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Unconscious Processes: Perspectives from Neuroscience, Psychology and Psychoanalysis

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Social Neuropsychoanalysis and the Ecology of Group Dynamics

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The importance of groups for neuropsychoanalysis has not yet been adequately explored despite the fact that the object of psychoanalysis, the human mind, does not exist in isolation. As Freud (1921) wrote: “individual psychology cannot be isolated from group psychology...A mind without links to objects is simply not a human mind”. Secondly, the object of neuroscience, the brain, is also not an isolated entity but in constant and complex interaction with other brains, other bodies, other minds. Mind/brains are embedded in families, groups and classes of various kinds on a variety of scales, including entire societies. These societies themselves, and the brains which inhabit them, exist within complex ecological webs. In addition, the brain itself can be viewed as a collective phenomenon, a vast assemblage of 100 billion nerve cells, each neuron with 1,000-10,000 synaptic connections to others, where “the number of possible permutations and combinations of brain activity...exceeds the number of elementary particles in the known universe” (Ramachandran, 2003). Indeed the mind, including consciousness, has been seen as an emergent property of vast assemblages of neurons self-organizing at the edge of chaos. This can be usefully compared to Freud's idea of consciousness emerging from interactions between id and outer world (utilizing the theories of co-evolution and coupled oscillators) and Damasio's (2000) view of consciousness as momentary 40 Hz pulses of self-object couplings. Different levels of consciousness and unconsciousness correspond to different *collective neural formations*, the emergent group-level structure may well be key to the resulting phenomenon, rather than the specific neurons/ regions involved.

Neuropsychoanalysis can be broadly defined as an interdisciplinary field combining the methods and theories of biology and psychoanalysis. This could encompass wider aspects of both including *group analysis* and other psychoanalytic approaches to groups and social systems, and *ecology, swarm intelligence, complexity theory, self-organization, open systems theory* and other approaches within biology to collective phenomena (Bonabeau, Dorigo, and Theraulaz, 1999; Camazine, Deneubourg, Franks *et al.* 2001; Sole and Goodwin, 2000). Existing neuropsychoanalytic approaches to social and affective neuroscience such mirror neuron research, the neuroscience of self-other relations, the biology of attachment and empathy (Watt 2007; de Vignemont and Singer, 2006), and the neural correlates of consciousness are highly relevant to a social neuropsychoanalytic project. In addition, psychoanalytic approaches to group phenomena building on Freud's group psychology (1921) are needed, as developed in *group analysis* (including the pioneering work of Foulkes (1990), Bion's (1990) *basic assumption theory*, and Jaques (1977) s*ocial phantasy system* approach), *group relations* (Armstrong, Lawrence and Young 1997), *systems psychodynamics* (Gould, Stapley and Stein, eds. 2006) and *psychoanalytic social theory*.

Recently, group analytic perspectives have begun actively utilizing complexity and non-linear dynamical systems theory, aiding potential interdisciplinary research (Stacey, R. 2003, 2006). Complexity theory and ecological science have much to offer psychoanalysis (Spruiell, 1993; Palombo, 1999), and serve as a more adequate scientific framework than the 19th century models of physics/biology often embedded in psychoanalytic thought. These newer meta-theories emphasize the view of multiple dynamic interacting complex systems at all levels (from microbiological to neurological to psycho-social to ecological) and they have already been utilized by psychoanalysis, group analysis, social theory, and neuroscience. Within psychoanalysis it could be seen as extending the development represented by object relations and other relational approaches to envisage the internal world as a complex ecology, reminding us of Bateson's (2000) early suggestion to conceptualize and ecology of mind. This perspective allows us to conceptualize networks within networks and internal ecologies interacting with external ecologies in complex, highly non-linear ways. More specifically, Bion's *basic assumption groups* can be studied as complex *attractors* towards which group life is pulled (Stacey 2006) (whether point, cycle, or 'strange'/chaotic) with *phase transitions* occuring as group move towards a different basin of attraction. In addition, Jaques' (1977) *social phantasy systems* and Menzies-Lyth's (1988) *transpersonal defence mechanisms* can be understood as an emergent property of the self-organization of individual defence mechanisms. More generally, psychoanalytic and group analytic processes in general can be thought of as highly complex negative and positive feedback processes, of catalytic and autocatalytic loops, while social formations and 'individual' mind/brains can be studied as *dissipative structures* and *swarms.*

