

How does neurobiological research influence psychoanalytic treatments?

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Clinical Observations and Reflections from a Study on the Interface of Clinical Psychoanalysis and Neuroscience

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Abstract

One of the counterarguments against empirical research is that research negatively influences the psychoanalytic situation. In this paper the impact of a neurobiological study on psychoanalytically oriented treatments is presented from three different perspectives: patients' views, a study group of participating psychoanalysts and a clinical case reflection. Results show a clear influence of the study on the course of treatments. Patients report consistently that study participation had a positive impact on their treatment experiences. However, study participation forced the psychoanalysts to carefully reflect on his/her unconscious and conscious involvement to establish a psychoanalytic stance independent from empirical research.

Keywords: empirical research, study group of psychoanalysts, research evaluation

Introduction

Empirical research on psychoanalytic treatments has been the subject of a controversial discussion for many years. Some authors strongly urge testing both basic psychoanalytic assumptions in experimental settings and the efficacy and effectiveness of psychoanalytic treatments (Kächele, Schachter, & Thomä, 2009; Luyten, Blatt, & Corveleyn, 2006). From their point of view, empirical research will foster the continuation of psychoanalytic treatments in health systems and will contribute to overcoming the scientific “splendid isolation” that has characterized psychoanalytic thought. Proponents of empirical research identify an urgent need for research on long-term psychoanalytic treatment because without substantial evidence these costly treatments will not be supported by the health care system (Fonagy, 2002). Opponents of this view claim that the Freudian clinical observational research is sufficient to create and evaluate clinical psychoanalytic theories (Green, 1996, 2000). Moreover they declare that empirical research methods are not appropriate to explore the basic topic of psychoanalysis: the individual dynamic unconscious (Perron, 2002). Aside from epistemic argumentation, one of the counter-arguments against empirical research seems to be that research may negatively influence the psychoanalytic situation (Alonso, 2009; Bush, et al., 2001). Although the reluctance of clinicians to participate in therapy research is a problem for research in every therapeutic school (Bednar & Shapiro, 1970; Wynne, Susman, Ries, Birringer, & Katz, 1994), psychoanalytic therapists seem to have the strongest resistances (Morrow-Bradley & Elliott, 1986). Moreover, Bush et al. (2001) have shown that psychoanalysts are more critical and reluctant regarding therapy research than their own patients.

In this paper we want to contribute to this discussion by describing our research experiences in a neuro-psychoanalytic study from three different perspectives: patients’ views, a study group of participating psychoanalysts and that of one treating analyst. Our observations will examine some of the criticisms of empirical research by examining whether psychoanalytic treatments are influenced by parallel empirical, in this case neurobiological, research. Furthermore, a multi-methodological approach is presented, combining through standardized questionnaires, group discussions and clinical reflection.

The object of observation – the Hanse-Neuro-Psychoanalysis-Study

The object of observation is the Hanse-Neuro-Psychoanalysis-Study (HNPS)¹ which investigates neural correlates of changes in chronically depressed patients before and after 8 and 16 months of psychoanalytic treatment using functional magnetic resonance imaging and EEG (Buchheim, et al., 2008; Kessler, et al., 2011). The study protocol of the HNPS was approved by the ethics committee of the University Ulm, Germany. The HNPS was performed from January 2007 to February 2010 in Germany. The HNPS is the first study that investigates neural changes during psychoanalytic therapies; only interpersonal and cognitive behavioral therapies have been investigated before with neuroimaging measures (Roffman, Marci, Glick, Dougherty, & Rauch, 2005). Furthermore, in our study the observation window was very much expanded up to 16 months in comparison to former studies in that field which had included short-time therapies only (e. g. Linden, 2006). Another special focus of the HNPS was that the research team consisted of psychoanalytic researchers who developed individually tailored stimuli for the fMRI and EEG experiments that intended to capture unconscious dimensions of the patients’ individual psychodynamic features (Buchheim et al.,

¹ The whole research group consisted of the authors and Gerhard Roth, Daniel Wiswede, Thomas Münte, Lenka Staun, Anna Stumpe, Michael Stasch and Manfred Cierpka.

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2008). One paradigm confronted patients with their maladaptive interpersonal relationship themes as derived from the relationship axis of the Operationalized Psychodynamic Diagnostic System (OPD-2) (OPD-Task-Force, 2008). The other paradigm focused on mental representations of attachment experiences using the Adult-Attachment-Projective-Picture-System (George & West, 2001, in press). Besides fMRI and EEG the research design included diverse interview-based and psychometric methods to assess symptomatic and structural changes as well. Patients met the research team approximately 12 times. Each assessment took about two to three hours at the university lab. Assessments involved EEG, fMRI, videotaped interviews and questionnaires. A healthy control group was examined with the same methods. Patients and controls were paid for participation. In this report we will restrict data presentation to the research topic, if and how this kind of research influences the course of psychoanalytic treatments.

