Expressed relationships, dream atmosphere and problem solving in Amalie´s dreams - Dream series as process tool - A single case study

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1 Introduction: Dream series in clinical practice and in research

Even if most discussions about dreams in clinical practice are focused around a single dream it is evident that reporting of dreams during a psychoanalytic treatment belongs to one of the most regular and repetitive phenomena of that kind of therapy. Patients dream more or less, and analyst differ to the extent they use the dreams offered by the patient. As a compromise formation a non-conscious, non-intential agreement on the relevance od dreams for the treatments between patient and analyst is established.

"Analytic therapy finds the analyst drawn into the intrapsychic as well as external communicative system of the dreamer" ((Kanzer 1955), p.265).

Depending on the agreement a treatment may be based wholly on the analysis of the dream material or the dreams are treated like any other material ((Fliess 1953), p.123). The first analyst to emphasize the use of dream series for the evaluation of the course of treatment has been Stekel: "The dreams in their totality has to be studied like a novel in progress (Fortsetzungsroman). There is no such thing as an individual interpretation of dreams, there is only a serial interpretation" ((Stekel 1935), p.12). Without following Stekel´s idea of the "prospective tendency" that he thought he would find in this serial interpretation it remains clinically impressive how the repeated observation is able to strengthen the understanding of a patient´s dynamics.

In the United States one of the first to systematically study manifest dream content per se was (Saul 1940; Saul and Sheppard 1954; Saul and Sheppard 1956)) ; he discussed the "utilization of early current dreams in formulating psychoanalytic cases". Saul L Later he and his collegue Sheppard E (1954, 1956) attempted to quantify emotional forces using manifest dreams. This track was also taken up by Tim Beck & his collegues ((Beck and Hurvich 1959; Beck and Ward 1961))

The true pioneering work on dream series had come from Thomas French who from 1952 onward published his five volumes on "The Integration of Behavior". In the second volume using a dream series of more than 200 dreams he shows "that every dream has also a logical structure and the logical structures of different dreams of the same person are interrelated, and that they are all parts of a single intercommunicative system" ((French 1952; 1954; 1958)). In the third volume he applied this understanding for a thorough description of the re-integrative process within one psychoanalytic treatment (French 1958).

The method of process studies using dreams series in the German psychoanalytic world was first elaborated by Enke et al. (Enke et al. 1968); they were able to demonstrate that certain syndromes of affective developments in the dream series of psychosomatic patients, like increase of active-positive affective qualities with relative decrease of passive -negative were correlated to favorable outcome in inpatient psychoanalytic therapy (p. 32).

Our own experience with dream series analysis began with demonstrating the usefulness of Hall & van de Castle spotlight analysis (Hall and van de Castle 1966) studying two levels of transference constellations in a single case dream series (Geist and Kächele 1979). Later the study group by Leuzinger-Bohleber & Kächele (Leuzinger-Bohleber and Kächele 1988) implemented a project to

study cognitive changes based on dream reports in five psychoanalytic treatments. In that investigation we used dreams from the beginning phase (session 1-100) and the terminal phase (100 session before the end) comparing the cognitive functioning by a content-analytic tool that was based on the theory of Clippinger´s (Clippinger 1977). and Pauker´s et al. (Pauker et al. 1976) computer simulation models. We did not evaluate the development over the whole of the treatments - as task we have taken up in this study. We shall use the total dream material of one patient - the patient Amalia X that has been clinically described in Thomä & Kächele (1988, engl. 1992) and in Leuzinger-Bohleber write-up of the whole project in her second volume (Leuzinger-Bohleber 1989).

2. Theoretical model

This study continues the use a theory of cognitive processes based on computer simulation models that has been fashionable more than ten year ago to investigate changes in dreams processes of a patient in long-term psychoanalytic treatment. Although the latest fashion in neuroscience is based on connectionist models, especially neuronal networks (Spitzer 1996), we have found it useful for our descriptve purpose to remain with the old model (see also Pfeifer and Leuzinger-Bohleber 1986).

> "Clippinger's theory of cognitive processes was convincing to us because it embodies the conception of conflicting processes taking place inside a black box, just as the structural theory in psychoanalysis does. That is, it conceptualizes cognitive processes as being determined by the interaction of separate cognitive modules. The processes (programs) running in one module can complete, modify or inhibit and interrupt those running in other modules. Among other things, this leads to characteristic structures in the interaction of the different modules and specific ways of perceiving and processing information" (Leuzinger-Bohleber & Kächele 1988).

