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**The Mind's Farthest Reach: Dream-Telepathy in Psychoanalytic Situations: Inquiry and Hypothesis**

**Abstract:**

Emerging out of an era when the 'paranormal' was viewed with skepticism by the scientific community, Freud steered clear of associating psychoanalysis with dream telepathy or thought transference, phenomena which were reported quite frequently within its domain of inquiry. In later years, however, he advocated that psychoanalysts embark on a serious inquiry of this phenomenon, approaching it as a *normal* rather than *paranormal* aspect of unconscious functioning.

Inspired by direct experience in my practice, this paper searches for the operative roots of dream telepathy. From within a revised framework of Freud's first topographical model of mind viewed as a continuum from biological to semiotically mediated organizations of experience and modes of interacting (Aragno 1997, 2008), the inquiry ventures to our distant evolutionary past when evidence of 'representation' first appeared, leaving traces of early hominid mental capacities. Supported by contemporary neurobiology and interdisciplinary literature, relevant data is selected and synthesized, piecing together a comprehensive hypothesis. The subject is approached from the perspective of a biosemiotic model of human interaction in which all unconscious processes are viewed as *natural* rather than *supernatural* phenomena.

**Key words:** biosemiotic hierarchy of interactive modes; emotional attunement; pattern-matching.

It is a very remarkable thing that the *Ucs* of one human being can react upon that of another, without passing through the *Cs*. This deserves closer investigation... especially with a view to finding out if the preconscious activity can be excluded; but descriptively speaking, the fact is uncontestable. (Freud, 1915, p. 194)

The mind sinks into apathy unless its hungry roots are continuously searching the dark sustenance of the unknown, its sensitive foliage continuously stretching towards unimaginable light. (Read, 1955, p. 32 )

### **Introduction**

The subject of his paper has been weaving tentatively in and out of psychoanalysis from its beginnings. Yet despite the current body of reputable experimental evidence and legitimization from other fields, still, one hesitates to tackle it openly. I have chosen to do so now for reasons I will shortly disclose. I hasten to emphasize, however, that it is by virtue of our methodology and the semantic protocols of our interpretive discourse that the phenomenon under discussion emerged so clearly: likewise, it is through the prism of our metapsychological framework (albeit revised) that explanatory hypotheses will be proposed.

We are living at a time when the prevailing scientific world view is one of entanglement and connectivity, a paradigm which benefits from scientific authority while comfortably accommodating phenomena once considered paranormal. This world view, which stresses the overall unity of observer and observed, has given rise to a new interest in examining what happens between things, in forms of *interaction* themselves and the expanded epistemologies derived there-from. We are therefore well poised to revisit the phenomenon of telepathic dreams in psychoanalytic situations. In order to go beyond what has hitherto been presented and approach this topic in depth I have spread my interdisciplinary readings far and wide and will endeavor to integrate and synthesize information derived from anthropological

studies of Paleolithic art: early development; semiotics; experimental research in psi: group-process phenomena; current neuroscience, and quantum physics, including, of course, our own literature, particularly Freud's metapsychology of dreams.

The revisionist approach thread through this essay, more fully addressed in previous works (Aragno, 1997, 2007, 2008a, 2008b, 2009), cannot here be revisited for want of space. However, the whole falls under the overarching impact of epistemological changes brought about by paradigm shifts in physics, biology, and the philosophy of language spread through the 1900's, yielding, in psychoanalysis, a revised framework for a general bio-semiotic theory of mind and communication (Aragno, 1997, 2008a). The previous century saw to it that all our solids and certainties, our perceptual and conceptual convictions, would collapse in the wake of the alarming news that nothing really is as it seems! Spatial/temporal illusions, contours of the perceived world, categories of objective truths, and deterministic assumptions, all dissolved into, a) general relativity; b) the wave/particle complementarity of a unified worldview where observer and observed form one, inseparable system; and c) the realization that we ourselves condition the perceptual/semantic and linguistic categories that create our realities. There is no radical separation between mind and world. Neither determinism nor causality, or, in fact, the apparent separateness of 'things' hold sway in an indeterminate, holistic universe where space/time, mass/energy, and wave/particle dualities are the way subliminal things *really* are. Everything is entangled. The dramatic epistemological crisis stirred by quantum theory, and the 'radical relativism with rigorous restraints' (Goodman, 1983, 39) of the philosophy of language, thrust before us a mirror of our minds and the humbling recognition that we ourselves construct versions of worlds through the prism of narrow lenses, looking through selective semiotic devices and systems adopted to represent what we have singled out to see. We move in a probabilistic, entangled universe, where complementarities rather than contrasts,

unity rather division, and deep connections rather than separateness, operate at non-visible levels.

This notwithstanding, for most of us, seeing, is *still*, believing! The conviction of the veracity of telepathic phenomena comes from experiencing them personally. So it was for Freud; for psychoanalysts of subsequent generations who wrote about telepathic phenomena; and so it was for me. Additionally, from the early 1900's on there have been literally thousands of controlled psi experiments (Radin, 2001) yielding significant results. It is therefore not my intention here to waste words in defense of its existence but rather to forge ahead attempting to uncover its possible origins and probable conditions of appearance, in light of new relevant information. My goal is to treat this spontaneously arising phenomenon *psychoanalytically*, as a normal rather than a paranormal unconscious process, as Freud perspicaciously suggested, for the study of which our method is ideally suited. To reiterate points I have developed elsewhere (Aragno 2008a): Freud's naturalistic approach to investigation; his willingness to be embedded in the field of inquiry (to which his discovery of 'transference' attests); his evenly suspended, non- prejudicial listening stance; advocacy of an empathically attuned attentional disposition; and finally his lament regarding the inadequacy of the scientific *Weltanschauung* of his era in providing conceptual underpinnings for his discoveries, all attest to a methodology that, though ideal for the study of the human mind in its entirety, had sprouted ahead of its time.

### **Empirical premise for this essay**

'La méthode, c'est précisément la chois des faits.' H.Poincare`

In the early fall of 2000, I experienced a tragedy: My vigorously healthy partner (P) began fading before my eyes. Initially misdiagnosed, after a brief bout with a virulent illness, he passed away in mid October. During, and after, this period

of time I maintained my normal practice hours and since my office is in an impersonal institutional setting and we did not share surnames, absolute anonymity and inaccessibility to the privacy of my experience was guaranteed. In these circumstances there occurred, in a number of my patients at different stages of their analyses, a series of telepathic dreams. I ought to specify that dream analysis is a centerpiece of my technique, and I grow as familiar with each patient's 'style' as I do with their dynamic issues and history. So powerful and obvious were the telepathic elements and emotional tenor of these dreams, so specific their details -- Freud's "single point of thought transference"-- and often so incongruous or ill-fitting the associations to them, that they could not but capture my attention. Space does not allow a full exposition of all the dreams so I limit myself to pertinent elements and salient points.

