A cyclic model of therapeutic processes: The flow of Emotion-Abstraction Patterns in a long term psychoanalytic treatment

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Introduction

Jones and Windholz in their 1990 paper entitled "The psychoanalytic case study: Toward a method for systematic inquiry" (Jones & Windholz, 1990) conclude that "The psychoanalytic literature is extraordinarily rich in theoretical writings and clinical case studies. There has, however, been very little in the way of reliable, descriptive data about the analytic process" (p. 1014). With the application of the Q-technique to the case of Mrs. C. in that very paper they clearly demonstrated that psychoanalytic case material can be studied in a systematic and formal manner and thus they gave a valuable contribution to a formal and systematic inquiry of psychoanalytic constructs. With the most and least descriptive Q-items for the complete treatment they provided a "static" picture of the analysis. An "in-motion" view was given by statistically comparing the more or less characteristic Q-items in successive years. The study was based on 6 blocks of 10 sessions each roughly covering the six years lasting treatment, or in other words 5,5 percent of all 1.100 sessions. This poor coverage however raises doubts on the usefulness of the findings, whether psychoanalytic constructs really are captured, or whether the psychoanalytic process has been observed at all.

About the same time, Gedo and Schaffer (Gedo & Schaffer, 1989) presented a study of another psychoanalytic case, A2, lasting 2 and a half years with a total of 324 sessions. The authors choose a random sample of 10 sessions each from an early and a late phase and thus covering 6,2 percent of all sessions. The sessions have been rated according to a modified form of the Gill-Hoffman (1982) coding scheme for tracing transference references. The aim of this study was to "systematize the data and to trace process within sessions" (p. 281). Also here the results may be questionable with regard to their representativeness for the full treatment.

Another aspect both studies share is the lack of a process model, or at least of variables that are closely related with a theory of change. Both, the Psychotherapy Process Q-set and the Gill-Hoffman coding scheme are instruments that are inherently bound to clinical psychoanalytic thinking and barely can be connected to a dynamic view of change. An idea of what "Therapeutic Change Agents" could be like Toksoz B. Karasu already gave in 1986 (Karasu, 1986) . In a very profound and theoretically grounded paper he identified three change agents: Affective Experiencing, Cognitive Mastery, and Behavioral Regulation. These aspects of therapeutic processes share the principle of universality and complementary. This means, that "all psychotherapies use some combination of affective experiencing, cognitive mastery, and behavioral regulation as therapeutic change agents" (Karasu 1986, p. 693). From this it can be concluded that schools may not be more than emphasis on one or more of these change agents by preferring certain techniques. This however sounds very similar to what Klaus Grawe in a recent paper (Grawe, 1997) lines out as Research Informed Psychotherapy, based on four "Basic Mechanisms of Change": Problem Actuation, Clarification of Meaning, Mastery/Coping, and Resource Activation. In fact, what is new compared to Karasu's change agents is the aspect of the patient's and therapist's resources that can or can not be activated in a psychotherapeutic process.

But still, the identification of therapeutic change agents is not enough in order to understand and study psychotherapeutic processes and thus processes of change. What needs to be added are models of process that are built on change agents but also take into account the temporal aspects of treatment. A very general process model, or better to say, a model of viewing at therapeutic

processes, is given by Thomä and Kächele (Thomä & Kächele, 1985; Thomä & Kächele, 1987) with their notion of the "Focus Model". This model essentially describes a psychoanalytic long term treatment as a sequence of focal therapies with changing focus. The model does not, however, specify any change agents.

A more specific view of therapeutic processes is given by Stiles (Stiles et al., 1990) in his model on the Assimilation of Problematic Experiences. His variables "Feelings" and "Attention" roughly can be understood as change agents and the Assimilation Model predicts their prototypic change, defining the sequence of phases like: Warded off, unwanted thoughts, vague awareness, problem statement and clarification, understanding and insight, application and working through, problem solution, mastery. The empirical realization of this model is done using a rating scheme to identify the given phase in transcripts or video recordings.

A psychoanalytical oriented and by findings from cognitive psychology grounded process model is given by Wilma Bucci (Bucci, 1997) . Her *Multiple Code Theory* and the Referential Cycle provide a solid theoretical background to describe psychotherapeutic processes not only phenomenological, but also analytical. The notion of the "power of the narrative" opens both a window to an understanding of therapeutic processes in terms of emotion schema and reflecting processes, and to an immediate understanding of the therapist's verbal actions and regulation of such.

