lexical or grammatical explanation. For example:

    5. T: There will be
    What mistakes have you made?
    You will change "be" *to what*?
    6. T: Keep quiet, *Keep quiet*
    Then here keep *can be translated into what?*

We do not find any single Chinese verb inserted in English matrix utterance unit. This is because English is the target language the students are learning. Teachers usually use their native language (Chinese) to explain the target language, not vice versa.

The switched adjectives appear to be only 8 percent of the total switches, which is much low compared to adverbs (25.6%). One of the reasons may be that adjectives are not widely used or explained than those of adverbs in our corpus. Most of the switched English adjectives are also mentioned or inserted in teachers' Chinese utterances for lexical or grammatical explanation. We also do not find any switched Chinese adjectives in English matrix utterance. For example:

    7. T: Ok let's go on
    Look *here,*
    Again distinguish fewer *and* less, fewer and less
    Now, ok, page 4, page 4
    8. T: Now look at the paper (…)
    Enough money, old enough
    Did you see it clearly?
    Enough *as an adjective, modifying nouns, should be put before nouns*.

The switches of adverbs is very high compared to that of other studies, comprising 25.6 percent of the total switches which is the second most frequent word class of single-word switches in the data. One of the reasons may be that teachers frequently use the adverbs such as, *OK, Now, Yes, First, Next, So*, and Chinese adverb 好 (*good*), etc. Of all the 324 adverb switches, the most widely used switched adverbs are *OK*, *Now* and 好 (*good*), which account for more than 72 percent of the total adverb switches. In most of the cases, these switched adverbs are placed at the beginning of the clause. We find that when these transitional discourse markers appear, language is usually switched (from English to Chinese or from Chinese to English). For example:

    9. T: *Good*, next.
    Now, Paper, paper, *paper.*
    Uncountable noun, Uncountable noun.
    Now, *a piece of paper*, OK.
    Ss: A piece of paper.
    10. T: Good

Now, *what does it mean in Chinese?*

Ss: *fewer.*

The switching of interjections accounts for 8.20 percent of the total switches, which is relatively higher than that of adjectives. There is a set of invariable expressions of various kinds switched by teachers, chiefly by young teachers who like to show some fashions such as *Yeah* or *yes*, *well*, *you know*, etc. *Yeah* (or *yes*) is the most widely used marker by the teachers. Of all the 103 interjections in the corpus, *yeah* or *yes* cases are 80 which comprise about 80 percent of switches of this word class. Most of these switched interjections are also placed at the beginning of the clause. Here are some examples:

11. T: Yeah, *he later considered this word.*

He then realized loving this lady, is it right?

he had always loved me. (recording)

12. T: yeah, *your programme is to face everybody*?

Of course I'd like to reach a wide audience.

What does "reach a wide audience" *mean*?

The occurrence of English prepositions comprises 4.4 percent of the total switches in our corpus, which is relatively higher than the last two word classes, conjunctions (2.5%) and pronouns (2.2%). Most of the switched English prepositions are inserted in Chinese utterances when the teachers explain their usages. For example:

13. T: As *is followed by a noun of identity.*

For example, as a freelance Reporter.

As a teacher, as a nurse.

14. T: I want to apply for the job

Of course, here omitted a 'TO'

For example, you should apply to the company in person.

Conjunctions comprise only 2.5 percent of the total switches. Conjunctions occurred either for the explanation of the lesson content or for the grammatical usage of the conjunctions proper. For example:

15. T: The earth is surrounded by a lay of atmosphere.

So Pull the air on the surface on the earth

OK, *Good*, Number 38, Any questions?

16. T: take into account the bad weather

Or say take the bad weather into account

we should take into account of bad weather

The occurrence of English pronouns is also low (2.2 percent) compared to the other word classes. The switched English pronouns can also be inserted in Chinese clauses, if necessary. For example:

17. T: The job is not available to you.

But if you are not suitable for this job.

You should say You.

