Nonverbal Processes in Psychotherapeutic Interaction

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Abstract: In this paper, we outline a research approach, which describes affective regulation processes in psychotherapeutic interactions on the micro-level of interactive behavior. We present some considerations about the general functions of nonverbal behaviors as well as possible meanings of specific nonverbal behaviors such as gazing, gesture, or head- and body movements in psychotherapeutic interaction. Our focus is on facial behavior. Furthermore, the article discusses the relation between certain interactive patterns and mental disorders and their possible manifestation in psychotherapeutic interaction. Using a specialized method to study affective micro-sequences in interaction, we analyze a conversation from psychoanalytic psychotherapy to illustrate the relevance of specific interactive relationship patterns for a productive psychotherapeutic process.

Keywords: Facial expression, FACS, interactive relationship patterns, micro-sequence analysis, nonverbal behavior, psychoanalytic psychotherapy, therapeutic relationship.

THE INVESTIGATION OF THE THERAPEUTIC RELATIONSHIP

We start from the commonly accepted assumption that the relationship between client and therapist is an important factor in the psychotherapeutic process (e.g., Bordin [1]; Horvath [2]). The therapeutic relationship consists of a trustful working alliance and the implementation of a specific therapeutic treatment technique. Processes of affective regulation play an important role in terms of the realization of both aspects. Affects are not only communicated verbally, but also by nonverbal behaviors such as facial expressions, head- and body movements or the tone of voice. This view is gaining acceptance in psychotherapy research: while the research focus has been traditionally laid on the 'exchange of words' (Streeck, p. 7, [3]), we now can observe an increasing emphasis on the investigation of nonverbal behavior. In this paper, we will present a research approach that allows for the description of affective regulation processes on the micro-analytic level of interactive nonverbal behavior. We start with some considerations on the general functions of nonverbal behaviors. Here, our focus mainly lies on facial behavior. Furthermore, we will discuss how specific interactive relationship patterns are linked to mental disorders and how these specific patterns may manifest themselves in psychotherapeutic interactions. The methodological approach will be explained and illustrated by an example taken from a videotaped session of psychoanalytic psychotherapy.

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THE MANY FUNCTIONS OF NONVERBAL BEHAVIOR

Nonverbal behaviors play a central role in interpersonal communication. Body language reflects our feelings and facilitates the regulation of relationships. Various interpersonal dimensions, such as power and submission, closeness and distance, affection and antipathy, are regulated through nonverbal signals. Nonverbal behavior comprises a wide range of different phenomena, such as facial behavior, gestures, gazing behavior, head- and body movements or vocal cues. Some of these nonverbal phenomena are directly associated to speech; for example, the so-called listener responses ('mhm'), intonation or pauses in speech. Other nonverbal behaviors, such as the different ways people move while walking, are fairly independent of speech. Most of these nonverbal phenomena proceed automatically and unconsciously. We only become aware of them when a disruption occurs; for instance, when speaker B ignores A's nonverbal signals with which A tries to take over the speaking role, leading A to interrupt B. Facial behavior is of special importance because it plays a central role in the communication of emotions. This applies particularly to the so-called basic emotions, which include happiness, surprise, anger, disgust, contempt, and sadness. Each of them is characterized by specific facial expressions. According to Darwin's theory [4], these facial expressions are universal and biologically determined. Facial behavior may be controlled voluntarily or automatically. These control mechanisms are shaped by cultural influences. Ekman and Friesen [5] introduced the concept of so-called display rules which tell us what emotion we have to show in which intensity and in which situation. Thus, these display rules modify our emotion expressions. In

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psychotherapeutic interaction it is important, that patient and therapist share these cultural determined display rule to a certain degree in order to avoid misunderstandings.

Facial behavior may be viewed as an 'interface' between intrapsychic and interactive processes of affective regulation and fulfills several functions simultaneously. Smiling, for instance, can be the expression of the inner state 'happiness'. Patients who are permanently smiling may be warding off their aggressive impulses. In this case, smiling fulfills an intrapsychic, i.e. a self-regulatory function. At the same time, smiling is an important signal in terms of relationship regulation and may signal to the therapist: 'treat me gently!'