The study presented here uses Mergenthaler's approach of measuring therapeutic processes by means of *Emotion-Abstraction Patterns* and the *Therapeutic Cycle* Model (Mergenthaler, 1996) . This approach makes use of two of the above mentioned change agents, Affective Experiencing and Cognitive Mastery measured as "*Emotion Tone*" and "*Abstraction*" in the verbal expressions of patient and therapist in verbatim transcripts. This model describes both: Micro processes within session and macro processes across sessions. Depending on the intensity and duration of a therapy (e.g. psychotherapy vs. psychoanalysis) the various phases of the model can become repeated (repetition), cycles can be repeated (iteration), or one or more cycles can occur within a cycle (recursion). This constitutes the descriptive power of the *Therapeutic Cycle* Model.
Emotion-*Abstraction* Patterns

The quantitative dimension of *Emotion Tone* and *Abstraction* allows to differentiate four classes, the *Emotion-Abstraction Patterns* (Fig. 1). Graphically they will be represented as a combination of the standardized relative frequencies (z-scores) for *Emotion Tone* (black) and *Abstraction* words (grey). The four patterns are defined, labeled, and interpreted as follows:

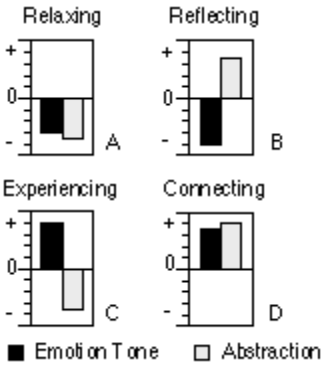

Figure 1: The four Emotion-Abstraction Patterns

Pattern A - *Relaxing*: Little *Emotion Tone* and little *Abstraction*. Patients talk about material that is not manifestly connected to their central symptoms or issues. They describe rather than reflect. Further, it is a state patients return to as often as they feel the need to, thus regenerating both, physis and psyche to prepare themselves for the next step of their «talking cure». *Relaxing* correlated with "Well Being" as rated by a patient on a visual scale (Mergenthaler et al., in prep.) . Furthermore, there is a coincidence with the "Well Modulated" state of mind according to Horowitz (Mergenthaler & Horowitz, 1994) .

Pattern B - *Reflecting*: Little *Emotion Tone* and much *Abstraction*. Patients present topics with a high amount of *abstraction* and without intervening emotions. This may be an expression of defense known as intellectualizing.

Pattern C - *Experiencing*: Much Emotion and little *Abstraction*.
Patients find themselves in a state of emotional *experiencing*. Patients may be raising conflictual themes and *experiencing* them emotionally. *Experiencing* correlates negatively with "Well Being".

Pattern D - *Connecting*: Much *Emotion Tone* and much *Abstraction*. Patients have found emotional access to conflictual themes and they can reflect upon them. This state marks a clinically important moment. *Connecting* correlates with the "Shimmering" sate of mind, according to Horowitz a moment where therapeutic change takes place (Mergenthaler & Horowitz, 1994) .

The therapeutic cycle model

The following model (Fig. 2) is derived from a specific temporal sequence of the four Emotion-Abstraction Patterns. This is introduced as the Therapeutic Cycle Model consisting of five phases. It is based on the assumption that across a psychotherapy or within a psychotherapy session emotion abstraction patterns do not occur by chance. Rather a periodic process for the underlying variables "emotion tone" and "abstraction" is assumed. A periodical change of content analysis variables already has been observed by Hogenraad and Bestgen (Hogenraad & Bestgen, 1989) . They have been analyzing a three-hour monologue for primary and secondary processes using the Martindale regressive imagery dictionary. Within approximately half an hour the initally dominating primary process decreased and the secondary process dominated. Within another two hours the variables again changed dominance. They found similar rhythms in literature like novels. To explain this, not only psychic, but also biological factors may be taken into account (e.g. endorphines).