I noticed that each of the telepathic dreamers seemed to pick up and weave into the manifest content of their narrative sensory-emotive details fitting their most favored sense, so that a painter focused on the vivid 'yellow' of a jacket of a hurried man (P's sunny Land's End wind breaker worn to a doctor's appointment which I particularly registered as contrasting sharply with the gravity of the visit); a landscape designer pictured a woman in black, hanging horizontally, head down, arms and legs strung up by twisted twig tendrils tied to trunks in a forest of leafless trees with dead limbs (a naturalistic depiction of the helplessness and physiological anguish of sudden, irrevocable loss, and of my utter desolation); an opera singer spent an entire session, tears streaming uncontrollably down her face, over a dream fragment regarding her Father's abrupt passing - the one person who 'made everything feel right' -- vividly pointing to its telepathic quality, "I can see his eyes through you" said her sister in the dream, "as though she could read my mind". This patient profoundly resonated with my emotional state. Another, in termination-phase, dreamt of being in a small boat with a gentle, bearded man, lulled peacefully by wavelets at dusk, (P was an avid and excellent sailor): yet another pictured a

primordial scenario of huge boulders, sunrays cutting through, as an older man in a tweed jacket (P's classic analytic garb!) walked through them (P had recently visited Stone Henge, acquiring special permission to peruse the site alone at dawn). It was as though the telepathic elements echoed events and moments of our story that must have been constantly in the background of my mind, as the dreamers slanted the overall themes of grief, loss and endings, to their current psychical needs.

Since then I have encountered countless more examples occurring during emotionally charged crisis moments (particularly around illnesses, death, and severe losses) and during early-phase resistances in patients beginning to form a therapeutic-alliance, or during termination. Interestingly it has been noted in our literature that it is patients, more frequently than analysts, who exhibit these telepathic phenomena. Before a brief literature review I offer a broad overview of how shifting paradigms and epistemologies of the past hundred years have impacted on our approach and understanding of this phenomenon.

### **Looking Back; 1900-**

I must urge you to have kindlier thoughts on the objective possibility of thought transference and at the same time of telepathy as well. (Freud, S. 1933.54)

We begin with Freud, whose initial intense ambivalence toward the subject is palpable. Yet despite starting out extremely skeptical, over the years, after undertaking experiments within his own intimate circle, his attitude mellowed. He became more outspoken about the incontrovertible evidence of these phenomena and ended up writing several papers (1921, 1922, 1925, 1933) in which he not only addressed the subject, putting forward some interesting hypotheses, but also

suggested that due to its acquaintance with the laws of the unconscious psychoanalysis was uniquely privileged to investigate the subject.

That Freud would have wanted to distance his psycho-analysis from any connotations of occultism is understandable; at the time, a florid spiritualist-transcendentalist movement was in vogue. The close proximity of 'psychic' with 'psychical' and their shared mysterious 'unknowable' qualities, Freud felt, would only further threaten the fledgling field's scientific credibility. He was already battling on several fronts; for the mere existence of the unconscious; for his Darwinian depiction of its deterministic powers; and for the reality of infantile sexuality. He had troubles enough without adding thought-transference and dream-telepathy to the mix. But the winds of change were already stirring new ideas that would revolutionize scientific and philosophical thought throughout the next century. Ironically, the momentous changes that were taking place in physics nearby ran *pari passu* with the birth and development of psychoanalysis. Were Freud to have known that quantum hypotheses would soon be unveiling principles of relativity and non-locality in the invisible sub-atomic world he need not have felt so threatened. But paradigm change is slow to take hold and overlap between fields takes time. He could not have anticipated that the scientific *Weltanschauung* itself (of which psychoanalysis was a part) would be so transformed that it would actually underpin the feasibility of such phenomena.

Between 1900 (Planck's constant) and 1905 (Einstein's special theory of relativity) the quantum era in theoretical physics had begun: There followed in rapid succession throughout the 1920's, Heisenberg's 'uncertainty principle', Bohr's 'principle of complementarity,' de Broglie's wave function, Schrödinger's wave mechanics, Feynman's electromagnetic field theory, and Einstein's general theory of relativity, as well as the contributions of Born, Jordan, Pauli, Dirac, Bell and mathematician von Neumann, who was instrumental in bringing the human mind into the equation. The following years brought quantum electrodynamics and relativistic

quantum field theory to the fore with explosive results: by mid century ‘matter,’ as we knew it, was no more. What replaced it was a set of interacting quantum fields mediated by other quanta. That’s all there is. The idea that gravitational and magnetic fields were of a physical nature originated in Young and Faraday’s 19<sup>th</sup> century experiments on electricity and magnetism, culminating in Maxwell’s 1873 electromagnetic theory of light (a wave of oscillating electric and magnetic fields). By 1926, with the dissolution of wave/particle and mass/energy dualisms in a 4 dimensional continuum, material reality, in its essence, was seen as nothing more than the transforming organizations of fields of interacting quanta. Modern physics is based on theories of interaction; *the interaction of wave/particles in and between electro-dynamic fields in which everything is interconnected with everything else*. In fact, particles and electromagnetic fields are actually complementary manifestations of the same thing; quantum theory describes the interacting sub-atomic particles *through* the field concept (Pagels, 1983). We will return to the idea of fields as ‘dynamic regions of reciprocal influence’ in biological (Sheldrake, 1981, 1991) and semantic (Aragno 2008) spheres.

Ideas foreshadowed by philosophers like Bergson and Whitehead, by psychologist W. James, sung by the ancient poet Rumi, became manifest in the explosion of advances in theoretical physics with rippling effects throughout the next decades in biology, philosophy, and literary theory. The logic of solid bodies at the macro-level and, hence, descriptive categories of classical physics, did not apply to the sub-atomic microcosm where wave/particle dualities, photons, electrons, leptons and muons, move in a kaleidoscopic sea of vibratory oscillations, a sort of puntillistic space where points of energy/matter coagulate into ‘things’ that our eyes can see! Nature is now seen as “an interconnected, dynamic web of relationships in which...specific patterns as “objects” depend on the human observer and the process of knowledge” (Capra, 1988,149).



The implications were enormous and it was inevitable that a clash between old and new would erupt. It did, in the form of the famed Einstein/Bohr debate. What was at stake was nothing less than one of classical physics' founding axioms, the 'principle of local causes' which maintains that a physical event cannot be influenced by another event without direct mediation by a signal which, implicitly, cannot travel faster than light. The premise of the Einstein/Podolsky/Rosen (EPR)1935 thought-experiment paper was to challenge the completeness of quantum theory. But Borh's swift rebuttal once again confirmed quantum indeterminacy and although full validation for sustained 'contact' in sub-atomic spheres did not come until Bell's theorem in the Aspect and Gisin experiments of the 80's the principle of 'local causes' was definitively disproven in quantum reality. Quantum formalism declares that correlations *do* in fact hold; over Any distance, and in No time (Nadau,/Kafatos, 1999). Einstein's 'spooky action at a distance'...is real. What relativity theory does prohibit is the instantaneous transfer of *information* (of a particular *kind*) without a mediating signal while simultaneously, however, acknowledging the quantum tunneling effect, whereby particles apparently pass through solid barriers. The real question then becomes: How do we define *information* since its processing source is the human mind? And this, as we shall see, is why questions probing the sources and constructs of forms of knowledge in conscious awareness, is crucial.

