WHOLISTIC HEALING PUBLICATIONS

THE INTERNATIONAL JOURNAL IJHC OF HEALING AND CARING

WHOLISTIC HEALING WHP PUBLICATIONS

WHOLISTIC HEALING WHR RESEARCH

January, 2011 **Volume 11, No. 1**

Post-Darwinian Psychology: Does Mind Really Matter?

Michael M. DelMonte, MSc, MPsychSc, PhD

Abstract

The perceived causal relationship between body and mind is central to various psychotherapy theories. This paper speculates on the evolutionary aspect of this relationship since the "Big Bang", as well as on causality and on how these issues are relevant to psychotherapy practice, especially in the Zeitgeist of a growing confidence in genetics, biochemistry and, by implication, in evolutionary psychology. Our long evolutionary journey out of inorganic matter poses many challenging questions. It is contended that Darwinian Theory can only offer a partial explanation of human behavior and psychopathology, and that issues other than distal etiological (i.e., bio-evolutionary) factors, namely proximate, existential, systemic, teleological and even cosmic considerations, must also inform our theories and thus the practice of psychotherapy. This contention is discussed in a very broad context by drawing on geo-physical, psychodynamic, constructivist, systemic, Western philosophical and Eastern (e.g., Buddhist) considerations.

In this paper I begin by addressing our quest for understanding and meaning. I place this investigation in a spatio-temporal context. Then I go on to compare proximate (or lifetime) temporal factors with distal (or evolutionary) temporal factors. This sets the stage for addressing the mind/matter debate in an evolutionary context, in which the issue of causality is central. Finally, the question of causality – both linear (dualistic) and circular (systemic) – is discussed in terms of its implications for psychotherapy practice.

Keywords: Darwin; Wallace; evolutionary psychiatry; evolutionary psychology; evolutionary theory; linear causality; circular causality; mind; matter; psychotherapy.

Methods of inquiry

How do we know what we purport to know? Scientists typically endeavor to uncover "the truth" by making nature reveal her “hidden” secrets to us. This "internalist" method of inquiry (see Langs & Badalamenti, 1996) in which we scientifically dissect the material objects of our world so that we come to understand them - be they mineral, vegetable or human matter - has its undoubted merits, especially when dealing with the objective world. However, this approach also has its limitations, particularly when it comes to understanding consciousness and the meaning of human subjective experience.

Distinctions have thus been made between the above scientific, or logical positivist (Comte, 1855) method of inquiry typical of the natural sciences on the one hand, and those of the human sciences on the other (Oatley, 1992; Brewin & Andrews, 1997; DelMonte, 1997). Whereas the natural sciences deal with the (objective) mechanistic and non-intentional domain (i.e., the domain of facts and Logos), the human sciences are largely concerned with (subjective) goals, plans and intentions (Brewin & Andrews, 1997). But the sciences addressing consciousness do more than that. They also address meaning (and the realm of Mythos). The search for meaning is a uniquely human endeavor that separates us from other forms of evolved life on our planet.

Comprehensive meaning is ultimately holistic and cannot simply be deduced reductively from just one perspective, for instance, solely from a single domain such as biology. Meaning is more likely to be contextual and systemic. Systems Theory (von Bertalanffy, 1968) and Dynamic Systems Theory (Clark, 1997; Gaussen, 2001) go beyond simple "internalism" to embrace "externalism", such as context, and thus also take the extra-psychic and the inter-psychic domains into consideration when attempting to arrive at understandings of the intra-psychic human condition. Ideally, a comprehensive contextual approach should endeavor to include all major domains of investigation in attempting to comprehend our experiences. Thus, it follows that this would include the inorganic, biological, psychological, social and, for some, the spiritual and cosmic domains.

Spatial and temporal factors

A purely contextual approach is, by definition, focused on observations made in the context of objectively measurable space. It is plausible to argue that temporal factors should also figure in any attempt to come to grips with causality. It has been postulated (Brown, 2002) that, with contextualism, causation should be seen as a relational process that can exist in the dimensions of both space and time. The recent upsurge of interest in evolutionary psychopathology is a welcomed attempt to expand chronologically the scope of our investigations into past influences on psychological disorders encountered today (Stevens & Price, 1996; Gilbert, 1998).

This evolutionary approach, which looks to the past to explain the present, is another valid aspect of contextual etiology. Thus we can discern two major branches of etiology – one concerned with proximate (largely developmental) causes within individual organisms and the other with distal (evolutionary) causes. Proximate causes can be understood as ontogenetic or focused on current physical factors, and distal causes as phylogenetic and evolutionary. Distal causes have been described as “ultimate” causes (McGuire & Troisi, 1998; Abed, 1998 – see later). Ontogeny is the development of an individual throughout his or her lifespan, from conception to death. It implies an interaction between a given genotype and its changing environment, to produce an unfolding phenotype. Most psychological theorizing, from behaviorism through cognitive therapy on to psychoanalysis, emphasizes the importance of proximate etiological factors in the ontogenetic, or life cycle, sense. Here psychopathology is seen to be due to life-events impacting on a developing phenotype with a particular genotype.

Whilst most theorists accept the importance of such proximate, ontogenetic causes to psychopathology, others have argued that evolutionary, distal factors should not be overlooked (Stevens & Price, 1996; Gilbert, 1998a; Nesse, 1998). Darwinian Theory is applied to argue that, phylogenetically, many psychiatric and psychological disorders can be explained as evolving in past (often harsher) environments, which at the time afforded them a selective advantage in certain contexts. For instance, anxieties, phobias and paranoia appeared where serious conflict and danger existed.

Research into, and direct observation of, animal behavior is used to add a supportive ethological underpinning to evolutionary theories (Dixon, 1998). Many forms of psychopathology have been presented and analyzed from a phylogenetic and/or ethological perspective. Thus current maladaptive behaviors, attitudes and disorders may represent the activation in current time of 'paleo-ethological' adaptive strategies from the distant past (Gilbert, 1998a). Many detailed examples have been given, including depression (Price & Gardner, 1995; Gilbert, 1995; McGuire & Troisi, 1998; Nesse, 1998 Thwaites & Dagnan, 2004; Carey, 2005); manic-depressive or bipolar mood disorders (Wilson, 1998; Price, 1998); eating disorders (Abed, 1998; Troop et al., 2003; Faer, et al., 2005), as well as a whole range of emotional states and disorders including shame, guilt, anxiety, panic, anger, social phobia, agoraphobia, hypochondriasis, acrophobia, paranoia, schizoid personality, dependent personality, and sado-masochism, among others (Stevens & Price, 1996; Gilbert,1997; Dixon, 1998; Nesse, 1998). Cognitive biases, cognitive distortions, social manipulation and psychological defenses have also been described and analyzed from the perspective of evolutionary bio-psychology, whereby their evolutionary selective usefulness is highlighted (Dixon, 1998; Gilbert, 1998b; Gardner, 1998). For example, a depressive and submissive presentation may not only fend off further attack when one feels socially demoted or defeated, but may also attract rehabilitative social support.

Moreover, the evolutionary perspective is not just confined to explaining current psychopathology; it is likewise used to describe the adaptive advantages of social co-operation and communication (Bailey & Wood, 1998; Gardner, 1998; Price, 1998; Gilbert, 1998b; Dixon, 1998; Cavalli-Sforza, 2000). For example, submissive behavior can be seen as prompted by fear of harm to oneself, or by a concern for emotional harm to others (O'Connor, et al, 2000). In the context of group-living, reciprocal altruism is proposed as a mechanism to facilitate survival. Inequity guilt, following one's own relative success, could trigger the kind of submissive behavior that wards off envious attacks.

In some cases, however, contradictory theories have been proposed. For example, evolutionary theory has been used to explain the eating disorder anorexia among women from quite opposing perspectives, namely as a sign of defeatist or submissive behavior on the one hand (Troop et al., 2003) or as vigorous, youthful female competition for mates and status on the other, where thinness is often perceived as a sign of nubile fertility (Faer et al., 2003).

Darwinian Theory has also been invoked to account for the emergence of conscious cognition, in that the evolution of consciousness in the direction of free will, as seen in humans, may have selective value (Lindahl, 1997; Arhem & Liljenstrom, 1997). Phylogenetic "learning" of adaptive mechanisms in the physical world may lead to the type of knowledge that organisms use in unconscious cognitive processes as found in physical homeostasis, sleep, immune responses, body maintenance and repair. It probably has accumulated over numerous generations via natural selection.

