Contextualization Cues in Online Medical Consultations: A Cognitive-pragmatic Account of Metonymic Schemes of Thought

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Abstract: This article employs the online medical consultation conversations on the website of "Chunyu Yisheng" as data, adopts Gumperz's contextualization cue theory to investigate metonymic schemes of thought employed by doctors in online consultations, explores metonymy as the contextualization cues and explains the evasiveness of doctors' reply by using metonymic schemes of thought as the contextualization cues. This research finds that four metonymic schemes of thought underpin the satisfactory performance of the consultations. The metonymy PART FOR WHOLE provides patients with additional health information related to their health condition. The metonymy POTENTIALITY FOR ACTION/ACTUALITY proposes further medical suggestions for patients. The metonymy CAUSE FOR EFFECT explains why a suggestion is given the way it is. The metonymy CONDITION FOR UNKNOWN speculates on developments of their health conditions. Through exploring metonymic schemes of thought as the contextualization cues in online medical consultation, this study has the following implications. The recognition of contextualization cues can make the doctor-patient communication effective, develop the harmonious doctor-patient relationship and reduce the misunderstandings and conflicts between them.

1. Introduction

With the popularization and development of the Internet, online medical consultation is regarded as a new way of diagnosis, which effectively relieves the pressure of limited medical resources. Although online medical consultations have grown at an average rate of 150% per 5 years since 2000, the research of such consultations is still in its infancy. A recent study found that nearly 80% of medical disputes in China are caused by poor communication between doctors and patients. Different from the offline consultation, the whole process of online consultation is completed merely by the discourse interaction between doctors and patients. Therefore, they need to accurately understand each other's communicative intention.

The research on online medical consultations is rich in identity construction by doctors[1], forms and functions of linguistic mitigating devices used by doctors[2] and empathy by doctors[3], etc. Although these studies emphasize the discourse characteristics of doctors in online medical

communication, they do not clearly explain how doctors receive, infer, interpret patients' intentions and convey their own communicative intentions.

Therefore, based on Gumperz's contextualization cue theory in interactive sociolinguistics, this study investigates how metonymic schemes of thought as contextualization cues are exploited in online medical consultations from the website "Chunyu Doctor" (https://www.chunyuyisheng.com/). It adopts a fresh cognitive-pragmatic perspective. As will be demonstrated, specific patterns of thought that can be characterized in terms of metonymy (e.g. CAUSE FOR EFFECT) underpin the satisfactory performance of the consultations. The research questions are as follows:

(1) How can metonymic schemes of thought be analyzed as contextualization cues from a cognitive-pragmatic perspective?

(2) How is the distribution of the four types of metonymic reasoning in the data?

2. Literature Review

2.1 Previous Studies on Contextualization Cues

In recent years, Western scholars have made some advances on the research of contextualization cues. Erickson (2011) discussed Gumperz's academic achievements and proposed that contextualization cues are used by both parties to regulate the intimate and distant relationship in the communication. At the same time, domestic scholars have also carried out a series of studies on contextualization cues in different contexts. Ren (2003) studied lexical contextualization cues to activate mental schema. Lexical contextualization cues can solve problems such as ambiguity, improper collocation, vague meaning, temporary combination of words and the meaning of new words, which is also helpful to translation and foreign language teaching. Zhang (2009) studied the application of contextualization cues to the teaching of reading for English majors, and proposed that contextualization cues can accurately help understand the contextual meanings of polysemous words, which helps to understand the syntactic structure and conduct necessary reasoning on text information.

2.2 Previous Studies on Metonymic Thinking

Compared with studies that deal with metonymic expressions in language, research on metonymy as a structuring dynamic for social activity has received relatively less attention. Cienki (2013) situates a discussion of metonymy in the context of politics and policy-making. He stresses the power of metonymic reasoning in providing a compact means to refer to and think about complex issues, and, at the same time, he points out its potential risk such as inducing unjustified inferences. Polletta (2012) considers metonymy useful to studies of social movements in that "its use in movement groups tactical decision making sheds light on how cultural associations shape strategy". Based on the self-accounts of 25 participants with delusions,e.g., patients with schizophrenia, delusional disorder and manic depression, Rhodes and Jakes (2004) found that some of them attempted to understand their unusual experiences using metaphor/metonymy. Littlemore (2015) reanalyzed their data and showed that metonymy played a larger role than was treated in Rhodes and Jakes's study. Although the role that metaphor plays in assisting patients seeking psychotherapy has received increasing attention, how metonymic thinking can be applied to medical consultation has been under-explored.