For our purposes, the above deviation from classical assumptions merely confirms that the laws of bounded bodies in experienced space and time simply do not apply to subliminal levels. Acknowledging non-locality, however, ought not license falling into 'quantum hype,' (Polkinghorne, 2002) or fuzzy 'holographic holism' (Wilbur, 1986), simplistically assuming it to be sufficient explanation for telepathic processes. "Quantum weirdness" (Pagels, 1983) confounded its founders and especially perplexed its most fervent propagators. It would be foolhardy to take complex statistical abstractions expressing probability correlations as explanatory for phenomena occurring in the human domain. The idea of unconscious determinism

antedates Bohm's (1980) 'Implicit/Explicit Orders' and quantum 'Holomovement' models by one hundred years; in psychoanalysis we have long been familiar with a Timeless, porous, dialectical universe, where paradox, contradiction, reversal, condensation, displacement, and transformation are the norm, and where the past is *always* in the present!

Consider that between 1900 (The Dream book) and 1905 (Three Essays) Freud had already laid down the foundational principles of a new developmental, depth psychology. And throughout the following twenty years, in rapid succession, he introduced applied psychoanalysis, metapsychology, phylogenetic reconstructions, and a new structural theory, to include only the broadest outline of the new science of mind. Freud had already encountered the equivalent of 'quantum weirdness' in deciphering the mechanisms of the primary process, the coexistence of opposites and dualistic meaning-structure of dreams, perhaps our most palpable parallel to quantum slipperiness. Like Bohr, who voiced his discomfort with the inadequacy of our vocabularies to fully grasp quantum realities, in psychoanalysis we labor to linearize the polysemic, multidetermined density of Ucs meanings, to fit into fixed verbal signs the fluid experiential quality of unconscious manifestations.

Both subliminal worlds -- the sub-atomic and the unconscious (*Ucs*) -are dynamic, ephemeral dimensions, subject to different variables and principles and, most importantly, to the *perceptual/interpretive impact of a conscious, sentient, observing mind*. Attention and intention appear to play a crucial role. The fundamental difference is that physical laws operate according to quantifiable principles derived from complex equations, whereas our phenomena, issuing from symptoms, feelings, and pictured meanings/ideas, follow principles of psycho-logical forms. These are in the order of bio-semiotic planes of organic, proto-semiotic, and semiotic-organizations (*Ncs, Ucs,Pcs,Cs*) determining the nature of subjective experience and whether its form is knowable or not (Aragno, 1997, 2008). Psychoanalysis began by deepening our epistemology to include the Ucs: we may now

need to expand this dimension further to include an unknowable, organic non-consciousness, Ncs.

The above excursion into physics was justified insofar as prevailing paradigms are heavily influenced by scientific propositions of the times which may provide useful inroads for vexing dilemmas like the mind/brain or mind-to-mind connections. However, given our emphasis on origins and prominence of genetic dimensions in psychoanalysis, after a brief literature overview, we will turn to developmental and phylogenetic reconstructions in deepening our investigation. It is not my intention here to provide an exhaustive account of the literature, for which readers may turn to excellent papers by Mayer, 2001 and especially Eshel, 2006.

### **Brief Literature Review**

The term 'telepathy,' coined in 1882 by F.W Myers, accompanied the burst on the scene of the telecommunications era, replacing the more obscure 'occultism', 'spiritism', or 'paranormal' mind-reading. In 1887, one year after the telephone, its study was subsumed under the legitimizing field of parapsychology, or psi. This mysterious form of communicating emotions, ideas, images and words, without direct mediation by the senses would now be conceived as a 'wave/impulse' -- emitted, transmitted, and received -- along the lines of a wireless. Accordingly, in Sinclair's (1930) landmark book documenting countless image- transmission experiments carried out with his mediumistically talented wife, the idea was of a cosmos of potential signals, a "common substratum"(119) of minds, which could be tapped into. The analogy is palpable: turn on the switch, find a wave-band, and you have a transmission. The brain was imagined as a "storage battery" emitting nerve- or telepathic-impulses into a universe of energy that reflected back "brain-rays" or "thought-rays" (120) to a sensitive percipient.

Among the first brave analysts to publish records of telepathic dreams was Silberer (1914). Yet by 1915 Freud had already sanguinely stated that communication

between one Ucs and another was a real phenomenon and by 1933 openly advocated psychoanalysts pursue research of a process which, along with other prominent minds of the day, he assumed to be a fairly common, normal, unconscious process. Although many suggested that telepathy originates in functional 'substrata' prior to language, it is Freud who, applying the concept of 'somatic-concomitant', decisively pointed to the bio-psychical, possibly even bio-*social*, nature of this process: "It would seem to me that psychoanalysis, by inserting the unconscious between what is physical and what was previously called 'psychical,' has paved the way for the assumption of such processes as telepathy...we do not know how the common purpose comes about in the great insect communities: possibly it is by means of a direct psychical transference of this kind" (1933, 55). It was also Freud (1921) who stressed its specificity, "the single point of thought transference" (193).

During the 1930's and 40's, from within and without our field, emphasis was less on insisting on the veracity of telepathy than on beginning to demystify its processes through systematic analysis of its features and a typological break down of its various forms. In addition, along with increasing technology and many highly controlled experiments in image-transmission, distance healing, and remote viewing, a number of physiological responses (electro-dermal and later electroencephalographic correlations) were recorded.

Noteworthy from this early period are the works of Warcollier (1938, 1948) whose 1921, "*La Telepathie*" was a resounding popular success, and from psychoanalysis Eisenbud (1946/70, 1947/70) and Ehrenwald (1942, 1944, 1956, 1971) whose contributions on the topic span over thirty years. Both psychoanalysts had the advantage of a participant/observer context from which to study this spontaneously occurring phenomenon and both put forward the concept of 'telepathic contagion' or 'psychic fusion,' the idea of trans-psychic interference within certain orbits of influence, a process indicative of still open, operative, and extremely porous, bio-mental layers. Reik's (1948) acutely sensitive 'third ear,' through which he accessed

‘subsensuous’ layers of the deep unconscious might also be mentioned in this context.

Though published in 1970, the Devereux (ed.) compendium actually contains far earlier contributions from such eminent pioneers such as Deutsch (1926/70); Hitschmann (1930/70); Holòs (1933/70); Róheim (1932/70; Servadio (1935/70); Burlingham (1935/70); Fodor (1947/70); Eisenbud (1948, 1949/70); and Gillespie (1948/70), including interesting epistemological speculations from Devereux himself. Yet despite familiarity with dream processes and a privileged situation in which unconscious phenomena come into sharp relief, their doctrinaire approach and reliance on concepts like repression, regression, wish-fulfillment, and ‘intuitive empathy,’ hamper observations that clearly need to move beyond conventional psychoanalytic givens. Only Eisenbud, Gillespie and Ehrenwald, mention the primary process and only the latter noted that telepathic imagery undergoes many of the same processes as dreams: and no one specifies the *kind* of regression or *state* promoting telepathic perception. Instead of providing a starting point to dig deeper, psychoanalytic terms seem to constrain rather than inspire further probing into the bidirectional and interference qualities, the special context, and emotional disposition of the percipient of telepathic phenomena in psychoanalysis.