Phylogenetic learning is slow but relatively accurate for promoting survival in terms of environmental fit. On the other hand, ontogenetic learning, or developmental learning, is less accurate but relatively fast. Ontogenetic learning delivers the more conscious type of knowledge

gathered over the lifetime of an organism. Phylogenetic knowledge can be seen as based on Darwinian natural selection. This a priori knowledge dominates over the a posteriori knowledge acquired during our life cycles, and the whole organism is sculptured by phylogenetic learning. Popper (1990) claimed that 99% of our knowledge is a priori. It is all unconscious – and so is most of our a posteriori knowledge. Only a small part of our ontogenetically acquired a posteriori knowledge is conscious (Arhem & Liljenstrom, 1997). Thus, conscious knowledge, although impressive, is still only a very small fraction of total knowledge. For Schwartz (2000), only between 1% and 5% of mental functioning is conscious.

Darwinian Theory has had great intellectual appeal over the years and has fed the imagination of many psychotherapists. For example, Sigmund Freud's "drive theory" and "seduction hypothesis", as well as John Bowlby's work on attachment behavior, were inspired by Darwinian Theory (Mitchell, 1998). So was Freud's notion of "archaic vestiges" and Carl Jung's views on "archetypes" (see later). Socio-biology was also spawned in the Darwinian cradle. It can also safely be argued that B.F. Skinner's behavior theory is also in the spectrum of evolutionary theory. His book, *Beyond Freedom and Dignity*, argues that between genetic determination and environmental conditioning there is no real free will (Skinner, 1971).

We can also trace the impact of Darwinian Theory on psychological discourse and clinical practice (Plomin, 2001) from its birthplace in class-stratified, mercantile, and worldwide colonial 19th century Great Britain. From here it spread, especially to the (now) English-speaking parts of the world. Its explanatory power still is appealing. The view of the "survival of the fittest" was consistent with Western colonial domination and enthusiastically embraced by Nazi apologists. Darwinian Theory grew to the point that phylogenetic (i.e., distal) factors are now being described as the "ultimate" cause of human behavior and pathology (McGuire & Troisi, 1998; Abed, 1998). It is still commonly stated that phylogeny explains ontogeny.

Is this a step too far? Can we really equate "ultimate" causes with natural selective forces operating in the past? I prefer the term "distal causes" to "ultimate causes". Darwinian Theory is increasingly being invoked to account for all human behavior. Richard Dawkins (2006) stated that the "natural selection" of genes "explains the whole of life" (p.116). This is an "inward" (genetic) to an "outward" (whole of life) explanation.

Like Birtchnell (1995), I would also prefer to exercise some caution when applying animal models to humans. Moreover, I would like to go further and question the hypothesis that evolutionary forces, in the strict Darwinian sense, are unquestionably the "ultimate" causes of all of our behavior. In brief, I am questioning the view that "ultimate causes" are solely bio-etiological. Why exclude teleological considerations? According to the Concise Oxford Dictionary "ultimate" implies "last, final, beyond which no other (cause) exists or is possible". Ultimate causes (i.e., Aristotelian "Causes Finales") cannot exclude teleology, which according to the Concise Oxford Dictionary is the "doctrine of final causes, a view that developments are due to the purpose or design that is served by them". This view is more consistent with much of mainland European philosophy. In contrast to the British, continental European philosophers tended to see evolution in Platonic idealist terms, rather than from the British "adaptationist" perspective (Kohn, 2004). This distinction later will be addressed later.

Is evolution blind?

Clearly the phenomenon of evolution is not at all being disputed here, but only its "causes". However, the abundance of geological, anatomical, genetic and fossil evidence in favour of evolution does not necessarily imply that Darwinian Theory can account for all of it.

Is the evolution of life really “blind” as Dawkins (1976) has contended – heading nowhere in particular? Why has inorganic matter (the atomic elements) also evolved with increasing complexity in solar “furnaces” after the “Big Bang”? Is it an innocent coincidence that matter, like life, has also evolved in complexity and sophistication? Is all of this heading nowhere?

Evolution is multi-faceted. It is not just confined to life forms such as plants and animals, but also, prior to that, to physical matter and more recently to the realm of ideas. This “mental” evolution had to be preceded by the evolution of consciousness itself, and then by the production, selective survival and spread of useful mental concepts (called “memes” by Dawkins). There also appear to be cultural, ethical, moral and spiritual components to evolution. Thus evolution can take place at various levels, from the inorganic concrete level to higher levels of abstraction.

Let us consider first causes. Why does anything exist at all?

The primacy of matter?

With the “Big-Bang” circa 13.7 billion years ago, four-dimensional time and space as we know them, supposedly started from point zero (Gribbin, 1999). Expanding matter also came into being ex-nihilo. With this Big-Bang (there may have been other ones) our universe began to evolve in complexity from (almost?) nothing, and, following The Laws of Nature (Physics, Chemistry, Mathematics, etc.), it began to take physical shape and form – including our galaxy with its solar systems with their suns, planets and moons, and, with time, forms of life and even consciousness capable of reflecting upon the Big Bang itself.

When we talk about the origin of life we normally have in mind its biological beginnings and manifestations on earth, although it has also been argued that primitive forms of life could have been “seeded” by meteorites or comets falling onto earth from extra-terrestrial sources. This theory is known as “panspermia” (Wickrama-Singh, 2001).

The public position held by many, if not most, scientists (e.g., Maynard Smith, 1966; Reville, 1996) is that life eventually emerged on earth as the result of chemical evolution, meaning, inorganic chemicals increased in complexity and “somehow” became organic. There is little or no disagreement that hydrogen, the first and simplest of elements, evolved into more complex elements via nuclear fusion. However, it is further argued that certain carbon compounds essential to life arose "by chance", and gradually developed or evolved into more complex chemicals capable of self-replication. But why should chemicals evolve in complexity by chance? From where did the laws of chemistry originate?

Just how (and why) the simpler inorganic elements evolved into more complex atoms and molecules, and then how ordinary inorganic matter became animated by a “life-force” that distinguishes living matter from inanimate chemical matter is unknown. Likewise, the question as to why this vital animation should have occurred at all leaves scientists guessing.

It can be argued that the biological manifestations of life as we know them could have evolved only under certain fairly narrowly defined physical, chemical and astronomical conditions (Matthews, 2005; Fleury, 2006; Reville, 2006; Bogdanov & Bogdanov, 2010). In other words, many complex laws of physics operated within extremely narrow parameters in order to produce and sustain our universe with its complex living matter. Even minute deviations in any one of these cosmic “fundamental constants” would have spelt disaster in the tentative and delicate evolution of our universe as a “home” to evolving life (Bogdanov & Bogdanov, 2010). The various physical

conditions (temperature, acidity, gravity, electromagnetic field, electrostatic force, the position of the moon, etc.) had to be so precise that one is left wondering if their co-existence could be "merely coincidental". Even if the relationship were slightly different between some of the most basic physical conditions, like the ratio of the force of gravity to the force of electromagnetism, stars would either burn out too quickly or to burn too dimly, so that in neither case could life as we know it be supported.

The observation that our universe in general, and the earth in particular, appear to be so well suited and so finely tuned to support the emergence and sustenance of life has been called the "anthropic principle" (Barrow and Tipler, 1988; Matthews, 2005). It can be argued that the likelihood of all of these prerequisites coming together simply "by chance", and then going on to produce life "blindly", is statistically highly improbable (Bogdanov & Bogdanov, 2010). Fred Hoyle (1983), a famous mathematician and cosmologist, suggests that the likelihood of life evolving just by chance would be the same as anticipating that a hurricane could rearrange a junkyard into a functioning airplane. While all of this is untestable conjecture, it may also be the case that the earth's manifestations of life represent just one range of environmental life-promoting and sustaining fit out of a wider potential spectrum existing elsewhere in our or other universes.

If the origin of life were not problematic enough, how does Darwinian Theory account for the origin of genes, meiosis, cells, sexuality, photosynthesis and, ultimately, consciousness? For example, cells are chemically very complex. How did lifeless chemicals assemble themselves "spontaneously" into highly organized and functional living units – capable of sexual and other behaviors? Moreover, how can non-conscious organic matter become conscious? From where did consciousness come or how was it actually "manufactured" by the selective forces of evolution? Darwinian Theory can indeed help explain selective forces operating on existing life, as in producing darker skins in humans living near the equator, but cannot readily account for the emergence of life itself, nor for genes or consciousness.

