

# ASPECTS OF SPEECH ERRORS IN CHINESE

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## 1.0 INTRODUCTION

Recent psycholinguistic studies have seen the emergence of a large body of literature discussing speech errors found in the course of normal speech production. Speech production, which involves the process of how a speaker translates information and intention into the language format in a given language, is an active processing procedure of the human mind and is strictly governed by phonological, syntactic and semantic rules. Speech errors are likely to occur when these rules are misapplied. Therefore, speech errors are used as evidence to illustrate the working system of the human mind and the rules that make the system work. Speech errors, a common phenomenon in normal speech, are defined by Sturtevant as an unintentional linguistic innovation, and by Boomer & Laver as "involuntary deviation in performance from the speaker's current phonological, grammatical or lexical intention (see Fromkin 1971, 1988). Whatever the real nature of speech errors might be, the study of speech errors has attracted the attention of scholars across the world throughout history. Apart from the fact that speech errors have been used as a source of humor, serious publications from the Arabic *Errors of the Populace* eleven centuries ago (see Fromkin 1988) to modern works on Spoonerism (e.g., Potter 1980) and "Freudian slips" (e.g., Motley 1985) have hypothesized different theories to account for the speech errors that occur in different shapes and in different languages. Speech errors may appear anomalous, but they do not randomly occur. As Fromkin (1971) points out, these anomalous utterances are really non-anomalous in nature. They in fact fall into a limited set of categories across different languages. This paper discusses the nature of different types of speech errors that are commonly found in Mandarin Chinese and the possible factors that cause these errors.<sup>1</sup> I hope that this initial work will lead to more detailed and systematic research on the topic of Chinese speech error analysis.

## 2.0 SPEECH ERROR ANALYSIS IN CHINESE

Since speech errors in general can indicate the internal mechanisms of speech production as well as the format of language structure, it is reasonable to assume that speech errors in Chinese can also reflect the common properties of language in general as well as the specific characteristics of Chinese. Like other languages (e.g., English), Mandarin Chinese has its own linguistic units that form the framework of speech according to certain syntactical, phonological, morphological and semantic rules. These rules interact with each other in such a way that speakers of Chinese, with proper application of these rules, make well-formed utterances in communication. Misapplication of these rules, on the other hand, will result in speech errors. These errors can in turn give the insight into how Chinese speech is structured and how the different rules that structure the speech are at work. Speech errors in Chinese occur in very unexpected forms, and quite often, these utterances in obvious violation of the commonly accepted linguistic rules can provoke laughter. Thus, speakers and writers in China have long been using such errors intentionally as a source of humour. However, speech errors were not taken seriously as a subject of study in China

until very recently. I believe that although speech errors appear in different languages and in different shapes, they can be categorized in similar ways to those described by Fromkin (1971, 1973), since the universality of linguistic rules is what linguists suppose and try to prove. A careful analysis of my Chinese error data shows that Fromkin's classification scheme for speech errors can largely account for speech errors in Chinese.

## 2.1. Substitution

Substitution is a type of speech error in which a speaker plans to say one thing, and somehow something else appears in the speech output. In this type of error, the target utterance (T) and the actual utterance (A) bear strong phonological similarities (similar in sound), and they may also involve semantic relations between the A and T utterances (related in meaning). The speech environment (contextual factors) and the speaker's mental status (psychological factors) also play a role in causing an error. T and A can differ by a word, a syllable, or even by only one phonetic feature (see Fromkin 1971). The following Chinese examples illustrate that speech errors of such a type fall into the above description.<sup>2</sup>

- (1) a. bizi --> pizi  
       'nose'       'leather'
- b. xia pao le --> xia pa le  
           'scared away'
- c. wo ma --> wo mao  
           'my mother'
- d. shui kai le --> huo kai le  
           'the water is boiling' --> 'the fire is boiling'
- e. dianshi jia --> dianshi tai  
           'TV stand'       'TV station'
- f. tu dou --> xihongshi  
           'potato'       'tomato'

