

9. Nonverbal Communication in Doctor-Suicidal Patient Interview.

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Abstract. Current techniques of repeated suicide risk assessment are not reliably predictive, and research into new methods is needed. The judgment of clinicians relies partly on nonverbal signs such as facial expressions. If differences in patients and/or interviewer's facial expressions appeared between subjects who were to make subsequent attempts (Repeaters) and those who were not (Non-Repeaters), this could lay the foundations for new ways of prediction.

Fifty-nine patients admitted to the Geneva University Hospitals after a suicide attempt were video-recorded during an interview with a psychiatrist. After the interview, the therapist was asked to assess the suicide risk on a 4-point scale. At 24-months follow-up, we identified 10 Repeaters, who were matched with 11 of the 48 Non-Repeaters, with respect to gender, age, and number of previous suicide attempts. To code the doctor's and patient's facial behaviour, we used Ekman and Friesen's "Facial Action Coding System" (FACS) and we analyzed her behavioural differences with both groups. Results indicated an average activation of all coded units, peri-ocular activation, and duration of her gaze straight at the patient, which were all significantly higher, distinguishing correctly 81.8 to 90.9 % of the patients. By contrast, the doctor's written predictions were erroneous: only 22.7 % of the patients were correctly classified. This fact reflects the doctor's perception of risk, without awareness.

To analyze the structure of the interactive behaviour, we used THEME. Different types of behavioural patterns were found to occur exclusively by either repeaters or non-repeaters and significant differences were found in the complexity of patterns between groups. They give us a sense of the nonverbal communication quality.

Keywords: Suicide attempt; nonverbal behaviour; patient-therapist interaction; suicide risk assessment; T-patterns.

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9.1 Introduction

The incidence of suicide in Switzerland is quite high and at present stands at about 20 per 100.000 inhabitants per year. According to WHO statistics suicide attempts can be multiplied by 10. The risk of reattempt, even frequent reattempt, is high in these patients [1, 2]. The accuracy of suicide reattempt risk assessment therefore plays a crucial role in effective prevention of suicide. However, the limitations of the suicide scales concerning suicide attempts lead most experienced clinicians to trust primarily their own intuition and their personal expertise. *But what is this intuition made of?* It is our belief that clinicians rely heavily on nonverbal signs (i.e., tone of voice, facial expressions, gestures or posture) [3]. Number of studies has shown that dyadic interaction is highly structured and ritualized [4-8]. Many suicide patients are thought to disclose their intentions to their significant others (particularly in nonverbal ways), who too often fail to grasp these hints [9-11]. Therefore, in the present study, we set out to assess suicide risk by exploring this new lead, which is their nonverbal communication and the structure of the interaction. With this in view, we proposed to study patients' and doctor's facial behaviour and their interactive behavioural patterns, in order to get a better understand on how they communicate at a nonverbal level. We hypothesized that, by correlating these variables with the patients' future suicide behaviour outcome, we might have a more direct access to the patients' inner state of mind and suicide intentions, and to the interviewer's perception of such intentions.

9.2 Hypothesis

Our hypotheses are the following:

- 1) Differences in repertoire and type of facial expressions, related to emotions and the intensity of interaction would appear between both groups;
- 2) The doctor's head and facial behaviour would differ when talking to a future repeater or to a future non-repeater;
- 3) We expect to find pattern types occurring exclusively in one group or the other as well as a repertoire of common patterns.

