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Linguistic Aspects of Family Doctor - Patient Consultations

Theses of the PhD Dissertation
by
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Pécs

2015

1. Introduction

Empirical studies concerning doctor – patient communication using the methods of conversation-analysis came to the focus in the middle of the 1980s (Frankel 1983, 1985, Heath 1982, 1986). Research was primarily conducted in primary and general medical care settings (Maynard-Heritage 2005, Heritage-Maynard 2006), however some other special fields of healthcare like emergency medicine (Mondada 2003) or the study of HIV-infected patients were also investigated (Peräkylä 1995, Silverman 1997). Approaches of conversation analysis have been used by Hungarian researchers for analysing various types of conversations in complex studies (Kuna - Kaló 2012).

Investigations of family doctor – patient encounters and hospital teachers' classes, using the methodological framework of conversation analysis, have gained more and more importance recently (Hambuch 2014, Kránicz 2015). The present functional cognitive linguistic study is meant to investigate family doctor – patient interactions with the methods of conversation analysis.

The aim of the present dissertation is to explore the institutional character and the changing dominance patterns of family doctor – patient interactions. The analysis of turns and overlapping utterances in the interactions are thoroughly investigated, furthermore, question types in the dialogues are interpreted. To capture the nature of dominance patterns, besides quantitative analyses, the content of turns and simultaneous speech are analysed. In studies related to dominance relationships the following categories are used: gaining and obtaining the right to speak, turn allocation, turn taking, quantitative aspects, thematic properties, strategic dominance, style, choice of code and speech acts. The present study focuses on turn taking and simultaneous speech. Although overlapping utterances are considered as rare or non-existing phenomena in institutional talk, these were frequent in the present corpus. Conversations between patients and a physician comprise the study corpus. The recordings of the dialogues were transcribed using the Folker 1.2. Software (Schmidt – Schütte 2011), which

enables the quantification of the characteristics analysed in family doctor – patient interactions.

Simultaneous speech of doctor – patient dialogues has not been extensively studied yet; therefore the development of a new methodology is necessary. The introduction of new methods is reasonable with the help of a small size corpus (Sator 2003). The findings may enrich knowledge on family doctor–patient interactions and may also contribute to further increasing the effectiveness of doctor – patient communication.

2. Hypotheses

In the present dissertation the following hypotheses are investigated:

1. The physician's dominance in doctor – patient interaction is unquestionable.
2. Simultaneous talk is initiated by the physician.
3. As a result of simultaneous talk the length of consultations is shorter than the average length of a family doctor – patient interaction.
4. Overlapping utterances are supportive rather than competitive.
5. Female patients initiate more overlapping utterances than male patients.
6. The question-and-answer function dominates in the turns of the interactions.
7. Simultaneous speech develops following the physician's open questions.

3. Material and Methods

3.1. Corpus

The digital recording took place in a village near Pécs in a family doctor practice of 1300 patients, both children and adults. The family doctor has been working in the surgery since January 2013. The participants of the conversations were the physician, the patient and the assistant in all cases. The patients' age ranged between 30 and 56 years, there were 7 females and 5 males. All the patients were inhabitants of the village, had low qualifications and were involved in hard physical labour. The length of the consultations ranged between 70 seconds and 7 minutes, and the complete duration of the recordings was 44 minutes. Adult patients with acute diseases were asked to give consent for recording their conversation conducted with the physician, after permission was granted by the Ethics Committee of the Faculty of General Medicine at the University of Pécs.

3.2. The method of quantitative analysis

The conversations were recorded by the physician with the help of an Olympus WN-2100 Dictaphone; the researcher was not present in all cases. After recording, the WAV files were converted and transcribed, and the quantitative analysis was carried out using the Folker 1.2. Transcribing software (Schmidt–Schütte 2011). Quantification based on the software was followed by statistical analysis. The Folker 1.2. software can measure the number and duration of turns, pauses, words and in-and expirations, thereby reducing the potential failures compared to manual analysis.

3.3. The methods of qualitative analysis

This part of speech analysis is full of extracts and examples, they are meant to illustrate the function of turns, turn taking after simultaneous speech, thematic changes and question types.

4. Results

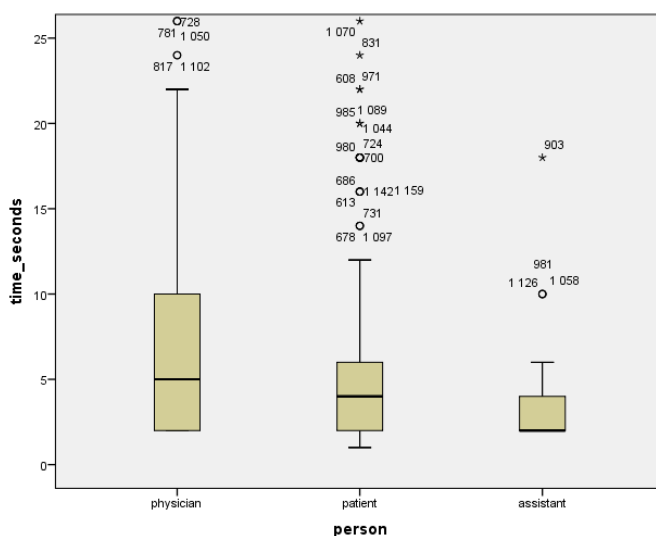
4.1. Quantitative analysis of turns

The dialogues comprise 477 turns of doctor – patient interaction, 234 turns of the physician and 243 turns of the patients. The doctor had a lower number of turn takings than the patients.

