

The Use of Sentence Final Particles in Cantonese-Speakers With Aphasia

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Aphasiology refers to the study of loss or impairment in language among brain injured patients. The use of SFP (sentence final particles) among Chinese speakers with aphasia is particularly vulnerable. This study aims to systematically investigate the use of SFP in a picture description task among 21 native Cantonese speakers with aphasia and 21 controls. It was found that speakers with aphasia generally used significantly fewer SFP than their normal counterparts. Specifically, subjects in the aphasic group, as compared to controls, tended to produce fewer SFP that indicated time or focus of the speech but more SFP that helped expression of stress or emotional feelings.

Keywords: aphasia, SFP (sentence final particles), Cantonese, Chinese

Introduction

Aphasiology refers to the study of loss or impairment in language among brain injured patients. Speakers with aphasia are often found to be suffering from disturbance of language function in terms of both reception and expression. Depending on its type, aphasia may manifest itself in various ways including difficulties in listening, reading, speaking, and writing.

In general, speakers with aphasia are classified into two major groups as fluent or non-fluent. Based on the performance of spontaneous speech, auditory comprehension, repetition, and naming, fluent aphasic speakers are further divided into various types. For example, fluent speakers can be classified as Anomic, Wernicke's, Conduction, or Transcortical Sensory aphasia. In particular, Anomic aphasia is the most common among all aphasic types. Anomic speakers have the most superior language performances among all speakers with aphasia in which some of them may have close to normal oral expression except a various degree of word finding difficulties. Comprehension and repetition of spoken language are preserved. Concerning Wernicke's aphasia, its distinctive feature lies on the emptiness of conversational speech. In most cases, the output contains acceptable grammatical structures, articulation, and prosody except that the output is too excessive such that it lacks of meaningful and substantive words. While individuals with Wernicke's aphasia can speak without effort until they are stopped by others, their naming, comprehension, and repetition of spoken language are disrupted. As for those with Conduction aphasia, the amount of their speech is far less than those of Wernicke's and

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contains more pauses and breaks, greatly due to word-finding difficulties. Their auditory comprehension is good but naming and repeating spoken language is impaired. Finally, speakers with Transcortical Sensory aphasia often produce paraphasic and echolalic conversation characterized by incorrect syntactic structures. While the ability to name objects and to comprehend spoken language in these patients is highly defective, the ability to repeat is good. As for non-fluent speakers, they can be classified as Broca's, Transcortical Motor, or Global aphasia. More specifically, Broca's aphasia is characterized by short phrases that are poorly articulated. The output content generally has a high deficiency of functors such that it mainly consists of nouns and verbs. Although the ability to understand verbal language is relatively intact, repetition and naming are highly impaired. Individuals with Transcortical Motor aphasia produce speech in great effort. The verbal output is usually characterized by agrammatism, over simplification, and repetition of short phrases. While naming ability is severely defected, understanding and repeating spoken language is relatively preserved. As for Global aphasia, the verbal output is always limited. Most of them cannot repeat nor name although some abilities in comprehending non-language communication are found. A more detailed description of each type of aphasia can be found in Benson (1979).

The issue of agrammatism in English-speakers with aphasia (e.g., Kean, 1985; Linebarger, 1997; Menn, Obler, Miceli, & O'Connor, 1990) as well as aphasic speakers of other languages with rich inflectional morphology (e.g., de Bleser & Luzzatti, 1997) has been widely investigated. Accounts of agrammatism, usually defined as the deletion or inappropriate substitution of grammatical morphemes from language, were generated. Given a lack of inflectional morphology in Chinese, one may find it difficult to apply these research findings to Chinese languages. This motivated Packard (1990) to investigate grammatical elements that are affected disrupted in Chinese patients with aphasia. In particular, two native Mandarin individuals with aphasia were engaged into a conversation with the examiners and were asked to describe the Cookie Theft picture from the BDAE (Boston Diagnostic Aphasia Examination) (Goodglass & Kaplan, 1993). The occurrences and distribution of morpheme errors in the language samples, including both functor and non-functor errors were calculated. In addition, the use of functors in aphasic speakers and their normal controls was compared. It was found that speakers with aphasia under-employed certain types of functors significantly, including pronouns, conjunctions, attribution markers, emphatic markers, and classifiers. According to the author, the under-employment of pronouns, conjunctions, and attribution markers was consistent to findings in corresponding English literature as these functors were often omitted by agrammatic speakers in other languages. The under-use of emphatic markers was due to their mere function of expressing importance or emphasis and thus these markers were grammatically extraneous. Concerning classifiers, their under-use was because of the fact that they, to some extent, contained semantic information modifying the nouns they specified and therefore were more difficult for speakers with aphasia.

