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A Discourse Study of Chinese Dementia Patients under the Affect Resource Perspective Valve

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Abstract: Based on a case study approach, this study explores the individualized differences in the use of affect resource between Chinese patients with Alzheimer's disease and normal senior in conversation, using the daily conversations of the two subjects as the data, and manually annotating them with the UMA corpus Tools. It was found that the Alzheimer's patient produced fewer attitude resource compared to the normal senior. In addition, the Alzheimer's patient and the normal senior both used "unbiased/biased" character-group of affect resource more, and the Alzheimer's patient tended to use "Bu"(means 'No' in English) plus characters (an adjective modifier/a verb) express the affect degree of inclination, which could extend further research for the field of applied linguistics.

Keywords: Alzheimer's disease; Attitude system; Discourse analysis; Appraisal theory

1. Introduction

Alzheimer's disease, commonly known as dementia, is most commonly associated with loss of short-term memory, language impairment, inability to care for oneself and many behavioral problems. Individuals with language disorders due to traumatic brain injury and degenerative brain lesions go beyond the lexical-grammatical level and have difficulty in determining the applicability of their discourse structures to the linguistic situation at hand [1].

In the research about language disorders, scholars have more often adopted sociolinguistic perspective, discourse linguistic perspective, psycholinguistic perspective, pragmatic perspective, discourse analysis perspective. Constructing a language development model of language attainment and social-cognitive competence to predict language disorders from the psycholinguistic perspective[2]. Constructing a model of language processing based on cognitive neuropsychology - the Comprehensive Aphasia Test (CAT) to explore the effects of aphasia [3]. From a morphosyntactic perspective, [4]. Levy found that patients with dementia dysphasia have largely preserved morphosyntactic functioning, have short and concise sentence structures, and are slower to extract vocabulary, with marked lexical repetitive features, and a preponderance of poorly formed words [5]. Ling Lin analyzed the phenomenon of aphasia from the perspective of functional linguistics, using the conceptual metafunctional theory of transitivity to make different interpretations of the linguistic material of aphasic patients. By reading a large amount of literature, we found that there are fewer topics about language disorders studied from a functional linguistic perspective, especially research on language disorders in Alzheimer's disease from a functional linguistic perspective.

Appraisal theory is a new lexico-grammatical framework developed by Systemic Functional Linguistics in the study of interpersonal meaning, which includes three components according to semantics: attitude, intervention, and grading, in which the attitude resource system includes affect、judgment、and appreciation. In recent years, there are fewer studies analyzing discourse with attitude resources, especially combining the language disorder.

2. Research Design

Based research status, our research questions is what are the individual differences in using attitude resource between the discourse of Chinese patients with Alzheimer's patient and the normal senior? And we choose one female Alzheimer's patient as the main research subject and one female normal senior as the reference subject with both 85 years old. After identifying the two research subjects, with the consent of the family members of the dementia patients as well as the normal senior, the sessions were conducted

once a week for a period of two months with them in a relatively quiet environment and recorded throughout the whole process, with each recording lasting for about 30 minutes. After that, the data was screened and then transcribed, using text to transcribe only the sessions that matched the above information about the research subjects. We recorded 216 turning-talks and 3079 characters that produced by the Alzheimer's patient, while the normal senior is respectively 176 and 3308 within one research corpus. Then, we Combine with Martin and Halliday's systematic analysis of attitude resource in English discourse, a lexicon of affect point under the attitude resource in Chinese language was constructed to label the data and facilitate the analysis of attitude resource use in the discourse of Chinese patients with Alzheimer's disease.

After transcription and labeling of the corpus, in order to make the total word count of the two research subjects more balanced, we selected one of the interview recordings as the research corpus (30 minutes in length), and the total characters count of each subject was kept at about 3000. After that, we use UAM Corpus Tool to manually annotate and analyze the data.

3. Results and discussion

According to the macro-level analysis, we tentatively found that both research subjects produced more sentences of affect resource to express their subjective feelings, and Alzheimer's patient and normal senior used affective attitude resource in 80.4% and 74.7% of the cases respectively. That is to say, both normal senior and Alzheimer's patient tended to choose affective clauses as a means of expressing language at the level of attitude linguistic resource selection and interpersonal meanings. Since attitude resource consists of three categories of character categories, namely affect character-groups、 judgement character-groups、and appreciative character-groups. There are differences in the specific selection of each category of attitude resource by subjects, so the researcher will count and analyse them separately. This study focuses on the differences in affective resource between the Alzheimer's patient and the normal senior. A breakdown of the individualized differences between the two subjects under the attitude resource of affect is shown in Table 4-1:

Data statistics	Alzheimer's patients	Percent（/Affect）	Normal senior	Percent（/Affect）
Unhappiness/happiness	0	0.0%	2	2.3%
Dissatisfaction/satisfaction	18	40.0%	19	22.0%
Unbiased/biased	26	57.7%	64	74.4%
Insecurity/security	1	2.2%	1	1.1%
Total	45	100%	86	100%

According to Table 4-1, the Alzheimer's patient used 45 attitude resource of affect in turn- talking, "unhappiness/happiness" category is 0、 "dissatisfaction/satisfaction"category is18、"unbiased/biased"category is 26、"insecurity/security"category is 1. We found that, the Alzheimer's patient used much affect resource of "dissatisfaction/satisfaction"category and"unbiased/biased" category under the attitude system, and the percent respectively is 57.7% and 40.0%; In addition, affect resource of "unhappiness/happiness" category and"insecurity/security"category was used fewer than that two categories.