Binominal test was conducted to find out whether the number of the physician's and patients' turns can be regarded as equal-based on the data investigated. The test compared the ratio of physician – patients' turns (49-51%) to that of the null hypothesis, which claims there is no difference in the ratios of turns (50-50 %). The level of significance of the test ($p=0.71$) means there is no significant difference between the physician's and patients' ratio of turns. Doctors' turns were 9.04 seconds while patients' turn lasted for 5.54 seconds on average.

Figure 1. below illustrates the deviation of the physician's and patients' turns.

Figure 1: Deviation of the physician's and patients' turns



The figure above indicates that the duration of patients' and physician's turns are variable. There are peaks both on the patients' and the physician's part.

The variance can be used to measure the extent to which the data are scattered around the average, how far or close they are to it, why the distance is calculated as deviance. If the resulting values accumulate around the average then this value is relatively lower, compared to the situation when they show a greater deviation both in positive and negative directions, i.e. their variance is greater.

F probe could be used to decide whether there is a difference in the variance of the patients' and physician's turns. Based on the probe the null hypothesis was rejected ($p < 0.01$), which means that the length of the physician's turns shows significantly greater variance.

4.2. Quantative findings in simultaneous talk in the interactions

There were 203 overlapping utterances in the dialogues. The physician initiated simultaneous talk in 83 cases, while patients did the same on 120 occasions in the physician's turns.

Another direction of the investigation was the duration of the simultaneous talk. In the interactions lying in the basis of the present investigation 203 overlapping utterances lasted for 595 seconds of the 3181 second-long total talking time, which constitutes 18.7 % of the recorded dialogues. The 83 overlapping utterances initiated by the physician lasted for 265 seconds, while the patients initiated 120 overlapping utterances that lasted for 330 seconds. The interactions contained overlapping utterances lasting for 2,4,6,8 and even 10 seconds.

Chi-square test was used to find out if there is any significant relationship between the simultaneously speaking person and the duration of the simultaneous talk. The null hypothesis was that there was no significant relationship between them, i.e. they are independent, and they do not have an effect on each other. The result of the test indicated that there was no significant relationship between the duration of the overlapping talk and the simultaneously talking person.

4.3. *The types of simultaneous talk according to genders*

Interactions of the physician with 8 female and 5 male patients were recorded. Male patients initiated simultaneous talk with the physician in 72 cases, while the physician did the same on 48 occasions. Female patients initiated simultaneous talk in 48 cases, while the physical did the same with the female patients in 35 cases. Male patients initiated simultaneous talk more frequently, while the duration of simultaneous speech of the female patients was longer.

Male patients used 72 turns (52.17%) of the total 138 turns to interfere with the physician's talk. Female patients had a total of 105 turn-takings, and used 48 (45.71%) of them to talk simultaneously with the physician. Chi square test was used to find out if there is a relationship between the gender of the patients and the frequency of overlapping utterances. The result of the test indicated that there was no significant difference ($p=0.318$).

4.4. *Quantitative findings regarding the content of turns and simultaneous talks*

Turns were used by the physician and the patients as means of reinforcement, question and answer, correction or adding personal remarks. The physician used reinforcement in 39.7% of her own turns. History taking occurred in 62.1% of the interactions. The corrections of the patients' utterances occurred in 5 interactions amounting to 2.1% of all turns. Personal remarks were used in 15.4%.

As a next step, the content of overlapping utterances was investigated. The function of answering was used the most frequently in simultaneous speech of the dialogues. The physician and the patient used reinforcement in about the same number of cases. Overlapping utterances as means of personal remarks were used by the physician in 23 cases, while on 31 occasions by the patients.

4.5. Quantitative findings in question types

Table 1. illustrates the types and content of the physician's questions

Table 1: Types and content of the physician's questions in the interaction

	content	history taking	medication	other	total
type	open	38	26	6	70
	closed	68	28	22	118
	suggestive	8	8	18	34
total		114	62	46	222

The results above indicate that the physician used 3 types of questions in the doctor – patient interactions. Test for independence was conducted to find out if there is a significant relationship between the types of questions and the content. Based on the probe the null hypothesis of independence could be rejected as there is a significant correlation between the two variables ($p < 0.001$).

5. Discussion

In the corpus it is the length of the physician's turns to indicate that she is the dominant partner. The simultaneous talks initiated by the patient suggest that the patient is also an active member of the dialogues; therefore the interaction is more and more similar to a spontaneous dialogue.