Comparable studies in Cantonese have been put forth by Yiu (1995) who adopted the QPA (Quantitative Production Analysis) (Saffran, Berndt, & Schwartz, 1989), one of the most influential quantitative systems for analyzing aphasic production in English, to perform a quantitative analysis of sentence production in 30 Cantonese patients with aphasia. The same set of data was later subject to cluster analysis to objectively capture the disruption of morphology in these subjects (Yiu & Worrall, 1996a, 1996b, 1996c). In particular, two categories of functors, i.e., classifiers and SFP (sentence final particles), were examined as part of lexical content.

Three groups emerged including a fluent group and two non-fluent agrammatic groups. The fluent group did not show any significant lexical or morphological disruption, and the two agrammatic groups mainly differed in terms of severity of language impairment. The authors stressed that the use of SFP among speakers with aphasia was particularly vulnerable as reflected from the ratio of utterance particles to total number of utterances and the proportion of closed class words. However, the use, omission, and pattern of disruption of various SFP in aphasic speakers have not been explicitly investigated in these studies.

According to earlier studies of Cantonese linguistics (e.g., LI, SHI, MAI, & CHEN, 1995; Matthews & Yip, 1994), Cantonese is especially rich in particles. It is, therefore, important to carry out extensive studies of their pragmatic and semantic roles in the language. A number of Cantonese particles have been investigated in terms of their pragmatic functions, including aspect markers, such as “亲 (can1)¹, 住 (zyu6), 翻 (faan1), 埋 (maai4), 添 (tim1)” by ZHAN (1958), “晒 (sai1)” by Lee (1994) and TANG (1996a), “翻 (faan1)” by TANG (1996b), sentence initial particles “噏 (naa4)” by TANG (2002a), suffix “噏 (gam2)” by TANG (2003), etc.. However, one of them, namely the SFP, has not been fully studied. In fact, SFP is a unique feature in Cantonese in which there is no corresponding counterparts in English. These particles mainly serve various pragmatic functions, such as indicating speech act types or the source of knowledge of the speaker (evidentiality), and expressing the attitude or affection of the speaker toward what he or she is saying. Kwok (1984) had identified 30 SFP in Cantonese. Based on the pragmatic and semantic functions, Law (1990) had proposed a system to divide SFP into two major types, type 1 and 2. While type 1 SFP indicates time or focus of the speech, type 2 SFP is used when the speaker expresses stress or emotional feelings. Followings are some of the examples of these SFP (see Examples (1)-(2)):

Example (1) Type 1: SFP: 喇 (laa3), 啦 (la1), 囉 (lo1), 嚟 (lei4), 咋 (zaa3), 啫 (ze1), 嘅 (ge3), 㗎 (lei4 ge3)

Example (2) Type 2: SFP: 呀 (aa3), 㗎 (aa1), 吗 (maa3), 咩 (me1), 㗎 (wo2), 噃 (bo3), 㗎 (aa1 maa3)

To understand the proportion of use of SFP in various daily situations, Leung (1992) collected a corpus made up of language sample in 22 hours of radio and television programs in Hong Kong. He found that conditions in which SFP were used most frequently were daily conversations, talk shows, and dramas (62%-71%), followed by interviews and commentary shows (29%-33%). SFP were seldom used in news broadcasting (0%-6%). The author also found a higher tendency of using SFP in informal conversation than in other formal situation. To investigate the distribution of use of these two types of SFP in daily Cantonese, TANG (2002b) had collected 893 utterances from local radio programs. Sentences with type 1, type 2, and no SFP mentioned earlier were tallied. The results revealed an uneven distribution of use of Cantonese SFP. Half of the sentences in the corpus contained type 1 SFP. Around 33% and 17% of the sentences contained no and type 2 SFP, respectively. For type 1 SFP, the author also listed the top eight most frequently used particles as follow: 囉 (lo1), 啦 (laa1), 㗎 (gaa3), 嘅 (gaa3), 㗎 (laak3), 呢 (le1), 嘅 (ge2), and 喇 (laa3).

