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A comparative study of the emotional vocabulary in two cases

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1. Problem

Two years ago we began our studies supposing that exchange processes in psychotherapy already take place on the level of the speakers' vocabularies. It is obvious, that the investigation of not more than just the particles of speech by computer-aided text analysis limits the range of possible conclusions, since investigation of lexical items still is inevitably tied to a neglect of contextual information. However it comprises the advantages of a technology which may balance the poverty of the semantics involved [Mergenthaler, 1988].

At present, the search for linguistic markers as indicators for therapeutic process faces a dilemma: On the one hand , the rather mechanical process of analysis paves the way for a host of various procedures; on the other hand, the selection of the variables investigated is often restricted to formal critera lacking functional, i.e. clinical relevance.

Using transcripts from the Penn Psychotherapy Study [Luborsky, 1988b], we gathered first experiences with methods for analyzing vocabularies characteristic for the speakers involved. In this material we already found that successful therapists (that means: therapists of "improved patients") tend to focus particularly on the emotional parts of the patients' vocabulary [Hölzer, 1987].

From this we concluded that detailed examinations of sub-vocabularies would be more relevant than the study of total scores [Hölzer, 1988] and embarked on investigating the "emotional vocabulary" with what we call now the "affective dictionary" (AD). Working close to the patient's emotions has been identified as a therapeutic strategy by quite a few in the field [Safran, 1988]. Within the PEP-Project Hans Ruedi Ambühl's work on "therapeutic heuristics" includes the strategy of "working through emotions", as well.

The process of naming and thus signifying of affective states has a distinct position in reserach on emotions: Moser [Moser, 1983] defines an emotion als an "experienced and / or conscious affective coding of a situation with more or less accentuated self- and object-representations (p. 4). In a similar vein Krause introduces the "labeling of feeling states " as a separate component in his taxonomy of the internal structure of affects [Krause, 198x]. He also highlights evaluative processes with which the individual categorizeses emotions as self- or object directed.

Statements that are based on the investigation of the emotional vocabulary pertain to the question: which emotion words are used by the speakers and when. The context in which they are situated, the meaning of the sentence in which they appear, is not yet touched. Conclusions as to what actual affective states these words might represent are not covered by this approach as well.

2. The Affective Dictionary (AD)

Table 1 (table 1 shows the way of how the data were prepared)

In the frame of the PEP project our approach compares two therapies: The **STUDENT** ,a psychodynamic,and the **FORWARD,** a cognitive-behavioral one. In a first step all adjectives and nouns of the text were identified that in our opinion belong to the emotional field or indicate affect.

In a second step a category system, derived from Hartvig Dahls theory of emotions as "appetites and messages", was used to arrive at a classification of these words into distinct categories.

Table 2: Dahl‘s decision tree

Based on de Rivera‘s " decision theory of emotions", in Dahls classificatory approach, three dichotomous steps lead to eight categories for classification:

The first decision relates to the question whether the labeled affective state refers to an object or whether it describes a self-related state. Object emotions, conceived of by Dahl as appetetive wishes, are also called **it-emotions**, and self -related feelings

are labeled **me-emotions**. In Dahls theory me-emotions are messages or, more precise, beliefs about the state of wishfullfillment in the realm of object-related and other wishes.

The second step decides on a positive or negative evaluation of the feeling state

The third step classifies the object emotions in terms of directionality, whereas self emotions are judged on a passiv - active dimension. The classification of the emotional vocabulary was performed by two independent raters, reliability of coding reached 75%. The classiciation of differently judged words was resolved by discussion and consensus of the two raters.

Table 3: The Affective Dictionary Ulm = ADU

A critical issue relates to the role of verbs as carrying emotional meaning. From a theoretical point of view they are highly relevant since they mainly catch what Dahl calls "consumatory acts" and conceives of as integral contituents of object or it-emotions. On the other hand, our experience indicates that the emotional significance of verbs shows a much higher contextual dependency as that of adjectives and nouns. Since this quality of verbs lowers the valididy of the categories, we developed two preliminary versions of the Affective Dictionary, one with and one without verbs as entries.

