Clinical Implications of Neuropsychoanalysis

Mark Solms
‘Psychoanalysis still represents the most coherent and intellectually satisfying view of the mind’

Kandel (1999)
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(2) On this basis, what does psychoanalytic treatment aim to change in the brain?

(3) How effective is it?
Psychoanalysis rests upon three core claims about the human mind that were once considered controversial but which are now widely accepted in cognitive (and affective) neuroscience.

The clinical methods that psychoanalysts use to relieve mental suffering flow directly from these core claims, and are consistent with current scientific understanding of how the brain changes.

It is therefore not surprising that psychoanalytic therapy achieves good outcomes – at least as good as, and in some important respects better than, other evidence-based treatments in psychiatry today.
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Three core claims about the emotional brain:

(a) The human infant is not a blank slate; like all other species, we are born with a set of innate needs.

(b) The main task of mental development is to learn how to meet these needs in the world, which implies that mental disorder arises from failures to achieve this task.

(c) Most of our ways of meeting our needs are executed unconsciously, which requires us to bring them back to consciousness once more in order to change them.
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These needs -- ‘demands upon the mind to perform work’, as Freud called them (his “id”) -- are felt and expressed as emotions.
AFFECTIVE NEUROSCIENCE

THE FOUNDATIONS

OF HUMAN AND ANIMAL EMOTIONS

Jaak Panksepp
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
lateral/central amygdala
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
Seeking
Lust
Fear
Rage
Panic/Grief
Care
Play

Panksepp (1998)
Seeking
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Care
Play

Panksepp (1998)
Fig. 1. Play-fights are initiated by an attack to the nose, which occurs both from the front (A) and from the rear (B). Even after the defender has adopted a supine position, the attacker continues to direct his attack to the nose, which in turn continues to be defended by the supine rat (C). Drawn from 16-mm movie film taken at 48 frames/sec. The rats represented in A and B are 31 days, and the rats in C are 56 days. Lower case letters signify frames of the sequence and are placed in a fixed location relative to the animals. The same procedure is used for subsequent figures.
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We do not learn for its own sake; we do so in order to establish optimal actions to meet our needs in a given environment. (This is what Freud called “ego” development.)

Learning is necessary because innate tendencies have to be reconciled with real experiences, and thereby elaborated.

Successful actions entail successful emotion regulation, and vice-versa. This is because our needs are felt as emotions.

That is why our patients suffer mainly from feelings.
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(c) Most of our ways of meeting our needs are executed unconsciously, which requires us to bring them back to consciousness once more in order to change them.
Consciousness (‘working memory’) is an extremely limited resource, so there is enormous pressure to **automatize** learnt solutions to life’s problems.

Only 5% of our goal-directed actions are conscious.

Bargh & Chartrand (1999)
What was noted by E. J. Langer (1978) remains true today: that much of contemporary psychological research is based on the assumption that people are consciously and systematically processing incoming information in order to construe and interpret their world and to plan and engage in courses of action. As did E. J. Langer, the authors question this assumption. First, they review evidence that the ability to exercise such conscious, intentional control is actually quite limited, so that most of moment-to-moment psychological life must occur through nonconscious means if it is to occur at all. The authors then describe the different possible mechanisms that produce automatic, environmental control over these various phenomena and review evidence establishing both the existence of these mechanisms as well as their consequences for judgments, emotions, and behavior. Three major forms of automatic self-regulation are identified: an automatic effect of perception on action, automatic goal pursuit, and a continual automatic evaluation of one's experience. From the accumulating evidence, the authors conclude that these various nonconscious mental systems perform the lion's share of the self-regulatory burden, beneficially keeping the individual grounded in his or her current environment.

The strongest knowledge—that of the total unfreedom of the human will—is nonetheless the poorest in successes, for it always has the strongest opponent: human vanity.

—Nietzsche, Human, All Too Human

Imagine for a moment that you are a psychology professor who does experiments on conscious awareness. You keep finding that your subtle manipulations of motion by features of the environment and that operate outside of conscious awareness and guidance—is a difficult one for people to accept. One cannot have any experiences or memories of being nonconsciously influenced, of course, almost by definition. But let us move from the layperson to the experts (namely, psychological researchers) and see what they have to say about the relative roles played by conscious versus nonconscious causes of daily experience.