In this study as background theory we use a modified version of Clippinger's model that has been developed by Leuzinger ((Leuzinger 1984) defining the six modules shown in Figure 1. These modules perform the following tasks:

> **MOZART** selects what is attended to.
> **CALVIN** represents the superego and the patient's values, and acts as censor.
> **MACHIAVELLI** develops problem-solving strategies.
> **CICERO** translates cognition into verbalizations.
> **MARX** perceives and tests reality.
> **FREUD** introspects and performs specific ego functions.
>
> The models assumes reciprocal pathways of communication among the cognitive modules.

For a detailed understanding of the operation of the model see Clippinger (1977). Nonetheless it is obvious that unconscious motivations ultimately reveal themselves in cognitive processes, and it is the manifestation of these in the transcripts of what patients verbalize on the couch that we study.

In all that follows it should be understood that we use a very broad definition of "cognitive processes" as inner processes of perceiving and processing information that are always connected with physiological and emotional processes and cannot be studied separately (Pfeifer and Leuzinger-Bohleber 1986)

Another theoretical imput comes from Moser´s and his collegues (Moser et al. 1980) work on sleep-dream simulation; there they have developed very detailed item list for the description of the manifest content of dreams with respect to what Clippinger has termed the functions of the MOZART module. This has been described in detail already in the doctoral dissertation of Merkle (1987) that had been part of the afore mentioned project. It is the declared intention of this study to again use the same instrument applying it to a more complete data base of the patient of this study, called Amalia X.

3. Method: Theory-Guided Complex Ratings & hypothesis:

The tool for the description of the dream material consists of three parts:

> **Part A Relationships**
>
> A.1 How does the marker happen to be in the dream ?

(Active = 3; passive = 2; as observer = 1; not at all = 0)

A.2 Are there human partners in the dream ?
(none = 0; one = 1; more than one = 2)

A.3.1 What kind of relationship between dreamer and dream partner do you find in the manifest dream ?
(8 categories:loving, friendly, respectful, conflictual, clinch, neutral, sexual, non decisive)

A.3.2 Describe the relationships of the dream partner among them:
(8 categories: loving, friendly, respectful, conflictual, clinch, neutral, sexual, non decisive)

Part B Dream atmosphere

B.1 Does the dreamer comment upon the atmosphere of her dreams?
(yes = 2; no = 1)

B.2.1 How do you judge the atmosphere in the manifest dream ?
(8 bipolar adjective items scale 1 - 5)

B.2.2 How do you judge the atmosphere in the manifest dream ?
(4 unipolar items from "more to less)

C Strategies of Problem-Solving

C.1 Is there one or more problem solving strategies ?
(cannot judge any = 0; none = 1; one = 2; more than one = 3)

C.2 Is problem-solving successful
(8 categories: yes, no, partially, undecisive, trial with support, trial with hindrance, problem solved, passive solution)

C.3 which kinds of problem-solving strategies do you find the in manfest dream content?
(deferred = 1; avoiding = 2; active = 3)

C.4 Are the problem-solving strategies reflecting upon by the dreamer ?
(scale 1 - 5; a lot = 5; very little = 1)

The basic question of this study explores to the issue whether the aforementioned pre-post design - comparing the dreams from the beginning to the termination phase - is able to generate reliable statements on the development of psychological functioning that needs time to develop. Do we have to observe the development over the course on treatment. Particularly for the long term treatments what kind of models do we have to map the process.

In our work in the long term processes we have seen different courses for different variablels (Kächele & Thomä 1993); however we assume that a linear trend model for changes in basic cognitive functioning is the most plausible.

To test this assumption we need more than data from beginning and end phases of a treatment. Therefore this study fills a gap in our understanding of cognitive changes process in long term treatments. At least in using a single case design we might find our which of the descriptors are most likely to follow the linear trend model.