9.3 Method

Video recordings were made of 59 adult suicide patients admitted to the Emergency ward at Geneva University General Hospital. Recordings of patients' who did not speak fluent French, those who were not living in the Geneva area (making them difficult to be traced after two years), and those who were in an acute psychotic state were excluded. A written informed consent was obtained after a thorough explanation of the nature and procedures of the research, in conformity with the procedure set out by the Ethics Committee of the Geneva University Psychiatry Department, according to the latest edition of the Declaration of Helsinki. All patients, after having been examined and attended to, were interviewed by the same experimenter, an experienced psychiatrist who was not aware of the psychiatric diagnosis, the medication and the number of previous attempts. During the interview, two visible video cameras recorded the facial expressions of both doctor and patient. The doctor interviewed each patient during 20 minutes using a standardized questionnaire. The questions concerned first the patient's general physical condition, his/her sensations and emotional status, degree of self-confidence, suicide intentions, and satisfaction with the care provided. The patient was then asked to describe in three words, if he/she so wished, his/her feelings at that moment. After each interview, the doctor rated

the patient's suicide risk, (her "written prediction"), on a 4-point scale (no risk, low risk, moderate risk, and high risk).

Twenty four months after the interview we checked the hospital files: 11 patients had been admitted again to one of our Geneva hospitals (the "Repeaters") (one tape was technically unusable) following at least one further attempt since our study; 48 patients had not (the "Non-Repeaters"). We then matched each of the 10 Repeaters against a Non-Repeater of same gender, age and number of preceding suicide attempts (bringing the total to 21 subjects). As FACS coding is time consuming, we selected one question (Question 1) on the possible intention of a further suicide attempt: "Do you think that one day, you will attempt suicide?" ("Suicide topic"), and another (Question 2), not directly related to suicide, on satisfaction with care received: "Could you tell me what you liked and disliked in the care you received here, at the hospital?" ("Care topic"). We assumed that the latter would elicit different emotions (anger?) than the first topic. These two samples were analyzed by four coders qualified to use the "Facial Action Coding System" (FACS) [12] with an inter-coder reliability of 0.82. The coders were blind to who was a Repeater and who was not. FACS is a system for recording all visible movements of facial muscle groups, called action units (AU). Each one of these AUs is given a code number. The direction in which the subject is looking and the tilt of the head are also recorded. The time of onset of each AU, its intensity, any asymmetry (left / right), the time of disappearance, are all taken into account. The AUs can combine to form recognizable configurations which Ekman and Friesen [13] have related to basic emotions such as anger, fear, joy, contempt, surprise and sadness. The intensity of each unit is coded on a 3 to 5 point scale (A to E) depending on the type of AU.

First, we used a two-tailed signed ranks Wilcoxon test [14] for statistical analysis. In order to test the discriminative value of the variables we calculated an "*efficiency value*" (in %), using Belson's criterion. This made it possible to split the sample into two groups, based on a threshold defined by maximized inter-group variance [15]. We then crossed these results with our Repeaters and Non-Repeaters classification in order to see how many Repeaters were above the threshold and how many below [16].

Following the transcription of FACS codes the THEME 5.0 [17, 18] was used to detect and analyze behaviour patterns.

9.4 Results

Our first series of analysis of the doctor's nonverbal behaviour brought to light numerous differences, according to whether the interview was being held with a future Repeater or a Non-Repeater. Three aspects of the doctor's behaviour were significantly more frequent with a future Repeater: i.e., doctor's average activation, peri-ocular muscular activation and gaze direction. By contrast, her written prediction did not show significant differences between groups.

1) Average activation: Here we considered the mean of *all facial, head and eyes* Aus' intensities during one given time segment. This value was significantly higher when the doctor was interacting with a future Repeater, particularly during the "suicide topic" time segment. With this variable, 81.82 % of patients were correctly classified as Non-Repeaters or Repeaters.

2) Peri-ocular muscular activation: This includes all action units of the upper face. However, the result we achieved is mostly a function of the lowering of the eyebrow (as when frowning). When listening to the Repeater during the "suicide topic" time segment, the doctor's peri-ocular region was activated significantly more frequently and with greater

intensity. With a maximum inter-group variance threshold of 0.94, we correctly classified 90.9 % of the patients.

3) Direction of gaze: During the “suicide topic” time segment, the doctor held her eyes on Repeaters’ face for a significantly longer time than on Non-Repeaters’ faces. Through this variable, we classified correctly 86.4 % of the patients.