In summary, a number of studies have been carried out to examine the use of various particles in Cantonese by native speakers in Hong Kong. In contrast, investigation of particle usage in the aphasic population has been

¹ In this paper, Cantonese examples are transcribed using the romanization system and jyutping which was developed by the Linguistic Society of Hong Kong

very limited, among which the disruption of SFP in aphasic speech have been found. According to Matthews and Yip (1994), the meaning of a sentence can become incomplete if one or more SFP is omitted. From the point of view of speech therapists, who provide assessment and treatment of language impairment to speakers with aphasia, understanding the use of SFP among individuals with aphasia will be particularly important in helping them to assess the language functioning of their clients and to devise appropriate intervention program. The aim of this paper is thus to investigate the use and disruption of SFP among speakers with aphasia in Hong Kong by comparing to their normal counterparts.

Methods

Subjects

Twelve male and nine female native Cantonese speakers with aphasia were recruited through an internal clinic in the Division of Speech and Hearing Sciences of the University of Hong Kong, the CRN (Community Rehabilitation Network), and other hospital settings in Hong Kong. The patients had suffered either a brain injury or a single unilateral cerebrovascular accident no less than six months post-onset before the first test session. They included nine Anomic, two Wernicke's, two Conduction, one Transcortical Sensory, six Transcortical Motor, and one Broca's aphasic patients according to the Cantonese version of the Western Aphasia Battery (or CAB (Cantonese Aphasia Battery); Yiu, 1992). Note that the CAB is currently the only published formal assessment tool for Cantonese speakers that provides an estimate of the severity of aphasia (i.e., Aphasia Quotient). Their ages and education levels ranged between 28 and 76 years, and between seven and 19 years, respectively. Twenty-one normal speakers who were matched in gender, age, and education level with each of the speakers in the aphasic group were recruited to serve as controls. Background information of the participants with aphasia is provided in Table 1.

Table 1

Background Information on Patients With Aphasia

Subject	Gender	Age	Education	Aphasia type	Aphasia quotient (out of 100)	Etiology	Time post-onset (month)
Fluent							
A1-LaTK	M	60	Secondary 6	Anomic	85.0	CVA	43
A2-LoLM	F	37	Secondary 5	Anomic	78.2	TBI	62
A3-TaKY	M	59	Primary 5	Anomic	79.6	CVA	20
A4-HuSF	F	58	Secondary 5	Anomic	93.0	CVA	102
A5-LoWY	F	62	Primary 6	Anomic	88.9	CVA	7
A6-YuTL	M	51	Secondary 5	Anomic	93.8	CVA	25
A7-ChLW	F	75	Primary 6	Anomic	99.0	CVA	15
A8-NgMY	M	62	Primary 6	Anomic	91.6	CVA	19
A9-YaKY	F	67	Primary 6	Anomic	87.6	CVA	18
TS1-LaCL	M	71	Secondary 3	Transcortical Sensory	75.6	CVA	15
C1-ChOL	F	49	Secondary 3	Conduction	65.6	CVA	69
C2-NgW	M	76	Primary 3	Conduction	64.7	CVA	17
W1-LaKH	M	47	Secondary 5	Wernicke's	64.2	TBI	103
W2-YaSH	F	70	Secondary 3	Wernicke's	39.7	CVA	31

(Table 1 continued)

Subject	Gender	Age	Education	Aphasia type	Aphasia quotient (out of 100)	Etiology	Time post-onset (month)
Non-fluent							
TM1-ChSH	F	50	Primary 4	Transcortical Motor	74.3	CVA	67
TM2-HoSM	F	45	Secondary 5	Transcortical Motor	78.0	TBI	163
TM3-LiLM	M	28	Secondary 3	Transcortical Motor	63.6	AVM	118
TM4-ChWL	M	50	Secondary 2	Transcortical Motor	79.4	CVA	64
TM5-LeCK	M	52	Secondary 5	Transcortical Motor	57.8	CVA	8
TM5-YuKM	M	61	University 3	Transcortical Motor	74.9	CVA	21
B1-MoTK	M	38	Secondary 3	Broca's	50.8	TBI	102

Notes. CVA = cerebral vascular accident; TBI = traumatic brain injury; AVM = arteriovenous malformation.

Procedures

Data collection. Each of the subjects in the aphasic and normal groups was asked to describe a revised Cookie Theft picture depicting a kitchen in Hong Kong from the CLCM (Cantonese Linguistic Communication Measure) (Kong & Law, 2004). They were given a standard instruction “tell me everything you see happening in this picture”. Only general verbal cues or prompts, e.g., “what about here” or “what’s happening here” were given. The recording of speech samples began once the instruction had been given and ended when the subjects indicated that he/she had finished. The recordings were then transcribed orthographically for further analysis.