4. Description of the Material

As the case of Amalia´s has been one of our research cases we already have a large number of transcribed sessions out of 517 recorded sessions 218 have been transcribed for various studies

Part 1: sessions 1-45, 51-55, 61-62, 71-80, 98-99 :
a total 63 sessions

Part 2: sessions
100-105,109-116,126-130,150-157,172-179,181,202-209,213,221-225,

236-237,241-243,246-256,276-280,286-287,297-299:
a total of 76 sessions

Part 3: sessions 300-304,326-330, 335, 339,343-346,348-357,376-383;
a total of 34 sessions

Pat 4: sessions 401-404,406,421-425,431-433,435,442-449,476-480,482,489,
501-508,510-517;
a total of 45 sessions

In these sessions one of us (ME) identified all dreams; the dreams in part 1 and part IV already had been localized by our former study. A total of 93 dream reports were identified with some sessions containing multiple dreams; so the total number of dreams rated was 111.

Part 1: 63 sessions:

dreams No 1-18

Part 2: 76 sessions

dreams No 19-54

Part 3: 34 sessions

dreams No 55-70

Part 4: 45 sessions

dreams No 71-93

The Reliability Study

Three judges - two of them medical students (M.E. & M. B.) and one of them a psychoanalytic oriented experienced clinical psychologists with more than ten years of clincial experience (L. T) - were intensively trained to understand Clippinger´s and Moser´s models of cognitive processes. In several pretests they were acquainted with the kind of material to be rated. The training was very time-consuming; the interrater reliability achieved were quite impressive:

Results of interrater-reliability:

The three raters judged 1/3 of all identified dream reports (N = 38 out if 111 in 93 sessions):

Item B2.1, B2.2, C4: Pearson 0.82-0.89
Item A1, A2, C1, C3: Kappa 0.9 - 1.0
Item A3.1, A3.2, B1, C2: Kappa 0.47 - 1.0; 84% of all values are beyond 0.7

Interrater Reliabilities:

Overall results: 0.80 across all ratings !

5 Merkle´s study

From the summary of the results on Amalia X as established in the earlier study (Leuzinger-Bohleber 1989) we quote the main features:

I. Changes in Problem-solving Cognitive Processes: Interactions among Cognitive Modules

The problem-solving cognitive processes of the patient comparing beginning and end of the treatment can be characterized by a high degree of flexibility, by an enlarged cognitive range, an associative and "gestaltlike" way of thinking, and by a capacity for a functional and realistic style of problem-solving. Different information could be perceived and worked on at the same time and led to a process of generating and testing

hypotheses that could compete with, modify, or contradict each other. Cognitive dissonances were recognized, reflected, and influenced, among other things, the decision-making process.

Unpleasant affects had an important function as signals indicating cognitive processes to be taken into account in the problem-solving process. In terms of our model, we found: (1) increased cognitive and affective knowledge used in a functional way in different modules, (2) interrupt programs that functioned well and corresponded better to reality, and (3) an uninhibited interaction of cognitive processes in the different modules.

Changes Within the Cognitive Module *MOZART*:
Changes in What was Attended To

The later the sessions in the treatment the more the following changes were observable:

-More of the text of the dreams was attended to and worked over cognitively.
-The context of the dreams was taken into account.
-The analyst's interventions were part of the patient's dream associations.
-The patient pursued hypotheses about their dreams more systematically.
-The process of generating hypotheses took place easily, without much hesitation.
-The patient considered more than one hypothesis about the meaning of a dream.

In a separate assessment Merkle (1987) observed the following systematic changes in three dimensions of the manifest dream content, based on the model by Moser et al. (1980) comparing beginning and end of treatment: *Expressed relationships, dream atmosphere and problem solving*. :

Expressed Relationships:

-The dreamer expressed better relationships with both his objects and himself.
-The range of interactions in these relationships was increased e.g. in the late dreams she was more often alone, as well as interacting with one or more partners.
-Although the relationships were more often tender and friendly than in early dreams, to our surprise, they were also seldom neutral, and included conflictual relations - an indication, to us, that the range had been increased.

Dream Atmosphere:

-The variety and intensity of affects in the manifest dream content was increased.
-The atmosphere was more positive with less anxiety, but aggressive, sad and frightened moods were also expressed. This contradicted our original hypothesis that a single positive mood would prevail.

Problem solving:

-More problem-solving strategies were recognizable.
-Problem solving was more successful than not and the dreamer was more active in doing it, and seldom avoided it.
-The range of problem solving was greater than in early dreams.

