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Linguistic Analysis of Subjective Illness Theories in Family Doctor – Hypertonic Patient Consultations

PhD Theses

by

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1 Introduction

The physician – patient interaction is a therapeutic tool (Bálint, 1961), which can properly function only if the physician realizes that in his interactive and therapeutic activities he requires the knowledge of the patient's theories of himself.

Diagnosing a disease launches complex processes in the patient. While learning more and more about the disease, he develops theories of his illness and builds some kind of knowledge of it. These processes manifest at three levels: at cognitive, affective and behavioural levels.

At the beginning of the 1960s Howard Leventhal suggested a hierarchic model for describing the perception of the disease. In the basis of this model there are illness representations also called subjective illness theories. The Common-Sense-Model of Illness, a model of the mental representation of diseases developed by Leventhal is comprised by 5 components: 1) identity, 2) time 3) causes 4) consequences 5) controllability.

The role of patients' subjective illness theories in the physician's perspective has been investigated by several studies meant to clarify the diversity of causes. The findigs are also diverse, depending on the subject of the consultations, the institutional venue and the population included in those studies.

The present dissertation is meant to focus on subjective utterences related to hypertonic patients' illness theories within the structural organization of the conversations. The purpose of analysing subjective utterances is to provide a description of the interactive processing of lay people's theories.

Interactional processing of the illness theories is investigated at the micro and meso levels of the sequential order of the dialogues, using the concepts of functional cognitive pragmatics.

The research is expected to result in a general description of the physician – hypertonic patient dialogues on the one hand, and in demonstrating in what way the features of the dialogues and the incorporation of subjective utterances into the sequential and hierarchic system mutually effect one another, on the other.

Through going as deep into the dialogues as possible, the findings may enrich knowledge on interaction by offering an insight into the elementary structures of converstaions. The interpretation of the findings may help understand the reasons for the problems arising in handling subjective illness theories, and indirectly may also contribute to further increasing the effectiveness of physician-patient communication.

1. Hypotheses

1. The processing of subjective utterances can be related to a sequential pattern.
2. In more structured dialogues there are more subjective utterances.
3. The difference in the style of conducting the talk by the physicians originates in activity patterns.
4. The style of conducting the talk by the physician and the frequency of subjective utterances show correlation.
5. Female patients make more subjective utterances than male patients.
6. The subjective illness theories are re-enactable in the episodes of the conversations.

2. Material and Methods

As the manifestation and interactional appearence of subjective illness theories may greatly vary, it was advisable to complement the lingusitically oriented research focus with such methods which help thoroughly describe the topic of research, distinguish the possible contents of subjective utterances and provide relevant information on the context of the conversations.

2.1. Illness Perception Questionnaire

This is why the Illness Perception Questionnaire developed for the purposes of patients with hypertension (http://www.uib.no/ipq/pdf/IPQ-Hypertension-New.pdf) was used. In the Hungarian version of the questionnaire items translated at the Department of Personality and Health Psychology at the Pedagogical and Psychological Faculty of the Eötvös Loránd University were used.

The questionnaires were delivered to patients in two family doctors' practices in a suburban area of the city of Pecs between 2009 and 2010, where the recordings serving as the basis for the llingusitic analyses were also made. Patients recorded also filled in the questionnaire. Apart from them another 130 individuals filled in the questionnaire. Ninety-one questionnaires contained evaluable data. The questionnaire survey is not representative.

2.2. Linuistic method

Fifteen recordings of physician-patient consultation served as the basis for the linguistic analysis. The digital recording took place in 2009 and 2010, after permission was granted by the Ethics Committee of the Faculty of General Medicine at the University of Pécs. Recordings were made on condition the patients gave informed consent by signing the declaration. The only selection criterion was the presence of the disease in the patient: Patients with hypertension were asked to give consent for recording their conversation conducted with the physician.

Of the 15 converstaions comprising the study corpus 10 was conducted by a male physician and 5 by a female physician. In four of each physician's interviews the nurses of the practices got also involved. The patients' age ranged between 45 and 82 years, there were 9 females and 6 males. The female patients' average age was 67.5 years, while in the case of males it was 57.1 years. Two third of the patients were retired. The greater proportion of the patients had low qualifications.