How might social neuropsychoanalysis proceed? The first obvious area is affect. The complex and detailed psychoanalytic theories of group dynamics and their associated emotions, anxieties and defences should be able to yield specific predictions of the types and intensities of affect in different kinds of collective processes, and from there form concrete hypotheses of

what should be going on in the brain in terms of the dynamics of neural assemblages within the basic emotional systems involved (Panksepp, 2004). For example, the libidinal ties binding groups together and to their leaders (LUST, SEEKING), attachment processes (CARE), idealisation, identification and 'contagion' (eg. mirror neurons and neuropsychoanalytic approaches to self-other relations), hatred (ANGER-RAGE), anxiety (crucial in the social phantasy systems approach, FEAR). There would also be expected a variety of *synchronization* effects predicted. For example in Freud's model of group formation by identification and introjection or Bion's (1990) concept of 'valency' in basic assumption groups. The latter was theorized to rely on what Bion (1990) called the *proto-mental system* which points towards the neuronal underpinnings of group behavior and some interesting new avenues for research. These effects may related to other phenomena of synchronization found in *swarm intelligence (Bonabeau, Dorigo and Theraulaz, 1999).*and other collective emergent properties organized through *self-organization* (Camazine, Deneubourg, Franks *et al.* 2001). For example the co-ordinated flashing of thousands of fireflies, the split-second timing of defensive maneuvers by a shoal of fish, massive raids of a million army ants, the formation of consciousness in the brain. There are likely to be many such synchronization effects going on in different areas of the brain in social processes. These are likely to extend far beyond mirror-neuron research, although the recent exploration of “shared neural representations” (Gallese 2006; Uddin, Davies, Scott, Zaidel, Bookheimer, et al. 2008) or on the “activation of shared affective neural networks” that enable us to “feel the emotions of others as if they were our own” (de Vignemont and Singer, 2006) are likely to be important, as is the recent work on 'contagion' by Douglas Watt (2007) which seems to come close to certain of Bion's ideas on the powerful emotional valency of groups.

There is clearly a vast area of potential research yet to be developed, where even the most basic questions remain unanswered as yet. For example what can it mean in terms of brain events if as Freud hypothesized, group members take their leader as their ego ideal? Or the socially patterned containers for split-off aspects of the self as objects of collective (synchronized) hatred which occurs in the constructions of phobogenic objects in racism according to post-Kleinian group analysis (Clarke 2001)?

A final suggested area of research would be through computer modeling experiments. Following the Engineering and Neuropsychoanalysis Forum in 2007, Chao, Rato and myself have been working on an approach to *artifical group psychodynamics,* to utilize group analytic theories to forming simulations of social processes. Such computer modeling approaches have been an important tool for ecological, evolutionary and biological sciences in general (eg in *artifical life, genetic algorithms*, fitness landscapes, population dynamics) and have been crucial in pioneering and developing the complex non-linear dynamical systems approach. Chao and Rato's first model implemented specific neuropsychoanalytic and group analytic assumptions which led to marked improvement over previous, non-psychoanalytic, Axelrodian simulations of social processes. Artifical group psychodynamics may prove an important avenue for developing and testing a neuropsychoanalytic theory of “what happens in groups” (Hinshelwood 1987).

In conclusion, a neuropsychoanalytic approach to psychoanalytic group theories should point towards the formation of specific, testable hypotheses about what might be going on in the brain, including emotions, synchronization effects, and beyond. Social neuropsychoanalysis offers a fresh approach to social and affective neuroscience, to studies of consciousness, and in addition the findings would enrich and usefully constrain group analytic theory. More theoretical and conceptual work is needed, including developing refined complexity-theory based models, in tandem with empirical work in social and affective neuroscience, artificial group psychodynamics, psychoanalysis and group analysis. These offer a rich variety of different theoretical and methodological approaches with which to tackle the neuropsychoanalysis of groups.