As for "dissatisfaction/satisfaction" category and"unbiased/biased" category, UAM Corpus Tools analyzed the characteristics of the two categories under the affect resource. We found that, the Alzheimer's patient used such characters frequently to express the attitude of dissatisfaction/satisfaction: "Hao"(means 'Good' in English) plus verb、Hao、verb plus "Hao"、"Yaode"(mean 'OK' in English)、"Bu"(means 'No' in English) plus negative characters, and the affect resource of "unbiased/biased"category, like "Rendedao"(means 'I know' in English)、"Xiaobude"(means 'I don't know' in English)、Keneng(means 'might' in English)、"Bu yuanyi"(means 'unwillingness' in English). Then we found that the Alzheimer's patient tended to use more "Hao"(means 'Good' in English) plus verb and "Bu"(means 'No' in English) plus characters (an adjective modifier/a verb) respectively express her affect degree of satisfaction and inclination. For example:

[Dissatisfaction/Satisfaction] :

A. Hao he-Hao he-Ah? Hao he-Hao he.(refers "good taste" to one drink in English)

B. Hao shua, Hao shua. (refers to " something is great fun" or "something is amusing")

[Unbiased/Biased] :

C.Ni? Wo bu xiao de le. (means " You? I don't know about you " in English)

D.Wo bu leng, bu leng a. (means " I don't feel cold" in English)

AB clauses are all related to the degree of satisfaction under the affect resource. The Alzheimer's patient tended to use "Hao"(means 'Good' in English) plus verb to express his attitude of satisfaction. For example, in the clause A and B, both of them used " Hao" plus verb to convey the interpersonal meaning of affect resource, such as " Hao he"、"Hao shua". "Hao" means "Good" as a adjective modifier in English, "he" and "shua" respectively mean "drink" and "play" as verbs in English. Therefor, the Alzheimer's patient would like to express her satisfaction to " one drink " and " sources of entertainment".

CD clauses are related to the degree of inclination under the affect resource. The Alzheimer's patient tended to use "Bu"(means 'No' in English) plus characters(an adjective modifier/a verb) to express her affect degree of inclination. For example, in the clauses DEF, he used "Bu xiaode"、"Bu leng" character-groups, and these severally mean "I know nothing"、"Hardly/No cold", respectively expressing his inclination for familiarity and perception. Similar word groups are widely distributed in the Alzheimer's patient's discourse, such as "Bu chou" (an inclination to odour)、"Bu xiang" (an inclination to fragrance) and so on. " chou" and " xiang" characters belong to the way of "Bu" plus a adjective modifier for presenting his inclination. In addition, "Unhappiness/happiness" and "Insecurity/security" are produced fewer even missing by the Alzheimer's patient comparing with "Dissatisfaction/satisfaction" and "Unbiased/biased".

According to Table 4-2, the normal senior used more Chinese characters of inclination to express her affect attitude under the attitude resource. Therefore, we run an in-depth analysis of Chinese character-group of inclination produced by the normal senior. In terms of statistics of Chinese character-groups about inclination by UAM, we divided it into three components: modal verbs, tendency verbs, tendency adverbs. It accounts for 61%、23%、16% respectively. For example, modal verbs refer to certain verbs presenting the meaning of modality and modulation, such as "Bu xiang"(means "not want to do " in English)、"Bu yuanyi" (means "unwilling" in English); Tendency verbs refer to certain verbs with tendency behaviors, such as "Da suan" (means "plan to do" in English)、"Yu ji" (means "prepare to do " in English); Tendency adverbs refer to some adverbs with tendency meaning as a modifier to modify the main verb, such as "Ru guo...jiu hao le" (means "if...." in English)、"Ji ben shang" (means "basically" in English). We found that the normal senior used more modal verbs than the other two under the affect resource of tendency, counting 61%, and some examples of analysis are shown below:

1）Ni waipo ta jiu buyuanyi chuqu zou. (means "Your grandma is unwilling to hang out" in English)

2）Wo zhehui buxiang kaohuo. (means "I don't want to go for a walk now" in English)

Clause 1) and 2) contain the typical modal verbs of the tendency category under the affect resource, such as "buyuanyi" (means "unwilling" in English)、"buxiang" (means "not want to do" in English). In the clause 1), "buyuanyi" presents grandma's negative attitude or tendency behaviour about hanging out; clause 2) reflects the normal senior's negative psychological inclination for getting warm.

Therefore, we found that the Alzheimer's patient and the normal senior both used "unbiased/biased" character-group of affect resource more. What's more, the Alzheimer's patient tended to use "Bu"(means 'No' in English) plus characters (an adjective modifier/a verb) express the affect degree of inclination; while the normal senior prefer to using modal verbs for the behaviour and consciousness of inclination.

4. Conclusion

This study discusses individual differences and the characteristics of discourse between the Alzheimer's patient and the normal senior from the perspective of affect resource under the appraisal theory. There are 2 findings about this study, 1) the Alzheimer's patient produced fewer attitude resource compared to the normal senior. 2) the Alzheimer's patient and the normal senior both used "unbiased/biased" character-group of affect resource more. What's more, the Alzheimer's patient tended to use "Bu"(means 'No' in English) plus characters (an adjective modifier/a verb) express the affect degree of inclination. The innovation of this study is a certain cross-linkage with clinical linguistics, which could extend further research for the field of applied linguistics.

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