By comparison, Warcollier’s (1938,1948) systematic observations yielded a set of interesting propositions regarding general principles of telepathic reception. To describe these he not only borrowed from psychoanalysis (i.e. condensation, dissociation, secondary-elaboration) but also coined new terms. With introductions by G. Murphy and R. Targ, prominent researches of the times, in ‘Mind to Mind (1948) Wallcolier laid out several important concepts crystallizing around the following central ideas: i) telepathic processes occur at primitive, less differentiated, pre-linguistic levels of mental organization reminiscent of communication among insect and animal herds; ii) issuing from this primal dynamic it is fueled by emotion and motor-impulses as, iii) telepathic perceptions well up from kinesthetic impulses

manifesting in the form of images. Warcollier's insights orient around "global, syncretic perception," a "matrix, which binds together the many elements contained in the impression"(41-42). He likened the telepathic image to chemical molecules which arrive decomposed as elements, particularly the emotional state, which are then recombined into a new molecular structure (3). From this frame of reference he understood the "conceptual kernel" at the heart of what is transmitted and a most important concept he referred to as the "law of parallelism," that like seeks like, concluding that it is "entirely a question of movement"(5), both points to which I will return.

Experimental studies in 'Dream Telepathy' by three illustrious figures in psi (Ullman, Krippner, Vaughan, 1973/2002) ought to be mentioned here as a lively attempt to generate a deeply unconscious, spontaneously occurring process under rigorous sleep-lab conditions. While literally hundreds of sterilized experiments in thought-and image-transmission appear to me strained and artificial due to the observers intent on obtaining 'manifest facsimiles' of the material, deeper insights may be gleaned from the so-called 'off nights' or 'failures,' expressions of a phenomenon that is loathe to appear on command! Clearly transference displacements and interpsychic-infiltrations often interfered in the fulfillment of the required achievement although, unfortunately, these clever deviations and obstructions were not taken as resistance-clues into the delicate medley of dynamics underlying this phenomenon. Without sufficient exploration of surrounding associations what is left out is *meaning*, emotional hue, motivation, organic conditions, inter-relationship. As Eisenbud (1973) pointed out this phenomenon is "geared primarily not to the individual but to an interlacing hierarchy of ecosystems in which the individual...is necessarily imbedded." (213) Although this research did introduce the biological underpinnings of shifting brainwave activity in REM and non-REM sleep, it also reinforced evidence for how psi is the essence of spontaneity.

I ought perhaps confess my personal aversion to “laborotizing” natural phenomena, attempting to isolate and duplicate psychical processes occurring spontaneously in our method. Narrow focus and measurements of ‘success’ rates exclude too much valuable information and point to the benefits of naturalistic methodology, of which the psychoanalytic situation is one of the earliest and most felicitous examples. Of its first major yields, the ‘dream’ continues to provide invaluable inroads into processes of the deep unconscious which we are now poised to probe deeper still.

After the initial spate of analytic papers interest in the subject apparently fades and sporadic contributions (Major&Miller,1984; Lazar,2001; Mayer, 1996,2001,2002; Verene,2001; Cambray, 2002; Eshel,2002,2005) do little more than remind us of its existence while keeping the topic on life-support. We are reminded of the frequency of premonitory dreams and recurring observations of telepathic phenomena around deaths, disasters, and separation, as general themes. Langan’s (2002) “Portals” stands out as a particularly poignant and poetic reminder of this as he wistfully reflects, in retrospective recognition, on dreams and themes of a patient who died on 9/11. On the whole, however, in psychoanalysis it is with Jung’s (1951/71) concept of “synchronicity” that we are predominantly associated and certainly it is the Jungians (epitomized by Jung’s famous ‘golden beetle’ episode) who are most comfortable with this sort of phenomenon. Despite his recognition that the term “explains nothing” other than designating the “parallelism of time and meaning between...psychophysical events,” (517) ‘synchronicity’ provides a definition for uncanny coincidences for which no scientific principles as yet exist.

But as the subject lies fallow in our field so does it flourish outside, fertilized by the founding of The Parapsychological Association in 1969 and the Institute of Noetic Sciences, established a year later by astronaut E. Mitchell after a successful psi experiment from the Apollo 14 space capsule. There followed the founding of the Psychophysical Research Laboratories by C. Honorton and the famous Princeton

Engineering Anomalies Research (PEAR) program which, along with years of government backed experiments, gave status and credibility to this research. For a thorough history of the subject, and comprehensive coverage of copious data, there is no better than Radin's (1997, 2006) two volumes. Among exhaustive coverage of all aspects of the topic he mentions research on brainwave activity, electrodermal responsiveness, central, autonomic, and enteric nervous systems, correlations that are, in my opinion, of particular interest (pp139-143).

### **Reaching inward.....**

On March 22, 1985, physicist D. Bohm, first recipient of the G. Murphy Award from the American Society for Psychical Research, gave the inaugural speech, "A new Theory of the Relationship of Mind and Matter" at the Harvard Club, in New York. In it he laid out the fundamentals of his implicate/explicate order, causal interpretation of quantum theory, the essence of which conceives of a holistic, entangled universe in which everything and each 'thing' is implicate, or enfolded, in everything else (114). In this dynamic totality he called the 'holomovement' an implicit principle of order is expressed through variegated emergent physical phenomena on the analogy of the holograph so that the whole is contained in every part. (Harris, 1982, 159. Several important quantum principles inhere in Bohm's conception, particularly in his extension of these, which pertain directly to our subject.

The first is the fundamental Heisenberg/Bohr proposition which considers observer and observed an essential unity, an all pervasive premise that brings human consciousness into the equation: our objectivity is always subjectively tinged by the perspective and limits of our 'instrument' of observation.\* The second has to do with the wave/particle duality: Bohm (1986) introduced the notion of the wave-function as containing something analogous to a form of "information content" (122) by which each particle within a common energy field is guided. Electrons would thus be *participating* in communal action based on a common pool of information derived



\*The impact of this premise regarding psychoanalytic discourse-semantic (addressing the unconscious), its speech forms, semiotic/linguistic processes, referential/interpretive protocols, goals, and emergent phenomena, are amply discussed in *Forms of Knowledge* (2008).

from the configuration of the whole system, like a ballet to a score. Implicitly he draws a conceptual parallel between wave/particle and action/meaning dualities whereby movement, or activity, is viewed as inseparable from *meaning*. Meaning becomes the link between mental and physical, a bridge unifying matter/mind, insofar as information in thought is a neuro-physio-chemical *and* physical activity (128). Only in thought, conceptually, are indivisibles like body/mind, observer/observed, movement/meaning, form/content dualisms, divided.

Bohm's (1986) furthest extension of the mind/matter unity proposes human consciousness as part of this overall activity of meaning, so that the mind's movement through "various levels of subtlety, would ultimately reach the level of wave-function...the "dance" of the particles" (131). At extreme levels of wave-function subtlety bi-directional contact may be apprehended more on the basis of similarity and resonance of 'meanings' acting "directly from brain to brain" than by location in space (132). Interweaving mental and physical, according to Bohm, constitutes reality as a whole, from which follows that in the very act of applying such a theory one is "doing what one is talking about" (133). (Interestingly, examination of the interplay between doing and telling in clinical free association reveals a tight connection between words/thoughts and concomitant enactments.)

Bohm's holistic holographic articulation of quantum reality did more than satisfy the parapsychologist: what it proposed captured the imagination of a group of neuroscientists seeking answers to unanswered questions. The holograph had already been conceived mathematically by D. Gabor in 1947, but its realization, and the Nobel he won for it, had to await the invention of the laser. Visibly one of the most alluring demonstrations of modern physics, the holographic image appears hovering mid-air, a three-D likeness, suspended and projected at a distance from its photographic plate.