From rocks to philosophers: the problem of entropy

Evolutionary complexification operates against entropy, which is the general tendency towards disorder, according to the Second Law of Thermo-dynamics. Organisms are described as "open systems" which can use an external source of energy, such as that of the sun, to decrease their own entropy. Mind is seen by many scientists as only a secondary epi-phenomenon, spontaneously emergent out of evolving biological matter as expressed by our operative brains (Pinker, 1994, 1997, 2002). In other words, for many neurobiologists mind is the innocent by-product of the brain in action - which in turn was produced fortuitously against the forces of entropy, which is a general tendency of all closed systems towards breakdown, death and decay (Thanatos). So with this view, life (Eros) arose casually as a purely chemical and biological phenomenon; and subsequently mind somehow became immanent from complex biological matter in just as mysterious a manner as life previously came to animate inorganic matter.

We can summarize the dominant view on the origins of life as follows: Despite the force of entropy, inorganic matter became more complex via nuclear fusion, and somehow evolved into simple living matter (vitalization) capable of self-reproduction (sexual behavior). In other words, all of the following steps evolved spontaneously:

- Genes somehow assembled themselves;
- The genetic material of one organism somehow began to undergo the complex process of meiosis to prepare sperm and ova for fusion with the gametes of another member of the same species of organism;
- Simple living matter somehow evolved into more complex forms;

- Consciousness (mentalization) appeared at some point;
- Culminating in humans capable of self-reflection, inquiry into meaning, philosophizing and increasingly exercising control over biological evolution via genetic engineering.

But why has all this been unfolding, and why does evolution appear mainly to move in one direction, namely that of increased complexity and not also “backwards” towards increased simplicity - given that some simple forms of life are highly fecund and “successful” in the Darwinian sense? Is there a problem with this “Mind emergent from Matter” model?

The primacy of mind?

Some authors, especially Pierre Teilhard de Chardin (1965), and Sri Aurobindo (1973) and, in his own way, Carl Jung (1958 – see later), have envisaged the above relationship the other way around: "universal mind" or “unmanifest mind” (akin to the “collective unconscious proposed by Jung) exists independently of matter. According to this view, mind is transcendent and shapes evolution (de Chardin). That is, the evolutionary process and the resultant biological diversity and sophistication reflect “universal mind.” In other words, life evolved to adapt to mind.

From the above perspective, unmanifest universal or “transcendental mind” is part of a greater metaphysical reality, and is said to express itself in the evolution of life. Mind becomes manifest to varying degrees of awareness, in embodied consciousness and in "personal mind”. The latter, with its individual consciousness, is also referred to as the psyche. This is another way of saying that matter is "bathed" in universal (or transpersonal) mind - rather than mind being solely confined to living (brain) matter. This is a “top – down” or “collective to personal” explanation consistent with Jungian psychology, and with the cosmic causality of the ancient Greeks who postulated a form of divine design to the Cosmos.

With this metaphysical model one can argue that structural and neurological differences between units of evolved and organized matter, which we identify as individual organisms, reflect their level of ability to access aspects of this “universal” or transcendent mind. Just as radios and transmitters do not actually create organized sound but rather, when tuned into it, can capture and relay it, likewise organisms may differ neurologically in their ability to tune into the "mental sea" in which they are bathed, to relay and express various aspects of it. The transmissions from the universal mind may include art, music, mathematical formulae, philosophical concepts such as eternity and infinity, and all of the other awarenesses that have manifested into the world as we experience it. Bio-neurological evolution from this perspective is thus characterized by increases in attunement with both the physical environment and the “mental sea” (largely unconscious) in which life is evolving. With this model, humans are seen to achieve greater degrees of complexity in this attunement compared with simpler life forms.

Another way of expressing the above is to consider “unmanifest mind” as an important part of our non-physical environment. Adaptation to this mental environment via the evolution of consciousness would be advantageous. Developing the neurological sophistication to do so would thus be beneficial. Hence, the wide range of psycho-neurological complexities in species that we witness today could be explained, in part, as an evolutionary adaptation to the unmanifest mental environment, gradually rendering it more conscious. Whereas simpler forms of life are primarily adapted to their physical niches, social animals in general, and humans in particular, also show evidence of adaptation to the mental, social domains. For humans, there are the additional domains of aesthetics and spirituality. Once we humans evolved the prerequisite neurological hardware we were able to “tune into” the truths of mathematics, physics, chemistry, music and so forth. Our sophisticated sense of aesthetics and morality sets us apart from other forms of life on

earth, but we may not be the only the only forms of life in our universe to have achieved this.

From nature to culture: an incredible journey

When we look at life solely through the lenses of mainstream evolutionary theory, then diverse cultural phenomena such as music, painting, philosophy, poetry, literature, mathematics, architecture, etc., are just envisaged as by-products of the complex workings of human brains, which purportedly developed via “blind evolution” (Dawkins, 1976). Put differently, human life and all its cultural manifestations are an "accident" of bio-chemical evolution and have no a priori meaning per se. With this radical materialist model there is an implied primacy of matter over mind. Mind is matter-made - with our "man-made" mind being its ultimate expression – not penultimate to any transpersonal reality. Moreover, from Dawkins’s radical perspective, spiritual values are just social meme-manifestations, and like all other cultural memes, are purely functional and thus devoid of any intrinsic value per se (Hogan, 2008).

Theories of biological evolution are based on the environmental selection of the fittest genes. Such selection is not seen to be guided by any ulterior purpose - spiritual or otherwise. Dawkins's (1976) view of the "selfish gene" popularizes this approach. Within this theory, genes survive only for the sake of survival – via sexual and natural selection. But why do “selfish” genes “need” or “want” to survive? Moreover, it is not just individual genes but whole genotypes and phenotypes (complex sub-systems) which are selected or perish.

Within this view, the evolution of fitness and survival at the levels of a family or social group can also be subjected to selective pressure (O’Connor, et al, 2000). The behavior of a complex system cannot be explained by only analyzing its parts, and certainly not by reducing one’s focus to just one component such as genes. When a system reaches a new point of complexity via evolution, unpredicted novel behaviors appear to emerge spontaneously, which are greater in sophistication than that shown heretofore by the sum of its parts. Could it be that rather than “selfish genes” using bodies to reproduce themselves, organisms use genes to this end (Noble, 2006)?

Dawkins’s selfish-gene reductionism is based on a conceptual divorce between the material manifestations of life and the realms of consciousness that lie beyond the level of physical appearances. When one examines the evolved complexity and sophistication of animal and human behavior, including altruism, respect, compassion and affection, the world's cultural achievements and the more profound archetypal symbolization associated with the major religions, and the wisdom-traditions and philosophies of the world, then it is very parsimonious indeed to put all of this down to some unprompted evolutionary by-product of “selfish genes” as the advocates of biological primacy postulate. Moreover, given that chimpanzees and humans share about 98% of their genetic material, I find it extraordinary indeed that such vast cultural differences between them need to be explained by such small genetic differences.

Even at the animal level, especially with social insects, birds and mammals, the detailed intricacies of social behavior, of metamorphosis and of very complex polymorphous life cycles, as well as of behaviors such as mimicry, deception, inter-special exploitation, inter-special partnership, nurturing, complex mating rituals, and team-work found in hunting packs are often suspiciously more complex and purposeful than can be comfortably accounted for by random mutations, natural selection, genetic founder effects and genetic drift. There appears to be an additional missing factor. For example, how did some birds learn to eat morsels of food from the teeth of crocodiles while standing in their open mouths? How did monkeys who eat poisonous leaves learn to eat certain clays and charcoal as antidotes? More spectacularly, how did monkeys learn to bite poisonous insects in order to provoke them to release poisonous toxins for rubbing into their fur to

kill off parasites? How did “forest witch” plants “learn” to lure and trap insects inside their slippery receptacles, which two days later become less slippery, thus allowing the insects to crawl out covered in pollen? Finally, how did birds learn to bring insecticidal plants into their insect-invested nests full of chicks?

Did evolving consciousness rather than “blind evolution” play the decisive role in the evolution of these behaviors? The use by monkeys, of plants, fungi and certain clay minerals to improve their health, fight disease, ward off parasitic infestations and achieve drug induced altered states of consciousness is quite remarkable, as are the various manifestations of primitive culture and of social co-operation among animals (Lestel, 2003; de Waal, 2006).