4) Analysis of the doctor’s “written predictions” showed, by contrast, that the doctor could not predict who was at risk: She rated 14 patients as presenting a moderate risk of reattempt, 7 as high risk (5 of whom were Repeaters), and 1 as low risk (who eventually was a Repeater). In short, here she classified correctly only 22.7% of the patients (5 in 22).

5) Our second series of analysis, that Analysis of T-patterns indicated some differences between repeaters and non-repeaters concerning complexity and frequency of behavioural patterns. On average we find a higher number and frequency of patterns for Repeaters than Non-Repeaters in both questions, but the differences are not significant. The number and frequency of patterns is also higher in Question 2 than Question 1 for both Repeaters and Non-Repeaters, non-significant though. The same is also true for number and frequency of individual and interactive patterns.

Concerning analysis of Question 1 we find Repeaters having significantly higher number of *individual* pattern types than Non-Repeaters (see Figure 9.1). On average the number of individual patterns was also higher for Repeaters in Question 2, but the group difference were not significant.

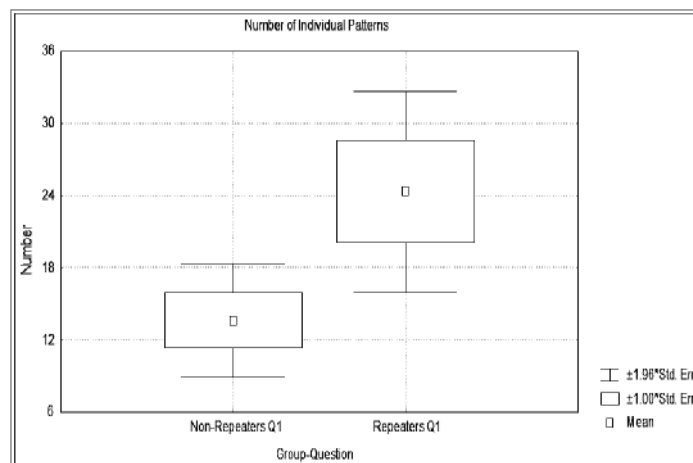


Figure 9.1 Number of Individual patterns detected in Question 1 for groups Non-Repeaters and Repeaters ($t = -2,23$; $df = 19$; $p < .03$).

Concerning Question 2 we find significant differences between Repeaters and Non-Repeaters on maximum number of pattern occurrences, being higher for Non-Repeaters (see Figure 9.2). On average the maximum number of pattern occurrences is also higher for Non-Repeaters in Question 1, but the group difference was not significant.

Certain complex patterns were found exclusively to be produced either by Repeaters or by Non-Repeaters (see examples 1 and 2 below) and some pattern types, not as complex, were found to occur in both groups (see example 3 below).

Example 1. The following pattern (Figure 9.3), was found to occur in 70% of the Non-Repeaters group for Question 1, not found in the Repeaters group, can be considered as a NVC prototype as it displays the structure of a speaking turn, that is, the ritual that allows the therapist to speak. We see that the patient turns his face and his eyes toward the therapist who sits facing him slightly on the left, then the therapist turns his face and eyes toward the patient (eye contact), then the therapist prepares to speak and eventually speaks.