Data analysis. The total number of sentences in each speech sample (U) was first counted. A sentence was defined as a segment of words the speaker used to convey an idea without using a SFP for pausing. Given that some of the speakers with aphasia, especially those with non-fluent aphasia, had difficulties in producing complete sentences, some sentences might appear as broken words, i.e., some of the sentences in the sample could be as short as one content word with a pausing particle.

As for the analysis of SFP, the classification of two major types of SFP suggested by Law (1990) was adopted. To examine the diversity of SFP used, the number of different SFP used by the speakers was counted. The number of utterances with type 1 and 2 SFP as well as no SFP were then tallied. To reflect their percentage occurrence in both groups of speakers, the ratios of type 1 + type 2 SFP, type 1 SFP, type 2 SFP, and no SFP to U were further calculated.

Results

The total number of sentences in aphasic and normal speakers was 300 and 293, respectively. For type 1 SFP, while the normal speakers used eight different particles, including 呢 (le1), 啦 (la1), 囉 (lo1), 嘅 (ge3), 㗎 (gaa3), 㗎 (laak3), 㗎 (lei4 ge3), and 喇 (laa3), the aphasic speakers used seven of them except 嘅 (ge3). As for type 2 SFP, four particles, namely 呀 (aa3), 㗎 (aa1), 㗎 (wo2), and 㗎 (gaa3 wo2), appeared in the aphasic language sample. The normal group used another four type 2 particles on top of those used by the participants in the aphasic group, including 㗎 (gaa3 laak3), 㗎 (aa1 maa3), 啊 (o3), and 㗎 (aa3 wo2). Table 2 displays the individual percentage use of each SFP. In general, the normal group achieved a higher proportion of SFP to sentence ration (61.43%) than the aphasic group (47.34%).

Table 2

Use of SFP in a Picture Description Task in Speakers With and Without Aphasia

SFP	Speakers with aphasia		Normal controls	
Type 1 SFP	(%)		(%)	
呢 (le1)	19.33	(58/300)	25.94	(76/293)
啦 (la1)	6.33	(19/300)	10.58	(31/293)
囉 (lo1)	2.33	(7/300)	4.44	(13/293)
嘅 (ge3)	0.00	(0/300)	3.41	(10/293)
㗎 (gaa3)	1.00	(3/300)	1.37	(4/293)
㗎 (laak3)	1.00	(3/300)	1.37	(4/293)
㗎 (lei4 ge3)	0.33	(1/300)	1.02	(3/293)
喇 (laa3)	1.33	(4/300)	0.34	(1/293)
Sum:	31.67	(95/300)	48.46	(142/293)
Type 2 SFP				
呀 (aa3)	12.67	(38/300)	7.85	(23/293)
㗎 (wo2)	0.67	(2/300)	1.71	(5/293)
㗎 (aa1)	2.00	(6/300)	1.02	(3/293)
㗎 (gaa3 laak3)	0.00	(0/300)	1.02	(3/293)
㗎 (gaa3 wo2)	0.33	(1/300)	0.34	(1/293)
㗎 (aa1 maa3)	0.00	(0/300)	0.34	(1/293)
啊 (o3)	0.00	(0/300)	0.34	(1/293)
㗎 (aa3 wo2)	0.00	(0/300)	0.34	(1/293)
Sum:	15.67	(47/300)	12.97	(38/293)
No SFP	52.67	(158/300)	38.57	(113/293)

Table 3 shows the mean number of utterances with type 1, type 2, type 1 + type 2, and no SFP (Indices 1-4) in a speech sample. Indices 5-8 show the proportion of these SFP to U. It was found that the subjects in the aphasic group tended to produce fewer type 1 SFP but more type 2 SFP than their controls. However, when both types of SFP were counted as a whole, the normal speakers achieved a higher SFP mean, i.e., the controls used more SFP in the task. It should be noted that the proportion of type 1, type 2, and type 1 + type 2 SFP to U was also higher in the normal speakers.

Table 3

Group Performance of Using SFP in Speakers With and Without Aphasia

No.	Index	Speakers with aphasia	Normal controls
1	Type 1 SFP	4.52 (4.25), 0.00-17.00	6.76 (3.36), 1.00-12.00
2	Type 2 SFP	2.24 (3.62), 0.00-16.00	1.81 (2.42), 0.00-8.00
3	Type 1 + Type 2 SFP	6.76 (5.95), 0.00-24.00	8.57 (3.54), 1.00-16.00
4	No SFP	7.57 (2.86), 3.00-14.00	5.52 (3.20), 0.00-11.00
5	Type 1 SFP/U	0.30 (0.20), 0.00-0.59	0.49 (0.23), 0.11-1.00
6	Type 2 SFP/U	0.13 (0.16), 0.00-0.55	0.14 (0.20), 0.00-0.67
7	(Type 1 + Type 2 SFP)/U	0.44 (0.20), 0.00-0.71	0.63 (0.24), 0.11-1.00
8	No SFP/U	0.52 (0.21), 0.00-0.91	0.39 (0.22), 0.00-0.89

Note. The values are listed in the order “mean (standard deviation), range”.