Summarizing we found less concern with the major psychopathological symptoms in the patient. In the later dreams the content was more personal, with a greater variety of expressed activities. Moreover, the patient´s dream interpretations were more "dialogue oriented," more convincing and more directed at understanding the unconscious meanings of the dream. The associations were more constricted early and more varied in the late sessions. These are hints that the range of attention of the successful patients was enlarged.

6 Replication study

The replication study focused on the three aspects from the Merkle (1987) study; the new results were as follows:

4.4.6.1 Expressed Relationships:

A1. How does the dreamer appear in the dream action ?

Most frequently during the whole course of the treatment the dreamer is actively involved in the action. This is the more surprising as the patient come with a mild depressive basic mood to analysis. In contrast to Beck & Ward (1961) finding this patient never gave up the pace making function at least in her dreams.

A2. Do dream partner occur in the dream ?

> Again the patient is heavily involved with more than one partner all the time. A clinician might "see" in the data a slight increase of dyadic relationship probably reflecting the patient´s gain in intimate relationships of which the relationship the analyst is one.

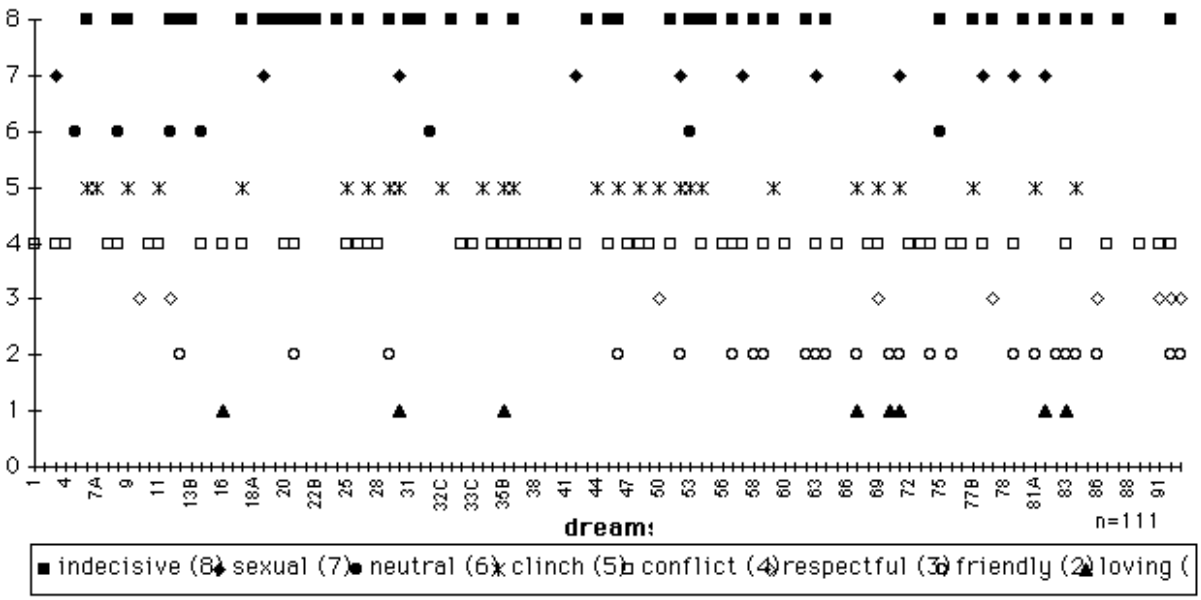
A3.1. What kind of relationship do occur between dreamer and dream partner ?

> Statistically there are more loving, friendly, respectful relationship and less neutral relationships (significant Cureton-Coefficients). We see this as a shift to the development of more pronounced qualities in relationships.

A3.2 What are the relationships among the dreampartners?

> The findings point to the same development as in A3.1
> To summarize the findings we use the graphical illustration to make our point that the overall impression of these items along the course of the analysis remains open for quite straight forward conclusions. There is less dramatic change and more stability as the findings from the Merkle-study had suggested:

picture1
Witch kind of relations do you find between the dreamer and the dream partner in the manufest dream content ?



Which kind of relations do you find between the dreamer and the dream partner in the manifest dream content?

Dream Atmosphere:

B.1.1 Does the dreamer comment about the atmosphere of her dreams more often ?

> No obvious change.

B1.2 If yes, how does she comment ?