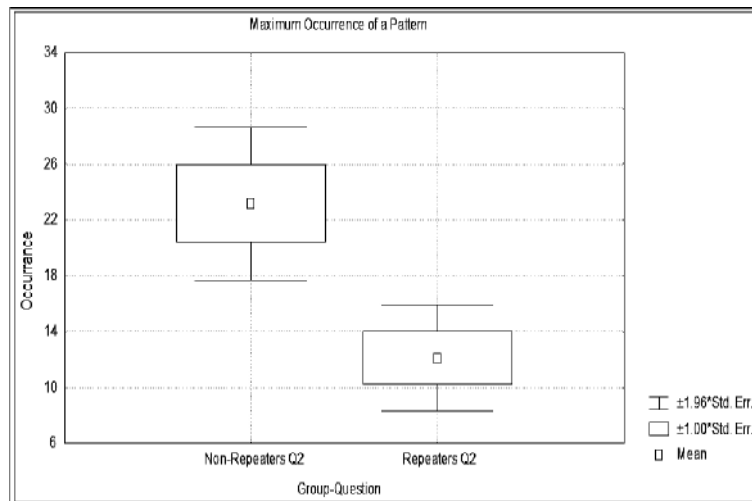


Figure 9.2 Maximum occurrence of a pattern detected in Question 2 for groups Non-Repeaters and Repeaters ($t = 3,17$; $df = 19$; $p < .004$).

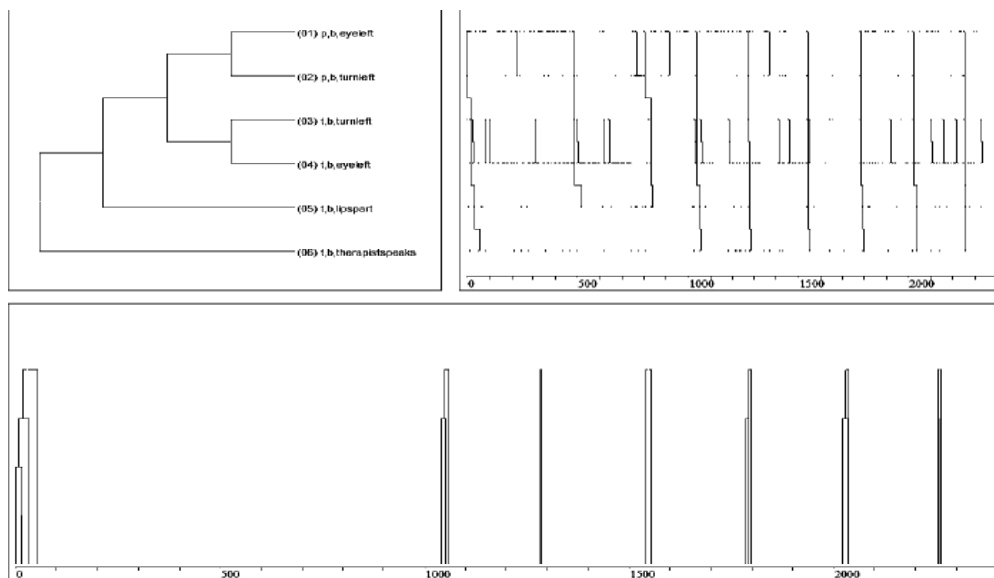


Figure 9.3 Pattern found in the Non-Repeaters group concerning question 1. Events – 1) Patient, begin, eyeleft, 2) Patient, begin, turnleft, 3) Therapist, begin, turnleft, 4) Therapist, begin, eyeleft, 5) Therapist, begin, lipspart, and 6) Therapist, begin, speak.

Example 2. Figure 9.4. displays a T-pattern found exclusively in the Repeaters patients group. The ritualistic pattern describes the therapist lowering her head before speaking, speaking, then turns her face and eyes toward the patient who then begins to speak. At that moment, the therapist closes her eyes, then opens them looking down. Two sub-patterns occur frequently within the larger structure; the therapist begins to speak and then turns toward the patient, and the patient speaks and the therapist closes her eyes.

Example 3. This simple pattern (Figure 9.5) displays a regularity of both parts of the eyebrow being raised. This pattern appears in at least 70% of the files of Repeaters and Non-repeaters in Question 1. This facial expression is well known as being highly communicative, its role being to captivate the listener’s attention [19]. This simple repeated structure was not detected as part of larger pattern and the events did not form a pattern for neither subject groups in Question 2.

