

Thinking Through the Body

▶ Home

▶ Seminars

▶ Books

▶ Articles

▶ Training Courses

A short paper given at the 7th UKCP Professional Conference on 'Revolutionary Connections: Psychotherapy and Neuroscience' 9th September 2001. Notes and a bibliography have been added.

This talk formed the basis for a longer chapter in Revolutionary Connections: Psychotherapy and Neuroscience, (2002) ed. Corrigan, J & Wilkinson, H. (Karnac, London)

"At the border between chaos and order"; what psychotherapy and neuroscience have in common

"Understandings that are derived at the border between chaos and order where, according to some, many of the problems of nature lie, may not provide exact solutions but rather those which can allow application and understanding to emerge." (Coveney xiii)

I want to start by putting both neuroscience and psychotherapy in a larger context, and suggest that we are undergoing a shift in our cultural and scientific paradigm. The cutting edge of neuroscience represented here this weekend offers us more than fragments of interesting information and alternative models of the mind. It highlights a new way of thinking in science which - I am going to argue - is not just a familiar way of thinking for psychotherapy but actually is fundamental to its inception. This new scientific paradigm goes by various names - catastrophe, chaos or complexity theory, or non-linear dynamic systems theory. Its radical principles have significantly extended research methods and processes and have led to tremendous advances in fields such as neuroscience.

I've done a very crude sketch of the evolution of scientific thinking. These stages I've outlined - pre-rational, classical and new science - overlap. Sometimes they are in apparently irreconcilable conflict but also potentially they can integrate at another level. It is a dialectical progression. (see Wilber) For example, we can talk about human relationship from any of these perspectives, and we can acknowledge the truth of each. (Footnote: For a concise and vivid account of the shift towards New Science and its key ideas, see Capra. For a more overarching theoretical view of the evolution of 'matter - life - mind' with a strong consciousness/spirituality perspective, see Wilber. Also relevant: Coveney, Sardar)

(Pre-rational science - intuitive, magical, mythical, traditional, folk)

Classical science

Causality
Linear
Objective
Isolates events
Matter
Focuses on stability
Logic
Closed system
Reductive
Predictability
Explicit/observable
Time is uniform
Cause-effect
Sequential

New Science

emergent properties
non-linear
includes subjectivity
emphasises context
process
focuses on sensitivity
deeper pattern
open system
complex
chaos
implicit/hidden
sensitive critical periods
feedback loops
experience-dependent

Mechanistic	self-regulating
Fixed relations	network interconnections
Objects	fields
Particulate	parallel

Classical science explains closed systems. New Science was born from the attempt to understand dynamic, complex, open systems, such as the ecosystem, the weather system, and the behaviour of living creatures. In these systems, change is a matter of complex interconnected events, where there can be an extraordinary sensitivity to timing and minute changes in the environment. Highfield and Coveney describe the brain as “organised by chaos – a complex non-linear feedback system.” (286) As you will have gathered from the speakers this weekend the characteristics of the brain cannot be reduced to the function of its different parts but to very dynamic complex interactivity. Consciousness, feelings, ego functions are emergent properties of the system. (“Within science, complexity is a watchword for a new way of thinking about the collective behaviour of many basic but interacting units [...] their interactions lead to coherent collective phenomena, so-called emergent properties that can be described only at higher levels than those of the individual units.” (Coveney, 7)

Psychotherapy has always sought to work with the apparently irrational, the quirky uniqueness of each individual or group. Its key thinkers have been gifted in seeing through the veil of madness to a deeper pattern, which takes account of the context and dynamic from which it emerged. Freud said of the unconscious: “we call it a chaos...” (1933) and he described it as a dynamic system. Winnicott and Bion recognised that development and psychotherapy involved negotiations with catastrophe. Reich and Jung perceived the re-establishment of self-regulation – one of the core tenets identified by New Science – as the basis of healing in psychotherapy.

In contemporary psychotherapy, the use of the countertransference across a broad spectrum of therapies, epitomises a chaos or complexity oriented style of work. Countertransference is an emergent property of the therapeutic encounter – its manifestations are inherently non-linear, it is unpredictable, we may notice it first in a very subtle detail of our own process; it is characterised by an extreme sensitivity to relational cues; its meaning has to be derived from the context; it relies on an objective use of subjectivity.