The first three examples in (1) are phonological substitutions. In (a), the initial segments of T [b] and A [p] differ only by one feature, the feature of [voiced] or [aspirated],<sup>3</sup> other features of the T and A utterances being unchanged. This suggests that [b] and [p] are paired up phonemically and restored next to each other in the lexicon. The T utterance [pao] in (b) has dropped part of its vowel segment [o], resulting in the error [pa]. This can be considered to be segment omission. In contrast, the error in (c) involves segment addition, adding [o] to the T utterance [ma], making it the erroneous [mao]. (d) and (e) in (10) are obviously semantic substitution errors. This is because in (d), *huo* 'fire' and *shui* 'water' are closely related in the event of "boiling water". while in (e), *dianshi tai* 'TV station' and *dianshi jia* 'TV stand' are related to the object of a TV set. Example (f) shows that T and A utterances both belong to the same "vegetable" category. This is in many ways similar to the analysis on English errors discussed in the literature, such as *spoon* for *fork*, *tree* for *flower*. As Fromkin (1973) explains, the involuntary substitution of the A word for the intended T word shows that the meaning of a word is not an indissoluble whole. The semantic rep-

resentation of a word is a composite of hierarchically ordered semantic features. This is why T and A words are often related one way or the other. This kind of relatedness takes place at different levels (feature, phoneme, syllable and word levels) and on different tiers (e.g., phonological, semantic tiers). Such an analysis clearly explains the data shown above: (a) is an error at the feature level of the phonological tier; (f) is an error at the word level of the semantic tier, and so on. This hierarchical structure of the speech production mechanism is built on crosslinguistic properties as well as language-specific characteristics. There are contextual substitution errors which involve not only the context which the speaker is in, but also the linguistic and cultural background of the speaker. For example, *gaizhang* and *qianzi* in Chinese both mean "to sign", but the former is typically a Chinese tradition in that it literally means "to sign with one's seal," while the latter, "to sign with a pen," describes the signing event that is more practiced in the west. These two words might be stored next to each other in the lexicon of a speaker and are selected for use according to the context. I once caught an error involving these two related words.

- (2) xuyao ta gaizh-.....qianzi  
'(We) need her to seal... to sign (the document)'

Although the speaker corrected her error immediately after she realized that Western people (in the speech context) usually sign with a pen (but not a seal), the unfinished utterance *gaizhang* was obvious enough to show her temporary confusion in the speech production process, and it is her knowledge of the cultural difference that made her adjusted utterance more meaningful. In general, substitution errors involve phonological, semantic as well as contextual relations between the T and A utterances. They show a structured internal mechanism for speech production with speech units well organized at different levels for selection to form well-formed speech.

## 2.2. Anticipation

As the very word indicates, the anticipation type of speech error refers to the anticipation of a speech unit (a phonemic feature, a phoneme, a syllable or a word) that should or is expected to occur later in an utterance, resulting in the substitution of one speech unit by another one that should (or is expected to) occur later, other units remaining unchanged. Such errors usually involve the involuntary forwarding of the anticipated segment across a syllable, one or several words, or even across a sentence. Also, apart from the phonological factors that are involved in the anticipation errors, there are also semantic factors that cause the occurrence of errors of this type. The following Chinese examples will show the "anticipating" nature of such speech errors.

- (3) a. chun qiu da meng --> qun qiu da meng  
'spring-autumn big dream'
- b. you zi you wei --> zi zi you wei  
'with taste and flavor'
- c. chun chun yu dong --> chong chong yu dong  
'plan to act with an ill-intention'

d. Sima Guang za gang --> Sima Gang za gang  
'Sima Guang broke the jar'

e. ni xi kuaizi le ma? --> ni chi kuaizi le ma?  
'Did you wash chopsticks?' 'Did you eat chopsticks?'

