

Mark Solms. The scientific standing of psychoanalysis

My aim is to set out here what we psychoanalysts may consider to be the core scientific claims of our discipline. Such stock-taking is necessary due to widespread misconceptions among the public, and disagreements among ourselves regarding specialist details, which obscure a bigger picture upon which we can all agree. Agreement on our core claims, which enjoy strong empirical support, will enable us better to defend them against the prejudice that psychoanalysis is not 'evidence-based'.

I shall address three questions: (A) How does the emotional mind work, in health and disease? (B) On this basis, what does psychoanalytic treatment aim to achieve? (C) How effective is it? My arguments in relation to these questions will be:

(A) Psychoanalysis rests upon three core claims about the emotional mind that were once considered controversial but which are now widely accepted in neighbouring disciplines.

(B) 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.

(C) 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.

## A.

Our three core claims about the emotional mind, I submit, are the following: (1) The human infant is not a blank slate; *like all other species, we are born with a set of innate needs*. (2) *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*. (3) *Most of our methods of meeting our emotional needs are executed unconsciously*, which requires us to return them to consciousness in order to change them.

These core claims could also be described as premises, but it is important to recognise that they are *scientific* premises, because they are testable and falsifiable. As I proceed, I will elaborate these premises, adding details, but I want to differentiate between the core claims themselves and the specifying details. The details are *empirical*. Whether they are ultimately upheld or not does not affect the core claims. Detailed knowledge changes over time, but core claims are foundational. Everything we do in psychoanalysis is predicated upon these three claims. If *they* are disproven, the core scientific presuppositions upon which psychoanalysis (as we know it) rests will have been rejected. But as things stand currently, in 2018, they are eminently defensible, strongly – indeed increasingly – supported by accumulating and converging lines of evidence in neighbouring fields. This continues to justify Kandel's (1999) assertion that 'Psychoanalysis still represents the most coherent and intellectually satisfying view of the mind'.

I turn now to each of the proposed three claims.

CLAIM 1. *The human infant is not a blank slate; like all other species, we are born with a set of innate needs*. These needs are regulated autonomically up to a point, beyond which they make 'demands upon the mind to perform work', as Freud (1915) put it. Such *mental* demands constitute his 'id'. They are ultimately *felt* as affects. That is why affect is so important in psychoanalysis. The affect broadcasting a need releases reflexive or instinctual behaviours, which are hard-wired *predictions* (action plans) that we execute in order to meet our needs -- e.g., we cry, search, freeze, flee, attack. Universal agreement about the number of innate needs in the human brain has not been achieved,<sup>1</sup> but most mainstream taxonomies (e.g. Panksepp 1998) include at least a subset of the following *emotional* ones:<sup>2</sup>

- We need to engage with the world -- since all our biological appetites (including bodily needs like hunger and thirst) can only be met there.<sup>3</sup> This is a *foraging* or seeking instinct. It is felt as

interest, curiosity and the like. (It coincides roughly but not completely with Freud's concept of 'libido'; see Solms, 2012.)

- We need to find sexual partners. This is felt as *lust*. This instinct is sexually dimorphic (on average) but male and female inclinations exist in both genders. (Like all other biological appetites, lust is channelled through seeking.)
- We need to escape dangerous situations. This is *fear*.
- We need to destroy frustrating objects (things that get between us and satisfaction of our needs). This is *rage*.
- We need to attach to caregivers (those who look after us). Separation from attachment figures is felt not as fear but as *panic*, and loss of them is felt as *despair*. (The whole of 'attachment theory' relates to this need, and the next one.)
- We need to *care* for and nurture others, especially our offspring. This is the so-called maternal instinct, but it exists (to varying degrees) in both genders.
- We need to *play*. This is not as frivolous as it appears; play is the medium through which social hierarchies are formed ('pecking order'), in-group and out-group boundaries are maintained, and territory is won and defended.