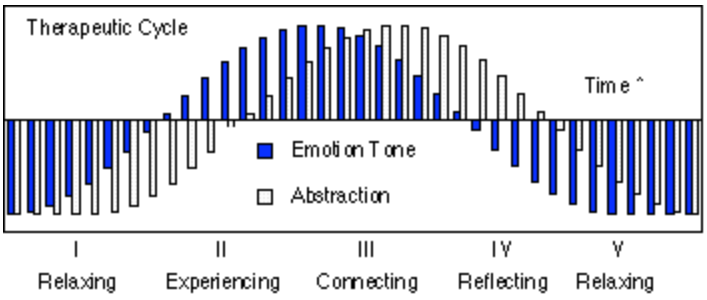

Figure 2: The Therapeutic Cycle Model.

Phase I: Starting point is pattern A (Relaxing), moments where patients do not show much emotion nor abstraction. They find themselves in a "relaxed" state, in a transitional state from one theme to another, or they are associating freely.

Phase II: After a while, emotion increases and pattern C (Experiencing) will show up. This shift can be initiated by having reported a narrative (dream, early memory, episode) or by reporting on the symptoms they are suffering from. Patients at this time are in a state of emotional experience.

Phase III: Ideally here the amount of reflecting will increase, either by patients' own impetus or guided by the therapist. Patients will reflect their recent emotional experience and thus reach emotional insight. They are in a state of connecting Emotion Tone and Abstraction showing up as pattern D (Connecting).

Phase IV: As a consequence of the insight processes the emotional tension will decrease. Patients can reflect upon their new experience without being bound to emotional constraints. Pattern B (Reflecting) will show up.

Phase V: Finally reflection will fade out. The cycle ends with the state of Relaxing (pattern A) which can lead to the emergence of a new cycle.

The Therapeutic Cycle model can be used for both, micro analyses, and for macro analyses. In the macro-analytic perspective the patterns are computed for full therapy sessions. A therapy then can be characterized by a given sequence of these patterns. From clinical experience it is known that in every therapy there are phases in which the patient has more working-through processes like insight but also periods where defence mechanismes are dominating or patients are occupied by emotional states. This experience is what the therapeutic cycle model puts into an ideal and prototypic order.

The microanalysis refers to the analysis of one single therapy session. Here the Therapeutic Cycle model describes the very moments of genesis, effect and end of therapeutic progress. From clinical experience it is well known that the processes of insight do not occur very often within a session and even not within every session. With regard to the Therapeutic Cycle model it is rather expected that the cycle fairly often can be observed partially. From the analyses of several hundreds of therapy sessions it is known already that the variables "emotion tone" and "abstraction" peak two to three times within a session.

Along with the Therapeutic Cycle model three principles should be mentioned that contribute to the descriptive power of this approach. The first one is the principle of *repetition* which means that single phases of the model can become repeated. The second one is called *iteration* when complete cycles are iterated. Finally the princple of *recursion* should be mentioned which can be observed on the macro-analytic level and means that one ore more cycles can occur within a given major cycle. One of the goals of this study will be to show that these principles, repetition, iteration and recursion empirically can be demonstrated with a long-term analysis due to the unique chance that there no sampling has to be employed because every therapy session is transcribed.

It has been shown that improved patients significantly more often show the pattern of connecting compared to not improved ones. Also, in a psychotherapy which was known to have a key session and key momentwithin, both could be idendified by using this technique. In addition the macro-analytic analysis of several short-term therapies ranging from 8 therapy hours to 28 showed an overall change according to the therapeutic cycle model.

Method and Material

This study used transcripts from a fully audio taped analysis conducted between 1975 and 1977 with a total of 324 sessions. The analysis begun with a frequency of 4 sessions a week; the last six months have been conducted with two sessions a week and face-to-face. The patient was a middle-class married woman and housewife in her late 20s. She was complaining about phobic reactions to social outings, which included symptoms of nausea and diarrhea before and after such events. The case was judged to have a good outcome.
The transcripts are on loan from the PRC[1]. The transcripts were done on a typewriter machine and later on became scanned for use with a computer. There have been many errors within the text which have been fixed as far as possible for this study. The most serious problem was the loss of speaker role due to missing markers and thus the mix-up of patient's and analyst's contributions.

The graphical data representation will be done using procedures composed of several smoothing runs. For the microanalyses this will be a moving avarage with a window of three and weights of .25, .50, and .25. For the macroanalysis a technique known as 4253H-smoothing will be applied (Velleman, 1982) . Thus the data are smoothed by a running median with a window of four, then smoothed again with a window of two, then of five and finally of three. Smoothed data may be considered to be closer to the real unfolding of the dimension measured in a given text. Of course for detailed analysis the unsmoothed data have to be used. The amount of variants that the smoothing data share with the unsmoothed ones normally is abough 25 % which means that the smoothed data still have a correlation with raw data of .50 or more.