Although the erroneous utterances in the above examples are not well-formed, or they may be considered as nonsense in a certain sense, they can still be understood in their respective contexts. In (a), the consonant [q] in the second syllable *qiu* 'autumn' is anticipated and is therefore forwarded to the first syllable, replacing [ch] of *chun* 'spring', resulting in a non-existing lexical item *qun*.<sup>4</sup> In (b) the entire syllable *zi* is anticipated and is thus fronted to replace *you*, resulting in a reduplication utterance *zi zi*. Example (c) shows anticipation of only the feature [back]. In Mandarin Chinese, the only two consonants that can occur at syllable-final position are the dental nasal [n] ([-back]) and the velar nasal [ŋ] ([+back]). Despite the spelling of *chong* (whose vowel should be phonetically represented as [u]), the only difference between *chun* and *chong* is the feature [back] of the syllable-final nasal. It is this particular feature that is anticipated in (c), other features (including the tone) being unchanged. The same kind of feature anticipation also happens to (d), where the unrounded velar stop [g] of the last syllable [gang] 'jar' is forwarded to the initial position of the second syllable *guang*, replacing the rounded *gu* of *guang* (which should be phonetically represented as [g<sup>w</sup>]). The anticipation error in (e) is of a semantic nature. I caught the speaker making such an error before I asked what she had intended to say. The T utterance *xi* 'wash' and the A utterance *chi* 'eat' in this context are more related semantically than they do phonologically. That is, when the speaker is articulating one sentence, her mind is already processing the next sentence, relating the action of *xi* 'wash (chopsticks)' to its purpose of *chi* 'eating'. Speech errors of the anticipation type indicate that the human mind processes sentence organization for speech production at a much faster speed than the speech organ can articulate, and this advanced process may influence the actual production of an intended utterance.

### 2.3. Perseveration

Speech errors of the perseveration type involve the carrying-onward of a segment, a syllable, or even a whole word in an utterance. Like perseveration errors in English, such as "give the boy --> give the goy", a segment of a Chinese utterance can also be carried forward to a later position in the utterance, forcing the segment at this later position to change its features. This segment can be carried across a syllable, a word, or even a sentence, as can be seen in the following examples.

(4) a. ta shoude pi bao gu --> ta shoude pi pao gu  
'He is thin to the bones.'

b. fen hong fenghuang --> fen hong hongfang  
'pink phoenix'

c. dao jintian zaochen --> dao jintian daochen  
'up to this morning'

d. shi shi shi, si shi si. --> shi shi shi, si si si.  
'10 is 10, 4 is 4.'

e. ta mai le yiping laochou. huijia yi chi tai xian -->  
ta mai le yiping laochou. huijia yi chou tai xian

'He bought a bottle of soya sauce. (When he) got home  
to taste it, (he found it) too salty'

Examples in (4) show perseveration of different linguistic units. In (a), the feature of [-voice] (or [+aspirated] to some linguists) of the segment [p] in *pi* 'skin' is carried forward across one syllable to the position of [b] in *bao* 'cover', causing the syllable to become [pao]. In (b), the second syllable *hong* 'red' is carried to the next syllable, replacing the third syllable *feng* entirely. Furthermore, the initial segment of the third syllable [f] is further carried to the next syllable, causing the initial segment [h<sup>w</sup>] of *huang* to be replaced by [f]. Therefore, a double perseveration in a single utterance resulted in the change of the last two syllables from *fenghuang* to *hongfang*. The examples of (a) and (b) involve a perseveration error across just one syllable, but a perseveration error can also occur across words (more than one syllable). In (c), the syllable-initial segment [d] of the first syllable *dao* is carried across an entire word *jintian* 'today' and is then located at the syllable-initial position of the fourth syllable *zao*, causing it to become *dao*. Example (d) is part of a Chinese tongue twister which is similar to the English "she sells seashells on the seashore --> she shells seasells on the seashore" (see Kupin 1982). If [sh] and [s] are termed A and B, the T sentence of the English tongue twister has a pattern of AB BA BA, which is changed to an AA BB BB pattern due to the perseveration process. Similarly, the Chinese example in (d) has a pattern of AAA BAB which is changed into AAA BBB. In this particular example, the perseverated speech unit is not just the feature, but the entire sound pattern. In (e), the perseverated segment [ou] in *laochou* 'a brand of soya sauce' is carried all the way to the next sentence. All these seem to suggest that the distance between the the landing and the original positions of a "persevering" segment can be across syllables, across words, or even across sentences. The "persevering" speech unit can be a phonemic feature, a syllable or a word.