CLAIM 2. *The main task of mental development is to learn how to meet our needs in the world.* We do not learn for its own sake; we do so in order to establish optimal *predictions* as to how we may meet our needs in a given environment. This is what Freud (1923) called 'ego' development. Learning is necessary because even innate predictions have to be reconciled with lived experience. Evolution predicts how we should behave in, say, dangerous situations in general, but it cannot predict all possible dangers (e.g., electrical sockets); each individual has to learn *what* to fear and *how best* to respond to the variety of actual dangers. The most crucial lessons are learned during critical periods, mainly in early childhood, when we are – unfortunately -- not best equipped to deal with the fact that our innate predictions often *conflict* with one another (e.g., attachment vs rage, curiosity vs fear).<sup>4</sup> We therefore need to learn *compromises*, and we must find *indirect* ways of meeting our needs. This often involves *substitute-formation*. Humans also have a large capacity for *delaying gratification* and for satisfying their needs in *imaginary* and *symbolic* ways.

It is crucial to recognise that *successful predictions entail successful emotion regulation, and vice-versa*. This is because our needs are *felt*. Thus successful avoidance of attack reduces fear, successful reunion after separation reduces panic, etc, whereas unsuccessful attempts at avoidance or reunion result in *persistence* of the fear or panic, etc.

CLAIM 3. *Most of our predictions are executed unconsciously.* Consciousness (short-term 'working memory') is an extremely limited resource, so there is enormous pressure to consolidate learnt solutions to life's problems into long-term memory, and ultimately to *automatize* them (for review see Bargh & Chartrand 1999, who conclude that only 5% of goal-directed actions are conscious). Innate predictions are effected automatically from the outset, as are those acquired in the first two years of life, before the preconscious ('declarative') memory systems mature (cf. infantile amnesia). Multiple unconscious ('non-declarative') memory systems exist, such as 'procedural' and 'emotional' memory, which operate according to different rules. These stereotyped systems (cf. the repetition compulsion) bypass thinking (i.e, the secondary process) and define the system unconscious.

The following fact is of utmost importance. *Not only successful predictions are automatized.* With this simple observation, we overcome the unfortunate distinction between the 'cognitive' and 'Freudian' unconscious (Solms, 2017). Sometimes a child has to make the best of a bad job in order to focus on the problems which it *can* solve. Such illegitimately or prematurely automatized predictions (i.e., *wishes* as opposed to realistic *solutions*) are called 'the repressed'. In order for predictions to be updated in light of experience, they need to be 'reconsolidated'; that is, *they need to enter consciousness again*, in order for the long-term traces to become *labile* once more (Nader et al 2000, Sara 2000, Tronson & Taylor 2007). This is sometimes difficult to achieve, however; not least because procedural memories are 'hard to learn and hard to forget' and some emotional memories – which can be acquired through just a single exposure -- appear to be indelible; but also because *the essential mechanism of repression entails resistance to reconsolidation despite prediction errors*. The theory of

reconsolidation is very important for understanding the mechanism of psychoanalysis. This leads to my second argument, concerning our treatment.

## B.

My second argument is that the *clinical methods that psychoanalysts use to relieve mental suffering flow from the above core claims*, which are consistent with current understanding of how the brain changes. The argument unfolds over three steps:

(a) *Psychological patients suffer mainly from feelings*. The essential difference between psychoanalytic and psychopharmacological methods of treatment is that we believe feelings *mean something*. Specifically, feelings represent unsatisfied needs. (Thus, a patient suffering from panic is afraid of losing something, a patient suffering from rage is frustrated by something, etc.) This truism applies regardless of etiological factors; even if one person is constitutionally more fearful, say, than the next, or cognitively less capable of updating predictions, their fear still means something. To be clear: *emotional disorders entail unsuccessful attempts to satisfy needs*. That is, psychological symptoms (unlike physiological ones) involve *intentionality*.

(b) The main purpose of psychological treatment, then, is to *help patients learn better ways of meeting their needs*. This, in turn, leads to *better emotion regulation*. The psychopharmacological approach, by contrast, suppresses unwanted feelings. We do not believe that drugs which treat feelings directly can *cure* emotional disorder; drugs are symptomatic (not causal) treatments. To cure an emotional disorder, the patient's failure to meet underlying need/s must be addressed, since this is what is *causing* the symptoms. However, symptomatic relief is sometimes necessary before patients become accessible to psychological treatment, since most forms of psychotherapy require collaborative work between patient and therapist (see below). It is also true that some types of psychopathology *never* become accessible to psychotherapy. We must also concede that patients just want to feel better; they do not want to work for it.