Can Darwinian selection really account for all of this complexity? Parsimony does not guarantee accuracy. Simply throwing in the "solution" of the passage of time does not solve the dilemma of the statistical improbability of all of this complexity occurring by chance. Who really believes that if monkeys had typewriters and interminable time, they would ever accidentally produce anything resembling the works of Shakespeare, Proust, Dante or Goethe? Moreover, why should they even bother trying, given that such exhaustive and complex productions are unlikely to yield more substantial sexual selective advantage than, say, brute force? Rape may make reproductive (selfish gene) sense but may not yield ethical peace of mind. Why should this matter so much if we are no more than elaborate non-moral packages surrounding “selfish-genes”? Can it really be argued that artistic ability only evolved because it offers a selective advantage through more offspring? Why does such symbolization exist so extensively in humans? More to the point, given that many, if not most, lower forms of life, such as bacteria and ants, have high selective fitness through reproduction with adaptive mutations, why should humans have evolved at all? Ants with their tiny brains nevertheless evolved complex social structures and communicate via sounds, gestures, “dances” and chemical messages. They are so successful that they account for 10% of the total animal biomass of the world (Passera, 2006).

With the current trend towards bio-medical materialism, with its over-reliance on bio-technology and pharmacotherapy, one is at risk of losing sight of the intentional and spiritual aspects of what it is to be human. The Darwinian view of evolution was given earlier to highlight the contention that those hypotheses which focus primarily on the biological domain - through the lenses of radical materialism of social Darwinism and socio-biology - although interesting, are over-simplifying the enormous complexities involved. At best they are only partial explanations, as is the newly emerging discourse labeled “evolutionary psychiatry”, which is an attempt to explain reductively most psychiatric disorders, primarily from the perspective of Darwinian Theory (Stevens & Price, 1996).

Limits to Darwinian theory

Darwin’s theory of natural selection was based on slow and gradual changes over long periods of time, in which intermediate steps in the evolutionary process of an organism had to have survival value. Naturally occurring mutations of genes and recombination meiosis produced the genetic variability upon which selection was based (Darlington, 1966; Carter, 1970). Yet the fossil evidence does not always support the view that evolution was gradual. In the past, periods of very slow evolution in life forms, not far from equilibrium, have been punctuated by periods of very rapid evolutionary change. This phenomenon is called “punctuated equilibria” (Gould, 1977, 2002).

Natural radiation, naturally occurring chemical mutagens, and copying errors have been assumed to be responsible for these genetic mutations – but there is no compelling evidence that all mutations to genes can be accounted for in this way (Carter, 1970). Chromosomes in the genes

can undergo drastic changes – namely translocations and breakages resulting in chromosomal insertions, deletions, inversions, and other alterations. There are also chromosomal non-disjunctions resulting in one or three strands rather than the normal two (Carter,1970). Such macro-level changes to the genotype may have "revolutionary" consequences, often leading to fatal changes, but potentially leading to evolutionary "leaps" if the changes they produce are adaptive.

The question is, are all mutations to genes and to chromosomes, as well as meiosis, really entirely random? Could there be a larger background – field, design or "sub-text" within the Laws of Physics and Chemistry, in the context of which mutations take place and to which genetic mutations are subjected, thereby imposing a structure and direction to evolution? What really constitutes the environment in which selection takes place? At a micro-level does it include the properties of the atomic nuclei of elements within the genes or within the cells? At a macro-level it certainly includes our proximate physical environment, other organisms, climatic conditions and our distal environment such as the sun, moon, or other elements in our world. How do we know that it does not include more, yet to be ascertained – or unascertainable – factors such as "dark matter", "dark energy" or even "universal mind"? Sun-spots, electro-magnetic and gravitational fields are other examples of physical forces which may influence and shape events.

Mathematical laws are likewise transcendent to the human condition. That is, mathematical truths exist both before and after our lifetimes and are not dependent on humans for their verity. Is there thus a sub-text, "para-text" or "supra-text" which guides evolution, gives it direction and defines the parameters of its range of expression? The Laws of Physics, Chemistry and Mathematics have governed the evolution of our universe ever since the "Big Bang" (and maybe existed prior to it), so how could the evolution of life escape their prescriptions?

Recent evidence suggests that the evolution of complex new forms of life, rather than requiring many new genes or genetic mutations, can be created by relatively small adjustments to existing genes, and that relative few changes to the DNA sequences are involved (Yoon, 2007). In other words, new species do not necessarily require new genes but rather modifications to existing ones. The developmental expression of genes is influenced systemically by master and control genes, which, in turn, are influenced by environmental, neuronal, hormonal and psychological factors. More interestingly, genetic material appears to be anticipatory. For example, fish appear to possess the genetic potential for making fingers, hands and feet - as if preparing for land usage (Yoon, 2007). In other words, major evolutionary transitions and advances were not necessarily triggered by genetic mutations so as to code for the new body-parts. Instead the right environmental conditions may have set new developmental structures in motion, via the selective expression of already existing genetic potential under the control of various genes. Hence the total environment is implicated in evolution, from a proximal mother's emotional attunement to distal cosmic realities beyond our ken. The former, mother's attunement, affects ontogeny, and the latter, cosmic reality, may guide phylogeny via universal (natural) laws and, perhaps, via what has metaphysically been referred to as "universal mind", which can be seen as the mental aspect of the universal laws.

The challenge of Wallace: teleological considerations

Alfred Russell Wallace, Charles Darwin's contemporary but largely overlooked co-proponent of evolution by natural selection, believed in some kind of "Higher Intelligence" guiding the more important aspects of evolution – such as the origin of life on earth, the emergence of consciousness, and the development of civilization. These aspects of evolution implied major acknowledgments of the involvement of spiritual factors in evolution (Wallace, 1870).

Wallace noted that natural selection operates without the benefit of pre-adaptational foresight. Wallace, unlike Darwin (and Lamark half a century earlier), did not believe in the genetic inheritance of acquired characteristics (Lamarckism). So, if there is no inheritance of acquired characteristics and no pre-adaptational foresight in natural selection, then how have human beings come to reach such an advanced level of sophistication in cultural matters? Wallace contended that many human features are largely inexplicable by natural selection, including speech, singing, artistic notions of form, texture and color; mathematical and geometrical reasoning, morality, ethical values, and concepts such as eternity and infinity. The latter attributes are far more complex than required in order to survive the crude forces of natural selection. We, like bacteria, can demonstrate reproductive fitness by producing plenty of healthy offspring without any of these higher capacities. Wallace envisaged a form of teleological natural selection in which everything that exists in life has a purpose – be it utilitarian or spiritual.

Wallace noted the problem of incipient evolutionary stages. He argued that incipient and intermediate stages might have little selective survival advantage, as with a partially developed wing; yet evolution progressed to new forms and greater complexity as if teleologically guided. Wallace thus predicted the problem of "irreducible complexity" (Behe, 2004). A group composed of Paleo-anthropologists and Linguists similarly argued that the physical and cognitive articulations required for human speech are so sophisticated that it is difficult to imagine intermediary systems (Picq et al., 2008). They described as a Neo-Darwinian tautology the argument that if a human feature existed, then it must be adaptive, otherwise it would not have survived. This is a form of Panglossian, overly-optimistic), post-hoc reasoning.

Wallace did not see mind as solely a manifestation of the brain in action. For Wallace, "disconnected mind" (unmanifest mind?) belongs to the spiritual world, and in this spiritual world "Higher Intelligence" operates as a guiding force in the development of higher human capacities. Natural selection, while accounting for the adaptational progress of biological evolution, has little or nothing to do with the greater "mysteries of life" according to Wallace (1870).

Why has Wallace, the Welsh co-founder of the theory of natural selection with Darwin, been so ignored? Was it because his approach was both etiological and teleological? Darwin's purely etiological and "survival of the fittest" perspective was much more parsimonious and compatible with the emerging scientific positivism, materialism, atheism, individualism and competitive free enterprise of the West.

One has to accept that, for the time being, teleological considerations are largely metaphysical speculations, although as William Blake said, what is now proved was only once imagined. The point to emphasize is that just as there are mathematical, musical, linguistic, electro-magnetic patterns and forms, likewise the forms (or structures) of life emergent from evolution may not be random but may, in a "big-picture" (macro) sense, be reflective of universal laws such as the Theory of Relativity, and in a micro-sense may be consistent with particle and quantum physics. If this is true, then evolution is not solely the outcome of random mutations and natural selection in the strict Darwinian sense. We can clearly observe patterns such as bi-symmetry in plant and animal life forms. These have been referred to as obeying "laws of biological form," common to most forms of life (Davey, 1981). This is a view consistent with Plato's "Theory of Forms" (Plato, see Jowett, 1888).]

Before the "Big-Bang," this theory suggests that all that existed was just a stable singularity or a "super-symmetry" (Bogdanov & Bogdanov, 2010), a unity without space and time, or even matter as we know it. This was presumably only a coded potential ("unmanifest mind"?), perhaps akin to a tiny seed ready to unfold – not at random, but according to pre-existing laws.