The recordings were transcribed using the EXMARaLDA Partitur-Editor 1.5 transcribing software (Schmidt Th., 2011:, http://www.exmaralda.org/downloads.html). The microdialogues constituting the conversations were transcribed using GAT 2 (Gesprächsanalytisches Transkriptionssystem, Selting *et al.*, 2009) conventions.

The analysis of the corpus including the transcribed conversations was carried out using quantitative methods focusing on the microdialogues of the conversations, having three points of reference in mind: *content, structure* and *participants.*

In the 15 conversations 325 microdialogues could be identified, each focusing on a particular topic. Topics were coded and so they became the basis for the linguistic data base.

The number of subjective utterances, the duration, the number of moves and steps, and also the proportion of the moves and steps as compared to the whole conversation, as well as the gender and the participation of the participants could be identified for each microdialogue.

After the liguistic data base was developed, data processing was carried out using SPSS 19.0 (http://ibm-spss-statistics.soft32.com/old-version/69/19/) statistics software.

3. Results

Of the socio-demographic factors (age, qualificatio, gender) investigated in the present study – most probably due to the homogeneity of the population (most of the participant were elderly patients with a history of hypertension of more than ten years) – both in the questionnaire survey and the linguistic analysis only the participants' gender proved to be relevant.

3.1. Results of the hypertension questionnaire

Of the individual dimensions the questionnaire survey concerned only the dimension of emotional representation showed significant differences between male and female patients (p=0.005). The emotional representation of the female patients was greater.

The Spearman rank correlation method revealed relevant and significant relationship between individual items and the patients' gender in terms of emotional representation between *'My hyprtension scares me'* and the *'family problems*' in the causes sub-scale. More than half of the female patients identified themselves with the statement related to fear. More than sixty percent of the male patients rejected that kind of statement. Compared to males, more than twice as high was the percentage of the female patients who called family problems as a factor in developing the disease.

3.2. Findings of quantitative micro-structural analysis of conversations

The 325 dialogues focused on 23 topics. Most of the microdialogues focused on the necessary medication. Filling in the progress notes was the second most frequent topic. Then follows the topic of home measurement and the discussion of blood pressure values, followed by the general well-being and the topic of specialist examination. Of the 325 microdialogues four focused on *'the consequences of hypertension'* topic.

Conversations, as a rule, consist of two-grade dialogues, which are followed by the second most frequent one-grade dialogues.

The most infrequent are the four-grade dialogues in the corpus. At the levels of the one and two-grade dialogues closed dialogues are dominant, while at the levels of three and four-grade dialogues the dominance of open dialogues can be observed.

The duration of the microdialogues (p=0.022) and the number of steps and moves in them (p=0.026) showed significant differences in the case of physicians, while it showed no significant correlation with the patients' gender.

The ratio of participation in the microdialogues and in elaborating a given topic in most of the microdialogues, altogether in 145 microdialogues, is 50% by both parties. The next most frequently occuring microdialogue type is that in which the patients do not participate (58 microdialogues).

3.3. Quantitative characteristics of subjective utterances in the micro structure of conversations

The patients' gender did not show signicficant correlation with the frequency of subjective utterances.

The frequency of subjective utterances showed significant correlation with the structure, timing (p=0.000) and number of moves and steps of the microdialogues (p=0.000).

In dialogues consisting of one, two, three or four moves no subjective utterance manifested. In dialogues consisting of at least five moves, the frequency of one or two subjective utterances exceeded that of the lack of such utterances.

3.4. Quantitative characteristics of subjective utterances in the meso structure of conversations

Topics in the hierarchic structure of the encounters, in accordance with the protocols of the profession, developed into greaer units making up 6 episodes, as follows: medication, blood pressure, specialist examination, well-being, progress notes, physical examination.

The degree of structuredness of the dialogues comprising the episodes can be characterized by their in-depth indicators.

Based on the in-depth indicators of the microdialogues belonging to the individual episodes it can be concluded that it was the episode of medication that had the highest degree of structuredness, while physical examination had the lowest degree of structuredness.

The duration of the microdialogues elaborating the episode of blood pressure was the longest. Taking the average duration into account the episode of physical examination came out in the second, while the episode of well-being in the third place. The lowest average duration belonged to the episode of progress notes. The highest values of standard deviation were found in the bood pressure episode, while medication was in the second and physical examination was in the third place in this respect. The lowest values of standard deviation were found in the episode of progress notes.