Even though nonverbal behaviors mostly occur unconsciously, they have a strong impact on our interaction partners and often are more effective than verbal statements. When a person offers verbal reassurance that everything is all right but simultaneously shows anger in his or her face, the interaction partner usually reacts primarily to the nonverbal behavior and may, for example, start to justify his or her own behavior. Nonverbal behavior can also be used consciously in order to regulate conflictive relationships. For example, we can deliberately smile at somebody in order to avert aggression or to win him or her over. Similarly to smiling, gazing behavior also fulfills many functions at the same time. Mutual gazing (eye contact), for example, may enhance the feeling of affective relatedness between patient and therapist. A patient's gaze avoidance, on the other hand, may help to regulate his or her fear of a too intimate affective relationship with the therapist. Therefore, gaze avoidance may be an indicator of a patient's disturbed affective regulation, but may also occur when a patient is reflecting on his or her problems. Generally, gazing behavior in psychotherapy is distributed unevenly: therapists gaze towards their patients more frequently and for a longer duration than patients do. This is connected to their roles as speakers or listeners, respectively. Usually, speakers gaze less frequently towards their interaction partners. This is presumably because most of their attention is taken up by cognitive processes, thus requiring them to compensate by reducing sensory input. In psychotherapies, the phenomenon of 'social referencing', a concept well known in developmental psychology (for an overview see Klinnert, Campos, Sorce *et al*. [6]), is also important. During this process, the patient gazes towards the therapist and uses the therapist's facial expression as information in order to check the impact of his or her statement. Head- and body movements, in turn, may regulate the affective relatedness between patient and therapist. Ramseyer and Tschacher [7], for instance, found a correlation between a high frequency of nonverbal synchronizations and a positive evaluation of the quality of therapeutic relationship. Gestures may not only visually illustrate certain aspects of verbal utterances, but can also function as important elements of turn-taking mechanisms. As so-called 'adaptors' (e.g., scratching, touching the face), gestures may help to regulate negative emotions. These phenomena occur very frequently in psychotherapy and help to reduce an individual's inner tension. In order to interpret the meanings of nonverbal behavior, it is necessary to consider the context and the relationship between patient and therapist at a given moment in time.

INTERACTIVE RELATIONSHIP PATTERNS AND MENTAL DISORDERS

Emotional processes and their nonverbal correlates are important for the understanding of mental disorders. We regard mental disorders as disturbances in affective regulation. We understand psychological disorders such as depression as disturbances in the elicitation, subjective experience, and regulation of emotions. We assume that the development of a child's personality is based on the experience of specific interactive relationship patterns between child and caregiver, which are internalized during ontogenetic development. Recent research findings on infant-caregiver interactions have shown that the nonverbal exchange of emotions, as part of the infant's communication, is fundamental to the development of an infant's psychic structure (e.g., Stern [8]; Juen & Juen [9]). In adulthood, these internalized structures manifest themselves as repetitive patterns of affective regulation that are characterized by specific verbal and nonverbal behavior. In other words, an individual evokes, through his or her behavior, specific reactions, emotions, and fantasies in the partner. In the case of mental disorders, these repetitive relationship patterns are usually maladaptive. Krause [10] and Benecke [11] observed very frequent expressions of contempt in schizophrenic patients, whereas colitis patients displayed disgust expressions most frequently. Borderline patients showed a reduction of positive facial signals and more frequent negative and especially aggressive emotional expressions. Barbist [12] analyzed affective regulation processes in interviews with anorectic patients using Facial Action

Coding (FACS by Ekman & Friesen [13]; see below). Contempt expressions and so-called 'masking smiles' containing indicators of negative emotions were more frequent in anorexic patients in comparison to a healthy control group. Furthermore, mutual smiling was reduced and anorexic women did not look towards the interviewer while they were smiling. In another FACS study, interactions between mothers and their anorexic daughters were videotaped. The interactions were characterized by many relationship offers from the side of the mothers, which were refused by the daughters (gaze aversion, no reciprocated smiles, and very few listener responses) [14]. FACS analysis of depressed patients in OPD interviews (Operationalized Psychodynamic Diagnostics [15]) showed a reduction of genuine smiling ('felt smiles'), but not of smiling frequency in general. The frequency of masking smiles was augmented. Mutual laughter occurred only once. In a study of Bock *et al*. [16], a correlation between the severity of mental disorders and the contextual embedding of their negative facial expression of emotions was found. Negative facial expression of emotion directed towards the displayer's whole self, as well as negative facial expressions directed towards the interaction partner, were associated with a lower level of structural integration and a more severe mental disorder. In contrast, negative facial affects directed towards single aspects of the self, single aspects of objects, or to external situations were associated with higher levels of structural integration and therefore greater mental health.