The findings are presented as a ratio of neutral-positiv in relation to the total amount of sentences where she comments about the atmosphere:

phase sessions	dreams	sentences with neutral-positive to total	percentage
I 1-99	1-18	1/11	9%
II 100-299	19-54	5/24	21%
III 300-399	55-70	6/8	75%
IV 400-517	71-93	6/10	60%

There is a definite increase in the second half of the analysis of neutral-positive comments with regard to the dream atmosphere. From our clinical knowledge we find this in good correspondence to the development of her personal life.

B2.1 How do you judge the atmosphere of the manifest dream ?

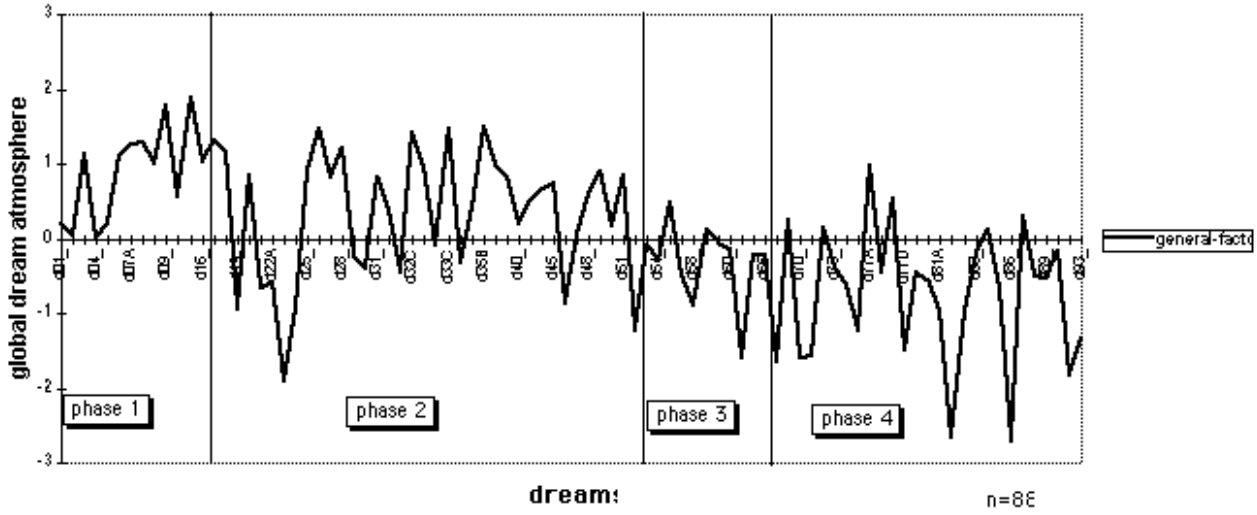
By Spearman rank correlations we find rather impressive systematic changes with time in some of the bipolar adjectives like pleasurable/unpleasure (-0.56), euphoric/depressive (-0.64), harmonic/disharmonic (-0.42), hopeful/resigned (-0.70), happy /sad (-0.58), easygoing/ painful (-0.61), peaceful/ dangerous (-0,52), happy/desparate (-0.68) - all of these correlations are below <0.001 p value.

B2.2 How do you judge the atmosphere of the manifest dream ?

By Spearman rank correlations we also find rather impressive systematic changes with time in some of the unipolar adjectives like anxiety ridden (-0.43), neutral (-0.26). However aggressive atmosphere remained the same shifting from very low to very high level along the treatment. The category lustful exhibited a more complicated relation to time: a the beginning there was very little, than it peaked

By factor analytic technique we identified a strong general factor that demonstrated the development of dream atmosphere over the course of treatment from negative to positive.

picture 2
Global dream atmosphere.
General factor: negative (high) versus positive (low) emotions.