Now, computer assisted content analysis by means of this"Affective Dictionary" allows seperating the dialogue into speakers, sessions and (for some questions) into utterances as well. The programme checks the verbal exchange for entries, marks them and computes a total score for each of the categories for each session or whatever the summarizing unit of analysis may be.

Table 4: The ADU Coding in the the text

After computerized analysis, the data structure of a single therapy can be represented by a three-dimensional continency table.

Table 5: Contingency table

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In further steps more complicated analyses such as comparisons between two therapies become possible.

3. The comparison of the Student and the Forward
From our previous investigations we already knew that the size of any given vocabulary highly depends on the verbal activity of the speaker. Thus, for comparing vocabularies, the assessment of verbal activity is a necessary prerequisite:

Table 6: Verbal Activity, Private Vocabularies, Emotional Vocabularies

Verbal activity turns out to be fairly different in both therapies. In relation to their therapists, the Bernese patient stays rather passive compared to the Ulm patient. Factors of technique as well as personality style and clinical experience may contribute to these differences. The cognitive- behavioral oriented Bernese technique for example leads to quite a few comprehensive instructions of the therapist. Whereas the lower verbal activity of the Ulm therapist fits well with his technique of active listening, which primarily serves the detection of conflictual material in the patients speech.

Table 7: Verbal Activity in the Ulm Case

Sticking to this technique leads to a low variability in verbal activity of the Ulm therapist, with a mean of about 2000 (2010) words per session , each lasting 45 minutes. The patients speech activity has a mean of about 4400 (4443) words/ a session, showing slightly more variety over the course of treatment. It seems noticable, that there is a tendeny of the patient to lower verbal activity in sessions before separation. In hour 14, the last session before a longer break, and hour 29, the very last session of this treatment, the patient exhibits his lowest scores.

Table 10: Verbal Activity in the Berne Case

In comparison, the more active Bernese therapist produces a mean score of 2700 words; in 13 out of 28 sessions his verbal activity is even larger than that of his patient, who displays a mean of about 2800 words.

Presupposing that the size of a vocabulary allows a fair estimation of the verbal creativity of a speaker [Schoppe, 1975] , we may draw the following conclusions

from our results. The small vocabulary of the Forward reflects lower verbal creativity in expression of inner states, whereas the Student presents a much more diversified vocabulary and thus more abilities to meet the demands of verbal psychotherapy. Since the respective vocabularies of the therapists correlate in size, we think that this reflects **their** attempt to adapt to the different verbal capacities of their patients.

Focusing now on the **emotional** vocabularies as they appear distributed over the eight Dahl categories, three general statements can be made: 1) In the Ulm therapy, quantitatively more affective labels are used compared to the Bernese case. 2) As it was in the overall vocabulary more qualitatively different entries are found in the emotional vocabulary of the Ulm therapy 3) Both therapists use significantly more emotional labels than their patients. In other words the therapists speech displays a higher degree overall emotionality or "affective density" than the patients speech.

Table 12. Comparison Ulm- Berne in Categories

A category-based comparison of both therapies produces the **following** result: The Ulm case is primarily a therapy on object or it-emotions, the Berne case focuses much more on self or me-emotions. (Explanation: blue is characteritic for ULm, red for Bern). Not only that this difference is statistically highly significant ($p = < o.o1$), it can be reproduced by cluster analysis of the four emotional vocabularies. Here it becomes obvious, that speakers talking to each other in **one** therapy show a higher degree of similarity than speakers across therapies. Furhtermore, the cluster-analytic distances **within** therapies are impressively different:

Table 10: Cluster Analysis

Whereas the Ulm speakers are fairly close, the Bernese speakers stay rather distant from one another. Since we are still lacking data on other dyads, these differences should be only carefully interpreted.

Table 11: Affective Dictionary in the Berne Case

Closer investigation of how these distances between patients and therapists come about, reveals that in the Bernese case the **patient**'s vocabulary is characterized by a strong prevalence of self emotions. Interesstingly, the therapist's vocabulary not

only seems to be much more balanced as to the different categories, compared to his patient, the therapist is uttering significantly more object emotions.

Table 12. Affective Dictionary in the Ulm Case

The match in "affective style", so to speak, in the Ulm case is more distinct and therefore this dyad shows less ditance in cluster-analysis. In spite of this overall similarity, the therapist has significantly higher scores in categories 1 (love) and 3 (satisfaction), the patient higher levels in categories 4 (joy) and 5 (anger).