The point I want to make is that psychotherapy already has a relationship with chaos and complexity even if its principles are not an explicit part of our theory and practice. It is precisely because neuroscience at the cutting edge is informed by these principles that there is a new basis for dialogue. (footnote: the parallel between psychotherapy and chaos/complexity/catastrophe has been considered by several writers, including: Field, Eigen, Postle ; and in passing by Samuels. I also find Christopher Bollas evocation of psychotherapy imbued with the metaphor and resonance of this paradigm, though he does not explicitly make the connection. Schore (1994) quotes studies of psychotherapy which analyse the client's autonomic state changes from a chaos perspective. And in a paper on 'Early organisation of the nonlinear right brain ' uses non linear dynamics theory and self-organisation theory to explicate the complex process of brain development through interaction with the environment)

Neuroscience has helped us, for example, to re-define and differentiate trauma, particularly by illuminating how trauma is internalised on a structural level throughout the brain and the body. But it is not just the establishment of more intricate neuroscientific detail about the function of the brain but the actual principles they illustrate which are of major importance to psychotherapy. This is because the mind is not a thing but a process. The embodied brain is the dynamic structure through which this process operates.

Neuroscience confirms that the earliest years of a child's life are intensively and extensively formative: the interactions between infant and primary caregivers strongly influence the developing structure of the brain. (Schore, 1974) Whilst such concentrated change cannot occur in the adult brain – because the sensitive ‘windows’ of development have passed and with it the young brains neural plasticity - the adult brain continues to evolve according to the principles of self-organisation. (Schore 1994, 473)

Psychotherapy offers a particular opportunity for intensifying the normal self-organising process of life. ‘Self-organisation is a bit of a misnomer in a way since the process it describes is intrinsically bound up with relationship and environment which impinge directly as feedback. Self-organisation is a term which can describe any system which is changed structurally by its dynamic interactions with the environment. In the case of humans, self-organisation is perpetuated via multiple interconnected feedback loops which continually modify the micro-structure of the brain-body. This process parallels and is a direct corollary of socialisation, both individual and large-scale. (Schore interview) Psychotherapy is painful precisely because it involves a conflict between established structures and an emergent process.

Self-organisation through and in psychotherapy depends on three interrelated aspects of feedback: re-presenting, relating and feeling.

Re-presentation of the client to him or herself happens in numerous ways. Psychotherapies vary most obviously in the way in which they implicitly and explicitly manage this feedback process: verbal intervention, eye contact, non-verbal attunement, movement, touch, and other strategic interventions, such as maintaining boundaries. All these interventions are to one degree or another interpretative within a framework. Every therapist imparts a set of principles and concepts which, whatever their intrinsic value, reframes the client's experience, and therefore represents it.

Re-presentation is complex, conflicted and multi-levelled: conscious and unconscious, triggered self-reflexively and directly and indirectly in relation to the therapist. And it is holistic: affecting many systems of the brain and the body, producing images, sensations, fantasies, feelings and thoughts. The nature of the brain makes this inevitable – for representation of the self is distributed through many systems of the brain, from the brain stem to the cortex. Creative activity, dreaming and play share some of these characteristics of re-representing– hence their therapeutic (in the broadest sense) value. Metaphor in particular is a highly integrative form of re-representation.

What is interesting about neuroscience is that its emphasis on the highly distributed nature of brain functions does not exclude the intuitive structural models grasped at by therapy. Our psychic structure – grounded in the structure of the brain and the body– is labyrinthine, with re-transcriptions occurring on all planes. Ascending and descending from brain stem to cortex, with higher and lower functions, as Freud envisioned. Working cross-laterally from right to left and left to right brain, whose functions clearly differentiate in ways reminiscent of the Jungians idea of feminine and masculine principles. And this is not to mention the circuits in the brain which are familiar via the all too human tendency to go round in circles! The ongoing process of re-presenting in therapy helps sort, strengthen and modify the connections on which self and self-other representations are based. (Footnote: for a clear introduction to current neuroscientific thought on processing, the concept of 're-entry' and 'distribution', see Pally)