Psychoanalysts from two local psychoanalytic institutes were invited to participate in the study after discussing extensively and critically the research design. A group of 16 psychoanalysts decided to collaborate with the research team; they developed their own clinical research issues which will also be presented here. These analysts started a regular monthly discussion group in which the influence of the study on the psychoanalytic process was reflected upon. Before presenting the methods and results of the three different approaches, we will present procedures that the research group developed together with the psychoanalysts as basic ethical guidelines for such a study:

- 1) Patient recruitment should not take place in an ongoing treatment because the patient may not be able to decide freely if the psychoanalytic process of regression and a certain dependency on the psychoanalyst has already started.
- 2) To ensure confidentiality and to keep the analytic process as undisturbed as possible no information was exchanged between the research group and the treating psychoanalysts. There was only one exception in which the psychoanalysts reported on the diagnosis to the research group to ensure inclusion criteria.
- 3) The study protocol, research methods and its aims were explained for the participating psychoanalysts in detail.
- 4) Any irritations that occur during the assessment phase were discussed between the research group and the treating psychoanalysts.
- 5) Results were presented and discussed with the group of participating psychoanalysts after study completion. The research team also informed the treating analysts that patients would receive feedback about their results (fMRI, EEG, questionnaire and interviews) after study completion.

Methods

Participants

Patients and controls were informed about the study via a written research protocol. Before assessments, written and informed consent was obtained. Patient recruitment took place in an outpatient department of a psychoanalytic institute and also among new patients attending some of the participating psychoanalysts. Inclusion criteria were: main diagnosis depression, depressive symptoms longer than two years (chronic depression), age between 18 and 60 years. Exclusion criteria were: substance abuse, acute suicidality, psychosis, cognitive and neural impairment, claustrophobia and other contraindications for fMRI-assessments (e. g. pregnancy, cardiac pacemaker, etc.). 25 patients who met study criteria were allocated in study therapies provided by psychoanalysts in private practices. After first assessments and therapy allocation, five patients dropped out of the study and/or out of psychoanalytic therapy. 20 remaining study patients started psychoanalytic oriented therapies of various frequencies

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(two to four hours weekly). Four patients were on medication during the recruitment phase but quit medication when starting therapy. Controls were recruited through advertisements in local newspapers. Out of a pool of 80 subjects, 20 controls were chosen who had no history of psychiatric disorders and matched patients in age, sex and education. Four controls dropped out after the first fMRI-assessment. Patients fulfilled diagnostic criteria for chronic depression, 11 patients reported recurrent major depression episodes and nine patients were suffering from double depression. Patients had a history of an average of 5.5 major depression episodes; the age of onset of depression ranged from 8 to 50 years ($m=20$, $SD=9.5$). 16 patients reported former unsuccessful psychotherapeutic and/or drug treatment.

16 state-licensed psychoanalysts working in private offices participated in the study. The group can be considered as highly experienced with a mean of 22.4 years ($sd= 7.9$) practicing as psychoanalysts, five participants are training analysts in their institutes.² The psychoanalysts offered psychoanalytic therapy using the couch setting. The number of sessions per week varied from two (nine cases), three (nine cases) and four (two cases) per week. Eight of the psychoanalysts participated regularly in a monthly study group.

Measures

After study completion a standardized questionnaire was used to evaluate patients' and controls' view on the study. The questionnaire was a modified version of an instrument Bush et al. (2001) used in their feasibility study on the impact of psychotherapy research. Two versions were constructed: a control version with 10 items and a patient version with six additional items concerning questions about the influence of the study on their therapy (compare patient version in the appendix). All items were scored from zero (not applicable), one (rather not applicable), two (partly applicable) to three (very applicable). Items asked for a negative or positive evaluation of the impact of certain methods (EEG, fMRI, interviews and questionnaires) on the participants and in case of the patients, on the therapy. Two final items asked for the overall experience of the study as negative or positive. Questionnaires were sent with postal services two months after study completion to 16 controls and 20 patients. Participants were asked to return questionnaires anonymously by using a prepaid envelope. The response rate was high: 16 patients (80 %) and 13 controls (81%) answered. Statistical analysis was performed with the Statistical Package for the Social Sciences (SPSS 17.0).