The major historical perspectives of 20th-century psychology can be distinguished from one another based on their positions on this question: Do people consciously and actively choose and control (by acts of will) these various experiences and behaviors, or are these experiences and behaviors instead determined directly by other factors, such as external stimuli or internal, unconscious forces?

Freud (e.g., 1901/1965), for example, considered human behavior to be determined mainly by biological impulses and the unconscious interplay of the psychic forces those impulses put into motion. The individual was described as usually unaware of these intrapsychic struggles and of their causal effect on his or her behavior, although it was possible to become aware of them (usually on Freud's couch) and then change one's patterns of behavior.

Early behaviorist theory (e.g., Skinner, 1938; Watson, 1913) similarly proposed that behavior was outside of conscious control, but placed the source of the control not in the psyche but in external stimulus conditions and events. Environmental events directed all behavior in combination with the person's reinforcement history.

A third major perspective emerged in mid-century with
LONG TERM MEMORY

Declarative (Explicit)

Semantic (facts)
  Medial temporal lobe; diencephalon

Episodic (events)

Non-declarative (Implicit)

Priming and perceptual learning
  neocortex

Procedural (skills and habits)
  striatum

Associate (C and O conditioning)
  amygdala

Non-associate (habituation and sensitization)
  cerebellum
  Reflex pathways

Emotional response
  Skeletal musculature
Basal Ganglia

Note that you cannot see the Globus Pallidus in this view, as it is located medial to the Putamen.
For automatized programmes to be revised and updated, they need to be **reconsolidated** (i.e., they need to enter consciousness again, to become labile once more).

This is **cannot be done for non-declarative (automatized) memories.** That is why automatized memories are ‘hard to learn and hard to forget’, and some are ‘indelible’.

**Not only successful actions are automatized.** Prematurely automatized action programmes are “the repressed”. Thus, repression entails resistance to reactivation of insoluble problems.
Fear memories require protein synthesis in the amygdala for reconsolidation after retrieval

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'New' memories are initially labile and sensitive to disruption before being consolidated into stable long-term memories. Much evidence indicates that this consolidation involves the synthesis of new proteins in neurons. The lateral and basal nuclei of the amygdala (LBA) are believed to be a site of memory storage in fear learning. Infusion of the protein synthesis inhibitor ansamycin into the LBA shortly after training prevents

Figure 1 Schematic representation of the amygdala at four different rostral-caudal planes. The numbers represent the posterior coordinate from bregma. Injector placements in the LBA are represented by the filled symbols; black filled squares represent ACG group placements; grey filled triangles represent the low-dose ansamycin, and black filled circles represent high-dose group. L, lateral nucleus; B, basal nucleus; C, central nucleus. The placements for subsequent experiments all demonstrated similar distributions as in this experiment and therefore are not shown.
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Our patients suffer mainly from feelings.

We believe that feelings mean something.

Specifically, feelings represent unsatisfied needs.

To be clear: emotional disorders entail unsuccessful attempts (usually unconscious) to satisfy needs.
The main purpose of psychotherapy is to help patients learn better ways of meeting their needs. This leads to better emotion regulation.

The psychopharmacological approach, by contrast, suppresses unwanted feelings.

To cure an emotional disorder, underlying need/s must be addressed, since they are what is causing the symptoms.
Psychoanalytical therapy differs from other forms of psychotherapy in that it aims to reconsolidate deeply automatized (unconscious) action plans.
We identify **dominant emotions**.

This leads us to the **automatized non-solutions** that gave rise to them.

These ‘solutions’ cannot be remembered directly, so we focus on **here-and-now patterns of behaviour** derived from them.

Reconsolidation is thus achieved through “transference” reactivation of **derivatives of** long-term solutions.

These new solutions must then be **consolidated afresh**.

Consolidation **takes time**. This is called “working through”. (Healthcare funders must learn how learning works!)
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Psychotherapy in general is a highly effective form of treatment.

Meta-analyses of outcome studies typically reveal effect sizes of between 0.73 and 0.85.