In essence the therapeutic relationship is a cultivated form of mutual feedback – particular attention is paid to subtle changes and nuances that hint at hidden dynamics. When a behaviour, phrase or gesture – or all three together – are noted, even if not verbalised, awareness is amplified. Empathy in the therapist, and the client's attachment to the therapist, and curiosity in them both will increase the potential for resonance. The structure of therapy itself re-inforces the propensity to heightened engagement which Schore describes as "synchronised energy exchanges" (1997, 595). The Process Oriented Psychologist Mindell suggests that the varieties of psychotherapy are "spontaneous creations which arise by amplifying events in given channels of the client therapist interaction". (Mindell, 8)

In science two kinds of feedback are recognised: amplifying or (+ve) feedback which expands and intensifies patterns; and dampening or (-ve) feedback which has the opposite effect. The tension between these forms of feedback are at the crux of psychotherapy. Through amplification subtle transactions are magnified and experienced in their intensity as pain, excitement, fear etc. This positive feedback will alternate or even oscillate with negative feedback which operates psychologically as a defense, an attempt to limit the catastrophe and chaos of experiencing intensity. With an imbalance of negative feedback, the individual/system becomes static and closed. Too much positive feedback dysregulates in the other direction – there is chronic instability.

At the risk of over-generalising, we could say that the humanistic tradition has been characterised by its emphasis on positive feedback, 'letting it happen' expression etc. Its *raison d'être* was the encouraging of growth. By contrast some psychoanalytic psychotherapies have focussed on naming and interpreting defences, in order to modify the effect of negative feedback. In practice all therapies probably use a mixture of both. We work with the dynamic tension between safety and not being too safe, between conscious insight and disinhibition, between structuring and disrupting.

The paradox of therapy is that when the client can bear what is unbearable to think and feel, their experience changes – the self re-organises. The critical factor here is spontaneity which is equivalent to chaos, in the sense that scientists are using the term. Chaos, in this context, represents "a lifting of constraints on information processing". (Schore 1997) Of course, client and therapist naturally fear that chaos – in the ordinary sense – may be unleashed. Both neuroscience and psychotherapy would agree that change is not linear but rather a continual process of organisation, disorganisation, and re-organisation.

It is widely agreed now that the client needs to *experience* feelings in the relationship with the therapist. This makes sense because, as Doug Watt has argued, "emotion binds together virtually every type of information that the brain can encode". (Watt, 5) Intensity of feeling, transitions between feelings, and the

identifying of unfamiliar feelings, all feed self-organisation.

These are bodily relational processes. Allan Schore has detailed the transformations in the infant's psychobiological state as it regulates and is regulated by the attachment relationship. There is a direct parallel with the therapeutic relationship which has the added complexity and inherent conflict of being both a more *and* less equal relationship. In the talk given as the overture to this Conference he suggested that the process of therapy can utilize right brain to right brain communication to work with projective identification. The complex interactions he describes ultimately come down to a developed capacity for empathy, for allowing the client to affect the therapist and the therapist being able to tolerate that impact and feed it back to the client in a useful way. In other words to work "on the border between chaos and order".

The fears of the Neurosceptics are that the findings of neuroscience will diminish the subtlety and complexity of psychotherapy. But its not a matter of giving up the sterling of our evolved and involved practice, or handing over our authority to the equivalent of Brussels bureaucracy. Its about being willing to cross the channel which has divided the two disciplines for over a Century and get stuck into dialogue

Any theory – no matter how brilliant, how robust – can be misapplied

One danger is that Neuroscience could be funnelled into a medical system in a way which exacerbates its tendency to think in terms of damage.

That would be an example of positive feedback (in the negative sense, if you see what I mean) . But New Science theory of life is actually one of extraordinary creativity rather than bleak determinism.

In conclusion, I suggest that neuroscience can nourish psychotherapy in two ways. By providing a description of human processes from a different perspective, it offers us feedback for us to chew over. Secondly, developmental neuroscience is accumulating further evidence that we cannot isolate human psychological function from its somatic foundation and from the network of relationships in which it has been formed and is embedded. I believe that neuroscience can be on our side in the argument that people need people, that psychotherapy needs due time for its process and that simple statistical facts cannot adequately represent complex effects of psychotherapy.

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[top](#)

[previous page](#)

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