² One institute belongs to the International Psychoanalytic Association, the other one belongs to the German umbrella organization for Psychoanalysis, Psychosomatic, Psychotherapy and Psychodynamic Psychology (DGPT).

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Evaluation: Experiences with the HNPS (Patient-Form)

In this evaluation form we ask you how you have experienced your participation in the Hanse-Neuro-Psychoanalysis-Study.

		<div> <div> 1 ↓ 1 </div> <div> Not applicable Rather not applicable Partly applicable Very applicable </div> </div>
1.	Questionnaires helped me to understand myself better.	I ✓ I gefunden werden.
2.	The EEG-Experiment was annoying or troubling to me.	Fehler! Verweisquelle konnte nicht gefunden werden.
3.	Interviews helped me to understand myself better.	Fehler! Verweisquelle konnte nicht gefunden werden.
4.	Questionnaires supported my therapy.	Fehler! Verweisquelle konnte nicht gefunden werden.
5.	The scanner experiment scared me.	Fehler! Verweisquelle konnte nicht gefunden werden.
6.	The fMRI experiment helped me to understand myself better.	Fehler! Verweisquelle konnte nicht gefunden werden.
7.	The Experiments (EEG and fMRI) had a negative impact on my therapy.	Fehler! Verweisquelle konnte nicht gefunden werden.
8.	The EEG experiment helped me to understand myself better.	Fehler! Verweisquelle konnte nicht gefunden werden.
9.	The interviews supported my therapy.	Fehler! Verweisquelle konnte nicht gefunden werden.
10.	The experiments (EEG and fMRI) supported my therapy.	Fehler! Verweisquelle konnte nicht gefunden werden.
11.	Questionnaires had a negative impact on my therapy.	Fehler! Verweisquelle

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		konnte nicht gefunden werden.
12.	I experienced the Interviews as stressful and /or intrusive.	Fehler! Verweisquelle konnte nicht gefunden werden.
13.	The interviews had a negative impact on my therapy.	Fehler! Verweisquelle konnte nicht gefunden werden.
14.	Questionnaires were a negative experience.	Fehler! Verweisquelle konnte nicht gefunden werden.
15.	The overall experience in the study was negative for me.	Fehler! Verweisquelle konnte nicht gefunden werden.
16.	The overall experience in the study was positive for me.	Fehler! Verweisquelle konnte nicht gefunden werden.

Study Group and Case Discussion

The participating psychoanalysts were offered to take part in a study group. This group met once per month with 90 minutes duration of each session; 13 psychoanalysts participated in the beginning. Five of them dropped out – two because they lost their patients (one stopping the treatment soon after it had started, one stopping the treatment after the suicide of his father), two because of a clash of the group sessions with other continuous obligations and one because she left Bremen. Thus eight psychoanalysts remained and four to eight were present in the sessions.

The study group accompanied the whole study, starting in May 2007 and ending in January 2010. In this time span into total 27 sessions took place. Participants presented their patients' treatment in this group, especially focusing on any open or hidden appearance of the study in the analysis and on specific treatment problems. One of the psychoanalysts (GB), who is trained in group analysis, was the moderator of the group. He was responsible for organizing the room, planning the dates, informing absent group members and sending invitations for the meetings. He also observed the group process and interpreted it relating to the case presented. After each meeting, he wrote a report of the session and additionally every session was recorded on audiotape.

The group worked in a psychoanalytic manner – there was no plan regulating who had to speak or to report about a patient. The psychoanalyst who felt the most intense need started reporting about his respective analysis. The other psychoanalysts contributed their ideas and associations or they contributed clinical material of the treatment they conducted. In this report a whole clinical case will be presented that was discussed during the study group as well as a description of the group process from the written and transcribed protocols.