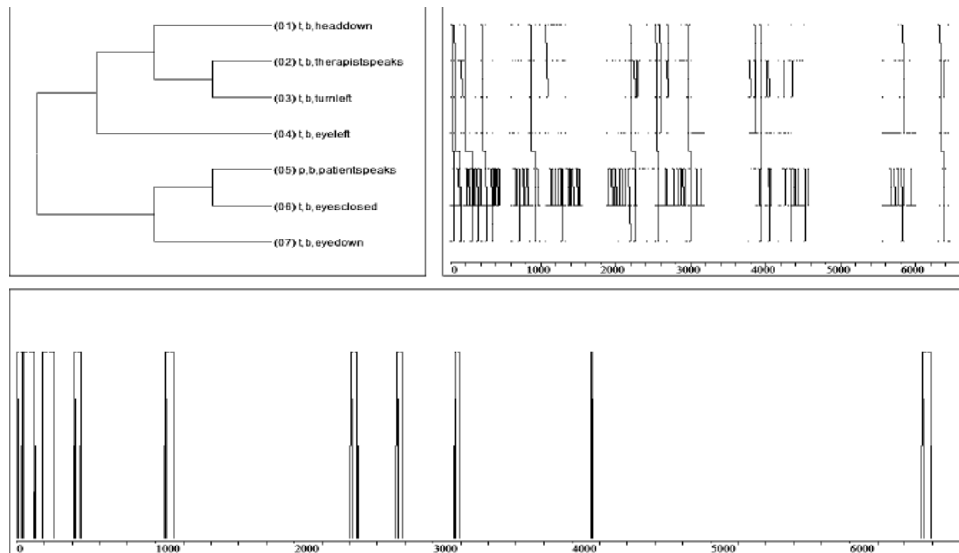


Figure 9.4 Pattern found in the Repeaters group concerning question 1 and 2. Events – 1) Therapist, begin, headdown, 2) Therapist, begin, therapistspeaks, 3) Therapist, begin, turnleft, 4) Therapist, begin, eyeleft, 5) Patient, begin, patientspeaks, 6) Therapist, begin, eyesclosed, and 7) Therapist, begin, eyedown.

9.5 Discussion

In the first series of our findings, the therapist's increase in peri-ocular activity can be considered as a sign of anxiety or preoccupation. Her tendency to look very constantly and carefully at the patient's face could be understood as a way of scrutinizing it during the discussion on the "suicide topic". This particular behaviour could be associated with the interviewer's heightened concern about the patients who, later, actually did repeat a suicide attempt. This attitude was not found when she was talking with "Non-Repeaters". Therefore, her nonverbal attitude could reflect an accurate perception of the suicidal patient's intentions. Apparently, the doctor's perceptions did not lead to a conscious acknowledgement on her part: her written predictions did not help to discriminate between "Non-Repeaters" and "Repeaters". Consequently, she did not prescribe specific safety measures (e.g., hospitalization versus discharge) for some persons of the repeater group. Her perception, as inferred from her nonverbal behaviour, seems to have had no impact on her clinical decision-making.

In the second series of analysis, we present the THEME analysis of patterns, which brings us the following results.

1) The significantly higher number of individual patterns by Repeaters, joint with the fact that there were also significantly less maximum occurrences of each of these patterns means that the *variety* of patterns was much greater by the Repeaters. This may have given a feeling of unusual communicative style.

2) The analysis of the numerous individual patterns of the therapist let us understand better the communicative style of the therapist (the same therapist in all interviews)

3) The analysis of interactive patterns gives us valuable information about the quality and the peculiarities of nonverbal communication in each group. In fact, the most complex and frequent patterns, for all subjects, include mainly eye and head movements. Facial expressions, however, were not found in many patterns, as they are scarcer and more individual. Politeness smiles did not emerge, and further examination of the data may bring an explanation to this. In example 1, what we can clearly observe are eye contacts in the well known ritualized speaking turns. This ritual implies that both partners are willing to look at each other in the eyes in a foreseeable way. As exposed above, we know that by

Repeaters, eye contacts were transcribed, but they aren't found as a part of detected pattern. In example 2, the pattern is unexpected, as it shows the doctor closing quickly her eyes when the patient begins to speak. Does she need to gather her thoughts and/or concentrate on her feelings? Example 3 shows us a very typical communicative pattern, and as such, it is surprising *not* to find it included in a larger interactive pattern, but only isolated, by itself.