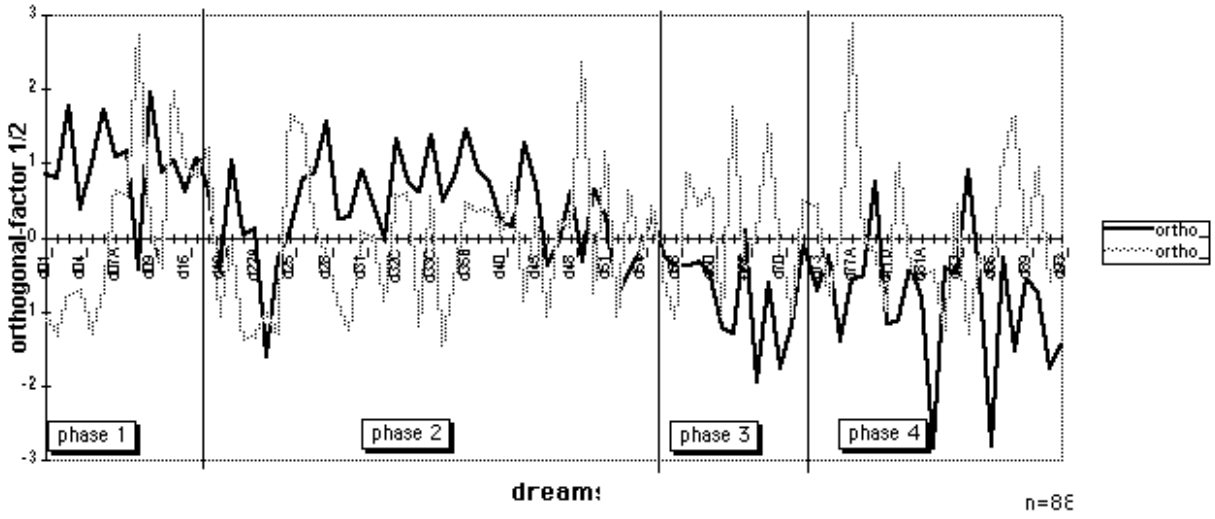


Global dream atmosphere.
General factor: negative (high) versus positive (low) emotions.
Keeping in mind the diverse findings on the level of single items we then performed an orthogonal

varimax rotation. The outcome of this operation pointed to two components.

The factor "negative me" using Dahl´s system of classification of emotions (Dahl et al. 1992) incorporate the self emotion states whereas the factor "negative it" assembles the aggressive and anxious states that are object-oriented.

picture 3
Factor analysis.
Orthogonal factor 1 = negative me
Orthogonal factor 2 = negative it



Problem solving:

C1 Are there one or more problem solving strategies ?

> One or two problem solving strategies are equally distributed across the treatment. There is no substantial change.

C2 Is the problem solving successful ?

> The percentage of successful problem solving strategies is increasing and the unsuccessful strategies are decreasing; furthermore partially successful solutions tendentially are increasing.

C3. Which problem solving strategies do you find ?

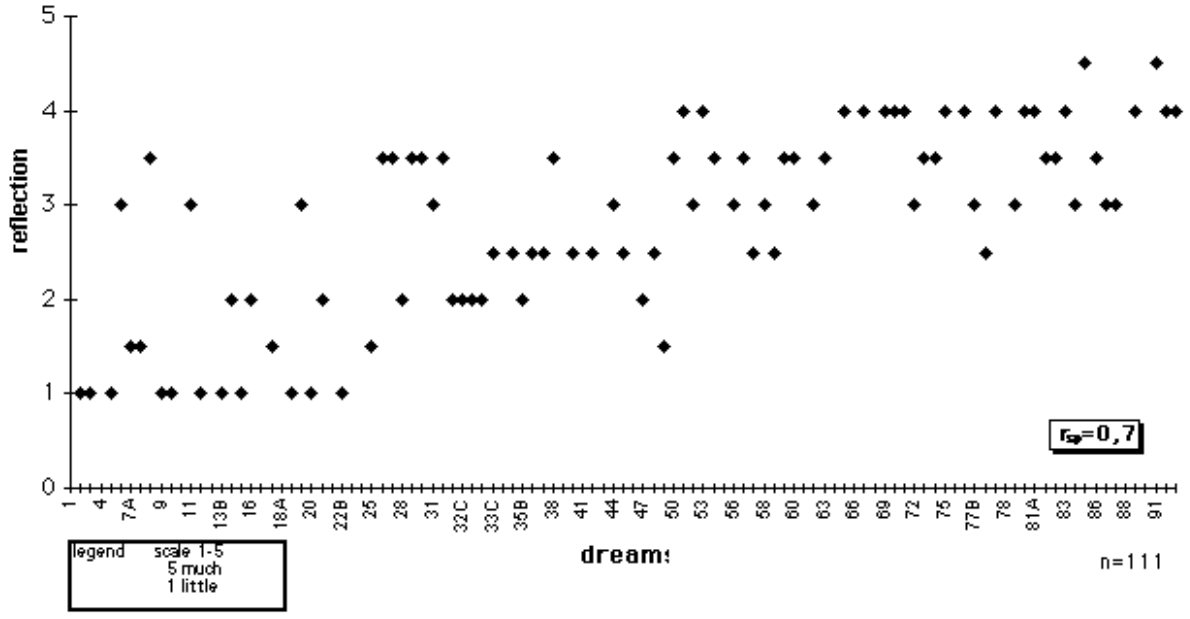
> The patient throughout the analysis is actively seeking solutions of problems; there is a slight increase in deferred (storniert) actions. A clinician might surprised by this result.