Results

Questionnaire Data

Patients' and controls' evaluations did not differ significantly in any item (t-test, compare table 1). The strongest positive evaluations in terms of experiences during the study that improve self-reflection were given for the interviews (Adult-Attachment-Interview, AAI, Psychodynamic Interview, OPD). This result is not very surprising because both interviews ask for self-reflection and the psychodynamic interview in particular is constructed to involve at least one interpretation of unconscious meaning. Therefore, patients and controls obtained a certain kind of feedback from the interviewers which they mostly acknowledged in their evaluations. The evaluation of the questionnaires was less positive than the interviews but still closer to "partly applicable" in what refers to a mixed feedback from patients and controls; most of them found questionnaires helpful to improve self-understanding and some did not. The experiments were evaluated as least positive. Mean values show for both groups that they were not experienced in improving self-understanding. The healthy controls rated them a little more positive than the patients but the differences were not significant. Especially the OPD-experiment yielded a character of interpretation because participants were confronted with their maladaptive interpersonal relationship themes. But being confronted six times in six assessments (36 times the same "interpretation") was obviously not seen as helpful for them as questionnaires and interviews. Concerning negative experiences, neither questionnaires were evaluated negatively nor were interviews seen as intrusive or stressful. Again mixed results were seen with the EEG experiment as troubling or annoying. Eight patients and four controls agreed with the item whereas eight patients and nine controls did not. The fMRI experience was seen as frightening for three patients and two controls. To our surprise both groups evaluated the EEG experiment worse than the fMRI experiment. This result could be due to the fact that EEG requires a long set-up to establish a connection between electrodes and head skin involving the application of a sand-water-paste on the hair that requires hair washing afterwards. On the other hand some patients reported personally that even though they were scared of the fMRI they saw it as a challenge and were proud to have faced it successfully.

The overall feedback was very clear: only one patient evaluated partly negative experiences participating in the study and the rest denied any negative experience. But both groups gave feedback that they had found an overall positive experience with their participation in the HNPS study.

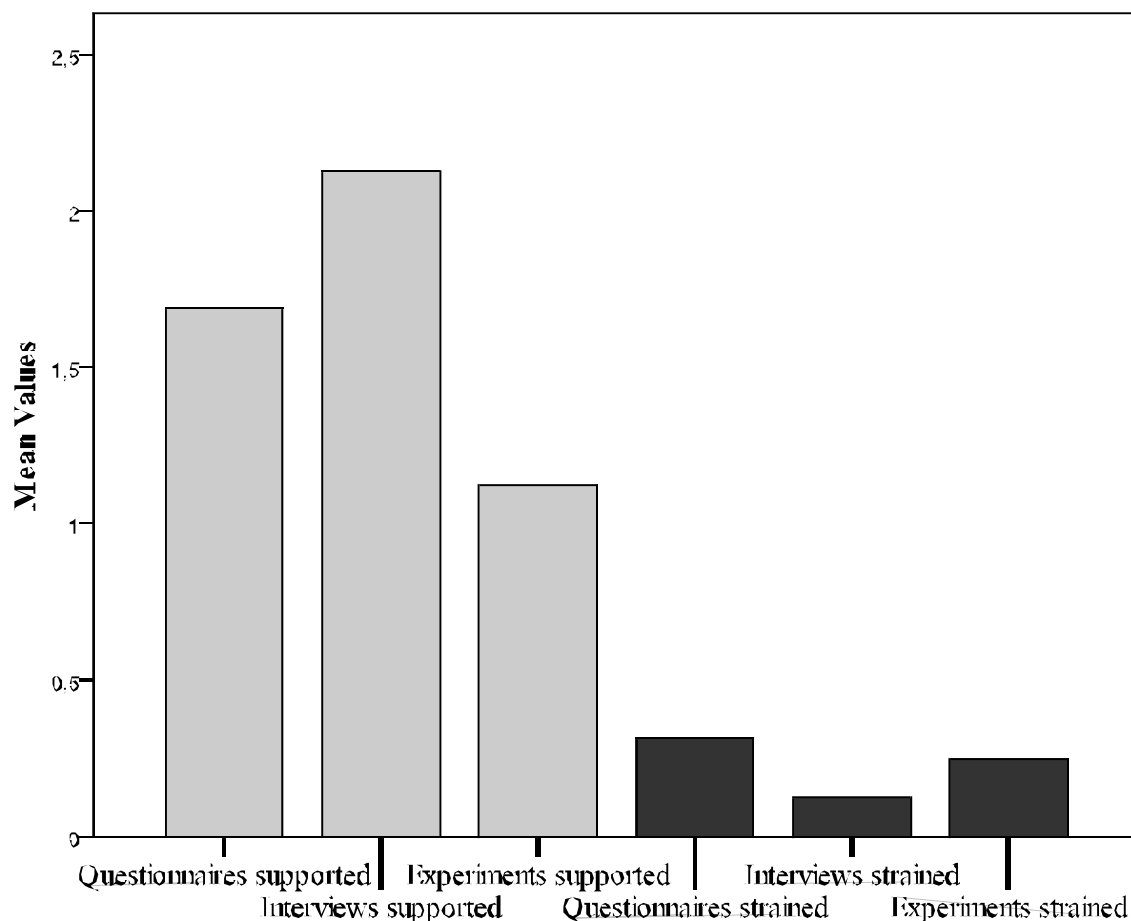
Table 1: Results (mean values) from the evaluation form for patients and controls. Ratings from zero (not applicable) to three (very applicable)