It is, in fact, created by a manipulation and reintegration of two light sources, one deflected by a mirror onto a plate which does not store a verisimilitude likeness but bits and pieces of it which are reconstituted by the cohesive laser beam. The extraordinary quantum feature consists in the fact that if a hologram is broken, any piece of it can reconstitute the whole image (Wilbur,1982 Ferguson, 1982).

Not surprisingly an astute neuroscientist, whose teacher K. Lashley had searched in vain for the 'engram' of memory, seized upon the holographic idea as a powerful model for brain processes. Years of research led K. Pribram to propose that the brain's deep structure functions holographically: widespread distribution of information throughout all cerebral systems mirrors the hologram's scattering of the object's light wave/field and re-cohesion by the laser beam so that damage to one part of the brain does not eradicate a coded memory. The analogy also fits the way perception works and provides impressive support for transcendental states, metaphysical revelations, and paranormal phenomena.

We learned from Penfield (1975) that the indispensable substratum of consciousness originates in the diencephalon outside of the cerebral cortex and later, from Pribram (1982), that we ought to be thinking in terms of frequencies and waves of sensory input received, interpreted, and abstracted, by nerve impulses throughout the brain's intricately interwoven networks. Already then brainstem and limbic nuclei were thought to be both more complex and more interconnected to higher cortices than previously understood (Wilbur, Ferguson, 1982). Altered states of consciousness and attunement to quantum frequencies transcending time and space become subjects of intense scrutiny and discussion as the holographic analogy encompasses principles for just about everything from attention, memory, and learning, to philosophical insight, artistic creation, and personal transformation in psychotherapy.

By the early 1980's, Pribram and Bohm's common interests had converged in eastern philosophy producing a new age holographic paradigm which attracted many of the brightest minds at the cutting edge of biology, philosophy, psychology,

parapsychology, and physics, generating enough interdisciplinary intellectual energy to foment a formidable movement. Forms of conscious awareness and a new appreciation for 'non-rational' modes of experience converge in Bohm's idea that the 'implicate order' may be apprehended only through insight obtained in particular states of harmony. An understanding of the brain's receptivity to quantum dimension wave/frequencies, attunement to "spatio-temporal fields of influence," (Weber,1982,35) and all new 'patterning,' as Wilbur (1982) nimbly put it, "hits closest to the real neuropsychological substrate of revelation"(12). And, I would add, to that of telepathic resonance.

If the quantum revolution generated a feasible framework for psi phenomena the holographic movement provided it with a paradigm; a shift in epistemological possibilities. The question of the *form* of 'telepathic transmission' (or, in fact, any sub-sensory form of information) no longer poses a problem if we are to be thinking in terms of 'resonance' or special *states* of 'attunement.' We might pause here for a moment in appreciation of Freud's (1912-13) proscriptions for the listening analyst; an evenly hovering, empathically resonant attentional state, characterized by an unbiased yet highly attuned disposition. He seems to have understood that *quality* of attention and intention impact significantly on what one may apprehend.

The 1970', 80's and 90's saw considerable advances in the study of emotions, cognition and consciousness in neuroscience (Damasio,1994,1999), of emotional contagion (Hatfield, Cacioppo, Rapson, 1994) and, for our purposes, the reissuing of experimental studies in Distant Mental Influence (Braud,2003) and Dream Telepathy (Ulman, Krippner, Vaughan, 1973/2002). These, in conjunction with new studies in 'socially shared cognition' or interactive minds (Bower,1997) and, particularly, of unconscious convergence and containment phenomena in group processes (Schlachet,1989,1992, 2002), all point to the idea of interconnected, rather than sharply separate, mental functioning.

Particularly interesting is Damasio's (1999) neurobiological correlation of levels of consciousness with proto-, core-, and extended-'self' experience, revealing that once familiarity with an object is established, when presented with its image, neuro-imaging patterns indicative of recognition are stimulated even when in non-conscious states (166.) This suggests that not only perceptual/sensory cortices but evolutionarily earlier autonomic nervous system or visceral responsiveness antedates and apparently continues to undergird instinctual reactions only subsequently elaborated interpretively by higher cortical functions.

While we are quite familiar with the idea of core affects as the driving force behind dream imagery construction, it is specifically through the psychoanalytic investigation of Dreams in Group Psychology (Neri, Pines, Freedman, 2002) that we learn the most about their deeply social matrix. Whereas superficial recourse to studies of REM sleep or the mechanism of 'projective identification' do not take us far, a methodological shift to gathering group associations (*without* interpreting) while attending to the latent/manifest relationship, reveals a polyphony of contributing unconscious currents and crosscurrents in imagery and narrative-content converging on communal themes and overall meaning. The group-dream does not belong only to the dreamer!

Impressive evidence for this comes from a neglected deep stratum of unconscious communication in group interactions giving rise to emergent convergence phenomena in the establishment of group cohesion and coherence. Making use of 'primary process' features while accessing this shared unconscious through 'joint metaphors' and dream-elements, Schlachet (1989,1992) attempts theoretical integration of unconscious group phenomena inclusive of the particular traits of the likely 'container/expresser' of communal themes. Schlachet (2002) offers real metatheoretical insights into the phenomenology of unconscious synchronization and convergent data and underlying neurobiological substrate.

A word ought to be said here about Emotional Contagion (Hatfield, Cacioppo, Rapson, 1994) another phylogenetic phenomenon widespread throughout the animal kingdom, present at birth, involved in early learning and social bonding. Defined as a multiply determined cluster of neuro-physiological, automatic mirroring behaviors, emotional contagion initiates a family of social responses including sympathy, empathy, involuntary facial, vocal, and motor synchrony, resonance and mutuality. Given the tight linkage of emotional expression and somatic/feelings, vicariously aroused emotions through automatic mimicry feedback becoming habit, creating an inner core around which defenses form generating the outer crust of character. These universal phenomena, especially the more primitive resonance-induction mechanisms underlying them, are important to our topic not only for their ancient roots in subcortical regions but because they are outer manifestation of inner processes which may once have been totally interior.

Significantly, the discovery of the 'mirror neuron' network (Rizzolati, Fogassi, Gallese, 2001) attests to the adaptive imperative of this resonance circuitry undergirding a system of innate, pre-reflexive, imitative and empathic experiences and behaviors. In primates these circuits present a versatile self-learning mechanism coordinating perceptual and motor actions while potentially also presenting a bridge from mind to mind (Wiederman 2003). Conceptually generalizing this basic matching-endowment of our socially predisposed brains, Gallese (2007) adopts the term "embodied simulation" (Piaget's imitative sensory-motor stage) to refer to automatic responses extending beyond the viscera/motor domain involving perception and sensations like touch. 'Embodied simulation' (Gallese 2001, 2003) represents a *sub-personal* level instantiation of several circuits accompanying multilevel changes in body states. Rooted in a shared neural substrate, it is thought to scaffold higher cognitive connections within "shared manifold" spaces engendering sympathetic and empathic sensibilities toward others (Gallese, 2003, 177). Embodied simulation is

believed to generate *representational* content, by which, I assume, Gallese means imagery.

