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**INTRODUCTION.
SEQUENCE ANALYSIS OF PATIENT-PROVIDER INTERACTION**

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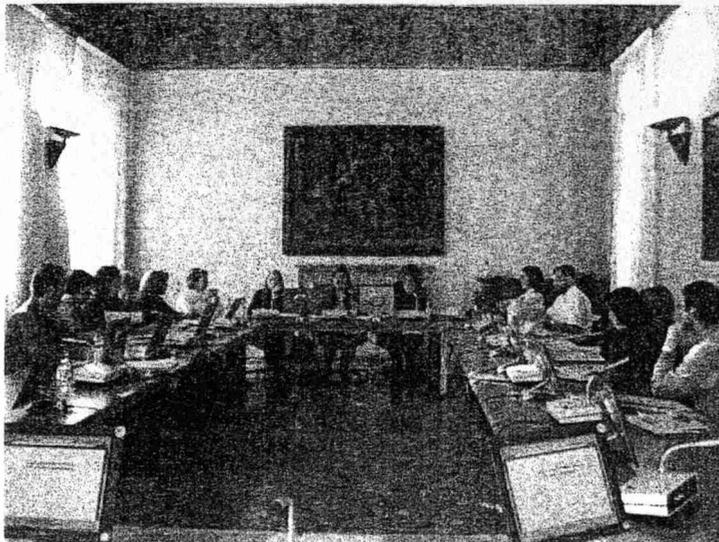
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Introduction. Sequence analysis of patient-provider interaction

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In doctor-patient communication research a few main-streams can be distinguished: a robust quantitative line of research, in which all patient and/or physician utterances are classified in a basically neutral coding system, usually consisting of a comprehensive set of mutually exclusive categories like RIAS (Roter, 1995) and VR-MICS (Del Piccolo *et al.*, 1999; 2002), versus some more qualitative approaches in which *either* physician's general performance is valued within a normative frame of reference, like MAAS-R (van Thiel *et al.*, 1991) or selected micro-processes within the medical consultation are studied in great detail, making use of the methodology of

discourse analysis (see for instance Meeuwesen's contribution to this Special Issue (Meeuwesen, 2003). All these approaches have their strengths and weaknesses, suggesting that a combination of methodologies offers the best perspective for breaking new ground in this highly relevant research area.

A major strength of studies based on Interaction Analysis Schedules like RIAS or VR-MICS is that – more than in the other mentioned methodologies – the acquired data are objective, reliable, replicable, and mutually comparable, which has led to major advancements in patient-provider interaction research. But it is important to also recognize the weaknesses of this type of research, as acknowledging inherent weaknesses might inspire researchers to find new solutions. One criticism is that many studies in this field are a-theoretical and only descriptive in nature (Bensing, 2000), while there is a growing need for putting values (positive or negative) to the observed behaviour, for instance in medical education or quality assessments in health care. This asks for more

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theory-guided research and for clear statements or hypotheses on the adequacy or inadequacy of certain behaviours in specified conditions, as is done in the MAAS-R. Another recurrent criticism is that studies based on Interaction Analysis Schedules do not capture the dynamics of patient-provider interaction, because only frequencies of behavioural units are counted, whereas a conversation between two individuals cannot be considered as the sum of two monologues. Doctor-patient communication is a reciprocal give-and-take, in which each statement bears a relationship to the preceding and subsequent statements (Wasserman *et al.*, 1983; Zandbelt *et al.*, in press). Till recently this dynamic structure of patient-provider interaction could better be captured by discourse analysis than by frequency-counting observational methods.

Recently, new perspectives have been opened which might help researchers to overcome both types of weaknesses by a relatively new and promising direction in analysing data resulting from Interaction Analysis Schedules: i.e. sequence analysis or sequential analysis. In sequence analysis specific behaviours are studied in relation to their predecessors and successors. As is argued by Mazzi in the first article of this Special Issue, sequential methods allow to study the doctor-patient consultation in terms of interaction between two individuals, and more specifically, in terms of "responsiveness" (Mazzi *et al.*, 2003). The importance of the interpretation of interaction sequences in observational research has frequently been stressed in the past, but was generally seen as technically inoperable. Times are changing though and these days, thanks to new software packages to code and analyse audio- and video recordings – one example is described in this Special Issue (Eide *et al.*, 2003) – the performance of sequence analysis has become feasible. The contributions in this Special Issue – most of it pioneering research and typically work in progress – all show how stimulating this new line of research is.

With sequence analysis research questions can be answered that were not possible to answer with more conventional methods. In the contribution of Langewitz *et al.* (2003), several examples are presented. Perhaps the most interesting possibility is the study of rare events, for instance critical incidents or remarkable patient cues. When analyses are restricted to frequency counts or proportional distributions of specific behaviours, these rare events tend to disappear, while they may yet have a profound influence on the course of consultations as well as patient satisfaction and well-being. One single, wrongly timed interruption can effectively silence a patient who just tried to verbalize his worries, while on the other

hand only one empathic response to the first sign of worry would have been enough to keep him talking. It is no co-incidence that five contributions to this Special Issue (van den Brink-Munen *et al.*, 2003; van Dulmen *et al.*, 2003; Eide *et al.*, 2003; Langewitz *et al.*, 2003; Zimmermann *et al.*, 2003) pay special attention to patient concerns, some by analysing which physician behaviour precedes the utterance of concerns by patients, some by focussing on physicians reactions to these concerns, and some paying attention to both. The studies show that physicians respond more to patient concerns with facilitating behaviour than with real empathy. Another interesting research question was analysed by Langewitz *et al.* (2003), who found that – in accordance with psychotherapeutic theories – open-ended questions indeed stimulate patients to talk more about their problems. The latter research question also stipulates the necessity to have clear theoretical notions and a priori hypotheses about orders of behaviours that are to be expected.

What has to be considered as 'adequate' or 'inadequate' behaviour is a topic that clearly bothers many authors and is discussed thoroughly by Heaven *et al.* (2003). Defining 'adequate' and 'inadequate' behaviours has been done in different ways, as is (another example) 'reciprocity', but it is also clear from the articles that defining these difficult concepts is in itself a major step forward. There is not one best way to define 'adequacy' or 'reciprocity'.

Apart from showing examples of new research questions that can be addressed by sequential analysis, this Special Issue also addresses several methodological and statistical challenges. One issue that clearly is not resolved yet is the issue of how long the reciprocal influence of physician and patient speech is operating (Mazzi *et al.*, 2003), or, in research terminology: how many lags have to be analysed to get clear answers. Nearly all authors struggle with this issue. Van Dulmen *et al.* (2003) analysed only one lag, but concluded that more interesting results could probably be found when analysing more lags. Van den Brink-Muinen *et al.* (2003) found that most relevant adequate behaviours were found within three lags after the patient's cue; Eide *et al.* (2003) and Zimmermann *et al.* (2003) analysed several lags and – indeed – found interesting results. But clearly more work has to be done on this issue. An interesting overview of statistical methods for different types of sequence analysis, exploratory as well as theory-driven research is presented by Mazzi *et al.* (2003). It shows several possibilities and is a good guide for researchers who want to get involved in sequential analysis. We hope that many researchers find inspiration in this Special Issue to do so.

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