We may conclude from these studies that the patient's interactive behavior makes it difficult for the interacting partner to establish affective relatedness with him or her. This makes it difficult to establish and maintain a good therapeutic working alliance in psychotherapeutic interaction.

AFFECTIVE MICRO-SEQUENCE ANALYSIS (AMA)

In order to better describe the specific characteristics of the psychotherapeutic relationship, we developed a research approach that enables the investigation of processes of affective regulation on a micro-level. The interactions are videotaped and analyzed on different conceptual levels. Facial behavior is analyzed using the Facial Action Coding System (FACS) by Ekman & Friesen [17] (see also Ekman, Friesen and Hager [18]). FACS was developed on a muscular basis and allows the detailed and objective description of all visually distinguishable facial movements. Observational elements are the action units (AUs). The AUs are given numbers. AU 4, for example, describes the lowering of the eyebrows. A genuine smile is defined by the AU-combination 6+7+12. For the basic emotions fear, anger, disgust, happiness, surprise, contempt, and sadness, there exist so-called tables of emotion prediction which relate specific AU-combinations to these emotions [19].

In our current research project we are analyzing psychoanalytic long-term psychotherapies. Our data consists of six psychotherapies taking place at our psychotherapeutic research unit at the University of Innsbruck. Four of them are completed and two are still ongoing (duration between 64 and 340 sessions). The therapies were conducted by four different very experienced psychoanalysts. At the beginning and at the end of treatment comprehensive clinical diagnostics including AAP and SKID-interviews take place. Our patients are mainly suffering from depressive symptoms, but vary strongly in their structural capacities according to OPD [15]. Four of five patients were advanced students in the middle of their twenties when entering psychotherapy. With the consent of the patients, all sessions are videotaped. In order to get high quality video material, two cameras film close-ups of the patients' and therapists' faces. The two video recordings are combined (split-screen technique) and a precise time code is added that allows the observation of the two faces simultaneously. After each session the Helping alliance questionnaire (HAQ) is filled out by patient and therapist [20, 21].

PROTOTYPICAL AFFECTIVE MICROSEQUENCES (PAMs)

Using this approach, we identified specific relationship patterns that function to balance out perturbations in affective regulation with the help of the interacting partner (Prototypical Affective Microsequences, PAMs). Perturbations in relationship regulation occur when an intrapsychic conflict threatens to be reactivated while talking about a difficult or conflictive topic. Smiling and laughing are core elements of PAMs. Both phenomena are contagious and enhance the affective relatedness between the two persons, giving them a sense of security [22-25]. PAMs are short processes that last only some seconds and occur unconsciously. PAMs occur in everyday interactions as well as in psychotherapy and serve as regulation processes in the context of several negative emotions.

The prototypical process of a PAM is as follows: On the verbal level we may observe indicators of a

perturbation in the patient's affective regulation such as repeating and correcting words, using filling sounds and pausing in the middle of the sentence. On the nonverbal level, we may observe facial indicators of negative emotions or adaptors such as lip pressing or touching the face. In order to increase the affective relatedness between the partners, the initiator of the PAM makes a joke or an ironical remark. He or she gazes towards the interacting partner in order to check the impact of his or her statement. This is a process that we could conceptualize as 'social referencing' [6]. Afterwards, he or she begins to smile, which can be understood as a relationship offer.

According to psychoanalytic principles, the psychoanalyst's job is to maintain a balance between two opposing prerequisites: On the one hand, he or she should be able to provide a reliable working alliance to give the patient a feeling of security and trust. This enables the patient to explore his or her experiences and behaviors and to accept and understand the therapist's interventions. On the other hand, the therapist has to maintain a certain conflictive tension in order to recognize and work on the patient's conflicts [e.g., 26]. PAMs play an important role in maintaining this balance.