The proportion of moves and time in microdialogues belonging to the individual episodes shows significant difference between the physicians ($p=0.000$), while no significant differences could be demonstrated according to the the patients' gender.

The episodes of blood pressure and well-being tend to contain one subjective utterance, while the other episodes can be characterized by the lack of subjective utterances. Microdialogues comprising the episode of specialist examination can be charactarized by equal numbers of one and zero subjective utterances.

4. Summary

4.1. Subjective utterances at the micro level of the conversations

Fast changes of the topic and the implementation of the local communication purposes in 1-8 moves were characteristic of the local structure of the conversations in the corpus analyzed.

On implementing the local communication purposes, one subjective utterance meaning special contribution by the patient could be demonstrated in dialogues consisting of at least 5 moves

The most frequently used basic sequences consisting of two or three moves as a rule, contained no subjective utterances during the implementation of the interactional tasks.

In sequential patterns frequently forming an open system realized by linking the basic sequences, specific contribution of the patients could more frequently be demonstrated in the implementation of local communicative tasks. Open dialogue structures developed on pursuing the local aims can be interpreted as a result of a communication problem between the participants.

The most frequent result of changing the topic in the local thematic structure of the conversations was the completion of profession-required tasks: medication and progress notes. The 'patients' topics' – well-being, requesting medicines, percieved drug side effects – apparently received less attention.

Comparing the local organization in the two physicians' dialogues revealed that, apart from both being conventionalized as demonstrated above, there were significant differences in the two styles of conducting the interview.

4.2. Subjective illness theories at the meso level of the conversations

In the hierarchic structure of hypertonic patient – physician consultations 6 episodes could be identified, which, in terms of activity structure, can be defined as the elements of the interactional scheme typical for the consultation.

The texts of the dialogues showed different degrees of structuredness, their structuredness exceeded that of spontaneous and planned drama dialogues, which proves a mosre intense information flow in the physician – patient dialogues as compared to everyday dialogues and drama dialogues.

The frequency of subjective utterances elaborating illness theories in the meso-level structures of the conversations did not show any correlation with the sequential structure of the episodesand the degree of structuredness of the dialogue texts.

Based on the analyses, it seems that on implementing the more comprehensive structural units, rights and obligations as well as competencies originating from the patient – physician roles have more influence on the elaboration of subjective illenss theories than the direct linguistic context of the utterances, the time and the number of moves.

No more than four subjective utterances are implemented in either of the dialogues related to any of the episodes, which means that only fragments of patients' subjective illness theories can be reconstructed both in the local structures of the dialogues and in the meso-level structural units.

4.3. Hypotheses and their status

1. *The elaboration of subjective utterances can be related to sequential patterns*

The hypothesis could be partially justified. In the local structure of the dialogues in the corpus in sequences consisting of at least 5 moves one subjective utterance could always be demonstrated. In the meso level structural units of the dialogues sequential patterns comprising the internal structure of the activity patterns and the frequency of subjective utterances elaborated in the individual episodes showed no correlation.

2. *In more structured dialogues there are more subjective utterances.*

The hypothesis could not be justified. In the most highly structured dialogues most frequently no subjective utterance could be found.

3. *Phsicians' different styles of interview conducting can be characterized by activity patterns.*

The hypothesis could be partially justified. In activity patterns related to the elaboration of local topics and in the activity patterns of meso level structural units diffrences characteristic of the physicians could be demonstrated. At the same time it could be seen that both in solving the local tasks (average time and number of moves, the implementationof local communication tasks in one grade and two-grade closed dialogues and moving on to the next task after closing the local aims) and the more comprehensive communicatiopn tasks both physicians' interview conducting style showed conventionalization.

Of the episodes only dialogues elaborating medication showed significant differences between the two physicians' interview conducting style, which allows for the indirect conclusion that further activity schemes of the consultation most probably get implemented through conventionalized activity patterns.

4. *Interview conducting style and the frequency of subjective utterances show correlation*

The present study partially, in the local structure of the conversations could justify the hypothesis. Local activity patterns of the physicians participating in the study showed significant differences in the number of elaborated subjective utterances.