#### 2.4. Metatheses and Blends

Metathesis, also called Spoonerism, exchange or transposition, is a type of speech error which involves a switch in the linear order of the intended speech units. Such errors as "wasted a whole term --> tasted a whole worm" (see Fromkin 1973) made Mr. Spooner<sup>5</sup> well known to the linguistic world with his special type of errors in language production. The reversal of the two elements involved in such errors can be between two phonemic segments, syllables, and even words. All these can be found in Chinese speech errors, as illustrated in the following.

(5) a. sishi --> shisi  
'forty'

b. chi putao bu tu putao pi --> chi putao bu tu pitao pu  
'eat grapes without spitting out the peels'

c. zhongguo renmin yinhang --> zhongguo yinmin renhang  
'China People's Bank'

d. shou chong ruo jing --> shou jing ruo chong  
'feel too much honoured'

e. xian chuan yifu zai kai men --> xian chuan men zai hai yifu  
'put on clothes before opening the door'

It is clear that, in the above examples, [sh] and [s] in (a) have exchanged the feature [anterior], it is therefore a phonemic feature metathesis. The two vowels in (b), i.e., [u] in *putao* 'grape' and [i] in *pi* 'peel', have methathesized, resulting in the exchange of vowel segments in two different syllables. Examples (c) and (d) involve whole syllable<sup>6</sup> exchange (e.g., [ren] of *renmin* 'people' vs. [yin] of *yinhang* 'bank'). Example (e) shows the metathesis of whole phrases (*chun yifu* 'to put on clothes' vs. *kai men* 'to open the door').

Note that in the above examples, the A utterances are mostly ill-formed semantically, that is, the metathesized sentences can be quite strange and meaningless. This is because the metathesized segments usually do not belong to the same semantic category. Phonological exchanges will also result in the change of meaning of the words involved. However, there is one kind of metathesis that does not make any difference between T and A utterances. Consider the following metathesis error.

(6) a. ru chi ru zui --> ru zui ru chi  
'like crazy, like drunk'

b. wan zi qian hong --> qian hong wan zi  
'very colorful'

These utterances are both grammatically and semantically well-formed whether or not metathesis occurs. It is therefore difficult to tell if a speaker is making an error in her speech. I recorded the errors in (6) when the speaker was reading the written T sentence while producing the A sentence. It seems that the speaker's knowledge of the variable grammatical structure of these sentences can sometimes influence the normal speech production under such circumstances.

In some Chinese proverbs such as (5d), the meaning of each monosyllabic word is so precisely fixed within the grammatical domain that an exchange in word position will make the utterance totally unacceptable. In general, these proverbs consist of a fixed number of words and people are so familiar with them that it is more likely that a word switches with only other words in the same phrase, but not outside the fixed set. This is a special characteristic of Chinese errors which may not be found in errors in languages such as English. Another point that should also be made clear here is that, unlike English, in which consonant clusters form natural phonological units, Mandarin Chinese does not have consonant clusters. Therefore, errors of any type involving consonant clusters do not exist in Chinese, at least not in my data.

As discussed above, metatheses or exchanges occur not only at phonemic or syllabic level, but at the word level as well. Garrett (1980) claims that if words are exchanged, they are usually some distance apart and of the same part of speech, but if sounds are exchanged, they tend to be close together and are between different parts of speech. Thus, it appears that the speech plan for words is earlier in the planning sequence than the plan for sounds. Garrett's observation may not prove totally true in Chinese speech errors. The exchanged words in the following examples do not belong to the same part of speech.