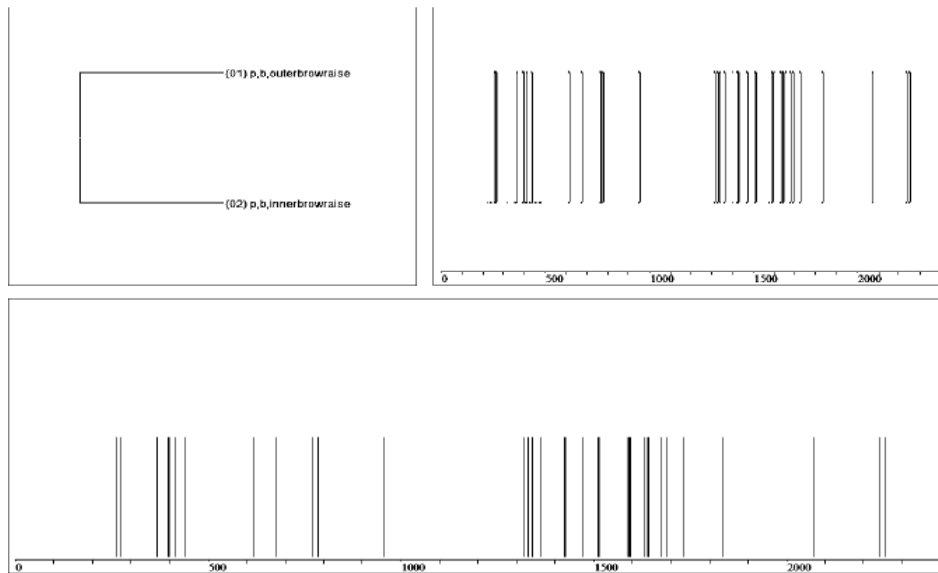


Figure 9.5 Pattern found in over 70% of Repeaters and Non-Repeaters group concerning Question 1. Events – 1) Patient, begin, outerbrowraise and 2) Patient, begin, innerbrowraise. Not found in Question 2.

9.6 Conclusion

We would like to propose three conclusions from the first part of our analysis. First, we can confirm that nonverbal, non-intentional, and non-conscious interaction between patient and therapist does occur. Second, that nonverbal communication could provide important clues regarding the affective state and suicidal tendency of patients, even if they don't verbally disclose their intentions. Third: if the interviewer would give credit to her own reactions, they would influence her decision-making.

Our hypothesis that the THEME analysis would detect the presence of individual as well as interactive patterns could be verified. Here we find patterns that happen exclusively in one group, moreover, some are found in as much as 75% of cases in that group. This thus amounts to a qualitative (but still probabilistic) difference between the groups. Assuming that such patterns can be identified directly by the therapist, it seems that their discovery could eventually facilitate diagnostics in the actual interview situation more than overall group differences in average frequencies of certain elements.

The significant differences between groups concerning occurrences and types of T-patterns give us some clues about the differences in nonverbal communication between groups. For example, we find significantly more individual patterns by Repeaters. In their group, there is a tendency to more *varied* but less frequently occurring patterns. Concerning interactive patterns, their behavioural content differs according to groups. They show the same behavioural elements (head and eye movements with speech) but their configuration is different. This is of interest, knowing the speaking turn rituals described by Duncan and Fiske in 1977 [4]. Looking closely we notice less eye contact in patterns by

Repeaters, although we know that they were scrutinized longer by the therapist. It seems therefore that the interaction with Repeaters may have been more disruptive than with the other patients.

These findings about a different “dance” performed in each group will support our efforts to promote body and emotions awareness in the therapists’ training as well as in the post-graduate medical workshops. In our ongoing study with other therapists, we will explore in more details the patterns including facial expressions and what they mean.

9.7 Acknowledgments

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