(c) *Psychoanalytical therapy differs from other forms of psychotherapy in that it aims to change deeply automatized predictions*, which – to the extent that they are consolidated into non-declarative memory – *cannot be reconsolidated in working memory*. Non-declarative (i.e., unconscious) predictions are permanently unconscious. Psychoanalytic technique<sup>5</sup> therefore focuses on:

- *Identifying the dominant emotions* (which are consciously felt but not always recognized as arising from specific needs and predictions).
- These emotions reveal the *meaning* of the symptom. That is, they lead the way to the particular *automatized predictions* that gave rise to the symptom.
- The pathogenic predictions *cannot be remembered directly* for the very reason that they are automatized (i.e. non-declarative). Therefore, the analyst identifies them *indirectly*, by bringing to awareness the *repetitive patterns of behaviour* derived from them.
- Reconsolidation is thus achieved through reactivation of non-declarative traces via their *derivatives* in the present (this is called 'transference' interpretation). Automatized predictions cannot be retrieved into working memory, but patients *can* be made aware of the here-and-now *enactments* of those predictions. This is the essence of psychoanalytical cure.
- Such reconsolidation is nevertheless *difficult to achieve*, mainly due to the ways in which non-declarative memory systems work (they are 'hard to learn, hard to forget' and in some respects 'indelible') but also because repression entails intense resistance to the reactivation of insoluble problems. For all these reasons, psychoanalytic treatment takes time – and frequent sessions -- to facilitate 'working through'. Working through entails numerous repetitions of transference interpretations in relation to ongoing derivatives of repressed predictions, while new (and crucially, better) predictions are slowly consolidated. (Funders of psychological treatments need to learn how learning works.)

## C.

My third argument is that *psychoanalytic therapy achieves good outcomes* – at least as good as, and in some respects better than, other evidence-based treatments in psychiatry today. This argument unfolds over four stages:

(a) *Psychotherapy in general is a highly effective form of treatment.* Meta-analyses of psychotherapy outcome studies typically reveal effect sizes of between 0.73 and 0.85. (An effect size of 1.0 means that the average treated patient is one standard deviation healthier than the average untreated patient.) An effect size of 0.8 is considered a large effect in psychiatric research, 0.5 is considered moderate, and 0.2 is considered small. To put the efficacy of psychotherapy into perspective, recent antidepressant medications achieve effect sizes of between 0.24 (tricyclics) and 0.31 (SSRIs).<sup>6</sup> The changes brought about by psychotherapy, no less than drug therapy, are of course visualizable with brain imaging (see Beauregard 2014).

(b) *Psychoanalytic psychotherapy is equally effective as other forms of psychotherapy* (e.g. CBT). This has recently been demonstrated conclusively by comparative meta-analysis (Steinert et al., 2017). However, there is evidence to suggest *that the effects last longer -- and even increase -- after the end of the treatment.* Shedler's (2010) authoritative review of all randomized control trials to date reported effect sizes of between 0.78 and 1.46, even for diluted and truncated forms of psychoanalytic therapy.<sup>7</sup> An especially methodologically rigorous meta-analysis (Abbass et al 2006) yielded an overall effect size of 0.97 for general symptom improvement with psychoanalytic therapy. The effect size increased to 1.51 when the patients were assessed at follow-up. A more recent meta-analysis by Abbass et al (2014) yielded an overall effect size of 0.71 and the finding of maintained and increased effects at follow-up was reconfirmed.

This was for *short-term* psychoanalytic treatment. According to the meta-analysis of De Maat et al (2009), which was less methodologically rigorous than the Abbass studies, *longer-term* psychoanalytic psychotherapy yields an effect size of 0.78 at termination and 0.94 at follow-up, and *psychoanalysis* proper achieves a mean effect size of 0.87 at termination and 1.18 at follow-up. This is the overall effect; the effect size that she found for symptom improvement (as opposed to personality change) at termination was 1.03 for long-term therapy, and for psychoanalysis it was 1.38. Leuzinger-Bohleber et al's subsequent study (2018) shows even bigger effect sizes: between 1.62 and 1.89 after three years of treatment. These are enormous effects. Follow-up data are of course not yet available from this ongoing study. The consistent trend toward *larger effect sizes at follow-up* (where the effects of other forms of psychotherapy, like CBT, tend to *decay*) suggests that psychoanalytic therapy sets in motion processes of change that continue even after therapy has ended (cf. 'working through', discussed above). This is called the 'sleeper effect'.