Furthermore, paired sample t-tests were used to compare the use of SFP in both groups. In particular, the

analysis focused on two aspects, including the difference in frequency of occurrences of SFP and the number of speakers using SFP in each speaker group. For the first analysis, the results did not reveal a significant difference between the two groups ($t(15) = -1.14, p = 0.209$). On the other hand, for the second analysis, the number of speakers out of the group using each of the SFP listed above was counted. The results indicated speakers with aphasia used significantly fewer SFP than their normal counterparts ($t(15) = -2.402, p = 0.030$).

Discussion

This paper is one of the first investigations focusing on the use of SFP in a picture description task among native Cantonese aphasic and normal speakers. In general, speakers with aphasia were more inferior to their normal counterparts in terms of the quantity and proportion of using SFP. This is consistent to the findings in Yiu and Worrall (1996a, 1996b, 1996c), in which aphasic speech was found to be improvised in functors, especially SFP.

An interesting finding here concerns the frequency of occurrence of SFP used in the sample. In particular, out of the total 300 and 293 aphasic and normal utterance sample, the three most frequently appeared type 1 and 2 SFP were the same in both groups of speakers. More specifically, the top three type 1 SFP, in descending order, were “呢 (le1)” for pointing out location or something and for drawing people’s attention a time or a place, “啦 (la1)” for indicating a lack of definiteness or completeness and for describing a sequence of actions or enumeration, and “囉 (lo1)” for giving reasons of something and pointing out something obvious. As for type 2 SFP, “呀 (aa3)”, which is used to make the intonation or sound of a sentence less abrupt, occurred most frequently. This was followed by “㗎 (wo2)” for showing doubt or what is being said is unexpected, and “㗎 (aa1)” which carries a tone of insistence. This may suggest that the two groups of speakers were not categorically different from each other with respect to the production of SFP. Although there is a lack of statistically significant difference between the two groups here, a possible reason could be related to the nature of the language sample and this issue will be discussed later.

It was found that the particle “呢 (le1)” attained the highest frequency of use in both aphasic and normal speakers. This is not surprising given the pragmatic use of this particle is to address the important feature of an object or a place (Kwok, 1984), which was exactly what the speakers were expected to do in a picture description task. In fact, overuse of certain particles in speakers with aphasia due to the task of speech collection is not uncommon. For example, Packard (1990) had reported that the subjects with aphasia in his study had overused affirmation and negative markers in a guided conversation with clinicians. According to the author, as the patient responses to experimenter’s questions or statements contained a large portion of simple affirmation and negative responses, over-employment of these two markers was not surprising. It is therefore suggested that when judging the use of a particular linguistic element in speakers with aphasia, one must also take consideration of the nature of the task eliciting language.

Concerning the language samples in this study, one may question how representative a picture description task can reflect SFP use in the speakers. It has been suggested that SFP were often used in daily conversation to convey certain pragmatic and emotional information of the speakers (e.g., Fung, 2000; Kwok, 1984; Luke, 1990), the task of speech elicitation might therefore had potentially hinder the use of other SFP in our subjects. For example, some of the commonly used particles in Cantonese suggested by TANG (2002b) were not used by the subjects here. These SFP included “㗎 (zaa3)” to convey a negative meaning indicating what is being stated is

not desirable, “啫 (ze1)” to suggest an idea of being insufficient, “吗 (maa3)” to be used in asking questions, and “咩 (me1)” to query the truth of something, etc.. The potential limitation here is acknowledged and further study should be carried out based on aphasic speakers’ daily conversations. However, the issue of controlling topic(s) for discussion must be carefully addressed to allow comparisons between the pathological and control groups.

Conclusions

Given that studies of Cantonese aphasiology are still in its infancy, theoretically driven investigations on the performance of various linguistic elements in native Cantonese speakers with aphasia are necessary. It is believed that the results of these studies can positively help clinicians in the field of language rehabilitation to judge the severity of language impairment of their patients as well as to plan relevant intervention program at appropriate level of difficulties to them.

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