From the Big Bang onwards, patterns began to emerge in space and time, matter took form and increased in complexity in accordance with the Laws of Physics and Chemistry. From laboratory observations we know that at a physical level patterns may appear spontaneously, producing regularities out of microscopic chaos. Sometimes such patterns are established and maintained in the absence of any apparent external causation, thus in apparent violation of the Second Law of Thermodynamics, which governs entropy. (See Ramseyer & Tschacher, 2006, for a further discussion of the work of Prigogine, Haken and others). Moreover, on a much larger scale, curved space-time, electro-magnetic patterns, mathematical laws characterize our universe.

Life also evolved. It too is patterned. So are languages, human behavior, music and so forth. Such patterning led Socrates to speculate about cosmic intelligent design. So what was there before the Big Bang to trigger it and create all of these forms and patterns? What determined the Laws of Nature? For Bogdanov and Bogdanov (2010) the structure of our universe, life and consciousness were naturally emergent out of universal laws from the moment of the Big Bang and thus were neither directionless nor random.

Darwinian Theory, centered on reproductive fitness – as measured by the number of progeny - hardly addresses the above issues. Darwin's views, while accounting for the details of micro-evolution, such as the prevalence of darker skin in the tropics, do not address the really big questions (Gee, 2000). In other words, Darwinian selection undoubtedly accounts for the detailed "fine tuning" of biological diversity in micro-evolution, but not so readily for the issues at the level of the grander "scheme of things" in macro-evolution, such as the emergence of genes, cells, organisms, consciousness and the existence of complex life forms, as well as repetitive patterns such as biological symmetry, reflective consciousness, compassion, non-genetic altruism, morality and aesthetics. With respect to aesthetics, the 5th Century Greek sculptor, painter and architect, Phidias (and many others after him), noted that the Golden Ratio frequently turns up in works of art (Chilvers, 1990).

Broad (1925) argued that natural selection is a negative process in that it tends to eliminate individuals who have variations unfavorable to survival. Hence natural selection (elimination) cannot entirely account for the production of new physical and behavioral features, as in the origin and growth in complexity of mind consciousness. Other authors have also drawn attention to the problem of the origin of conscious cognition (Lindahl, 1997; Arhem & Liljenstrom, 1997).

In summary, in Darwinian Theory fitness to survive and to reproduce is the ultimate goal. Very primitive organisms do an excellent job here, so materialistically there is no biological imperative for higher forms of life with consciousness to evolve. The Darwinian focus on adaptational changes does not account for the "bigger picture". Evidence for the more complex aspects of Darwinian evolution is based on additive details of research. George Kelly (1955) calls this the "accumulative fragmentalism" of linear causality.

Life on earth is part of a large complex system where causal relationships tend to be intricate and circular. This bigger picture sees life emerging and evolving in the context of the universe itself evolving – with no apparent selection of the fittest at a cosmic level. The state of human evolution which we currently witness, namely reflective, ethical and aesthetic human life, evolved out of organic matter, which itself evolved out of inorganic material. So, could it be that mind is "caused" by matter?

Circular causality

Objections may also be raised to the earlier metaphysical postulations that "universal (or

transcendental) mind" somehow "causes" or creates matter, or in other words, that matter is mind-made. Another view is that mind and matter co-evolve and are not separate entities, but rather manifestations of the same phenomenon at different levels of abstraction. In other words, the dualistic view of linear causality, as in biological determinism, whereby matter "causes" mind, is usefully replaced by the non-dualistic concept of "linguistic parallelism" (Hogan, 1995), in which psyche and soma, as in mind and brain, are perceived as polymorphic manifestations at different levels of concreteness or abstraction. By way of a crude analogy, we can think metaphorically of water molecules existing polymorphically in solid, liquid and gaseous forms. This view is consistent with the 17th century monist philosophy of Baruch de Spinosa, who argued that matter and mind are differentiated attributes of one and the same substance – namely that of a non-dual "Nature/God", and thus there is no need to infer linear causality (Guenancia, 2009). Similarly, the Dalai Lama stated that "the mind can in no sense be the substantial cause of matter, nor can matter be that of the mind" (Dalai Lama, 2002, p.323).

Within such a conceptual framework, notions of simple linear causality, with its attendant concern with one-way primary causes, are no longer seen to be useful (Muturana, 1978; Varela & Muturana, 1981). Systemic circular "causality", which can also include the concept of a direction or an ultimate raison d'être, is probably a more useful way to conceive of evolution. With this view, etiology, the push of the past, is systemically balanced by teleology - the pull of the future. At the time of the Big Bang there was, in a sense, only teleology and no etiology; although within circular "causality" we cannot clearly differentiate between potentiality and teleology. If, from the moment of the Big Bang the fundamental Cosmic Constants and other universal laws were already in place, then the end products of life and consciousness were entirely predictable (Bogdanov & Bogdanov, 2010). Thus, where the outcome is pre-determined, etiology and teleology are simply two faces of the same coin. For example, for a photon travelling at the speed of light, from 380,000 years after the Big Bang when light first appeared up to the present, there is no passage of time (Bogdanov & Bogdanov, 2010) and thus no difference between etiology or teleology for that period.

Another aspect of this systemic view is Gregory Bateson's (1972) contention that mind is not just immanent from the brain but from the whole body. Other scientists have argued that mind is not confined to the brain and the central nervous system, but is also sub-consciously emergent from the whole body with its peripheral nervous system (Pert, 1998, 1999; Sthalekar, 2000). These scientists suggest that we can "feel" with our hearts and intestines because they are neurologically and endocrinologically complex and enriched with the same neuropeptide receptors that are found in the brain

Bateson goes even further, suggesting that mind is combined with the whole interactive context, including the social environment. This is another way of saying that, paradoxically, mind has both immanent and transcendent aspects. This echoes Wallace's views on "disconnected mind".

If we think of life on earth as a complex inter-dependent living organism per the Gaia Hypothesis (Lovelock, 1987), then a systemic approach would make more sense for explaining the evolution of consciousness. For example, when observing the speed and highly coordinated maneuverability of shoals of fish and flocks of birds, and the coordinated activities of ants and bees, one is left with the impression that they offer us possible examples of what could be called a systemic "group mind" in operation. (See McDougall, 1921, for a further description of "group minds.") This phenomenon has also been referred to as "collective cognition" (Couzin, 2008).

From a systemic point of view, genes cannot be selfish. Genes within an organism need to co-operate rather than to compete as they either survive or perish together. The whole sentient organism can influence a range of coordinated gene expressions within itself, which can fluctuate within hours – depending on hormonal and neuronal messages. Hence genes co-operate more like

a symphony within an organism (Noble, 2006). The whole human race may be considered a loosely held together “super-organism” that is adapting to a complex environment in many ways, so as to ensure that a wide variety of skills are catered for - from maternal empathy, mechanical skills on to abstract reasoning, is consistent with a systemic view in which all types of human endeavor are selected for in order to produce an evolving, adaptive, coherent and functioning whole.

Relevance of evolution to psychotherapy

The relevance of the above discussions to the treatment of human suffering will now be addressed. There has been some concern at the growing influence of neo-Darwinian Theory on psychotherapy practice (DelMonte, 1998, 2001, 2005; Ryle, 2005). If we accept the “selfish-gene” view of primacy of matter over mind (i.e., that mind is solely a by-product of evolved living matter, via natural selection) and that Darwinian-inspired theory is adequate to explain the evolution of life, then it logically follows that distal and proximate etiological causes explain all human phenomena (Dawkins, 2006), including our psychopathology. However, can such etiology really explain our complex subjectivity, existential concerns and our quest for meaning? Should we not also include teleological “causality” as well, so as to embrace circular “causality” as advocated within systems theory?

Many Western psychologists tend to give priority to the mind - as exemplified by the practice of psychotherapy. A major example of this is cognitive therapy, which is largely a "mind over matter" approach using prescribed self-verbalization and the like.

The “cognitive restructuring” of cognitive therapy, the suggestions given during hypnosis, and the “talking cure” of psychoanalysis would, with this perspective, be of limited value, because mind in a linear sense is only secondary to matter, and as Skinner (1971) suggests, there is no free will. How can there be if we are wholly determined by both our genes (phylogeny) and our conditioning (ontogeny)? Can (secondary) mind emergent from (primary) matter manipulate this matter and change one’s emotions and behavior?

Looking at causality as being circular, rather than linear, may help to explain psychotherapy in new ways. If the relationship between mind and body is in both directions, then so can be the genesis of physical and psychological illnesses and their treatments (DelMonte, 1996).

But if mind is completely secondary to matter and no more than emergent from our operative physical brains, then models that emphasize “cerebral over-ride”, the “power of positive thinking” or “mind over matter” (metaphorically speaking) are fundamentally incompatible with such biological determinism, and suggest that we may have to modify or abandon this hypothesis.