5. *Female patients make more subjective utterances than male patients.*

The hypothesis could not be justified by the present study. In the study corpus the frequency of subjective utterances did not show correlation with the patient's gender.

6. *Subjective illness theories can be recostructed in the episodes of the conversations.*

The hypothesis could not be justified. In the dialogues of the individual episodes illness theories elaborated in up to four subjective utterances can be regarded as fragments.

5. Summary of new results

5.1. New research results concerning the local structure and subjective illness theories elaborated in the local structures

1. In sequential patterns developed for achieving local communicative purposes in nearly half of the dialogues in the corpus no institutional assymetry can be demonstrated between the physician and the patient. The contribution of both party is 50%.
2. Sequential patterns created in this way in most of the cases make up closed dialogue structures, which at the activity level shows the strive for solving local tasks prior to changing the topic.
3. In dialogue structures comprised by five or more moves, coming into existence by linking the basic sequences, in most of the cases open structures signaling the lack of completing the communicative tasks could be observed in the dialogues of the corpus.
4. Quantitative lingustic analysis justified the specialists' administrative burden at the level of the language use: the second more frequent result of changing the topic was the computer assisted management of the patients' data.
5. The sequential organization of local structures showed correlation with the frequency of subjective utterances.

5.2. New research results concerning subjective illenss theories elaborated for the meso level structures of the conversations in the meso-level structural units

1. The study explored 6 typical components (episodes) of the hypertonic patient – physiscian consultation: blood pressure, medication, specialist examination, physical examination, well-being and progress notes.
2. The internal structure of typical activity patterns and the differences in the sequential patterns were revealed by the study.
3. By describing the hierarchic structure and calculating the in-depth indicators the most complex communicative tasks of the hypertonic patient – physician encounter were identified: the episodes of medication and blood pressure proved to be the episodes realized through the highest numbers of local aims and the most structured dialogues.
4. By describing the structure of the episodes the present study made a contribution to understanding why communication between physician and patient is so frequently disturbed in relation to medication.

Based on the analyses it could be demonstrated that the dialogues of the episode of medication are more structured than everyday conversations and planned drama dialogues and even in comparison with the rest of the episodes appearing in the care for patients with hypertony. This high degree of information exchange at the same time coupled with the second shortest duration.

5. In activity patterns related to the communicative purposes of the episode of medication significant difference could be demonstrated between the two physicians: in relation to the implementation of the communicative purposes related to the episode showed more stable activity patterns and more rigid structure in the case of the female physician.
6. The study could not reveal any correlation between the sequential pattern of the meso-level structural units and the frequency of subjective utterances in the individual episodes.

Linguistic analysis could not justify the gender-related stereotypical expectations concerning the conversations: the patients' gender showed no correlation with the sequential arrangement of the dialogues (time, number of moves, participation in the elaboration of the topic) nor with the frequency of subjective utterance elaborated in them.

7. Restrictions and limitations

In the dialogues of the corpus analysed one female and one male physician participated. The significant differences revealed by the analyses cannot be interpreted as statistically significant gender differences.

The findings presented, however, may support the need for further detailed analyses, as they showed differences both in their interview conducting styles and in the frequency of utterances elaborating subjective illness theories. Morover, the findings of the present study contradicted those of previous studies aiming at giving overall analyses of the interactional structure of such dialogues.

Statements concerning the patients' gender, due to the low number of the participants, cannot be interpreted as representative. Tendencies revealed using the linguistic method – the lack of significant differences between the genders – contradict previously published research findings. Further investigations are needed to decide whether or not in male and female patients with long histories of chronic disease the patient carreer in the health care system and the institutional setting have a greater influence on these patients' lingusitic behaviour than their gender does.

8. Conclusion

Findings of the present study may contribute to a better understanding of family physicians' communication and the linguistic behaviour of patients with chronic diseases.

The findings of the present study could also be utilized in further studies aiming at investigating subjective illness theories.

The findings may complement previous results of the fragmented interactive appearance of patients' lay illness theories. As the fragmented character was demonstrated through the structural analysis of the dialogues, the findings may indirectly help physiscians in elaborating a conscious style of interview conducting. They may also contribute to using techniques for elaborating topics, which may reduce the degree of fragmentation of the 'patients' voice'.

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