As an example for a microanalysis with this long-term therapy session 245 was depicted. This is the only instance where both change agents "emotion tone" and "abstraction" are above two standard deviations. This sessions shows two cycles from word block 2 through 7 and 8 through 17. As we can see from the lower graph the therapist's activity in the word blocks 10 through 12 contribute to a more intensive connecting. In the second half of the session no cycle is developing. Although the therapist tries as in word block 17 and in word block 24 with substantial interventions to keep this

process running.

In addition to the application of the Therapeutic Cycle model based on emotion-abstraction patterns the Affective Dictionary developed by Michael Hölzer was applied to the material. From that dictionary two categorizations were used: *positive* compared to *negative* emotions and *self* compared to *object* emotions. From the macroanalysis it becomes obvious that the pattern of experiencing, as can be observed in phase 2, obviously is built up of negative emotions. The positive emotions rather mark the beginning of the intensive working period marked by phase 4. Both dictionaries positive and negative together cover less than 50 per cent of the emotion tone dictionary.

Results

The overall representation of case A2 (Fig. 3) clearly shows that the treatment can be characterized by five phases each represented by a different Emotion-*Abstraction* Pattern. The analysis starts with about 54 sessions classified as *Relaxing*, followed by a phase of 42 sessions marked as *Experiencing*. The third phase of about 30 sessions has little *abstraction* and moderate emotion. Formally this has to be seen as *Experiencing* as well, but it clearly differs from the second phase. Then follow 24 sessions *Experiencing* which directly leads into a long period of 78 sessions with *Connecting*. The last phase it characterized by the pattern *Reflecting*. The beginning of this period coincides with the strong wish of the patient to no longer lay on the couch and, in fact, refusing to do so. The second half of this phase was then conducted on a twice-a-week basis face to face. The *Therapeutic Cycle* partially can be observed twice. The first instance starts in phase 1 with *Relaxing*, followed by *Experiencing* in phase two. The next two steps, *Connecting* and *Reflecting* are missing however. The second instance is an almost complete *Therapeutic Cycle* and starts in phase 3 with *Relaxing*, followed by *Experiencing*, *Connecting*, and *Reflecting*. What is missing is the final *Relaxing*. This should however be considered in connection with the change in the setting from couch to face-to-face.

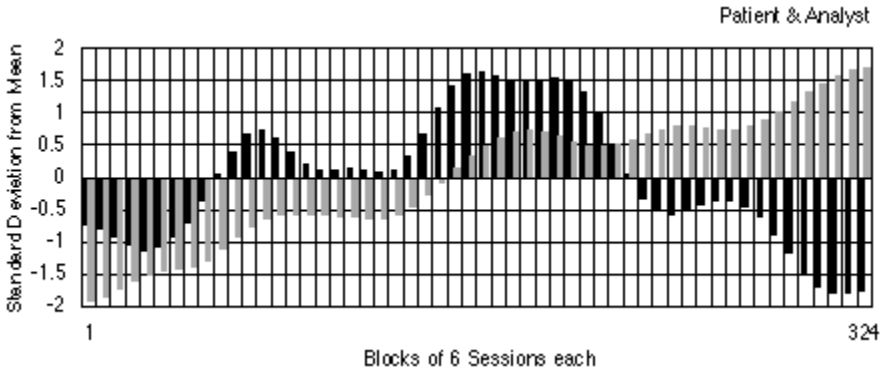

Figure 3: A2 - complete case (Emotion Tone = black, Abstraction = grey).

A macro analysis of the last phase which is characterized as *Reflecting* in the overall view reveals the recursive properties of the method. Standardizing just across the last 54 sessions reveals new cycles taking place on a "lower" level.

The longitudinal distribution of the Emotion-*Abstraction* Patterns over all 324 sessions (54 blocks) showed highly significant changes for all four patterns (Pearson r; $p < .001$). While *Relaxing* ($r = -.64$) and *Experiencing* ($r = -.52$) decreased, *Reflecting* ($r = .70$) and *Connecting* ($R = .55$) clearly increased. These changes mainly took place during the first 267 sessions (45 blocks) when the analysis was four times a week. The last 56 sessions (9 blocks) did not show significant change except for *Experiencing* ($r = -.40$, $p < .05$).