With biological linear determinism there is little scope for an appeal to a reflective, nuanced, inter-subjective, non-dualistic, circular, spiritual or transcendent aspect of mind to inspire and transform us. But what about our scientific, artistic and philosophical creativity: What inspired them? Can personal mind access transpersonal truths? Can personal mind, as in one’s verbalizations and attitudes, influence the brain (matter) of another person? Research evidence supports these possibilities. Magnetic resonance imaging studies show that mother-infant and therapist-patient dyads can literally alter the orbito-frontal system of the brain (Schore, 1994, 2003) in what appears to be inter-subjective resonance (empathy). In other words, inter-subjective relationships can induce developmental and structural changes in the brains of the participants. So, one’s mind may not be so purely “personal” after all, and not fully confined to the private workings of one’s own brain.

Can we perceive or experience anything that supports the existence of a reality outside of biological linear determinism? Other approaches to wellbeing, mostly but not exclusively Eastern, focus more on fostered silence and the stillness of meditative and contemplative states, and how the harnessed and receptive mind resonates in the body, as well as how the trained body in turn affects the mind, as in Zazen, Yoga, Aikido and Qigong (DelMonte, 1995, 1998a, 1998b). One's relationship to time and space becomes unimportant during deep meditation as one focuses on the unity of the here and now (DelMonte, 1995). Does dwelling in the present during meditation give one a sense of the non-dualistic timelessness, spacelessness and formlessness present before the Big Bang

Schwartz (1983) argued that self-attention, as practiced in various mindfulness meditation techniques, "seems to have specific autonomic, self-regulatory, stabilizing effects on physiological functioning" (p.114). He contended that self-attention can promote localized healing, "especially if the self-attention is guided by relevant imagery that is targeted to the appropriate part(s) of the body" (p.114). This postulation is interesting in terms of the pioneering work of Meares (1978) in which he used visualization exercises with cancer patients. More recent research shows that two months' practice of mindfulness-based stress reduction can slow down the progression of HIV by increasing the number of CD4+ T lymphocytes. This improved immune response was dose-related in that the more mindfulness classes attended the higher the CD4 T cell levels (Creswell, 2008). This finding is consistent with a previous finding of Davidson, et al (2003) reporting an immune response dosage phenomenon in anti-influenza activity associated with mindfulness practice. Two months of mindfulness based stress reduction training lead to a significant shift to a higher ratio of left-sided compared with right-sided brain activation (the left hemisphere is associated with the expression of positive emotions), as well as a significant increase in anti-body titres to influenza vaccine. Moreover, the magnitude of increase in left-sided activation predicted the magnitude of anti-body titre rise to the vaccination (Davidson, et al, 2003).The above findings show that mindfulness, i.e. consciousness, can influence the functioning of biological matter and the immune response. Hence mind can also affect matter and thus cannot be deemed to entirely secondary to it.

Systemic-constructivist psychotherapists envisage the relationship between psyche and soma - as well as that between minds - as circular (DelMonte, 1989, 1996, 2009). Here they may agree with Buddhists who also hold the view that, ultimately, dualistic "personal mind", although socially and practically useful, and narcissistically seductive, is no more than a window (usually with its blinds closed!) onto "universal mind". A problem with personal mind is that it is subject to distortions due to our psychological defenses and thus to unconscious influences, as well as to systemic pressures. However, it is contended by the author that personal mind becomes increasingly irrelevant as we inescapably approach the ends of our physical lives as it ceases to be of practical value when we are deceased.

The juxtaposition between etiology and teleology is also clearly relevant to psychotherapy. As mentioned earlier, most schools of psychotherapy have assumed an etiological perspective. For behaviorists, this is mainly described in terms of one's history of conditioning and reinforcement. Cognitive therapists focus on past acquisition of inappropriate or unhelpful cognitions. Psychoanalysts emphasize the importance of infantile instinctual drives, desires, motives, defenses and unresolved conflicts in the genesis of the neuroses. Key psychoanalytical authors like Sigmund Freud (1900; 1930) and Melanie Klein (1946) took an etiological position in which the "push" of innate instincts, drives and unconscious fantasies play determining roles (also see Fisher & Greenberg, 1996).

However, from early on there has been some opposition to this purely dualistic etiological view –

with its attendant “backward elaboration” in therapy (Kelly, 1955). Few people would dispute the importance of proximate etiological factors on current behavior, but clinicians like Carl Jung (1958) stressed the importance of teleological and collective factors in our attitudes and behaviors, and how we become more aware of these as we approach mid-life. Unlike Freud, who became an atheist, Jung was not willing to explain all human behavior in terms of early ontogeny that emphasizes our psychosexual motives, conflicts and developmental arrests. Jung’s view incorporated both etiological and teleological influences. He emphasized both the “push” of archetypes (phylogeny) in the context of a wider collective unconscious, balanced by their “pull” towards self-actualization and a search for meaning ('mythos'), and that all of these together forge the human condition. Here we can envisage the collective unconscious (an aspect of “universal mind”) interacting with personal mind and body to express our evolving humanity.

Wilfred Bion (1970) had a similar vision in that he postulated that thoughts use thinkers to think them – this all occurring in the context of an “ultimate reality” (p.80) or an “absolute truth” (p.117) – which could encompass the concept of “universal mind”. Here we see echoes of Platonic ideas. For Plato with his “Theory of Forms”, certain philosophical concepts such as Justice, Love, Beauty and Truth exist outside of time; that is, they are eternal (Plato, in Jowett, 1888). Individual consciousness, though, would need to evolve adequately in sophistication in order to be able to appreciate these metaphysical concepts.

Many other authors and clinicians have, like Jung, focussed on the importance of our quest for meaning and self-actualization (e.g., Frankl, 1967; Maslow, 1968). George Kelly (1955) based his theory and practice as a clinical psychologist on a human desire to predict the future. His fundamental postulate was that “a person’s processes are psychologically channeled by the ways in which he anticipates events” (Kelly, 1955, p.46). Kelly stressed that behavior was more often "in quest” of making sense of our lives rather than in response to stimuli.

Being reflective and seeking a purpose, which transcends our personal incarnations, is a central theme in the writings of psychotherapists like Carl Jung (1958), George Kelly (1955), Roberto Assogioli (1965), Abraham Maslow (1968), Viktor Frankl (1967) and Wilfred Bion (1970) – to name but a few. These authors incorporate a teleological perspective in that they envisage the “pull” of the future (and of a greater reality) being central to making sense of our existences, and this perspective is somewhat more compatible with Wallace’s, than with Darwin’s, views on evolution.

However, the recent focus on evolutionary genetics and sexual selection has often, but not invariably, been coupled with a form of radical materialism, which eschews inquiry into more subtle meanings that suggest connections of consciousness with aspects of the universe beyond our material world. Those theoretical perspectives on health and well-being, which carry the message that life and evolution have no meaning beyond genes reproducing themselves (“selfish gene” reductionism), appear to be doing a disservice to patients who are trying to make sense of their experiences but nevertheless feel stuck and unable to do so.

The speculations in this article may be of more than just theoretical significance. Could it be that one factor in the recent rise in suicides in the Western world is that people are increasingly being exposed to a reductionistic scientific culture, a culture which conveys the message that our existence is a meaningless bio-chemical "accident", blindly driven by "selfish genes" ending in nothingness? Do some clinicians, albeit unwittingly, further contribute to this problem by conveying a similar message? As already mentioned, Skinner (1971) argued against the existence of free will, as he saw all behavior as being entirely determined by both genes and environmental conditioning. The continued popularity of works like his and those found in other books on “The God Delusion” (Dawkins, 2006), our "selfish" genes and our “mean” genes (Burnham & Phelan, 2001) reflects the nihilistic and narcissistic Zeitgeist that we must work to overcome in order to

make sense of our own experiences and those of our patients.

Neo-Darwinian perspectives have increasingly been influencing all aspects of Western society. We live in a world where the focus is largely on narcissistic individualism, competition, optimal performance, winning, aggressive marketing, takeovers, and alike. Workers are often described as "high-flyers" or as "losers". The survival of the fittest mentality is most obvious in the business world, but is also increasingly penetrating education as in "league tables" and the "points system", and healthcare where hospitals are more and more being run as businesses that need to make a profit. Is there really parity of esteem, or even a place, in this Post-Darwinian society for "losers", or has Darwinian pessimism won the day? There is evidence of increased (doubled) psychiatric morbidity (illness) in nations characterized by "selfish capitalism" such as the USA and the UK, as opposed to those practicing "unselfish capitalism" in some parts of Western Europe such as Scandinavia and the Netherlands (James, 2007).