(7) wo jidong de hua dou buhui shuo le --> wo jidong de shuo dou buhui hua le  
'I am too excited to say a word'

(8) wode fei dou yao qi zhale --> wode qi dou yao fei zhale  
'My lung is angered to the extent of explosion'

In the above examples, the exchanged words in each sentence are not of the same part of speech (*shuo* 'say' is a verb and *hua* 'words' is a noun in (7); *qi* 'to anger' is a verb and *fei* 'lung' is a noun in (8)). This is certainly contradictory to Garrett's claim. A possible explanation for this kind of exception would be that most monosyllable "sounds" can be morphologically an independent word. If metathesis happens between such monosyllable words, it could just be regarded as "sound exchange" which does not "require" the identicalness of part of speech. This explanation also suggests that there are many different types of exchanges, and that the speech plan is quite versatile, capable of incorporating information from many levels (see Paivio & Pegg 1981).

Chinese speech errors can also occur in the form of blends. As Fromkin (1971) describes, blends occur in which non-existent words are produced as the result of composites of two words with similar semantic features. This is true in languages like English, such as *switch/changed* --> \**swindged* (see Fromkin 1971). In Chinese blends, on the other hand, an existing word can be generated with composites of two words. Although the blended word can still be meaningful, it is usually totally different from what is targeted. The following examples from my data illustrate the point.

- (9) a. bāozi/jiǎozi --> biǎozi  
'Chinese dumplings' 'prostitute'
- b. shengyiren/shangren --> sheng ren  
'businessman' 'stranger'
- c. jiaowang/jiechu --> \*jiaochu  
'interaction'
- d. zucheng/xingcheng --> \*zuxing  
'to form'

As shown in (9a), the speaker has blended [b] of [baozi] and [iao] of [jiaozi], resulting in the blend error of [biaozi]. (9b) shows that the speaker has blended the first syllable of one word with the last syllable of another, resulting in a non-matching combination. On the other hand, the blends in (c) and (d) are by no means comprehensible and thus cannot be accepted. But these examples show one thing in agreement with Fromkin's assumption that the two words to be blended have the same semantic features. For example, both *shangren* and *shengyiren* mean more or less the same thing: 'business person', the same is true with *jiaowang* and *jiechu*, both of which have the meaning of 'to interact with...'. Speech errors of the blend type in Chinese show that they bring together parts of two different lexical terms within the same semantic category. These blended parts can be either parts of a syllable or parts of a word. The result of such blending can be a non-existing lexical item or an item that does not fit into the speech context.

## 2.5. Speech Errors in Stress and Tones

Speech errors can also appear in the form of stress and tone misplacement. As Cutler (1980) argues, a correctly produced sentence involves the successful imposition of suprasegmental features at several points including the assignment of primary lexical stress to the correct syllable of polysyllabic words and the correct placement of stress within a phrase, a clause or a sentence in a language like English. In addition, the correct speech should also involve the correct placement of tone in a tone language like Chinese. In real speech, however, errors arise at each of the above decision points. And, like errors of other kinds, stress/tone errors do not just occur at random, and there is a certain degree of detectability. Consider the following English examples:

- (10) a. I put things in that abstráct that I can't justify.  
(T: ábstract)
- b. You are in a real advántag-- advantágeous position.
- c. In his life, there seems to be ambíguty.  
(T: ambigúity)

In the above examples, (10a) shows an obvious correlation between the error and the target word: same spelling, different stress positions (hence different parts of speech, N. vs V.). In (b), the erroneous stress has been detected and the error corrected before the utterance is complete. However, it is still clear that the speaker has had the word "advantage" in mind while planning to produce "advantageous". The stress shift in (c) appears to be the result of the error of syllable omission, which still shows "ambiguous" as the underlying word in the speaker's plan. In general, the location of the misplaced stress in these examples appears to be not at all random, and they seem to imply that stress misplacement in each case suggests another existing word, which is closely related to the target word in both form and content (See Cutler 1980). This in turn seems to support the assumption that lexical items in the mental lexicon are stored in groups of roots and their different derivatives. Errors in stress and intonation over phrases and sentences are quite common in spoken English (See Fromkin 1980).