It is important to recognize that these findings concern symptom improvement only. Psychoanalytic treatments are not directed primarily at symptomatic relief but rather at what might be called personality change. Not surprisingly, therefore, psychoanalytic treatments achieve much better results than other treatments on *this* outcome measure. In Leuzinger et al's ongoing study, for example, almost twice as many patients receiving psychoanalytic treatment vs CBT reached their criteria for 'structural change' after three years (60% vs 36%; Leuzinger-Bohleber et al, in press).

(c) The therapeutic techniques that predict best treatment outcomes *make good sense in relation to the psychodynamic mechanisms outlined above.* These techniques are (Blagys & Hilsenroth 2000):

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

It is highly instructive to note that these techniques lead to the best treatment outcomes, *regardless of the 'brand' of therapy that the clinician espouses.* In other words, these same techniques (or at least a

subset of them; see Hayes et al 1996) predict optimal treatment outcomes in CBT too, even if the therapist believes they are doing something else.

(d) It is therefore perhaps not surprising that psychotherapists, irrespective of their stated theoretical orientation, tend to choose psychoanalytic psychotherapy for themselves! (Norcross 2005)

## CONCLUSION

I am well aware that the claims I have summarized here do not do justice to the full complexity and variety of views in psychoanalysis, both as a theory and a therapy. I am saying only that these are our *core* claims, which underpin all the details, including those upon which we are yet to reach agreement. If we can agree on just these few claims, underpinning the arguments presented in this article, we are much better placed to explain our point of view to neighbouring disciplines and to the public. I believe that these claims and arguments are eminently defensible, in light of available scientific evidence, and that they make simple good sense.

However, it is far too soon to rest on our laurels. There is a pressing need, in particular, for more outcome studies focused on the symptomatic and structural effects of long-term psychoanalysis (versus not only CBT but also low-frequency and short-term psychoanalytic psychotherapies). I am therefore pleased to announce that we at APsaA are launching a major new research initiative in this respect (possibly in conjunction with the IPA). We have appointed Marianne Leuzinger-Bohleber (cited above) to design a randomized control trial which compares low-frequency and high-frequency psychoanalytic treatments. The study design will need to focus on just one particular psychopathology, to begin with, and will involve not only behavioural measures but also indexes of change in brain network dynamics (and other biomarkers) over the course of the treatments.

A major disadvantage that we suffer in comparison with psychopharmacological and CBT researchers is an almost total lack of financial support for psychoanalytic outcome studies from commercial and statutory sources. If we are going to overcome the prejudice that feeds this lack of support -- namely the self-fulfilling (and false, see Shedler, 2015) claim that psychoanalysis is not evidence-based -- then we will have to fund such studies ourselves, at least to begin with.

## ENDNOTES

1. The taxonomy of innate needs is an empirical question of the kind I mentioned earlier; it does not affect the basic claim that we *are* born with a set of innate needs, which are felt as affects and which trigger stereotyped predictions. I am well aware that the taxonomy I cite below differs from Freud's. Unlike many of his followers, Freud (1920) accepted that biology might well 'blow away the artificial fabric of our hypotheses [about drives]'.

2. Panksepp (1998) distinguishes between bodily, emotional and sensory needs, which correspond roughly with the terms 'drive', 'instinct' and 'reflex'. Here I am focusing on the *emotional* needs -- which are felt as separation distress, rage, etc -- not the *bodily* ones -- which are felt as hunger, thirst, etc -- or *sensory* ones -- which are felt as pain, disgust, etc. My focus is somewhat arbitrary, but I am highlighting the category of needs that most commonly gives rise to psychopathology.

3. The fact that we can only meet our needs by engaging with others is why life is difficult. You cannot successfully copulate with yourself, attach to yourself, etc, although this does not stop us from trying! (The psychoanalytic theory of 'narcissism' arises from these simple facts.)

4. This is why childhood, and the quality of parental guidance, are so important in psychoanalysis.

5. See Blagys & Hilsenroth, 2000; Smith & Solms, in press.

6. See Turner et al 2008, Kirsch et al 2008.

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