18. T: Heat (xxx)

Here omitting an attributive clause introduced by that

That (xxx)

Here, there is an omission of That, *which introduces an attributive clause.*

Phrases or groups switches, which comprise 10.32 percent of the total switches of all levels, here refer to phrases or groups of one language inserted in the other one. What is different from other studies is that our data include many phrases or groups of switches inserted in the other language. Most of these switched phrases or groups come from lesson content which is going to be explained. The most frequent switched phrases or groups are verb phrases, preposition phrases and noun groups. For example:

19. T: turn out, yeah, turn out, turn out can be followed by 'to be'

Turn out *can be followed* to be, *also noun or other things*

The experiment proves this matter failing.

20. T: Use water instead of petrol.

Instead of, *preposition phrase, means replace.*

We have another preposition phrase, in place of.

3.2. Switching at the Clause Level

Switching at the clause level involves more than one clause at a time: Switches between two main clauses, i.e. code-switching occurs at the clause boundaries between the two languages (here refers to inter-unit code-switching). There are two different situations: one is switching between two utterance units, which are demarcated by different languages; the other is switches between two utterance units, which belong to different types of unit (for instance, between English units and Chinese units in which English elements are inserted. These switches may occur in different directions, either from English to Chinese or vice versa. There are also switches between a main clause and a dependent clause, i.e. the switched English clause is either a main or a dependent one. These switches are much less than those switches between main clauses in the data. The frequency of switches at the clause level reveals that there are 2936 cases of switches at the clause level, representing 62.72 percent of the total switches.

Many cases concerning repeated utterances, which are originally spoken in English or Chinese, are included in the switching between two utterance units (main clauses) of different languages. In other words, these switches between two utterance units constitute more or less repetition of what has just been said in the other language. This

is one of the features of teacher talk style that is characterized by frequent repetition of linguistic elements from immediately preceding utterances as emphatic tie-ins with what follows. For example:

21. T: Now, for example
Yesterday he fell off the bike and broken his leg
He fell off bike and broke his leg
Ss: [Broke his leg
T: Broke his leg]
22. T: *His dream is realized*
His dream is realized
His dream came true.

In the examples 21 and 22, the repeated clauses are used to repeat or explain the preceding utterance unit. Although this feature of talk style can be found in every teacher's speech in EFL classes, it is interpreted in different ways in the studies of functions of code-switching by some researchers. For example, Gumperz (1982), states that code-switching could be used or a message repetition. The above examples, therefore, can be explained by assuming that the teachers want to clarify their message by repeating what is said in the other language or that the code-switching serves the functions of message repetition (Parks, 1982; Urgese, 1984).

Switching between main and dependent clauses occurs much less frequently than switching between main clauses in the data. However, once happened, none of the switched clauses violate the syntactic structure of both languages. One possible explanation may be based on the fact that Chinese and English have a similar word order, and there is more or less equivalence of word classes between both languages. Muysken (1991), proposes the notion of categorical equivalence, which is considered not only as a grammatical notion but also from the perspective of psycholinguistics. Under this perspective, a specific word class is only switchable if it exists in both languages and it is considered to be equivalent by speakers of these languages. For example:

23. T: Will be like *what will weather be like*
Will be like
And we can see *what will weather be like*
What will weather be like
How will be the weather
The weather will be a lot better
24. T: How to say "*modern technique*" ？
S: <hot discussion> 'modern technique'
T: modern technique, modern techniques.

3.3. Structural Properties of Code-Switching in Teachers' Discourse

Some researchers (Wu, 1985; Yu, 2001) analyze the structural properties of code-switching through a linguistic description of their data with no theoretical model, while many others have employed the Matrix Language Frame model proposed by Myers-Scotton (1993) in their analysis of the structural aspects of code-switching, usually aiming at identifying the linguistic constraints on code-switching. MLF model can also be applied to examine the structural features of different types of code-switching in EFL classes. The following sections examine the structural features of the switched word classes of English and Chinese and analyze the structural features of code-switching based on MLF model and compare them with those of other studies.

With the frequency of specific word classes, table 2 shows the different percentages of word classes in cases of switching. These findings seem to suggest implicitly that certain word classes are more likely to be switched than others. However, these figures cannot simply be accounted for in terms of syntactic constraints without taking into account the syntactic systems of the two languages. It is therefore necessary to examine and contrast the structure properties of switched word classes of two languages.