Items from the Evaluation-Form (in a different order than in the questionnaire)	Patients (N=16) M (sd)	Controls (N=13) M (sd)	t-test p
Questionnaires helped me to understand myself better.	1.75 (.8)	1.54 (1.2)	n. s.
Interviews helped me to understand myself better.	2.3 (.7)	2.0 (1.2)	n. s.
EEG helped me to understand myself better.	.6 (.7)	1.2 (.9)	n. s.
fMRI helped me to understand myself better.	.9 (.8)	1.2 (.9)	n. s.
Questionnaires were a negative experience.	.5 (.7)	.2 (.6)	n. s.
I experienced the interviews as stressful and /or intrusive.	.6 (.8)	.7 (1.0)	n. s.
The EEG-experiment was annoying or troubling to me.	1.3 (1.3)	.7 (1.1)	n. s.
The scanner experiment scared me.	.9 (1.0)	.5 (1.0)	n. s.
The overall experience in the study was negative for me.	.13 (.5)	0 (0)	n. s.
The overall experience in the study was positive for me.	2.2 (.7)	2.3 (.9)	n. s.

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Patients were also asked to evaluate the impact of the study on their treatments. Again the interviews ($m=2.1$, $sd=.8$) were experienced as most supportive followed by the questionnaires ($m=1.7$, $sd=.9$) and the experiments ($m=1.1$, $sd=.8$). From the patients' point of view none of the implied measures had a negative impact on the therapy; strongest negative impact was seen in the questionnaires ($m=.31$, $sd=.6$) and the experiments ($m=.25$, $sd=.6$). Least negative impact was seen for the interviews ($m=.13$, $sd=.3$) (compare figure 1).

Figure 1: Patients' (N=16) evaluations concerning the impact of participating in the study on the therapy. Mean values are displayed.



Results of the Study Group

Resonances on the patients' part

In this chapter we will describe how patients dealt with the HNPS in psychoanalytic sessions from the reports of their psychoanalysts. In the beginning of the study, some patients showed clear reactions to their participation in the project. It was mainly a kind of uncertainty; they felt uncomfortable with a new and unknown situation. Few patients showed stronger reactions that led to study and/or therapy drop-out. For example, one patient experienced the scanner examination as a repetition of overwhelming situations in her life such as the unexpected loss of a protecting object. The scanner assessment with this patient had to be interrupted because she developed feelings of panic. Later she dropped out of the study, but she continued the treatment.

Another patient was concerned about one question of the clinical interviews referring to sexual abuse. She became rather suspicious that a researcher had spoken with her analyst

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about her answer. This patient dropped out of the HNPS, too. A few weeks later she spoke to her analyst about sexual abuse by her stepfather. But the patient did not trustfully report this. The analyst felt a strong mistrust remaining, which she could not sufficiently interpret. A few weeks later the patient stopped analysis. In this case clinical examinations (here the SCID) seemed to prematurely have provoked unconscious fears.

Patients seemed to regard study participation as part of their everyday life and accordingly they spoke of the study rarely and incidentally. Interestingly, some elements of the research project appeared in dreams. For example, a patient had a dream with a symbiotic fantasy with her analyst and the study group understood that it was the defence of paranoid fears and aggressive impulses. The patient had received a CD with pictures of her brain. The symbiotic fantasy was to move together her brain picture and that of her analyst so both would melt. Another patient dreamt in the night before the second scanner assessment of a narrow channel she had to pass through. A third patient dreamt of her analyst handing her over to another young and inexperienced psychoanalyst who reminded her of one of the researchers. She associated her mother with this dream who had been hospitalized for a long time when the patient was still a girl. In some way she had to replace the mother in her family. Thus in all these cases the analysts dealt with the material according to other associations of the patients and analysed it. In conclusion: the surface of the material refers to the project but the latent meaning refers to biographically relevant conflicts.

There were a great variety of associations referring to the study. Some patients often talked about the assessments at the university lab, others did not or very rarely. One patient spoke during 18 months of participating in the study three times about it, twice only because of a clash of an assessment with a therapy session and once asking if the analyst knew when she would get the money for taking part in the study.