Mandarin Chinese is a tone language in which each morpheme consists of a single syllable, and tone is used to contrast individual lexical items. The dictionary entry of each morpheme must specify which of the four tones it has, namely: Tone 1 (ˊ) high level, Tone 2 (ˊˊ) high rising, Tone 3 (ˇ) low dipping and Tone 4 (ˋ) high falling (see Chao 1968 among others). Tone in Chinese is just like any other phonemic feature in the language, and it groups and differentiates lexical items both semantically and phonologically. A tone error in spoken Chinese, like the stress error in English, may also suggest the relationship between the target utterance and the actual utterance in speech planning. The following examples from my data show how speech errors in Chinese are caused by tone difference.

- (11) a. wǒ yá téng/tóng --> ...tóng  
'I have a toothache'
- b. fěnhóng fèng huáng -->  
fén hǒng fèng huáng  
'pink phoenix'



- c. *dá(rǎo)...., dǎduàn nǐ le*  
 '(sorry) to stop you (from thinking)'

To a native Chinese speaker, the erroneous utterance *tóng* in (11a) is certainly improper in such a context. But it seems to show that the speaker had two semantically related words -- *téng* and *tòng*, both meaning 'painful' -- in the selection list while planning and, by mistake, has used the sound of one choice and the tone of the other. This could also be considered a blend between a vowel and a tone. In (11b), it is obvious that the tones of the first two syllables have switched their positions, resulting in the error of tone metathesis. A possible explanation for this error could be that the speaker has in mind another utterance *hóng fěn* 'reddish pink' while intending to produce *fěn hóng* 'pinkish red', and the tone of the former affected the production of the latter, and thus the error occurred. The speaker of (11c) was hesitating between *dǎ rǎo* 'disturb' and *dǎ duàn* 'cut short'. According to Chinese phonological rules, a Tone 3 syllable becomes Tone 2 when followed by another Tone 3 syllable, hence [dǎ] in *dǎ rǎo* 'disturb' should be pronounced with Tone 2 [dá]. But once the first syllable of *dǎ rǎo* 'disturb' is produced, the speaker realized that what she actually wanted was the word *dǎ duàn* 'cut short', and she immediately switched to her correct choice. In other words, the same syllable [da] in different words can have different tones, and this difference can influence people's normal speech and cause speech errors in tone.

## 2.6. Speech Errors and Chinese Syntactic Structure

Although the theory of Universal Grammar believes that languages are the same everywhere in the world in terms of their very basic structures which can be captured within a set of principles, the language-specific syntactic differences between languages (e.g., English and Chinese) are still obvious. Such differences can also be reflected in the speech errors in respective languages. As Fromkin (1988) points out, the most commonly occurring speech errors are those which produce grammatically ill-formed sentences. These errors may result from sentence blends or wrong rule application. Fay (1980) describes such errors (e.g., *Why do you be an oaf sometimes?*) as "transformational errors". In Fay's analysis, a speaker has to follow a set of transformational rules to produce grammatically well-formed sentences. A wrong step in the application of these ordered rules will lead to syntactic speech errors. Similarly, Chinese speech errors can also mirror the syntactic structure of the Chinese language.

One of the major differences between English and Chinese grammatical structures is that Chinese has a topic-comment sentence structure (Li & Thompson 1981) while English does not. Also, Chinese is a pro-drop language in which a pronoun can be dropped from either a subject position or an object position in the proper context, while English requires all pronouns to be fully indicated. For example, a Chinese sentence like (12) can be uttered in the form of either (13) or (14) while the meaning and the wellformedness remain unchanged.

- (12) *ni chi fan le ma?*  
       you eat meal perf. Q  
       'Have you eaten your meal?'
- (13) *EC chi fan le ma?*  
       eat meal perf. Q  
       'Have you eaten your meal?'

- (14) fan, EC chi le ma?  
 meal EC eat perf. Q  
 'Have you eaten your meal?'