The lengths of the consultations also imply that the interactions deviate from the traditional definition of an institutional dialogue.

The length of the consultation in the study was relatively short as simultaneous interactions shorten it; however patients left the surgery satisfied. This is verified by the analysis of the content of the turns.

Linguistic studies differentiate between two types of simultaneous interactions, which can also be identified in the dialogues of the present corpus. Although, supportive simultaneous interactions are more common, competitive overlapping utterances are also present in the study. These were mostly initiated by the representative of the institution, which is also typical for institutional dialogues.

The study also investigated the differences in the use of simultaneous talk between males and females. It was an unexpected finding that male patients initiated more simultaneous interactions, in spite of the fact that there were more interactions recorded with female patients. The duration of overlapping utterances highlighted the opposite, namely simultaneous interactions of male patients were shorter than those of females. Regarding the content of turns, it can be concluded that reinforcement was mostly present in the dialogues along with several turns of personal content. As suggested by the literature, question–answer sequences are typical for institutional interactions; however, this was not confirmed by the findings of the present study. As far as the types of questions are concerned, the doctor mostly used closed questions, which is typical for institutional interactions.

5.1. The results of examining the hypotheses

1. The physician's dominance in doctor – patient interaction is unquestionable.

The results support hypothesis 1.

2. Simultaneous talk is initiated by the doctor.

The results contradict hypothesis 2.

3. As a result of simultaneous talk the length of consultations is shorter than the average length of a family doctor – patient interaction.

The hypothesis proved right.

4. Overlapping utterances are supportive rather than competitive.

The hypothesis proved right.

5. Female patients initiate more overlapping utterances than male patients.

In summary male patients initiated more overlapping utterances than female patients, thus the hypothesis could not be proved by the research.

6. Question and answer function dominates in the turns of the interactions.

This hypothesis could be partially justified. Besides question and answer, reinforcement occurred significantly frequently in the turns of interactions.

7. Simultaneous speech develops after open questions of the physician.

As the physician predominantly used closed questions in the interactions analysed, the hypothesis could not be justified.

6. New findings in the present dissertation

- The present study supports the physician's dominance in the length of turns. The patients use more turns in the interactions, however the duration of the physician's turns is longer.
- The patient's dominance can be detected when initiating simultaneous talk.
- The lengths of consultations in the present study are shorter than the average length of a family doctor – patient interaction, which can probably be attributed to the simultaneous talk of the patients and the physician.
- In spite of the short consultation time, personal contact between physician and patient develops.
- The presence of reinforcement function supports that the physician is actively involved in listening to the patient and the patient listens to the physician.
- Although closed questions are more frequent in the present study, these do not influence the personal character of the consultation.
- Closed questions are typical for the paternalistic model; however, the doctor uses a narrative style in the present corpus to assist the patient's interaction.

7. Limitations

More recordings at family doctor surgeries would be necessary to be analysed in order to get a better understanding of the present findings. The methods did not allow for detailed analyses of reinforcement functions which are often highlighted by the literature. Due to the limited length of the dissertation, the turns and simultaneous talk of the assistant and the analysis of self-or other initiated turns could not be included. The contrastive analysis of the interactions at a surgery in urban settings is also necessary. The analyses of pauses, interruptions, style, sequences could also prove to be beneficial in the future.

Correction is also present in the corpus, which would also be worth analysing as this is not typical for institutional interactions. The present study focused on analysing the communication of one family doctor, which does not allow for generalizing the results. Another limitation may be the gender of the physician, therefore further studies are necessary to find out whether there is any significant difference between the communication style of male and female doctors. Another limitation is the low number of patients involved. Still they represented a number of phenomena to be investigated by conversation analysis, and, what is more, the findings contribute to highlighting the problems and solutions in this special field. Further studies may also focus on analysing symmetric and asymmetric relations in doctor – patient dialogues. Therefore, it may prove to be interesting to analyse the “face” concept of Goffman (1983), i.e. how the doctor provides the patient with a “facet” during the interaction.

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Acknowledgements

First I would like to thank dr Gábor Rébék-Nagy, my supervisor, who encouraged me to complete this study. During the seven years I could always count on his professional support and help in writing my thesis.

Special thanks must go to the physician and the assistant involved in the research to allow me to record the dialogues.

I would like to thank the leaders of the Doctoral School at the Faculty of Health Sciences, Pécs University for making it possible for me to conduct research in the Borderline Areas of Health Sciences Programme.

I would like to thank dr Dóra Boronkai and Dr. Csilla Keresztes for their valuable professional guidance.

I would like to thank my colleagues, dr Katalin Fogarasi, dr Anikó Hambuch Kőhalmi, and dr Alexandra Csongor Szántó, and Tímea Németh and Rita Kránicz for giving direct help and sharing their professional ideas with me.

I would like to thank my colleagues Ms Tímea Nagy for her help with editing, Ms Judit Sávy for her help with the English translations and Mr Péter Mátrai for the help with the statistical analyses.

I would like to thank my family for their support, encouragement and trust.