With the image, we move from brain, to its function as mind: and where there is mind, there is meaning. More precisely: where there is *representation*, be it retained in memory or constructed out of imagination, there, ensue ‘*eidos*,’ *ideas*. Conjured out of perceptual recollection and sensory-affective experience, the image precedes but also crafts thereby a dynamic schema, nurturing cognition and imagination. Here, body meets ephemeral mind, in a somato-sensory-psychic representation yielding all subsequent levels, forms, and systems of semiotic reference and meaning. The image garners its immense power of transmission by its ability to encapsulate both idea and meaning instantaneously, an evocative/emotive force commensurate to the intensities of signals we are phylogenetically primed to receive and respond to automatically. It is, in a sense, our first embodied metaphor, a primary expression of “morphic-sentience:” the *form* of a felt-idea.

As I will continue to discuss, I believe that it is in the image, where the primordial unity of observer and observed, of sender and receiver, is still intact, undifferentiated by layered interpolations of mediating ‘signifiers’ that we may find the origins of mind-to-mind resonance and, from here, trace the slow evolution from organic signal to increasingly differentiated modes of interaction ultimately mediated by efficient, discrete, verbal signs. Out of this deeply undifferentiated, primal dialectic, come early theories of empathy (Worringer, 1908/48) and all ensuing ramifications in this line of inquiry.

### **The Mind’s Farthest Reach**

We must be prepared...to assume the existence...not only of a second unconscious, but of a third, fourth, perhaps of an unlimited number of states of consciousness, all unknown to us and to one another.

Freud, 1915, 170

I am not alone in going as far back as prehistory to trace the originating locus of this confluence of image/idea. In this evolutionary excursion backwards I take my cues from those who paved the way in this style of research, aligning myself particularly with H. Read (1955) who believed that “first there was a shape or image, then an idea”(67). And I maintain that it is the powerful ‘felt/idea,’ nesting squarely within sensory/emotive schemas, that is catalytic in the receptive-reconstitution of neural-patterns through time and space.

It is therefore highly instructive when searching for earlier, even organic, bio-semiotic strata, to revisit the actual products of the minds of early humans. Piaget and Inhelder (1969) provide a detailed six-stage course in the development of representational capacities, reminding that to study the development of mind we have only to observe the infant’s recapitulation in a few short months of the primary organization and mediation of visual, auditory, olfactory, and other somato-sensory stimuli, advancements which probably took Hominids millions of years to evolve. Yet for our purpose it is being a viewer, in the *actual* presence of reproductions of prehistoric images that produces an unmistakable sense of awe before the ancient artist’s evocative bravura. For even as we contemplate the skill behind what was contoured or carved by that early hand, its verisimilitude and elegance of shape, what is generated, remarkably, by the prehistoric image, is a sense of connection, a profound understanding of the ideas/meanings conveyed by the object or scene, transmitted directly through their signification by the artist. We are carried back, as it were, via the image, to the circumstance and situation, the stark reality of prehistoric existence.

I am thinking in particular of the ‘Crouching Bison’ (Altamira) of iconic fame in prehistoric art: exploiting the natural relief of the cave surface, with just a few sparse ideoplastic lines, our ancient artist captures the poignant reposing position of the beast while evoking the extraordinary pathos and austere vulnerability of animal life

in its value as nourishment for early humans. The nodal 'thought' in looking at the Crouching Bison, before emotions flow, is "inert animal/easy kill." Other images convey immense vitality of movement. One senses the sensorimotor, kinetic merger/identification with the object. Although executed by primitive hands, these are no primitive images. Consider also the discomfort of the physical conditions in which much cave art was created; many images were accomplished deep into the presumably dark, or dimly lit, cave-depths, far from visual input, often in awkward positions, certainly without the aid of 'sketch pads,' implying 'eidetic'(Haber, 1969), exact visual recall, an exceptional trait usually lost after childhood. All appear inspired more by inner feeling, a drive to abstract and represent, than outer observation, whereby the object *becomes* an iconic sign.

The image-as-sign projects a condensation of ideo-kinetic, sensory-emotive identifications with the object of representation by a mind still totally immersed in the objects and situations of its environment so that the 'picture' mirrors the intensity of that mind's empathic-merger and stage of development. The great Paleontologist Annati (2002, 2003) confirms this through extremely insightful interpretations of prehistoric art, reading into a basic grammatical system of 'pictograms,' 'ideograms,' and 'psychograms' the elemental sources and structures of the cognitive/emotive, epistemological processes of our species. One could say that these three universal, foundational, signifying-devices which, Annati explains, retain diagnostic value across different conditions and levels of cultural evolution do so because they are templates for perceptual, cognitive, and emotional features of a language in which the image *is* vocabulary. Iconographic codes, here, depict not only major themes (sex, food, shelter), but also time-sequenced scenarios, exposing the analytic and allegorical conceptual models available in primitive mental organization.

The explosion of prehistoric art 40.000 or so years ago in known sites all over the world, and the technological advance making it possible to leave us this record, was a momentous event in the evolution of Homo sapiens. This is because where an



image or scene is represented, there its 'naming' and story soon follow. White (2003) concurs with Marshack (1972) before him that neurological capacities for representational signification existed and were developing long before symbol systems were habitually adopted to express them.

Why, then, is the primordial image so powerfully evocative? I would answer because it emerges from a totally *undifferentiated* stratum of consciousness and so taps that same level in us, the viewers. Structurally this is exactly what we see in the dream: at the core or nodal point is an 'idea' embedded and condensed within the imagery which the pictographic narrative unfolds to show. We resonate with the dreams non-conscious ideoplastic meanings via their metaphorical features which belie a semiotic regression to more organic, less differentiated, embodied representations, where cross-modal perception (synesthesia) probably operates, as in poetry. The directness of communication and impact come from the undifferentiated nature of these levels or forms of 'morphic-sentience' whereby ideas are expressed instantaneously, imagistically, undiluted by intermediary conventional verbal signs.

In order to actually reach/cognize the nodal idea, we have to unpack associations to elements in the dream's storyline while *translating* its overall meaning into discrete, consensually understood, verbal signs. Yet 'meaning and idea' *already existed*, highly condensed, in deeper, Ncs/unmediated forms of organic apprehension where, incidentally, primitive affects predominate. In fact in this interpretive manifestation of semiotic mediation, primary-process mechanisms appear as already quite organized proto-semiotic modes of signification! Once again I draw attention to Freud who persisted in emphasizing the importance of his discovery of Dream structure in understanding the evolutionary progressions of the human mind, a factor that continues to be overlooked in our field and by the scientific community at large.

That said I move to a synthesis of the above material and my hypothesis for how to understand our subject.

## **Synthesis and Hypothesis**

The above material provides evidence that hard wired, deeply Ncs involuntary mirroring, synchronization, emotional contagion, and Ucs convergence phenomena, especially in groups, are the norm rather than the exception. Yet dream telepathy operates mind-to-mind, at a distance, without mediation by known senses. My first speculation was that there must be finer invisible sense-organs somewhere in the human nervous systems with vestigial electrochemical receptors that register and respond electro-chemically or neuro-hormonally to certain species-specific stimuli that commonly remain unconscious, bypassing cortical-sensory elaboration altogether. It is possible that deeper, earlier forms of sustained connection or correlations at biological/undifferentiated levels, both in prehistory and when these empathic channels are re-opened, are fairly common. The representations these stimuli elicit would rarely be retrievable except by certain sensitive percipients and sometimes in psychoanalytic situations due to our interpretive access to unconscious phenomena.