References

Armstrong, D., Lawrence, W.G., Young, R. (1997). *Group Relations: An Introduction.* Process Press, London: http://humannature.com/rmyoung/papers/paper99.html

Bateson, G. (2000). *Steps Towards an Ecology of Mind*, U. Chicago

Bion, W. (1990) *Experiences In Groups,* Routledge, London

Bonabeau, E., Dorigo, M., Theraulaz, G. (1999). *Swarm Intelligence: From Natural To Artificial Systems.* Oxford University, New York

Camazine S, Deneubourg J-L, Franks N. *et al.* (2001) *Self Organization In Biological Systems*. Princeton University Press, New Jersey

Clarke, S. (2001). From Aesthetics to Object Relations: Situating Klein in the Freudian 'Uncanny'. Free Associations, 8D:547-561.

Damasio, A. (2000). *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. Harvest books

Foulkes, S. H. (1990). *Selected Papers of S.H. Foulkes: Psychoanalysis and Group Analysis*. Edited by Elizabeth Foulkes. Karnac, London

Freud, S. (1921/1991) “Group Psychology and the Analysis of the Ego”, in S. Freud *Civilization, Society and Religion.* Penguin, London, pp91-178

Gallese, V. (2006). Intentional attunement: Embodied simulation and its role in social cognition. In Mancia, M (ed.) (2006). Psychoanalysis and Neuroscience. Springer.

Gould, L. Stapley, L., Stein, M. (eds.) (2006) *The Systems Psychodynamics of Organizations: Integrating Group Relations, Psychoanalytic, and Open Systems Perspectives.* Karnac, London

Hinshelwood, R.D. (1987): *What Happens in Groups: Psychoanalysis, the individual and the community.* Free Association Books London

International Society of Artificial Life: http://www.alife.org

Jaques, E (1977). "Social Systems as a Defence against Persecutory and Depressive Anxiety", in Klein, Melanie *et al*. *New Directions in Psychoanalysis.* Karnac: Maresfield Reprints, 1977, pp. 478-98

Mancia, M (ed.) (2006). Psychoanalysis and Neuroscience. Springer.

Menzies-Lyth, I. (1988). *Containing Anxiety in Institutions: Selected Essays*, *vol. 1.* Free Association Books

Miller, M. (1999) "Chaos, Complexity, Psychoanalysis", *Psychoanalytic Psychology,* 1999

Panksepp, J. (2004). *Affective Neuroscience: The Foundations of Human and Animal Emotions.* Oxford University Press

Palombo, S.R. (1999). *The Emergent Ego: Complexity and Coevolution in the Psychoanalytic Process.* International Universities Press

Ramachandran, V. (2003) *The Emerging Mind: The BBC Reith Lectures 2003*. Profile Books, 2003

Sole, R. and Goodwin, B. (2000) *Signs of Life: How Complexity Pervades Biology*. Basic Books, New York

Spruiell, V. (1993). "Deterministic chaos and the sciences of complexity: psychoanalysis in the midst of a general scientific revolution", in *Journal of the American Psychoanalytic Association*, 1993;41(1):3-44:http://www.analysis.com/vs/vs93a.html

Stacey, R. (2003) *Complexity and Group Processes: A Radically Social Understanding of Individuals*, Brunner-Routledge

Stacey, R. (2006). "Complexity at the Edge of the Basic-Assumption Group", in Gould, L. Stapley, L., Stein, M. (eds.) (2006) *The Systems Psychodynamics of Organizations: Integrating Group Relations, Psychoanalytic, and Open Systems Perspectives.* Karnac, London

Uddin LQ, Davies MS, Scott AA, Zaidel E, Bookheimer SY, et al. (2008). *Neural Basis of Self and Other Representation in Autism: An fMRI Study of Self-Face Recognition*. PLoS ONE 3(10): e3526. doi:10.1371/journal.pone.0003526

de Vignemont, F, Singer T (2006) The empathic brain: how, when and why? *Trends Cogn Sci. 2006 Oct;10(10):435-41. Epub 2006 Sep 1.*

Watt, D. (2007). Toward a Neuroscience of Empathy: Integrating Affective and Cognitive Perspectives. *Neuro-Psychoanalysis, 9:119-140*