3. Theoretical Framework

Interactive sociolinguistics aims to "seek a sociolinguistic analysis of face-to-face verbal

communication between people in real situations"[4]. Contextualization cue is a core concept. It was proposed by American interactive sociolinguist Gumperz in 1982, who initially defined it as "various techniques used by interacting participants in conversation to indicate and interpret the meaning and communicative intention of discourse"[4]. Then Gumperz added that contextualization cue can be regarded as "the collection of surface features of discourse, according to which the speaker and listener understand the activity, the semantic meaning of the discourse, and the relationship between the preceding and following sentences of the discourse"[5]. The contextualization cues are mainly manifested in code switching, dialect switching, lexical and syntactic conversion, stylized expression modes, strategies for starting, continuing and ending conversations, and prosodic features, such as stress, intonation, pauses and paralinguistic changes. Nonverbal contextualization cues, in daily conversation, are mainly manifested in facial expressions and body movements.

4. Analysis of Metonymy as the Contextualization Cue in Online Medical Consultations

4.1 Data Collection

The data comes from online medical consultations on the website "Chunyu Doctor" (https://www.chunyuyisheng.com/), which can provide publicly available medical questions and answers. This study randomly selects 30 cases from three departments of pediatrics, surgery and obstetrics in the "classic question and answer" section. Doctors and patients are respectively identified as D1, D2,... and P1, P2,... in order of occurrence.

The identification and encoding of metonymy is accomplished in three steps. First, any clear expressions that mark cause, potentiality, and condition are identified. For example, "if" is used to indicate an unknown or possible health condition, the segment is coded as CONDITION FOR UNKNOWN. Similarly, expressions that explicitly label cause and potentiality are used to identify CAUSE FOR EFFECT, POTENTIALITY FOR ACTION/ACTUALITY. Next, if no such marker is found, the discourse is carefully checked to see if there is additional health information, and such information is encoded as PART FOR WHOLE. Since PART FOR WHOLE is flexible enough to encompass any health information, it is to some extent inherent in all three other metonymic schemes of thought. However, in order to demonstrate the diversity of metonymic schemes of thought, this study highlights the four metonymic schemes of thought, rather than treating PART FOR WHOLE as encompassing the other three metonymic schemes of thought. Finally, the frequency of the four schemes are calculated.

4.2 Data Analyses

4.2.1 Part for Whole

One key metonymic scheme of thought is PART FOR WHOLE. Understanding a health condition involves much medical knowledge, which may be regarded as WHOLE, and a piece of information related to the condition is PART of the complete knowledge. PART means information other than a straightforward answer saying a clear yes or no or providing information addressing a WH-question. This additional information indicates that the doctor has extensive medical knowledge. The information may be used to describe the health condition concerned, to comment on the test results provided, to offer advice or to calm the health seeker. PART FOR WHOLE is not marked by any specific expressions and is identified only by checking the information against the question.

(1) D1: What is the value of HC G?

P1: The report picture can not be displayed due to privacy issues.

D1: Progesterone is too low. Take a progesterone supplement, progesterone capsules or dydrogesterone tablets.

(2) D2: Check it out, and see me tomorrow. When you're done, you'd better get a thyroid examination, too.

As shown from case 1 and 2, doctors use their professional medical knowledge to give treatment suggestions based on patients' conditions and examination report. In case 2, the doctor reminds the patient to further check the thyroid function associated with his health condition in order to exclude other diseases. These cases takes the metonymic schemes of thought PART FOR WHOLE as a contextualization cue to show that doctors have enough and professional medical knowledge, reassuring patients and giving extra reminder. It confirms the importance of additional information given by doctors using their medical expertise.

4.2.2 Cause for Effect

If we regard a health issue (e.g. an illness, symptoms) mentioned in the question, a piece of health advice offered in the answer, or the whole answer as EFFECT, then the reason that paves the way for the given explanation or suggestion in the answer is CAUSE. Although EFFECT may be identified in the text instead of being replaced by CAUSE, the metonymic scheme CAUSE FOR EFFECT is used because CAUSE may be weightier than EFFECT in OMC, especially in cases where the patient requests an explanation for the described symptom. It is identified by an explicit expression marking a causal relationship, e.g. because, therefore, so, result in, lead to or reason. The information embodying the thought may increase the health seeker's medical knowledge, help the inquirer know better what to do and make the answer persuasive.

P3: Breast milk, and 3-4 times a day. He is constipated. We dare not give more.

D3: The child is young, and his gastrointestinal function is not fully developed. The coarse grain is less. So it leads to the child's constipation.