In their last assessment the patients received some information about the scanning and psychometrical results. Some patients were irritated or confused about the results. One patient reported that she assumed that the measurements were evaluations of the psychoanalytic therapy, which irritated the treating analyst. Another patient cried in her last assessment and received consolation from a researcher. She regarded this to be inappropriate because it had a therapeutic attitude and she became suspicious that her analyst had spoken with the researcher.

Resonances on the analysts' part

The resonance of the analysts changed over time. Initially they looked at the project and its setting and how it interfered in their treatments; then they only paid attention to the analytic process for a long time.

From the psychoanalysts' point of view, there were several effects the project had on the therapeutic relationship. The patients were special patients whose treatment received unusual attention. One analyst explicitly said that her patient was an exceptional patient for her, one she had taken in faster than other patients. This special meaning and often special cathexis of these patients made the analysts more vulnerable for disappointments when patients cancelled participation in the study or even treatment.

At the end of the project some analysts were irritated and annoyed again, a parallel process to experiences of their patients during the closing appointments at the lab. At the very end of the project some analysts were sad and disappointed about the end of the project. They felt abandoned by the researchers but hid these feelings behind an attitude of being upset and irritated.

To summarize: there were three main effects of the project on the analysts' part. Initially they shared the excitement, fears and other emotions of their patients induced by the research

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project. They themselves seemed to be excited by emotions changing between anxious and enthusiastic expectations. This excitement was followed by a cooler attitude that facilitated the distinction between the patients' and their own excitement when entering the research project. Thus, the analysts had to acquire a calm and professional style in dealing with the research project. They responded to the patients' irritation at the end of the project with a similar irritation and they responded to the fact that some patients developed a kind of side transference with the research study itself or the staff with feelings of competition. The patients had the encouraging experience of a competition of researchers and analysts about them. This could be regarded as a wonderful experience for depressive patients who doubt themselves so rigorously. Simultaneously, the analysts showed a higher interest in the theories of depression, in the treatment technique and in the methodology of research. This research interest stimulated the wish for further education and intensified the cathexis of the patients as well as the analytic process. An analyst said about a treatment, which suffered from a nearly complete standstill, that she could have hardly tolerated this treatment and that she would have finished it already if it was not accepted for this study. So the research project and the study group became a third, providing the necessary distance for reflecting upon the treatment, its course and the analyst's involvement.

Clinical case reflection

In this part we will present the case of M. from the viewpoint of the treating psychoanalyst who has participated in the HNPS. The case reflection will focus on the possible impact of the study participation for M. and the course of treatment. The setting of psychoanalytic psychotherapy was mainly three sessions per week on the couch. Treatment terminated after 300 sessions because this is the session limitation paid by health insurances in Germany and M. was not able to continue paying privately.

Biography

In the beginning of treatment M. was 36 years old and married for 13 years. He and his wife had two children aged seven and eleven. The family lived in the small town where M. was born and raised. His parents had worked in their own business, which had led to a constant workload even during the weekends. M. was the youngest of seven brothers and sisters. His father had died when he was 14 years old. Even though his father had suffered from a chronic disease, M. experienced his death as surprising. From all the siblings, only M. was not allowed to visit his father in hospital. He kept his promise to his older sister not to cry during the funeral and was unable to cry about his father's death after that. At the same time he felt betrayed by his sister because she was heavily crying then.

Before his first depressive symptoms, M. was, like his father, strongly engaged in the community of his town. Four years before starting therapy he felt exhausted and discontent with his life. Suddenly, he was unable to tolerate alcohol, which was dramatic for him because every social activity was tied to drinking alcohol. Therefore, he felt excluded from his beloved social get-togethers. He described his personal theory in that alcohol may have caused an electric shock in his brain. From his descriptions, I could infer that in fact he experienced panic attacks. After suffering from severe dizziness during car driving he was diagnosed extensively (including MRI) with no somatic results. In the aftermath he lost his trading abilities and had to give up his job. He suffered from severe self-doubts and when he became suicidal he was referred twice to a psychiatric hospital.

Beginning of the treatment and first mentioning of the study

In his second session I asked M. if he was willing to participate in the study. He agreed surprisingly fast but after that, study participation was no topic in our session for a long time.

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Only after six months he mentioned briefly that the second round of assessments will start soon. The day before, an appointment was cancelled because the scanner was “broken down.” For the first time he reported that he had difficulties engaging emotionally in the sentences that were presented during scanning.