3.3.1. Features of Word's Morphological Change

One salient feature of Chinese nouns is that they do not contain any notion of number in themselves. As the Chinese nouns have no obligatory marking of singular or plural, they are invariant in form. The Chinese nouns themselves remain the same regardless of whether they are singular or plural. In this respect, they are like uncountable nouns in English such as *paper, water, weather,* etc. The following examples taken from the data give more clarification.

25. T: 1 2 3 5, 1 2 3 5, Ok, ok, next, now,
Here is problem, isn't it
Then we, then we give some advice
Ss: *suggestion, suggestion*
26. T: *We say it is a* Theatre
Some theatre *is not so good.*
27. T: *They two* group *can't match*

In the above utterance unit, whether they are countable nouns or uncountable nouns, all switched English nouns are in singular form, although some of them are preceded by the Chinese indefinite numerals "一些 (some)", "有些 (some)", or the unit number "两个(two)", and the plural marker "都(all)". The reason why all switched English

nouns are in singular form may be attributed to the fact that in Chinese, as a matrix language, all the switched English nouns take no forms of plural, conforming to the Chinese grammar.

From the point of view of English, these examples appear to violate grammatical requirements for the speaker, e.g. no explicitly expressed number (singular or plural). In fact, there are no such grammatical requirements in Chinese because the expression of such grammatical categories is only governed by discourse context.

With respect to the structural equivalence and contrast of English and Chinese nouns, it could be said that both English and Chinese nouns allow pre-modification with numerals, pre-modifiers, definite/indefinite articles (for English) or classifiers (for Chinese). The Chinese speakers can freely select noun items from English in the place of matrix Chinese utterance. In other words, the Chinese language appears to permit a great deal of freedom in the selection of nouns for syntactic combination.

In the above examples, the absence of articles in matrix Chinese is maintained when an English noun is inserted. The required articles are omitted, featuring undetermined nouns from the point of view of English usage. These English nouns themselves do not designate specific individual items. However, they are definite from the point of view of the discourse context.

We do not find English verbs as main verbs in matrix Chinese language. Most of the switched English verbs, just like nouns, are only inserted as items in Chinese utterances. For example:

28. T: The density (xxx)
If a matter has more density?
We see here there is a 'Say'
What does this Say *mean*?
29. T: Remain *is a link verb*

Since the teachers are secondary bilinguals (Li Wei, 2000), they can hardly insert an English verb as a main verb in Chinese utterance unit. The following examples are odd and unacceptable:

30. * *this street straightly* extends *to department store*[1]。
31. * *He* go shopping

Although we do not find these examples in our teachers' discourse, it is possible to find these switches in balanced bilinguals in other speech communities because of the similar positions of both Chinese and English verbs. In daily conversation, English verbs are used in different contexts in the matrix Chinese language, for example:

32. *You really* refuse *him*?
Finally, *Linda* agreed *too*.

3.3.2. The Syntactic Features of Code-Switching

The switching of single English adjectives, including switching between adjective and nouns, has been well-documented in the code-switching studies (Pfaff, 1979; Poplack, 1980; Treffers-Daller, 1994). These researchers found that the occurrence of adjectives is most often found in the predicative position, as shown by Pfaff (1979) in her study of English-Spanish code-switching. She gives an example of switched adjectives:

33. I'm not *terca*.
(I'm *not stubborn.*)

Because the similar placement of Chinese and English adjectives which is also most often found in the predicative position, it is possible for them to be switched in the other language. The following example highlights this point.

34. T: False, *it should be* Possible, possible.

The switches of the Spanish adjective *Terca* and English adjective *Possible* can be explained in the light of the equivalence constraint, i.e. switching is possible when the order of switched word classes is similar in both languages. Thus, because the two adjectives can be in the predicative position as shown in the above examples, the switches of *Terca* and *Possible* are possible.