Depending on the reaction of the interacting partner, so-called successful, unsuccessful, plus-minus and participation PAMs can be distinguished. In successful PAMs, the interacting partner reciprocates the prior person's smile or laughter. This results in both partners being in a positive affective state. The negative affect is regulated and the relationship is secure. The subsequent course of interaction may be experienced positively due to the pleasurable increase of the interaction and due to the joint experience of mutual responsivity [27]. In unsuccessful PAMs, however, the interacting partner does not reciprocate the smiling or laughing. Dealing with the perturbation is delegated to the respective self-regulation domains. The individual preoccupation with self-regulation results in a reduction of emotional involvement [28]. Thus, the negative affect remains and the relationship is experienced as insecure (The terms 'successful' and 'unsuccessful' do not evaluate the productivity of a regulation process in a certain context, but instead refers to whether the initiator of a PAM succeeds in eliciting a smile or laughter in his or her interacting partner or not.).

In participation PAMs, the interacting partner reciprocates the smile but only in a weak form. This smiling has the function of a 'thread of resonance' and gives the partner a sense of security. The negative affect, however, is not fully regulated and the individual's perturbation in his or her self-regulation remains activated. In plus-minus PAMs, the interacting partner reciprocates the partner's smile but shows at the same time facial indicators of negative emotions. Although the smiling response also has the function to sustain the partners' affective relatedness in this context, the partner does, however, simultaneously experience negative emotions. In these situations, the negative affect is not fully regulated but the relationship is secure.

The following micro-sequence comes from the 29th session of a long-term psychoanalytic psychotherapy. At the beginning of the treatment, the patient was 28 years old. She searched therapeutic help because of conflicts with her partner and her parents. She suffered from depressive symptoms such as feelings of worthlessness, loss of energy, and crying spells. She also had learning problems and difficulties to finish her studies. The micro-sequence starts at the end of the session (time marker 52.39) and lasts about 45 seconds. During this sequence the patient repeatedly tries to regulate her affective perturbations with the help of the therapist. The therapist, however, stays nonverbally abstinent and does not reciprocate the patient's smiling and laughter episodes. Because of this, the conflictive tension remained and the patient's problems could be discussed.

At the beginning of the sequence, the patient is complaining about her weaknesses and her faults. She compares herself with her mother who 'only mentions the negative and blocks the positive'. This verbalization is followed by several indicators of a perturbation: Indicators of anger appear in her face (AUs 4+7), she is covering her eyes with her hand and is shaking her head (Figures **1**, **2**). Then a short silence occurs in which the therapist tries to close the session by saying 'unfortunately, we must stop here'. The patient, however, does not react to the therapist's attempt but turns her gaze away saying 'it's just somehow very complex in my brain'. Then the patient begins to smile and laugh intensively while gazing away (Figure **3**). The therapist however, does not respond to the patient's smile and intense and loud laughter. Thus, the patient's perturbation is not regulated in this instance and the conflictive tension still remains. The perturbation in the patient's affective regulation is indicated by several negative facial expressions (AU 5, AUs 4+7, AU 6 + AU 45 (eye closure); Figure **4**). Furthermore, she shakes her head and moans audibly.

Figure 1: Patient shows indicators of anger (AUs 4+7).

Figure 2: Patient shows indicators of perturbation in affective regulation (adaptor).

Figure 3: Patient starts to laugh intensively with gaze avoidance. Therapist stays abstinent.

At time marker 53.23.08, the patient initiates a PAM by saying: 'that does not appeal to me' while showing a masking smile (AUs 6+7+10+12) and shaking her head again (Figure **5**). During this sequence, her head is turned away from the therapist and she avoids eye contact. Again, the therapist does not respond to her smile and laughter (unsuccessful PAM) but starts a verbal intervention asking the patient to more deeply reflect on 'what bothers her' and 'what might precipitate this emotion'. The therapist is not able to finish her sentence because the patient interrupts her by saying 'I simply want to be normal'. Again, the patient produces loud and intense laughter and the therapist stays abstinent (Figure **6**). We view this sequence as productive for the following reason: The therapist's nonverbal abstinence seems to be encouraging the patient to take a closer look at her conflictive topics and also shows that the therapist is not ready to engage in mutual laughter with the patient on these topics. This behavior corresponds to the basic psychoanalytic attitude of abstinence.

Figure 4: Negative facial expressions indicate perturbation in patients' affective regulation (AUs 4+7).

Figure 5: Patient initiates PAM (masking smile: AUs 6+7+10+12) and turns her head away to avoid eye contact. Therapist stays abstinent (unsuccessful PAM).