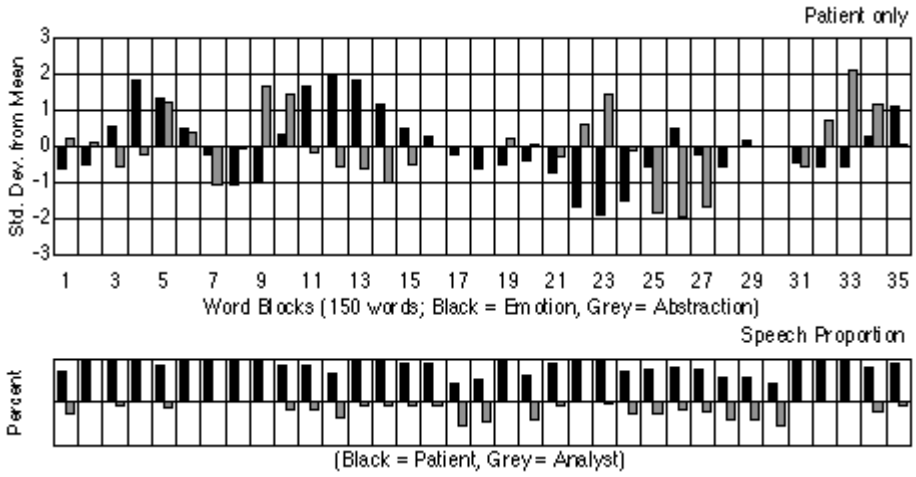

Figure 4: A2 - Session 245

From the micro analysis of session 245 (Fig. 4) it becomes obvious that there are two instances of the Therapeutic Cycle

Discussion

The findings support the notion of *Emotion Tone* and *Abstraction* as change agents under the principle of complimentary. The recursive power of the *Therapeutic Cycle* Model was demonstrated from a very general macro-analytic level, through a medium level analysis down to the mirco analysis within sessions. As to my knowledge this is the first time that a complete analytic treatment became analyzed in a systematic and formal way and theoretically grounded.

The results of the *Therapeutic Cycle* analysis also demonstrate that findings based on sampling techniques might be crucial when to describe long term change. The sample chosen by Gedo and Schaffer can be located in the transient area between the first and second phase for the early sessions, and the beginning of the fifth phase for the late sessions group. It is not astonishing from the *Therapeutic Cycle* point of view that they did not find as much significant findings as they had expected. Just to give an example, Gedo and Schaffer hypothesized, that within late sessions "the patient should be more able to follow up one transference insight with another" (p. 280) and they found a suggestive trend in the predicted direction. Using the same sample this also can be shown by counting the number of complete *Therapeutic Cycles* which in fact is higher in the last sessions sample. Had they chosen the late session samples within the range of phase 4 they could have expected much clearer results. Another example is their hypothesis that "transference insight will increase across the treatment" (p. 280). This prediction did not approach statistical significance, although the mean probability changed in the predicted direction. For the same sample the pattern *Connecting* increased significantly ($M_e = 18.9$, $SD_e = 6.4$, $M_l = 30.0$, $SD_l = 6.6$, $t = -4.40$, $DF = 9$, $p < .01$) which indicates a significant increase of insight.

The findings clearly are against the myth of uniformity. We can not expect the psychotherapeutic process to start from a given level and then to continuously increase or decrease. More likely and supported by the findings with the *Therapeutic Cycle* Model is a cyclic behavior with, in an ideal case, findings at the end that rather compare to those at the beginning and the extreme changes within the therapy.

Clearly, many steps are still left to do. One of them includes to trace the major topics this analysis is about in the disparate phases. This can be done by using the characteristic vocabularies which will give hints on thematic topics.
Another interesting step will be the analysis for transference using Spence's measures (Spence et al., 1994; Spence & Owens, 1990) .

Finally, this analysis will be expanded including Bucci's Referential Activity measured as Computer Referential Activity CRA (Mergenthaler & Bucci, in print) . Combining the three language measures

CRA, ET, and AB will allow for an even more powerful model, the Cycles Model (Bucci & Mergenthaler, in prep.) that makes fully use of the *Multiple Code Theory* and computer assisted measures in order to describe not only change effects but also to explain why changes take place.

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[1]Psychoanalytic Research Consortium, directed by Sherwood Waldron, New York