Conclusions

We require balance in our efforts to understand ourselves in psychotherapy - as well as in the rest of lives. Etiology, with both its distal roots in evolution (phylogeny) and its proximate triggers in life events (ontogeny), can usefully be enriched by a teleological perspective such as Wallace's cosmic causality, with its implied search for purpose and meaning in our individual and collective lives. Wallace's vision of natural selection and evolution may yet prove to be at least as inspiring to us as Darwin's more narrow and restricted etiological focus; and the natural selection of mutant genetic variants and their developmental expression may ultimately be influenced by or subject to universal laws (of physics, chemistry, "universal mind") in the evolution of life. Thus, evolution may be fully predictable at the macro (cosmic) level, while appearing to be "random" at the micro level here on earth.

Given that the scientifically mysterious "dark matter" and dark "energy" constitute about 96% of our universe (Matthews, 2005), we may have a very long way to go in fully unravelling the forces behind evolution. Hopefully, one day the various laws of mathematics, chemistry, physics (including quantum mechanics and the theory of relativity) will be combined into one unified super-theory accounting for the unfolding of our universe, life and consciousness. The construct "universal mind" may then become either redundant or be clarified. However, it is possible that we shall never achieve certainty about why life and consciousness evolved. Living with this uncertainty, with mystery, could be our challenge, as the origin of life may be as much beyond our conceptual grasp as is "ultimate reality". Only scientific and religious fundamentalists try to reduce the truth of evolution to what our limited senses can apprehend and to what our often dogmatic thinking can construe.

References

Abed, R.T. (1998). The Sexual Competition Hypothesis for Eating Disorders. British Journal of Medical Psychology, 71(4), 525-547.

Arhem, P. & Liljenstrom, H. (1997). On the co-evolution of cognition and consciousness. Journal of Theoretical Biology, 187, 601-612.

Assagioli, R. (1965). Psychosynthesis: A Manual of Principles and Techniques, Hobbs and Dorman, New York.

Aurobindo, S. (1973). The Supramental Manifestation Upon Earth, Sri Aurobindo, Ashram Press, Pondicherry, India.

Bailey, K.G. & Wood, H.E. (1998). Evolutionary Kinship Therapy: Basic principles and treatment implications. British Journal of Medical Psychology, 71(4), 509-523.

Barrow, J. & Tipler, F. (1988). The Anthropic Cosmological Principal. Oxford University Press, Oxford.

Bateson, G. (1972). Steps to an Ecology of Mind, Ballantine Books, New York.

Behe, M. (2002). Irreducible complexity: An obstacle to Darwinian evolution. In W.A. Dembski and R. Ruse (Eds). Debating Design: From Darwin to D.N.A. Cambridge University Press, Cambridge, U.K.

Bion, W.R. (1970). Attention and Interpretation, Tavistock, London.

Birtchnell, J. (1995). Exercising caution in applying animal models to humans: A response to Price & Gardner. British Journal of Medical Psychology, 68(3), 207-210.

Bogdanov, I. & Bogdanov, G. (2010), G. Le Visage de Dieu, Grasset, Paris.

Broad, C. (1925). The Mind and its Place in Nature, Routledge & Kegan Paul, London.

Brown, J.F. (2002). Epistemological differences within psychological science: A philosophical perspective on the validity of psychiatric diagnoses. Psychology and Psychotherapy: Theory, Research and Practice, 75, 239-250.

Brewin, C.R. & Andrews, B. (1997). Reasoning about repression: Inferences from clinical and experimental data. In M. Conway (Ed.), Recovered Memories and False Memories, Oxford University Press, Oxford, pp. 192-205.

Burnham, T. & Phelan, J. (2001). Mean Genes, Penguin Books, London, U.K.

Carey, T.J. (2005). Evolution, depression and counselling. Counselling Psychology Quarterly, 18(3), 215-222.

Carter, C.O. (1970). Human Heredity, Penguin Books, London.

Cavalli-Sforza, L.L. (2000). Genes, Peoples and Languages. The Penguin Press, London.

Chilvers, I. (1990). The Concise Oxford Dictionary of Art and Artists, Oxford University Press, Oxford.

Clarke, J.E. (1997). A dynamical systems perspective on the development of a complex adaptive skill. In C. Dent-Read & P. Zukow-Goldring (Eds.) Evolving Explanations of Development: Ecological Approaches to Organism – Environment Systems, pp.383-406; American Psychological Association, Washington.

Compte, A. (1855). The Positive Philosophy: Language, Man and Society, AMS Press, New York, 1974.

Creswell, D. (2008). Mindfulness meditation slows progression of HIV. Brain, Behavior, and Immunity, 22(6), 797-1008. Psychosomatic Medicine, 65, 564-570.

Couzin, I. D. (2008). Collective cognition in animal groups. Trends in Cognitive Science, 13(1), 36-43.

Dalai Lama, (2002). The Dalai Lama's Little Book of Inner Peace, Harper Collins, London.

Darlington, C.D. (1966). Genetics and Man, Allen & Unwin, London.

Davey, J. (1981). Once upon a time. Observer Review, 16th August, pp.19-21

Davidson, R.J; Kabat-Zinn, J; Schumacher, J; Roserkranz, M.S Muller, D; Santoreli S.F; Urbanowski, F; Harrington, A; Bonus, K. & Sheridan, J.F. Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65, 564-570.

Dawkins, R. (1976). The Selfish Gene, Oxford University Press, Oxford.

Dawkins, R. (2006). The God Delusion, Bantam Press, London, U.K.

DelMonte, M. M. (1989). A brief outline of the views of existentialist-phenomenological writers and how their views relate to psychotherapy. Psychologia, 32, 81-90.

DelMonte, M. M. (1995). Silence and emptiness in the service of healing: Lessons from meditation. British Journal of Psychotherapy, 11(3), 368-378.

DelMonte, M. M. (1996). Systems theory and psychotherapy: A constructivist perspective. In M.G.T. Kwee and T.L. Holdstock (Eds), Western and Buddhist Psychology: Clinical Perspectives, Eburon Publishers, Delft, pp. 269-293.

DelMonte, M. M.(1997). Psychotherapy: Science or Mysticism? Paper presented at symposium organized by the Austrian Forum for Theoretical Psychology entitled, "Ways of Thinking, Understanding and Knowing: Bridging the gap between science, humanities and mysticism", Vienna.

DelMonte, M. M. (1998a). The embodied mind, the talking cure and the silence of meditation. In M. DelMonte and Y. Haruki (Eds.) The Embodiment of Mind: Eastern and Western Perspectives, Eburon Publishers, Delft, pp.129-139.

DelMonte, M. M. (1998b). The mind versus matter debate. In M. DelMonte and Y. Haruki (Eds.). The Embodiment of Mind: Eastern and Western Perspectives, Eburon Publishers, Delft, pp. 17-20.

DelMonte, M. M. (2001). Evolutionary psychology: Does mind matter or is it immaterial? Journal of Critical Psychology, Counselling and Psychotherapy, 1(4), 217-229.

DelMonte, M. M. (2005). Evolutionary psychopathology: What is the matter with mind? Constructivism in the Human Sciences, 10, 145-164.

DelMonte, M. M. (2009). Empty thy mind and come to thy senses: A de-constructive path to inner peace. In E. Franco (Ed.) Yogic Perception, Meditation and Altered States of Consciousness. Austrian Academy of Sciences, Vienna, Austria, pp.449-479.

De Waal, F. (2006). Primates and Philosophers: How Morality Evolved. Princeton University Press, New Jersey, U.S.A.

Dixon, A.K.(1998). Ethological strategies for defence in animals and humans: Their role in some psychiatric disorders. British Journal of Medical Psychology, 71(4), 417-445.

Faer, L.M; Hendricks, A; Abed, R.T. & Figueredo, A.J. (2005). The evolutionary of eating disorders: Female competition for mates or for status? Psychology and Psychotherapy: Theory, Research and Practice, 78, 397-417.

Fisher, S. & Greenberg, R.P. (1996). Freud Scientifically Reappraised. John Wiley & Sons, New York, U.S.A.

Fleury, V. (2006). De L'Oeuf à l'éternité: Le Sens de L'évolution, Flammarion, Paris, France.

Frankl, V.E. (1967). Psychotherapy and Existentialism: Selected Papers on Logotherapy, Penguin, London.

Freud, S. (1900). The Interpretation of Dreams: Standard Edition, Hogarth Press, London.