At this point of our analytic work we had reached a state of paralysis. Unable to connect emotionally with himself or with me, he developed a strong belief that an organic damage was the cause of his problems. Since I did not share his belief, M. felt deeply misunderstood. At the same time, I could not grasp his state of mind. My only clear emotion during sessions was a recurring intensive anger. I had the impression of a parallel situation concerning the study participation and the therapy. In both, he refused cooperation but felt a victim of adverse conditions. During this period he reported the following dream: “I am in a gigantic building, a mall or something similar. There are many rooms and doorways. An enormous power crumbles everything and something starts a fire. Somebody was with me and we managed to get out just in time. An enormous power initiated everything.”

The strong images of his dreams were in contrast to his usual bland associations during sessions. We drew parallels from his feelings of being extremely threatened in his dream to alcohol or the analytic space that may have threatened him. But I experienced these explanations as blunt. In the following session M. reported about his second scanner assessment and I realized that his dream happened the night before being investigated at the lab. With this background, the dream could possibly shed light on aspects of his experience of the study, either feelings of being threatened by the fMRI or his own aggressive impulses toward the assessments.

Six months later a very similar scene took place. M. reported in a monotonous almost casual way the following dream: “Outside in the woods, something is planned to be built, an airport or something. They want to build up scanners that peep like when you steal something. I was supposed to build them up together with other people. But suddenly my head was about to be cut off. One of them had an instrument to do so. And my head was already half way off which was not too bad. Then the man did not find another tool to finish his work. I was relieved, of course.”

During his report I remembered a story M. had told me several times. When he was 16 years old, he felt so seriously mobbed during his first apprenticeship that he planned to cut off his hand to be able to drop out. He did not follow this plan only because one brother realized his suffering and helped him to find an alternative employment. Therefore I asked M. if his dream entails the wish to feel safer by cutting off feelings, for example. M. seemed to be struck by my idea. In his next session he reported again that he had an fMRI assessment the day before during which he was confronted with the sentences “individually *cut* for him.” Unfortunately he was still not able to engage emotionally with his sentences. As before, he did not connect his dream with the fMRI experience even though it seemed to entail his feelings of threat and ambivalence toward the assessment. The picture about “*cutting* his head off” can be seen as a metaphor for these feelings. In his perception the study cuts something off. Partly this cutting off was useful for him such as cutting off feelings, associations and meanings. Furthermore a biological approach allowed him to take refuge in somatic explanations for his mental state. At the same time, being cut off or excluded was his central and strongest issue of suffering. M. always felt cut off from his family, especially when his father died. He felt cut off from his wife and his children. Since he had to give up drinking alcohol he felt cut off from any social activity. Finally, he felt excluded in the company he worked at as temporary staff. To stop and overcome being cut off was his personal goal for treatment. But this wish hardly ever

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appeared in our interaction; instead he remained also cut off from me and left me in a state of helplessness and recurring strong anger.

The anger

I have never experienced this kind of recurring and persistent anger in any of my psychoanalytic treatments. For one and a half years I sat on my chair behind M., starting sessions mostly quite relaxed but got into a state of severe anger within a few minutes. Sometimes I even clenched my fists, wanting to strike him with a bat on his head. When I trace back this enormous anger as counter-transference phenomena I find a complementary form of this anger. I reacted emotionally to his way of putting himself in a victim position, small and helpless and his adhering rigidly to somatic explanations for his problems. Because he remained in a masochistic position I felt manipulated and paralyzed. In my concordant countertransference I sensed emotions that M. feared and thus repressed. In our analytic work these repressed feelings became more and more conscious. First, his anger about his wife, who had comforted their child's neurodermitis instead of comforting him, became clearer and his current anger about her meeting friends, smoking and drinking alcohol. Furthermore, enormous anger on his past appeared during sessions; his anger about his former boss for getting his wage irregularly and colleagues that mobbed him. He was even able to talk about his anger concerning his idealized father who passed all his belongings on to another son; and the anger about his dependence on his parents in law who owned the house he lived in. In very little steps, all this anger could be named but the analytic process remained stuck. Thus it seemed necessary to search for a source of my anger that was not driven by the patient but evolved in me. My reflections got new directions when I realized a decrease of my anger once the study participation ended with the last assessment.

In the beginning I was quickly supporting the HNPS and thought that the strong criticism of some colleagues was out of touch with reality. Possibly, I had pushed aside my own resentments against the paradigms of natural science and resistance against being controlled and put under pressure to perform. I developed the phantasmatic idea that the future of psychoanalysis depends on our performance in this study. Looking back, I can understand this as an omnipotent fantasy that idealizes science and devaluates my own clinical practice. At the same time I was trapped in M.'s resistance when I considered research results more important than the meaning of our psychoanalytic work. When the study became a central topic again in the one of the following sessions I asked M.: "So for you, study participation meant to come here and have therapy and at university the scientists will measure and judge the outcome?" And M. answered: "Yes, they measure it all. That's what it's all about, isn't it?"