One advantage of the Ulm textbank system is demonstrated by having the possibility to compare the Ulm therapist's emotional vocabulary in this short term therapy with his mean lexical choice as to affective labels in other therapeutic settings.

Table 13: Emotional Vocabulary of the Ulm Therapist in Initial Interviews with Male Patients (N = 18)

Compared to his mean values in 18 initial interviews with male patients, the Ulm therapist in the case presented here significantly prefers categories 1 and 2 by which he seems to be emphasizing mainly the identification of wishes for positive object relations. These **case-specific** deviations from his statistical **norm,** as it were, correspond to the focus of the treatment as described in the therapist's initial assessment. There, he interprets the compulsive symptom of the patient as a rejected longing for gratifying early object-relations. The emphasis on categories 1 (love) and 2 (attraction) seem to reflect the work on these aversive and therefore warded off emotional states pretty well.

Table 14: Total Amount of verbalized Emotions in the Berne Case

Over the course of treatment in the Berne case the total amount of verbalized emotions shows an initial decrease and, from hour 6 on, a steady rise. Upon examination of the transscripts we found that in the beginning the patient was mainly inhibited in his affective utterances by feelings of unsecurity about setting and general proceeding. Characteristically for the Berne case are phases of high synchronization in "affective density"; for example in hours 1- 8 or in the final hours of treatment, where the curves of patient and therapist correlate .95 and .85

respectively. The reasons for this phenomenon are still up to discussion and worth further detailed study.

Table 15: Total Amount of Verbalized Emotions in the Ulm Case

In comparison, the "affective densities" in the Ulm case stay more or less constant. It can be speculated that the maximum in hour 19 and the minimum in hour 20 were also caused by a change in setting: In hour 20 the girlfriend of the patient was participating and (therefore?) the patient did not talk about emotional material any more.

Table 16: Course of Self- / Object- Emotions (Therapist) in the Bernese Case

Perhaps the most interessting finding of this study relates to different therapeutic strategies as they might be reflected in **changes** of emotional vocabulary, particularly as far as the self and object distinction is concerned. In the Bernese case the ratio between self and object emotions increases significantly over the course of treatment. This holds true for both the therapists and the patients vocabulary.

Table 17 : Bern Patient Object-Self.

Put into Dahls theory of self-emotions as believed information about the state of wishfullfillment, one could claim, that the therapist more and more tries to help the patient to become concious of inner states and beliefs.

Table 18: Course of Self- and Object-Emotions in the Ulm Case (Therapist)

In the Ulm case the proportions are quite different hinting at a different therapeutic strategy. In correspondance with the psychodynamic treatment rationale where subjective states of dysphoria, i.e. negative self-emotions, have to be translated into object-related affects, we find the opposite course: In the therapists vocabulary high levels of self emotions at the beginning decline constantly throughout therapy. It seems fair to speculate that at the beginning of therapy the empathic stance of the therapist is reflected by his mirroring of self-states and the growth of a more interpretative attitude by the relative increase in object emotions.towards the end.

Table 19: Ulm Patient Self-object development.

Unlike the Bern case, this trend is significantly more distinct in the therapists' vocabulary, and the patient seems to follow. But clearly, the question for the trendsetter, so to speak, cannot be answered from this correlational approach alone. What might help to enhance knowledge on these macroscopic trends, is to look for more detailed, microscopic information in the verbal dialogue itself.

Table 4 Coding of Emotional Vocabulary in the Therapeutic Dialogue

In the episode shown above, it becomes obvious, how the therapist translates negative self emotions that means **complaints** of the patient into object emotions, in this case: **accuses**. The patients starts with describing his feelings of anxiety (category 8) and feelings of being left alone (category 7). Both categories get picked up and reverbalized by the therapist, who in turn in **his** utterance adds category 5, anger of the patient against his parents,who disregarded his strong wishes for attachment. Then, the next patient utterance is litterally "full" of anger and rebellion, both categories 5.

Since quite a few similar episodes can be identified in the Ulm therapy, the underlying therapeutic rationale "Where self emotions are, object emotions should be" can be found on both a microscopic and a macroscopic level.