(In psychiatry, an effect size of 0.8 is considered a large effect, 0.5 is considered moderate, and 0.2 is considered small.)
Antidepressant medications achieve effect sizes of between 0.24 (tricyclics) and 0.31 (SSRIs).
Psychoanalytic therapy is equally effective as other forms of psychotherapy (Steinert et al, 2017) but the effects last longer – and increase – after the end of the treatment.

Abbass et al (2006): 0.97 at termination and **1.51 at follow-up**
Abbass et al (2014): 0.71 at termination and **1.51 at follow-up**

De Maat et al (2009): 0.78 at termination and **0.94 at follow-up**
0.87 and **1.18 at follow-up** (psychoanalysis)
**1.03** for symptom improvement
**1.38** for symptom improvement (psychoanalysis)
The Efficacy of Psychodynamic Psychotherapy

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Empirical evidence supports the efficacy of psychodynamic therapy. Effect sizes for psychodynamic therapy are as large as those reported for other therapies that have been actively promoted as “empirically supported” and “evidence based.” In addition, patients who receive psychodynamic therapy maintain therapeutic gains and appear to continue to improve after treatment ends. Finally, nonpsychodynamic therapies may be effective in part because the more skilled practitioners utilize techniques that have long been central to psychodynamic theory and practice. The perception that psychodynamic approaches lack empirical support does not accord with available scientific evidence and may reflect selective dissemination of research findings.

Keywords: psychotherapy outcome, psychotherapy process, psychoanalysis, psychodynamic therapy, meta-analysis

There is a belief in some quarters that psychodynamic concepts and treatments lack empirical support or that scientific evidence shows that other forms of treatment are more effective. The belief appears to have taken on a life of its own. Academicians repeat it to one another, as do health care administrators, as do health care policymakers. With each repetition, its apparent credibility grows. At some point, there seems little need to question or revisit it because “everyone” knows it to be so.

The scientific evidence tells a different story: Considerable research supports the efficacy and effectiveness of psychodynamic therapy. The discrepancy between perceptions and evidence may be due, in part, to biases in the dissemination of research findings. One potential source of bias is a lingering distaste in the mental health professions over time. Finally, I consider evidence that nonpsychodynamic therapies may be effective in part because the more skilled practitioners utilize interventions that have long been central to psychodynamic theory and practice.

Distinctive Features of Psychodynamic Technique

Psychodynamic or psychoanalytic psychotherapy refers to a range of treatments based on psychoanalytic concepts and methods that involve less frequent meetings and may be considerably briefer than psychoanalysis proper. Session frequency is typically once or twice per week, and the treatment may be either time limited or open ended. The essence of psychodynamic therapy is exploring those aspects of self that are not fully known, especially as they are manifested and potentially influenced in the therapy relationship.

Undergraduate textbooks too often equate psychoanalytic or psychodynamic therapies with some of the more outlandish and inaccessible speculations made by Sigmund Freud roughly a century ago, rarely presenting mainstream psychodynamic concepts as understood and practiced today. Such presentations, along with caricatured depictions in the popular media, have contributed to widespread misunderstanding of psychodynamic treatment (for discussion of how clinical psychoanalysis is represented and misrepresented in undergraduate curricula, see Bornstein, 1988, 1995; Hansell, 2005; Redmond & Shulman, 2008). To help dispel possible myths and facilitate greater understanding of psychodynamic practice, in this section I review core features of contemporary psychodynamic technique.

Blagys and Hilsenroth (2000) conducted a search of the PsycLit database to identify empirical studies that com-
The therapeutic techniques that predict best treatment outcomes, *regardless of form of psychotherapy*:

- **open-ended** dialogue between patient and therapist
- identifying *recurring themes* in patient’s experience
- linking patient’s *feelings* to past experiences
- drawing attention to *feelings* regarded as unacceptable
- pointing out ways in which patient avoids those *feelings*
- focusing on *here-and-now* therapy relationship
- connections between *therapy relationship and other relationships*

The changes brought about by psychoanalytic therapy are visualizable with brain imaging.

Buchheim et al (2012)
It is not surprising that psychotherapists, irrespective of their theoretical orientation, tend to choose psychoanalytic psychotherapy for themselves!

Norcross (2005)
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