The subject pronoun *ni* 'you' is dropped from its position in (13), leaving an empty category (EC) in the gap, which results in a "subjectless" sentence; and (14) is the topic-comment structure with *fan* 'meal' as the topic and *EC chi le ma* as a subjectless comment. These two sentences are both well-formed and they represent different syntactic structures in Chinese which are distinct from those of languages such as English. However, it is this structural variation that may cause speech errors of the syntactic type. The following example from my data shows an erroneous combination of the two structures.

- (15) fan, EC chi le ma? / EC chi fan le ma? --> \*fan, chi fan le ma?  
 'Have you eaten your meal?'

Obviously the error is caused by misapplication of grammatical rules. If it is assumed that a Chinese sentence like (14) is derived through different steps by different rules, the transformation could be something like the following.

- |                    |                          |
|--------------------|--------------------------|
| (16) ni chi fan le | Normal sentence order    |
| you eat meal per.  | (Underlying form)        |
| ni chi fan le ma?  | Questionization          |
| fan, ni chi le ma? | Topicalization           |
| fan, EC chi le ma? | Subject pronoun dropping |

If this assumption is correct, it can be further assumed that the erroneous (15) is the result of misapplication of one of the above mentioned rules. In a Chinese sentence, when a word or constituent is topicalized, it is moved from its original position to the beginning of the sentence, leaving a gap behind. This rule of topicalization is misapplied, causing (15) to occur, as shown below.

- |                         |                             |
|-------------------------|-----------------------------|
| (17) ni chi fan le      | Normal sentence order       |
| you eat meal per.       | (Underlying form)           |
| ni chi fan le ma?       | Questioning                 |
| *fan, ni chi fan le ma? | Topicalization (misapplied) |
| fan, EC chi fan le ma?  | Subject pronoun dropping    |

Comparing the above examples with the English syntactic errors discussed in the literature (see Fay 1980), it is clear that there are different syntactic rules to be applied to form grammatical sentences. These rules may be language specific and vary across languages, but misapplication of these rules will result in the same type of speech errors -- syntactic errors.

### 3.0 FURTHER DISCUSSION

It has been shown that speech errors in Chinese are in many ways similar to those found in English in terms of the basic structures of T and A utterances. Chinese speech errors, on the other hand, also show the linguistic characteristics not found in English (errors in tone, in syntactic structure, etc). One may suggest that English speakers will plan their speech in English when speaking, following the English linguistic rules, and Chinese speakers plan in Chinese, following the Chinese linguistic rules. One natural question that will arise is whether the knowledge of both languages will make English-Chinese bilinguals think in both languages simultaneously when speaking. From my own observation, one's knowledge of two languages seems to influence the normal speech in either language. It is possible that certain lexical items in one language are stored together with the corresponding items in the other language in the speaker's lexicon, provided that these items of the two different languages are of the same grammatical category. For example, speech production in one language can be greatly influenced by one's knowledge of the syntactic structure of another language. Consider the following example.

- (18) wo kaiche song ni qu xuexiao --> wo kai ni qu xuexiao  
'I will drive you to school'

What (18) shows may be considered as an omission of a few words, but a careful analysis will prove that it is the result of misapplication of English grammatical rules to the production of the Chinese sentence. The speaker took the Chinese verb *kai* 'to drive' (which subcategorizes for a means of transportation as its direct object in this case) as the equivalent to the English verb *drive* (which, in this case, implies both the use of the vehicle and the service to the passenger). The erroneous A utterance of (18) can be literally translated as "I will go to school by driving you (as a means of transportation)". Such crosslinguistic interference seems to suggest that certain lexical items in one language are stored together with the corresponding items in another language in the speaker's lexicon. These items in the two different languages may be of the same grammatical category, but are selected for speech production through different grammatical rules in their respective languages.

