

## **Jung in the 21<sup>st</sup> Century; a neurobiological project.**

As we review the impact of Jung on the last century, one thing cannot be denied; his intuitive genius, his role of prophet, ushering in the brave sad Age of Aquarius.

You will all be familiar, from your respective disciplines, with the inspirations (and infuriations) he has brought to fields as diverse as ;

- the arts
- anthropology
- religious studies/spirituality
- cultural social and gender studies.

But what relevance can he, the champion of the autonomous Psyche, possibly have in this present age of radical reductionist bio-science ? What you may not have grasped (and indeed, what many of my Jungian, psychoanalytic, and psychiatric colleagues, have not yet grasped) is that of all the depth psychology models, Jung's is the one that most closely enmeshed with the biological facts, the dramatic advances in the neurosciences over the last decade.

One of my tasks, in closure, is to bring you up to speed a little.

Consider; what is Jung about, if not

- the search for meaning,
- synchronicity and other meaningful connections,
- experiences of numinosity, ecstasy, spiritual encounters,
- dreams and dreaming,
- creativity,
- the “complexes” and an associationist/dissociationist psychopathology,
- psychosis, understanding and treating it,

and how all these might interact in the therapeutic encounter. Let us start with this “therapeutic encounter”.

### **Foundations for the Psychoanalytic Tango .**

In the last 20 years, convergent developments across the many strands of contemporary psychoanalytic thought have brought us to a point where we can confidently articulate some of the basics of good clinical psychoanalytic practice. What is required is a kind of double consciousness; an ability to track one's own process while simultaneously tracking the patient's, **in interaction**. Furthermore;

1. The therapist *has* to bring an **appreciative** component.
2. And there has to be a capacity for **reverie**, a non-linear mind-state akin to play.
3. All this emerges optimally within an appropriate **container**.

When all the above is in place, the patient/analysand has the opportunity to progressively develop these capacity within themselves; a sense of their own self (stream of consciousness), and an empathic sense of the *other*, in and through interaction. Though seemingly simple enough (every good mother does this with her baby and infant), it can be a deeply challenging therapy task, taking years of effort (on both sides). But it is possible. Neville Symington and Russell Meares have reviewed the underpinnings of this basic position, Meares especially from the perspective of those recent neurobiological and developmental psychological researches and understandings that give it powerful cross-validation (SYMINGTON, MEARES). But things are a little more complicated than this. The powerful concept of **emergence**, (the way new and unexpected properties arise from patternings of elements) is one of the major themes in contemporary psychoanalysis, especially in its application to our understandings of developmental process and psychotherapeutic interaction.

### **The dance of the enigmatic signifiers and the unbearable singularity of being.**

The psychoanalytic tango is a dance between the partners' "**enigmatic signifiers**" (FROSH 2005); and every dance is necessarily a singularity, unique, irreproducible.

We all carry/emerge from, an unconscious, in the broadest senses of this term (not just the dynamically repressed). Some of this is, in principle, utterly irreclaimable. Who can claim an experiential awareness of the function of their spleen? Their COMT genes? Some of it, the pre-verbal, sub-linguistic, (the patterns, inherited and acquired, of the mid-brain, the hypothalamus, the hippocampi and the amygdala; profoundly affecting experience and behaviour; but percolating to the cortex in very limited ways) is only partially retrievable, and

only poetically expressible. Yet as all of this patterning decants into the encounter, something necessarily new can arise. Each being's "**enigmatic signifiers**" interact with the other's, mocking the manualized, operationalised conceits of CBT and that ridiculous (but sometimes useful) fantasy of the "impartial observer".

But the Jungian opus claims to take this one step further still.

### **Psychic structure, meaning, and emergence.**

Jungian psychology is both an **associationist** psychology and a psychology of **apophenia**.

The complexes, the archetypes, with their historical roots in Jung's exposure to Charcot's hysterical dissociations, and the word association studies that underpinned his investigations, were Jung's attempts to delineate this associationist structure.

### **Jung's psychology of apophenia.**

The search for meaning is both the weakest link (GIEGERICH 2004) and the strongest element in Jung's opus. What do I mean by this?

**Apophenia** is usually defined as the experience of seeing meaningful patterns or connections in random data. The term was first used by Klaus Conrad (CONRAD 1958) to describe the "unmotivated seeing of connections....[accompanied by] ....an ...experience of abnormal **meaningfulness**". It is usually regarded as psychopathological, but clearly cannot be so totally, otherwise we would have to relegate all discoveries?/constructions? of patterning to irrelevance and the madhouse.

Many of you will be familiar with the work of Brugger at the Zurich University Hospital. In one particular study (BRUGGER 2004) he describes how normal subjects, given a L-Dopa/benserazide (formulated to produce a dopamine surge and sustain it), displayed absurdly

high levels of magical ideation. Many of you will also realise that apophenic experiences are a common thread in a broad variety of conditions. These include a broad range of psychiatric conditions, wherein the firm historical Kraepelinian and Schneiderian taxonomic distinctions between; schizophrenia, schizotypy, bipolar affective disorder, borderline personality disorder, Post Traumatic Stress Disorder, and the various drug induced psychoses are being called into question (BRUGGER 2004 *ibid* p 2), (ANGST 2007) even in the AngloSaxon psychiatric domain (MELLSOP 2007). Adolescence in particular, with its pre-frontal pruning and identity re-organisation, can be said to be a developmental phase of normative apophenia. (DAMMAN 2004). One also suspects that a range of life experiences (grief, trauma, infatuation, near-death, moments of psychotic transference, but also creative and artistic inspirations, moments of numinosity, etc etc etc) come with an intrinsic apophenic dimension.