The most frequent used adverbs in teacher talk in the corpus are *Ok*, *Now* in English and 好 *(good)* in Chinese. In most of the cases, these switched adverbs are placed at the beginning of the clause. We do not find cases in which the switched adverbs modify other adverbs or adjectives, although they may appear in other positions of the utterances. For example:

35. Yeah, sit down, *good*, next
36. T: Old enough
Yeah, old enough
Old enough, OK
How to say *strong enough*?
Ss：Strong enough

It should be noted that these switched adverbs, whether in English or Chinese, can be allowed to be either sentence-initial or sentence-final.

Although there are many cases of switched interjection in natural discourse, very few interjections are observed in teacher discourse. The most frequently used interjection is *Yeah* and some teachers used it more frequently than others. However, interjections like *Yeah* are less restricted than any other word class in the positions in which they occur. For example:

37. T: Yeah, Yeah, *when meeting, before meeting next time, how long it will last*.

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[1] *mark here refers to the unacceptable utterance.

Yeah, it is long or it wasn't long or what?

Now who can translate

now, *Xu Zheng*, translate

38. T: *Here means 'officiate at a marriage',* yeah, *'officiate at a marriage'.*

Yeah, *this story is for what? And made something.*

Very funny.

Yeah, *this word* marry *cause it.*

The above examples demonstrate that *Yeah* can be put in different positions of the utterances. The switched prepositions, conjunctions and pronouns are usually inserted as items in the matrix languages, English or Chinese. In most of cases, Chinese is a matrix language, while English conjunctions, prepositions and pronouns are inserted items. For example:

39. T: I did not want to tell my parents anything

The (xxx) worried about me if I did

Then here anything *and the following thing,*

Here it should be because

40. T: although

Still *is an adverb not conjunction*

Then can it be used with 'Although'?

The above examples demonstrate that the cases of switched pronouns, conjunctions and preposition are related to their grammatical usage of these words in the lesson content. They can also be put in different positions in teachers' utterances. On the other hand, Chinese words or phrases will be inserted in English utterances. In other words, English as a Matrix Language will supply the grammatical framework, and when there is a switch, elements from the embedded language they get inserted into that framework. For example:

41. T: You know this person is [*Zhou Xingchi*

Ss: *Zhou Xingchi*]

T: This one is *Zhang Baizhi*

This one is *Mo Wenwei*

42. T; How to say '*modern technique*'?

Ss; <hot discussion> 'modern technique'

T: modern technique, modern techniques,

Traditional technique how to say?

S: Traditional technique

Of course, we would also like to see an example of code-switching using English as a matrix language because in English as a foreign language classroom, English is an unmarked language. From the expectations of classroom teaching, teachers and students hope to use unmarked words. Unfortunately, the corpus has a large number of phenomena of code-switching using Chinese as a matrix language.

4. Discussion

Code-switching occurs at some point of the utterance structure. There are three types of code-switching in teachers' discourse, inter-unit code-switching, intra-unit code-switching and tag-unit code-switching. We have picked out those switches from English to Chinese and those from Chinese to English (Chinese is the native language of both teachers and students) and analyzed the structure of these switches in terms of where they happen, within or between the units, looking closely at the structure of the switching parts and dividing them into several types in terms of the structural level. In the above sections, we focused on the nature and frequency of code-switching in our data. The corpus of this study includes all the cases of code-switching used by the informants (teachers and students). We have first approached the frequency of the switches at word, phrase, clause, and sentence levels to describe the overall code-switching pattern. In presenting quantitative aspects of switched word classes, a major part of these sections has been taken up with the description of switching word classes. The result shows that there are different distributions of switched word classes in the data from those of other studies. We have also concentrated on code-switching at the clause level. At last, we have discussed the contrasting properties of Chinese and English word classes, and described the structural properties of teachers' code-switching.