The pivotal question, then, posed earlier, regarding how to define information that is transmissible mind-to-mind, directly, needs to be reframed: the real question has to do with how the human nervous system can register stimuli at a distance. What have to be identified are the tele-neural processes that receive and register such signal-patterns and the pathways through which these neural patterns reassemble in constituting a matching mental image.

Before presenting my hypothesis, however, below is a summary of preconditions and factors regarding telepathic phenomena, including situational conditions that are most likely to stimulate their occurrence.

- i. A special bond or 'rapport' has to have been established.
- ii. Telepathic reception occurs in percipients either when totally unconscious or in self-induced dreamy, inner-oriented, quiet states in which focus of *attention* and *intention* have significant impact.

- iii. There can be great specificity of detail in the registered telepathic signal/idea.
- iv. Telepathic reception is whimsical; it cannot be commanded and is subject to intrusive interference, poly-psychic fusions, and cross-referencing, as in dreams *a` deux, or a` trois!*
- v. Telepathic manifestations are particularly common in dreams due to, a) deep, unconsciousness, b) a natural regression tapping neural substrates that are highly attuned to 'others' which, c) manifest through earlier iconic forms of thought wherein 'image-is-idea'.
- vi. Registrations in dream telepathy typically reproduce and represent strong emotional states resonating to danger situations of illness, death, separation, or loss.
- vii. Experiments indicate that telepathic percipience is scrambled, decomposed into elements which are then reconfigured into convergent, new patterns undergoing many of the same primary processes as dream imagery.
- viii. This is not a transfer of 'information' but an Ucs attunement to the emotional circumstances of the 'object, manifest via imagery.
- ix. This natural, spontaneously arising manifestation of Ucs resonance in human inter-actions is facilitated and comes into sharp relief in psychoanalytic situations where a deep 'rapport' is generated, permeating the interactions, by the specialized task of interpreting the unconscious.

The following hypothesis falls under the framework of a revision (Aragno, 1997) of Freud's first topographical model of mind, updated and reconceptualized in terms of a seamless bio-semiotic continuum moving from biological, non-conscious, automatic/organic modes of reaction to responses that are increasingly accommodated and mediated via semiotic means (Aragno 2008). This somatopsychic continuum (Ncs, Ucs, Pcs, Cs) recapitulated microgenetically in clinical processes of working through, verbalization, and especially dream interpretation, may be

correlated with the neurobiological substrate of different levels of consciousness and degrees of awareness. Originating in, and heavily tied to the ability to cognize feelings, points along this continuum correspond to different modes of registering stimuli, different ways of 'knowing' expressed through different levels of awareness and different modes of interacting, each increasingly inclusive of, and mediated by, neocortical input and feedback.

The recognition by modern neuroscience of the importance of feelings and emotions underpinning consciousness and cognition opens a new frontier in the study of telepathy. It takes us back to our prehistory tracing a speculative evolutionary trajectory in changing organizations of interrelated neuro-physiological systems, each correlated with different modes of experiencing and interacting with environment and others. In the 'Feeling of what Happens' tracing core, proto, extended, and autobiographical "selves," Damasio's (1999) model exposes these evolutionary progressions underpinning anatomical additions to the architecture and circuitry of the human nervous system and brain to accommodate increasingly complex sensorimotor, representational, and semiotic capabilities.

Core consciousness (Ncs) depends most critically on evolutionarily older (diencephalic) brain regions located deep at the brainstem midline and limbic structures. Second and tertiary order prefrontal processes remain anchored in these ancient nuclei regulating vital physiological functions connected to the autonomic nervous systems. Even a non expert in paleoneurology may infer from our tiered neuroanatomy how later cortices associated with language, sensorimotor skills, foresight, interpretive and abstract cognition, layered around core structures producing a synergistic system of bottom-up, top-down, looped circuitry. This generates an epigenetic hierarchical organization subject to regression in which earlier modes though fallen into disuse and superseded by newer, more expedient functional forms, continue to operate subliminally.

We know this first hand thanks to the great MRI of psychoanalysis the dream, which, as Freud (1900) foresaw, provides a privileged view and powerful inroad into what lies on the “boundary” between body and mind. Considered a ‘topographical’ regression to an earlier pictographic “form of thought,” in a revised model of mind this formal regression returns us to the somatosensory image, toward the *biological* end of the bio-semiotic continuum, where iconic representations emanate from neural patterns that directly express their meanings. At the nodal point of the dream (as in the Prehistoric *and* telepathic image) lie specific core “ideas” around which pivot all related meanings spun out in the narrative. These Ucs ideas are *felt*, unmediated by semiotic codes, and associated with ancient neural structures that process and represent emotion.

Imagine sedimentations of layer upon layer of microgenetic stages in the evolution of neural pathways looping from internal and visceral signals to brain and back, creating multiple streams of bio-semiotic mental activity in different organizations of experience. The least differentiated of these would encompass powerful non-verbal connections with others. We may assume a whole nested hierarchy of such levels of awareness and modes of interacting with the object, from non-conscious and undifferentiated, to increasingly semiotically mediated currencies of interaction. Despite having been superseded by Cs. linguistic mediation, earlier representational modes are still operating and accessible in certain situations.

In a timescale of millions of years of evolution, we may have to reach far back in our ancestral inheritance from early hominid or even vertebrate existence to find the roots of telepathy, to stages prior to the elaboration of prefrontal cortices when vestigial brainstem electrochemical or neuro-hormonal activators, perhaps, visceral autonomic receptors were primary registers for automatic reactions. We inherit certain stable unmediated reflexes and instinctual reaction. These “autopilot” circuits (Wilson1999,122) of autonomic systems are shorter and simpler than those of higher cerebral centers and bypass differentiated cortical specialization altogether. Brain

expansion evolved to accommodate increasingly elaborate uses of pre-existing structures, manifesting innate tendencies of a social species given to representation and abstraction, especially, and needing to communicate. Presumably the nervous system also underwent dramatic changes in self- and other-awareness as elaborations in specialized cortical areas grew to fulfill and feedback new representational and coordinating functions.

The dynamics of human evolution are rooted in this interplay of social and biological change (Wilson, 1999, Deacon, 1997): Primary bonds, affiliation to a group, and communication, were essential for survival. The cluster of attachment behaviors; emotional signals and contagion; empathic attunement; gestural indices, and probably some vocal signs, undergirded by the precise mimicry afforded by 'mirror neurons' (Gallese, 2001,2003, 2007) and the split second reactions triggered by autonomic receptors (Deacon 1997, Damasio,1999), are all hardwired. This suggests that at all levels of the hierarchy of modes of interacting, communication remains powerfully anchored in the neurophysiological underpinnings of emotional signals and empathic attunement. So strong is our affiliative strain and so widespread its impact that most organic systems are affected by the quality and nature of primary social attachments. Neurobiological correlates demonstrate that we remain connected in ways and at levels that we are completely unaware of. Moreover, psychoanalysis reveals that these levels of relationship are *internalized* wholesale.