EMPIRICAL EVIDENCE

PAMs serve as regulation processes in the context of several negative emotions. Up to now, they have been identified in situations of anger [e.g., 29], jealousy [e.g., 30], guilt feelings [e.g., 31, 32, 33], and shame

Figure 6: Patient starts to laugh again. Therapist stays abstinent.

[e.g., 27]. They occur in different types of relationships such as couples, friends, mothers and children, fathers and their adolescent sons as well as in psychotherapeutic interactions (in psychoanalytic treatment as well as in couples' therapy). PAMs not only occur in psychotherapies taking place in Europe but also in psychotherapies conducted in Chile [34, 35] and Canada [36].

In order to learn more about the phenomenology and function of PAMS in psychoanalytic psychotherapy we recently analyzed 36 therapy sessions coming from three different psychotherapies [37]. All PAMs were identified and classified according to the four different types (successful, unsuccessful, participation, plus-minus). In the second part of the study, we compared therapy sessions rated high in HAQ by patients and therapists with low rated sessions in terms of frequencies of PAM-types. In a third step, we compared the different PAM-types in the following three phases of a therapy session, namely 'session opening', 'working phase', and 'closing phase'. Furthermore, the initiators of the PAMs were determined.

In our data, a total of 704 PAMs occurred. 88, 3 % (622 occurrences) were initiated by the patients. Most of the PAMs were classified as unsuccessful (43, 8%, 308 occurrences), 17, 3 % (122 occurrences) were categorized successful and participation respectively, and 22% (74 occurrences) were plus-minus PAMs. The frequent occurrence of unsuccessful PAMs reflects the psychoanalytic attitude of abstinence which allows the maintenance of a certain level of conflictive tension necessary for working on the patients' conflicts. In the sessions rated high according to HAQ, significantly more PAMs occurred. Furthermore, significantly more successful and plus-minus PAMs occurred in the high rated sessions. It seems that the establishment of affective relatedness by successful PAMs leads to positive (conscious) feelings towards the interacting partner. PAMs are also important interactive relationship patterns in the opening and closing phases of therapy sessions. In contrast to the working phase, which are dominated by unsuccessful PAMs (43%), most of the PAMs in the opening phases (50%) and closing phases (69 %) were successful. We assume that the successful PAMs in the opening phase have primarily the function to provide a basic sense of security as a prerequisite for addressing conflictive topics during the working phase. Successful PAMs in the closing phase, however, allow a "good separation". Possible negative affects originating from the working phase can be replaced by positive feelings emerging from successful PAMs.

THE THERAPEUTIC RELATIONSHIP AS A DYADIC PROCESS

In line with the study outlined above (Huber *et al*. [37]) and several other studies (e.g., Bänninger-Huber, 2014 [38]), we can conclude that successful PAMs play an important role in the establishment and maintenance of a stable working alliance. Thus, productive sequences are often preceded by successful PAMs, which give the patient the necessary sense of security to be able to talk about conflictive and problematic topics. But unsuccessful PAMs are also important for the psychotherapeutic process because they help to maintain conflictive tension. Accordingly, successful PAMs only occur if the patient and therapist are not discussing a conflictive topic. Significantly more PAMs are initiated by patients, but in some cases therapists also initiate PAMs. They occur relatively often at the beginning and at the end of a therapy session and have the function to enhance the emotional relationship [27]. Sometimes, therapists' PAMs may also be observed in situations in which patients are not able to bear the conflictive tension any longer and the reestablishment of relationship security has priority. Only very rarely do therapist-initiated PAMs fulfill a self-regulatory function. This may occur when a therapist is confronted with a topic that is difficult for him or her to endure.

The analysis of different types of PAMs has shown that the therapeutic interaction can be viewed as a process of reciprocal coordination and that it is also shaped by the patients' and the therapists' typical processes of self-regulation. Therefore, the therapeutic relationship is an intersubjective reciprocal process in which the affective regulation systems of the patient

and therapist are intertwined. Nonverbal behaviors are essential for this process. A micro-analytic approach helps to investigate nonverbal processes that mostly occur automatically and unconsciously and helps to better understand the reciprocal quality of the therapeutic interaction. Because in the therapeutic relationship the patient and psychotherapist react to such fine details in their behavior and influence each other with means that are often undetectable by the naked eye (Streeck, p. 37, [3]).

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