A few weeks after his last appointment at the lab we talked about the end of therapy. M. expressed his wish that he wanted to be prepared for that at any time. I interpreted that as his never again wanting to have the feelings he experienced at his father's funeral. Following that interpretation he was able to cry about his father's death two sessions later, which was the only time he ever cried during our sessions. It was then possible to name his sadness about feeling excluded in our psychoanalytic work and connect it to his helpless anger. With this experience he started to overcome cutting his feelings off from his actions. He moved on from his resistance of having a somatic illness that was supported by his study participation. Some hours before therapy termination he reported a dream: "I am in hospital because of pain in my knee. The hospital is kept very sterile; my bed is an operating table. I am examined but they cannot find anything concrete. Then I visit another physician in another room. He says that you should not underestimate feelings." In the interpretation of this dream, parallels could be drawn between the hospital and the HNPS on the one hand and the other physician and the analytic therapy on the other hand. It was a long and difficult way for M. and me to work

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ourselves out of the feeling of being dominated by the study and to find our own way of talking in our analytic work.

Discussion

In our evaluation of the impact of the HNPS we followed a multi-methodological approach starting with patients' and controls' conscious beliefs via questionnaire, followed by reports from the treating analysts to evaluate unconscious impacts and meanings. Our methodological approach bears some difficulties because we cannot rule out how the research on research, implementing a study group, has influenced the observed psychoanalytic treatments as well.

However there is a clear answer to the question if a project like the HNPS influences the treatment course: yes, it does. Patients report consistently that study participation had a positive impact on their treatment experiences. The clinical case discussion from the study group also revealed no negative influence on the psychoanalytic treatment process of a majority of patients. For a sexually abused patient the project might have had a harmful effect upon the treatment because she dropped out of both, treatment and study. She seemed to be confronted with talking about her abusive experience too early in the SCID. But we cannot relate this only to the impact of study participation because she had dropped out of therapies before.

Some patients were upset about some organizational mistakes of the project and talked about this in their treatment. Initially both analysts and patients felt uncertain as how to relate to the project. The analysts easily took over the patients' irritation; later they had more of a distance and were able to deal with such patients' experiences as with any other everyday experience. Some patients with a borderline structure used the parallelism of research and treatment for acting out inducing rivalries such as these patients do anyhow.

From the evaluation of the study group and the clinical case discussion, it seems that the study impact was even stronger for the psychoanalysts than for their patients. Some treatments only started because a psychoanalyst was interested in participating in the project and therefore preferably took suitable patients into treatment. The analysts enforced the cathexis of the treatments as research interests and taking part in the study group indicates. We suppose that patients experienced this as a non-verbalized narcissistic gratification, which may have had a positive effect on the treatment course.

Fears occurred on both sides: patients and analysts; concerning the confidentiality of research and the analytic process. Patients feared that there was an exchange of information between the researchers and the psychoanalysts, parallel the psychoanalysts feared to be controlled or judged by the research results. These fears seem to be inevitably connected to psychotherapy research. Still it remains useful to remember John Bowlby's distinction about the quite different tasks of the scientist and the researcher:

"In his day work it is necessary for a scientist to exercise a high degree of criticism and self-criticism: and in the world he inhabits neither the data nor the theories of a leader, however admired personally he may be, are exempt from challenge and criticism. There is no place for authority. The same is not true in the practice of a profession. If he is to be effective, a practitioner must be prepared to act as though certain principles and certain theories were valid; and in deciding which to adopt he is likely to be guided by those with experience from whom he learns. Since, moreover, there is a tendency in all of us to be impressed whenever the application of a theory appears to have been successful, practitioners are at special risk of placing greater confidence in a theory than the evidence available may justify." (Bowlby, 1979, p. 4)

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How to bridge the two positions of clinical and empirical research remains a task that will need practical experiences (Protz, Kächele & Taubner 2011). The recommendation by Stuhr et al. (2001) to include both in research projects depends on the capacity of collaboration on both sides. In our study we have learned how important it is to develop a research design that was relevant for clinicians, too (Shedler, 2002). However, study participation forces the psychoanalyst to carefully reflect on his/her unconscious and conscious involvement to establish a psychoanalytic stance independent from empirical research.

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