In terms of switches at the word (or phrase) level, we have analyzed the structure of code-switching and found some structure patterns in teachers CS. It was shown that single words are frequently switched in teacher's talk, especially nouns, verbs, adverbs, different syntactic word classes switching at a different rate. Switches of nouns are the most common. By contrast, some others (pronouns, prepositions and conjunctions) occur much less, even no single switch of article is found. According to Meyers-Scotton's MLF model, one word or phrase can be inserted in the matrix language if it cannot violate the morpheme order from the ML. Another possible explanation can be that single words such as those exist in both languages, and more importantly, are considered as categorical equivalent (Muysken, 1995). Muysken proposes that one of the important conditions for switching of single words is that the switched word classes are considered as equivalents by speakers of the involved languages. Focusing on the structural equivalence and contrast of word classes in both languages, it has been demonstrated that English switched word classes are patterned like the structure of the Chinese counterparts. Given the surface similarities between the word order in both languages, most switches occur at points around which the word order of the two languages corresponds. The categorical and word order equivalence between the two languages plays a critical role in teachers' code-switching.

In terms of switches at the clause level, the results reveal that the most of switches (62.72 percent of the total switches.) was at the clause level. Switches between two utterance units (clauses or sentences) of different languages are many cases concerning repeated utterances which are originally spoken in English or Chinese. In other words, these switches between two utterance units constitute more or less repetition of what is said in the other language. This is one of the features of teacher talk style that is characterized by frequent repetition of linguistic elements from immediately preceding utterances as emphatic tie-ins with what follows. We argue that it can be interpreted in different ways in the studies of functions of code-switching by some researchers. The examples in the data, therefore, can be explained by assuming that the teachers want to clarify their message by repeating what is said in the other language or that the code-switching serves the functions of message repetition (Gumperz, 1982). Switching between utterance units occurs in a wide variety of grammatical positions. Examination of these switches between units reveals that none of the switched clauses violate the syntactic structure of both languages. This may be due to the fact that Chinese and English have a similar word order, and there is more or less equivalence of word classes between both languages. This may support Muysken's notion of 'categorical equivalence' (Muysken, 1991) which suggests that a specific word class is only switchable if it exists in both languages, and the Equivalence Constraint formalized by Sankoff and Polack (1981).

With the respect of the structure properties of teachers' code-switching, we have first examined the structural features of the switched word classes of English and Chinese, and then analyzed the structural features of code-switching based on MLF model, and finally compared them with those of other studies.

That all switched English nouns are in singular form may be attributed to the fact that in Chinese as a matrix language, all the switched English nouns take no plural forms, conforming to the Chinese grammar. However, from the point of view of English, these switches appear to violate grammatical requirements for the speaker, e.g. no explicitly expressed number (singular or plural). In fact, there are no such grammatical requirements in Chinese because the expression of such grammatical categories is only governed by discourse context. Because we consider the language which has the verb as the matrix language in intra-unit utterances, we do not find English verbs as main verbs in matrix Chinese language. Most of the switched English verbs, just like nouns, are only inserted as items in Chinese matrix utterances.

Whether the switched words (phrases) are Chinese or English, they do not violate the grammar of the matrix language when they are inserted. In other words, either of the languages can be taken as a ML and supply the grammatical framework, and when there is a switch, elements from the embedded language get inserted into that framework. With respect to the structural equivalence and contrast of English and Chinese nouns, the Chinese speaker can freely select lexical items from English in the place of Chinese matrix or vice versa, without violation of the grammar of either language.

5. Conclusion

As the major parts of speech in English and Chinese languages are roughly the same, such as nouns, verbs, adjectives, etc., a single word in one language is more likely to be switched into a single word in another language. According to Muysken (1995), an important condition for the switching of a single class of speech is that the speaker regards the switching of the two classes of speech as equivalent, that is, category equivalent. From the comparison of the structural equivalence and the lexical category of the two languages, the structural patterns of the transformed English word classes are similar to those of Chinese. Because English and Chinese have similarities in the surface of the word order, most of the conversions take place in the corresponding word order points of the two languages. From the data point of view, the frequency of different syntactical word categories is different. For example, the conversion of nouns is the most common and the proportion is the highest. In contrast, the conversion of articles in English did not appear in this corpus. From the results of the analysis above, the conversion of syntactical words is closely related to the structural equivalence and contrast of the two languages. The likelihood of the same part-of-speech switching is high, and the likelihood of different word-class switching is small, such as the English article. The equivalence between word category and word order in two languages is an important factor that causes code switching.

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