In case 3, the patient only described the symptoms without asking questions, and the doctor offered reasons to explain why the child was constipated. CAUSE FOR EFFECT is identified by the use of the expression "so causing" as a contextualization cue. Furthermore, the reply also offers an overall piece of medical advice that can prevent the similar problem in the future. In short, by providing additional information and what measures can be taken to curtail this, the reply is produced using CAUSE FOR EFFECT.

4.2.3 Potentiality for Action/Actuality

Panther and Thornburg (1999) already illustrated how the POTENTIALITY FOR ACTUALITY metonymy is exploited in different languages. For example, in English, it is typically realized by the use of can/could/may, and POTENTIALITY covers various meanings such as possibility, motivation, abilities or disposition as these modal verbs can express these ranges of meanings. The doctor used "can" or "may" to soften his advice. His advice is not taken as the only possibility but presumably the one that he considered most appropriate. The doctor provides patients with an option. This metonymy helps to increase the range of desirable options, and it is the basis of the doctor's advice.

D4: You can rub the stomach clockwise, and also can do baby exhaust exercise with the change of food. Constipation will be relieved. Do not worry.

In case 4, the doctor provides another option for the patient. The metonymic thought is woven into the production of the answer, allowing the doctor to offer advice. The answer would have been even more convincing if the metonymic thought CAUSE FOR EFFECT had also been activated.

Nevertheless, the answer using POTENTIALITY FOR ACTION as a contextualization cue provided the inquirer with one more option and could facilitate a possible further discussion of this option or other choices they would like with the patient's attending doctor.

4.2.4 Conditional for Unknown or Future Development

The repeated use of the metonymic scheme of "if" allows the doctor to provide additional medical knowledge that may be relevant to the development of the patient's condition. The doctor explains the various potential conditions and suggests countermeasures. Describing several possible conditions is a way of handling the unknown situation. It is marked by "if". The co-occurrence of POTENTIALITY and CONDITION metonymies (if...you can/may...) particularly helps health seekers know how to act in response to their health issues.

D5: If the symptoms continue without relief, or even chest tightness and shortness of breath and other related symptoms appear, you can even do chest CT, electrocardiogram. If the symptoms do not continue to worsen, you can also stay calm first, apply voltaline, oral celecoxib or do chest CT, electrocardiogram as soon as possible.

The case illustrates the treatment advice for the current condition and also present the coping plans for the continuous development of the condition. CONDITIONAL FOR UNKNOWN OR FUTURE DEVELOPMENT serves as a contextualization cue to inform patients of noticing their changing health conditions and optional treatment suggestions. POTENTIALITY FOR ACTION/ACTUALITY also plays a role, as "can" be used to guide the implementation of further treatment plans.

4.3 The Distribution of the Four Metonymic Schemes of Thought

Based on the analysis of the four metonymic schemes in the collected 30 OMC cases, Table 1 below presents a summary of their distribution. A specific metonymic scheme in each case, if used, was counted once only. For example, if ruo ("if") occurs three times in a case, the metonymy CONDITIONAL FOR UNKNOWN is counted once in order to show how evenly the four schemes are distributed in the 30 cases lest a heavy use of a marker (e.g. ruo) in some cases affect the overall distribution.

Table 1: The distribution of the four metonymic schemes of thought

Metonymic Schemes of Thought	Frequency
PART FOR WHOLE	30
CONDITIONAL FOR UNKNOWN/FUTURE DEVELOPMENT	21
POTENTIALITY FOR ACTUALITY/ACTION	23
CAUSE FOR EFFECT	22
Total	96

As shown in Table 1, PART FOR WHOLE is the most frequently used metonymic scheme, followed by POTENTIALITY FOR ACTION and CAUSE FOR EFFECT, with CONDITIONAL FOR UNKNOWN/FUTURE in the fourth place.

5. Conclusion

The four metonymic schemes of thought serve as the contextualization cues to express doctors' different implicit intentions. PART FOR WHOLE lays the foundation for providing medical advice. Providing additional health information relevant to the question can be of great help to the patient. Even if the patient does not specifically request it, the information provided can be just as important

as the target information. POTENTIALITY FOR ACTION/ACTUALITY is especially used when a doctor makes a medical suggestion for further action or states the capacity of a treatment. CAUSE FOR EFFECT is useful in explaining why a suggestion is given the way it is, what might cause the described symptom, and why a clear answer is impossible. CONDITION FOR UNKNOWN/FUTURE helps patients speculate on possibilities not covered in the description of their health condition. The analysis has shown that weaving metonymic reasoning into medical replies is an effective way of overcoming the constraints of the online setting and as a way of providing an answer to a medical question in an acceptable manner even though a straightforward answer is somewhat impossible.

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