C4. Are the problem solving strategies reflected upon ?

> There is a powerful increase of the reflection upon these strategies continously taking place over the course of the analysis.

This finding is well represented in a graphical representations. The changes occur in a continous non-dramatic fashion along the continuuum of treatment.

picture 4
Is there a reflection of the problem solving strategies?



7. Discussion & Summary

The hypothesis focused on the issue whether the changes can be modeled as linear trends or whether other, nonlinear models are necessary. Here the findings are very univocal: either we find stationary processes with variations in intensity (like in aggressive or anxious feelings) or the changes are either increases of decreases that are patterned along the time axis in a linear fashion.

Some surprises in the findings have to do with that patient particular properties she already brought to the treatment. From the start she brought the capacity to actively organize relationship patterns in her dreams; however the change occurred in the quality of these relationships: they became more friendly and caring

The impressive findings concerns the systematic change in dream atmosphere along the time axis: negative me emotions decreased, but negative it emotions remain at a stable variability.

Another impressive finding is the systematic shift of the capacity to shift from unsuccessfull to successful problem strategies along the analysis.

Our conclusion is that the process of change in psychoanalysis in basic psychological capacities take place all along they way. If the materials dreams are made of is considered a valid extract from the patient psychic life, than this study has demonstrated

a) change does occur

b) change mainly takes place in linear trend

c) relationship, atmosphere and problem solving are valuable dimensions of caturing a patient´s change process.

Summary

We have presented the results of a replication study designed to extend a former investigation about changes in problem-solving cognitive processes of a patient during her psychoanalytic treatment. The findings demonstrate that if change in dream relationships, dream atmosphere and dream problem solving strategies occurs, increases or decreases tamely follow a linear trend over the course of the psychoanalytic treatment.

8. References

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9 Appendix: additional results

We provide some additional results from the Amalia Study by Leuztinger-Bohleber (1989)

2. CALVIN: Changes in the Superego and Internal Values

The raters observed significant changes in the internal values of the patient. Their criticisms and judgments grew more mature, milder, more flexible, more adequate, and more encouraging, but remained consistent with inner ethical values already present at the beginning of her treatment. This included how the patient judged herself as well as how other relevant other persons judged her.

3. MACHIAVELLI: Changes in Problem-Solving Strategies for Dreams

The raters judged that the patient increased her ability to interpret her dreams. In later sessions she displayed more strategies for interpreting her dreams, such as working with dream symbols, integrating different themes in the dream and associations, and dealing with contradictory information.

4. CICERO: Changes in Language Expression

We found a variety of changes in the ratings of the patient´s language. Two of these changes were: (1) the language became more socially communicative rather than egocentric and (2) affects were more integrated into expressions rather than remaining isolated.

5. MARX: Changes in Reality Perception and Reality Testing

We observed fewer changes in these functions than we had expected. We had significant results only in changes in the patient's self-descriptions. The patient described herself more realistically and less conflictually in the later sessions. And by the end the patient became more "empathic" in her self-descriptions.

6. FREUD: Changes in the Capacity for Introspection

The raters found that the patient showed the most increase from the beginning to the end in her ability to introspect. Moreover, her introspections were "productive" (complex, profound, more intensely experienced) rather than "intellectualized" or "rationalized," and led to new insights and thorough working-through of conflicts. The raters also found more "good" late analytic sessions in the patient. There were also some instances in which the patient reflected on her own dream interpretation strategies. Finally, although raters could not find support for our hypothesis that these capacities would be based on demonstrable identifications with the analyst, the analyst and the patient were emotionally "closer" to each other at the end. Thus we concluded that the introspective capacities of the patient were less inhibited and analytically more fruitful.

7. Changes in Patients' Motivation to Understand Dreams

The raters found an increase in the motivation to understand dreams in patients