Phonological similarities between two items in one language may also influence the the production of the corresponding items in another language. For example, the Chinese terms *tudou* 'potato' and *xihongshi* 'tomato' in (1f) have no phonological similarity and thus cannot be phonologically related. It is hard to explain why of all the vegetables only *xihongshi* is selected to replace *tudou* if they are just semantically related. However, if we look at the phonological representation of their English equivalents (i.e., *potato* and *tomato*, which bear strong phonological similarity), it is clear that the speech error is more likely to be caused by the interrelationship between T and A at the level of an interfering language (English, in this case). Therefore, it can be suggested that speech errors reflect the relationship between T and A not only within one language (L1), but also in another language (L2) that the speaker is familiar with. Another example from my data further shows the interference of L2 on L1.

- (19) jiezhi fang de tai duo --> jiezhi pu de tai duo  
'(I) put too much lubricant'

The difference between T and A in (19) is with the verb *fang* 'to put' which is replaced by the sound [pu] in the A utterance. There hardly seems to be any relation, either in sound or meaning,

between [fang] and [pu] in Chinese, but the recognition that [fang] in Chinese and [pu(t)] in English both are verbs that mean "to locate something somewhere" helps understand that the Chinese item *fang* is replaced by its English equivalent *put*, thus the error. This example clearly shows that one's knowledge of one language can influence the normal speech production of another language.

#### 4.0 SUMMARY

This paper has discussed speech errors of different kinds that occur in Chinese in comparison with those found in English, each showing certain aspects of the relation between the human mind and the human tongue. Speech production involves simultaneous planning at many levels. At the lowest level are expressive elements, or phonetic features, and, at the highest level is the speaker's idea or intention that determines what to produce. The idea is realized or expressed through the elements which are organized in a particular order. This multi-leveled speech organization incorporates articulatory features into higher level units such as words, phrases and sentences. Examples of speech errors in this paper show that speech is organized on many levels, and some of the units of speech that will appear later in the speech stream are cognitively available earlier on, even to the extent of interfering or competing with the intended units (See Paivio and Begg, 1981). Speech errors like anticipation and perseveration also show that speech is not simply a one-word-at-a-time plodding activity, but rather, the mind skips ahead, sometimes well in advance of the tongue.

Speech errors in different languages may appear in different shapes. Errors in English can occur as misplacement of consonant clusters and stress while in a tone language like Mandarin Chinese, speech errors can involve shifts or exchanges of syllables and tones. However, most of the types of speech errors are shared by both languages. Bilingual speakers tend to apply the linguistic rules of both languages in the course of speech production, and it is likely that the two sets interfere with each other. It could therefore be concluded that speech errors in spoken language in general do not occur at random, and they show that people think and plan before they start talking. The plan is not at one single level, but rather at the levels of basic phonological features, such as the placement of vowels, consonants, consonant clusters, stress and tones, as well as at higher levels such as words, phrases and sentences. Different types of speech errors also show, in a much broader sense, that the human mind, like a sophisticated computer, but much more complex, works in a multi-dimensional and multi-level interaction in the planning and organizing of speech production.

#### NOTES

- 1 I owe my small data collection to my wife and other Chinese speaking friends who have carefully recorded the speech errors that they themselves have experienced or heard other people make.
- 2 The Chinese examples in this paper are given in the Romanized *hanyu pinyin* transcription used in the People's Republic of China. Tone markers are not applied to the examples unless speech errors in Chinese tones are discussed.
- 3 Many Chinese linguists argue that in Mandarin Chinese, what some call [b], [d], [g] are in fact unaspirated [p], [t], [k] respectively (see Chao 1968).

- 4 In a Mandarin Chinese dictionary, the phonetic representation of [qun] carries lexical meaning only when it has a second tone, but not with any other tones (unless in old written Chinese). Speech errors in tone will be discussed in a later section.
- 5 The Reverend Dr. William Archibald Spooner (1844-1930) was a lecturer, tutor, dean and Warden of New College, Oxford. In spite of being a good administrator as well as a scholar by any standard, Spooner is well known for his special type of speech errors in both oral and written forms which have attracted many researchers to the study of the mechanism of speech production. See Potter (1980) for a detailed introduction.
- 6 In Chinese, many words have just one syllable, and therefore syllable exchange sometimes can be regarded as word exchange.

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