Such deeply unconscious processing structures are in phylogenetically older regions of the reticular formation at the midline of the brainstem, going from brainstem to somatosensory cingulate cortices. They are endowed with considerable overlap of functions regulating attention, and processes that represent feelings, bodily and visceral states, the sense of knowing/recognition, and are critical in processing emotions. In this aggregate of brainstem nuclei the periaqueductal gray matter (PAG) acting via motor nuclei of the reticular formation and such cranial nerves as the vagus is a major coordinator of emotion. The brainstem connects the

spinal cord to cerebral hemispheres relaying signals to the central nervous system. It receives input from the entire body and viscera serving as conduit in a critical two way pathway from body to brain and looping back.

Stressing that there has to be the capacity to complete neural patterns for something-to-be-known, Damasio (1999) delivers an astonishing piece of information: when a non-conscious patient in a vegetative state is presented with pictures of familiar faces, neuro-imaging scans register brain activation much as in a normal person (166). The conclusion Damasio draws from this is; “the power to make neural patterns for something-to-be-known is preserved even when consciousness is no longer being made” (166). May we infer from this that ancient circuitry responds by direct induction via chemo-receptors and/or neurohormonal motor-visceral signals, bypassing higher consciousness cortices altogether? And that this direct induction generates correlative neural patterns (internal representations) that recognize or mirror emotional dynamics?

Might we then conjecture that points of origin for telepathic reception are; a) aspects of the autonomic nervous system, perhaps the Enteric, the ‘brain in the gut,’ seat of intuitive hunches, furnished with as many neurons as the spinal cord, several neurotransmitters, and connected to the brain by the vagus nerve; and b) that *underlying* the ‘mirror neuron circuitry’ activated in learning and strong attachments, *earlier* neural strata equipping us with emotional resonance and precise mimicry remain attuned to the *internalized* ‘object’s emotional states unconsciously via emotional correlations. The telepathic dream image would thus be a re-creation of an emotional state echoing what is being experienced by the ‘other’ from within a strong bond that has tapped neural underpinnings associated with primal attachments. These are organized at undifferentiated, unmediated, pre-verbal levels generating neural patterns through imagery that *directly* presents correlations of emotional resonance. We are speaking of influence *not* signal *per se*, of frequency *not* transmission, of pattern-correlation *as* information.

I suggest that the ‘image,’ first dreamt, with its metaphorical structure (Aragno 2009) straddling body and mind, and subsequently inscribed onto the walls of caves, is the neural pattern of that first “felt/sign” containing perceptual, emotional, and ideational components, *all in one*. The image *precedes* mediated cognition but also carries within it the ‘idea’ as ‘form.’ And it is the *idea* within the feelings that is *re-*recognized and given shape in the telepathic dream. The specificity of detail conforms to the degree and kind of empathic attunement obtained, favoring the dreamer’s sharpest sensory modality.

In *Forms of Knowledge*, (Aragno 2008a) I named this iconic epistemological strata “morphic-sentience” in correspondence with Sheldrake’s (1988, 1991) biological “morphic resonance” and “morphogenetic fields,” concepts invoked to explain how the laws of nature involving patterns of learning, regeneration, and habit, are transmitted and handed down. Living organisms are viewed as holistic systems at all levels of complexity, organized by species-specific morphogenetic fields containing inherent memory given by “morphic resonance” which is based on *similarity*, the effect of like-on-like. In the same above-mentioned work, I also proposed the concept of “semantic fields,” defined as ‘regions of influence created by referential patterns in discourse’ to understand phenomena that have been brought to light via psychoanalytic processes and inquiry into the “Unconscious”. Given the interpretive purview of psychoanalysis which extends well beyond linguistic indexical signification to organic-biological phenomena, I would view these fields as *bio-semiotic* regions.

From a psychoanalytic perspective, the relevant dimensions are intrapsychic undifferentiatedness, differentiation, and *de*-differentiation, the last of which may be the uncontrolled regression of dreams or psychosis, or a self-induced, intentional attentional-stance adopted to enter-into the others’ experience. In undifferentiated and *de*-differentiated states associated with analytic transference regressions or merger states the object’s internal representation probably impacts at a neural basis, possibly tapping ancient circuitry referred to above.



Despite enormous advances in knowledge about brain functioning neuroscience falls short of uncovering the mystery of how experience becomes “image”, the leap from brain to mind, curiously bypassing Freud’s theory of dreams. Writing on the co-evolution of language and brain, Deacon (1997) an expert in biological anthropology hypothesizes that “ideas” changed the brain (322). Yet the longstanding conviction that language is responsible for thought is put into question when Read (1955) writing about art, Freud (1900) writing about dreams, and Piaget (1969) writing about genetic epistemology, all find the origins of ‘ideas’ in the body’s somatosensory ‘image’ quite possibly the first representational link from mind to mind. Clinical psychoanalysis confirms this microgenetic progression of stages toward conscious awareness evolving from Ncs repetition-in-actions, through Ucs representation in dreams, Pcs fragments of verbal representation, and finally, after emotional working-through and linguistic articulation in discourse, full Cs awareness.

### **Summary and Conclusion**

The search for the roots of dream telepathy leads backward in this process, retracing stages of micro-evolutionary development through millennia of vertebrate and hominid evolution. Supported by contemporary neurobiology and paleoneurology there emerges an epigenetic hierarchy of functional organizations with corresponding modes of interaction creating a continuum from undifferentiated Ncs biological modes, to increasingly semiotically mediated ones. Undergirded by ancient circuitry in specific regions tied to primal attachments, and subject, perhaps, to direct electro-chemical or neuro-hormonal autonomic viscera induction, this archeology of epigenetic organizations yields a plausible hypothesis for unconscious emotional resonance, as represented in dream telepathy, in which the strength of an internalized ‘bond’ is catalytic. Transference recapitulation of pre-verbal organization in a situation designed to interpret unconscious manifestations confirms why

psychoanalytic discourse brings into sharp relief what may actually be a fairly common phenomenon (Freud 1933, 56).

This paper is written honoring the ‘conciliatory’ spirit of interdisciplinarity and unification of knowledge as conceived and advocated by O.E Wilson (1998). The correspondence of quantum principles of non-locality and entanglement with those of intersystemic dependence consistent with living biological processes provides the fundamentals for such a unifying paradigm. Living organisms are viewed as parts to a whole (universe) in which interpenetrative phenomena at multiple levels and diverse forms of interface, interaction, interdependence, and interference, are constantly occurring. The quantum principle of non-locality stating that once having interacted quantum entities remain mutually entangled here meets a functional process of the human mind as part of the natural world, a product of evolution, subject to its physical laws.

Within the framework of a participatory, entangled worldview, the human mind grew from an interpenetrative epistemology, deeply attuned, undifferentiated, and subject to the influence of others, to epistemologies founded on the interpolation of signs and symbols, in a more bounded mind, given to representing its own experience. The somatosensory ‘image’ of the dream, embedded in its emotional soil, prone to condensation and displacement, appears as the first conduit of meaning, the forerunner of all subsequent semiotic devices increasingly detached from the senses. Telepathic dream elements appearing in the regressive condition of deep sleep reveal our ancestral interpersonal porousness and profound engagement with others, tapping ancient circuitry activated especially in danger-situations of imminent separation and loss. We have, in this exploration, touched the biological roots of the psyche; for, as Freud (1937) put it, “... in the psychical field, the biological field does in fact play the part of the underlying bedrock (252).

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