This apophenic tension has not escaped the attention of Jungian scholars, and Jeffery Mishlove in Los Angeles (MISHLOVE 2007) has proposed that notions of archetypal synchronistic resonance can be invoked instead of models of dopaminergic neuropathology, to “explain ostensible paranormal experiences that can neither be accepted as literally constructed or dismissed as mere artefact or error”. It is not clear to me why these 2 models (metapsychological and neurobiological) should necessarily be irreducibly antithetical.

One obvious task then, is to develop some capacity to tell the difference between pathological and creative apophenias.

### **The neurobiology of the dream process and the complexes.**

The reader should know that the Dopamine 2 pathways we had mentioned earlier also serve dream process in an essential way. Mark Solms (SOLMS) observes that people who have had

bilateral mesial-prefrontal leucotomy (a vital part of the D2 pathways) retain REM functions but can no longer dream !

More recent work in Australia on the fMRI correlates of the Jungian complexes (PETCHKOVSKY et al) is beginning to suggest that the complexes themselves, those nodes of affect-laden meaning, involve the temporo-occipito-parietal confluence, Solm's *other* essential dream circuit.

### **A word on the biology of the affective drives.**

Panksepp's (PANKSEPP) paradigms describe 4 "basic-emotion command systems" common to all vertebrates. They are respectively the

- Seeking (curiosity and reward) system which includes the mesocortical-mesolimbic Dopamine mediated system described earlier, and its projections to the endorphin mediated fronto-hypothalamic systems familiar to us from the rat self-stimulation pleasure centre work of James Olds (OLDS and MILNER)
- Rage system (medial amygdala to PAG, Periaqueductal Grey Area),
- Fear system (Lateral amygdala to PAG)
- Panic (or more properly, separation distress) system, Cingulate to thalamic and hypothalamic, then PAG, with its serotonin and oxytocins/prolactin mediators

We know that the making of connections is associated with a dopamine rush. What we have yet to determine is how these systems underpin the affective binding that Jung construed as essential in his definition of complexes. While we do not have the time to develop this theme in this paper, this is clearly an important area in Jungian bio-research.

### **Some Anthropological Connections.**

Giegerich (GIEGERICH) in his revision of the Jungian Project of restoring (capital M) lost Meaning, attempts his own history of the development of consciousness. Giegerich is not a bio-scientist. We would not expect him therefore to realise that the neurobiology of apophenia is rife with possibilities for meaningful connections and the emergence of connections with radically different properties from their elements. But what he does focus on is a more central concept; a kind of “Big Meaning of Life” one, which, in his attempt to articulate the felt experience of Big Meaning, he calls “In-ness”. Thus, Giegerich discerns that “metaphysical In-ness” is explicitly articulated in geographic myths and cosmologies (like Mother Earth, Father Heaven, the World Tree) as a “content of conscious awareness”, but also as...”the factual phenomena of the way life was lived that betray that man’s containment in nature was the prevailing actual reality”.....or again as “inherent in the practical realities of life at those times”. (GIEGERICH pp 4 and 6) .

He then goes to list some experiential characteristics of this “life” the “pre-Modern Ages” (as he puts it). [My numberings]

1. “Each present derives its truths from what Eliade called *illud tempus* , or, from the ancients.”
2. “The individual has his reality in something larger,...be it the family, the clan, “
3. “there was an inescapable dependence on nature. The talk of Mother Nature was not so much a metaphor as a factual reality.”
4. “The factual in-ness showed itself in the unquestionable resigned submission of people to fate....nature...”

5. A large proportion of life and energy was devoted to what Jung called “the symbolic life”.....observances, cults, ceremonies, ritual enactments, especially striking in ancient Egypt’s funerary practices.

These characteristics resonate well, to my mind at least, with life as it is still occasionally lived in remotest Central Australia, but this is the very mind state that is undermined by contact with Western meta-representational culture and Modernist/postModernist consciousness. What may give us some hope though, is that new linkages may emerge, with very different properties from their elements. I have argued elsewhere (PETCHKOVSKY 2) that the Aboriginal Art movement is an example of this mergence phenomenon at the cultural level.

Wrapping it up.

The Jungian scholar Jean Knox (KNOX) proposes a list of Jung's 'signature concepts':

- 1) The self as an organizing psychic structure
- 2) Archetypes and the collective unconscious
- 3) The dissociative nature of the psyche and the formation of complexes
- 4) The unconscious as an active and purposive agent in individuation
- 5) The psyche as self-regulating - the transcendent function
- 6) Libido as neutral psychic energy, available for a number of purposes
- 7) Psychic imagery as symbols not signs, reflecting something as yet unknown

To which we would add Jung's clinical principle that one cannot exert influence unless one is available to be influenced.

It should be clear by now that our neurobiological overview can bring a strong fresh perspective to each of these items; and I leave it to each reader to make their own connections and enjoy the dopamine cascade, in the hope that this will motivate some of you further to

engage in this kind of research.

### **Alchemy in the 21<sup>st</sup> century**

Jung often put it that the deepest goal of the alchemical opus was the redemption of matter.

Our radical investigations into the neurobiological substrate of subjectivity may well be this century's practical expression of the alchemical quest.

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