Freud, S. (1930). Civilisation and its Discontents, Standard Edition, Hogarth Press, London.

Gardner, R. (1998). The brain and communication are basic for clinical human sciences. British

Journal of Medical Psychology, 71(4), 493-508.

Ganssen, T. (2001). Dynamic Systems Theory: Revolutionising Developmental Psychology. Irish Journal of Psychology, 22, 3-4, 160-175.

Gee, H. (2000). La génétique et l'embryologie volent au secours de Darwin. Le Monde, Sciences, p.26, 25th February.

Gilbert, P.(1995). Power, social rank and depression: Comments on Price & Gardner. British Journal of Medical Psychology, 68(3), 211-215.

Gilbert, P. (1998a). Evolutionary psychopathology: Why isn't mind designed better than it is? British Journal of Medical Psychology, 71(4), 353-373.

Gilbert, P. (1998b). The evolved basis and adaptive functions of cognitive distortion. British Journal of Medical Psychology, 71(4), 447-463.

Gould, S.J. (1977). Ever Since Darwin: Reflections in Natural History. W.W. Norton, New York.

Gould, S.J. (2002). The Structure of Evolutionary Theory, Harvard University Press, Harvard.

Gribbin, J. (1999). The Birth of Time: How We Measure the Age of the Universe, Weidenfeld & Nicolson, London.

Guenanacia, P. (2009). L'evenement du dualism. Philosophie, 31, 44-45.

Hogan, C.C. (1995). Psychosomatics, Psychoanalysis and Inflammatory Disease of the Colon; International Universities Press, Madison, Connecticut.

Hogan, M. J. (2008). On spirituality: Deconstructing, grappling, and moving in the field of others. The Irish Psychologist, 34(7), 187-197.

Hoyle, F. (1983). *The Intelligent Universe*, London: Michael Joseph .

James, O. (2007). Selfish capitalism and mental illness. The Psychologist, 20(7), 426-428.

Jung, C. (1958). Psychological commentary on the Tibetan book of the great liberation. In Psychology and Religion, Vol.2, Collected Works, Pantheon Books, New York.

Kelly, G.A. (1955). The Psychology of Personal Constructs, Norton, New York.

Klein, M. (1946). Envy and Gratitude, Virago, London.

Kohn, M. (2004). A Reason for Everything: Natural Selection and the English Imagination, Faber and Faber, London.

Langs, R. & Badalamenti, A. (1996). The Cosmic Circle: The Unification of Mind, Matter and Energy, Alliance Publishing Inc. New York, U.S.A.

Lestel, D. (2003). Les Origines Animales de la Culture, Flammarion, Paris, France.

Lindahl, B.I.B. (1997). Consciousness and biological evolution. Journal of Theoretical Biology, 187, 613-629.

Maturana, H. (1978). Biology of Language: The Epistemology of Reality. In Miller, G & Lenneberg, E. (Eds.), Psychology and Biology of Language and Thought, Academic Press, New York.

McDougall, W. (1921). The Group Mind. A sketch of the Principals of Collective Psychology with Some Attempt to Apply Them to the Interpretation of National Life and Character, Cambridge University Press, Cambridge.

McGuire, M.T. & Troisi, A.(1998). Prevalence differences in depression among males and females: Are there evolutionary explanations? British Journal of Medical Psychology, 71(4), 479-491.

Maslow, A.H. (1968). Toward a Psychology of Being, Van Nostrand, New York.

Matthews, R. (2005). 25 Big Ideas: The Science that is Changing our World, One World Publications, London.

Maynard Smith, J. (1966). The Theory of Evolution, Penguin, London.

Meares, A. (1978). Vivid visualisation and dim visual awareness in the regression of cancer in meditation. Journal of the American Society of Psychosomatic Dentistry and Medicine. 25(3), 85-88.

Mitchell, S.A. (1998). Attachment theory and the psychoanalytic tradition: Reflections on human relationality. British Journal of Psychotherapy, 15(2), 177-193.

Nesse, P. (1998). Emotional disorders in evolutionary perspective. British Journal of Medical Psychology, 71(4), 397-415.

Noble, D. (2006). The Music of Life: Biology beyond Genes. Oxford University Press, Oxford.

Oatley, K. (1992). Best Laid Schemes: The Psychology of Emotions. Cambridge University Press, Cambridge.

O'Connor, L.E., Berry, J.W., Weiss, J., Schweitzer, D. & Senier, M. (2000). Survivor guilt, submissive behavior and evolutionary theory: The down-side of winning in social competition. British Journal of Medical Psychology, 73(4), 519-530.

Passera, L. (2006). La Véritable Histoire des Fourmis, Fayard, Paris.

Pert, C, (1998). The Matter of Mind: Emotions as the mind-body connection. In M.M. DelMonte & Y. Haruki (Eds.), The Embodiment of Mind: Eastern and Western Perspectives, Eburon Publishers, Delft.

Pert, C. (1999). Molecules of Emotion: The Science Behind Mind-Body Medicine, Schuster, New York.

Picq, P., Sagart, L., Dehaene, G.& Lestienne, C. (2008). La Plus Histoire du Langage, Seuil, Paris.

Pinker, S. (1994). The Language Instinct, Penguin Books, London

Pinker, S. (1997). How the Mind Works, Penguin, London.

Pinker, S. (2002). The Blank Slate. Allen Lane Penguin Books.

Plato, in Benjamin Jowett's (1888) translation, The Republic of Plato, Book (VI), Clarendon Press, Oxford.

Plomin, R. (2001). Genetics and behavior. The Psychologist, 14(3), 134-139.

Price, J. (1998). The adaptive function of mood change. British Journal of Medical Psychology, 71(4), 465-477.

Price, J. & Gardner, R. (1995). The paradoxical power of the depressed patient: A problem for the ranking theory of depression. British Journal of Medical Psychology, 68(3), 193-206.

Ramseyer, F. & Tschacher, W. (2006). Synchrony: A core concept for a constructivist approach to psychotherapy. Constructivism in the Human Sciences, 11(1), 150-171.

Reville, W. (1996). Science Today, The Irish Times, 9th September, Dublin.

Reville, W. (2006). Science Today, The Irish Times, 2nd March, Dublin.

Ryle, A. (2005). The relevance of evolutionary psychology for psychotherapy. British Journal of Psychotherapy, 21(3), 375-388).

Schwartz, G.E. (1983). Disregulation theory and disease: Applications to repression/cerebral disconnection/cardiovascular disorder hypothesis. International Review of Applied Psychology, 32, 95-118.

Schwartz, J. (2000). Review essay: A beginner's guide to the brain. Ten lectures on the neurology of mental life Mark Solms at the Anna Freud Center. British Journal of Psychotherapy, 17(2), 173-179.

Schore, A.N. (1994). Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development. Hillsdale NJ: Lawrence Erlbaum.

Schore, A.N. (2003). The Seventh Annual John Bowlby Memorial Lecture: Minds in the making. In J. Corrigall and H. Wilkinson (eds), Revolutionary Connections: Psychotherapy and Neuroscience. London and New York: Karnac, pp.7-51.

Skinner, B.F. (1971). Beyond Freedom and Dignity, Penguin Books, London.

Sthalekor, H. (2000). Hypnosis in the past, present and in the New Millennium. Australian Journal of Clinical Hypnotherapy and Hypnosis, 21(2), pp. 65-80.

Stevens, A. & Price, J. (1996). Evolutionary Psychiatry: A New Beginning, Routledge, London.

Teilhard de Chardin, P. (1965). The Phenomenon of Man, Fontana, London.

Thwaites, R. & Dagnan, D. (2004). Moderating variables in the relationship between social comparison and depression: An evolutionary perspective. Psychology and Psychotherapy: Theory, Research and Practice, 77, 309-323.

Troop, N. A; Allan, S; Treasure J.L. & Katzman, M. (2003). Social comparison and submissive behavior in eating disorder patients. Psychology and Psychotherapy: Theory, Research and Practice, 76, 237-249.

Varela, F.J. & Maturana, H. (1981). Living warp of sense-making: A middle path for neuroscience. Paper presented at the International Symposium on Disorder and Order, Standford University, Palo Alto, California.

Von Bertalanfly, L. (1968). General Systems Theory, Brazillier, New York.

Wallace, A.R. (1870). The limits of natural selection as applied to man. In. Contributions to the Theory of Natural Selection; A Selection of Essays, Macmillan & Co., London.

Wilson, D.R. (1998). Evolutionary epidemiology and manic depression. British Journal of Medical Psychology, 71(4), 375-395.

Wickrama-Singh, C. (2001). “We are all aliens”. Paper presented at the Cork Institute of Technology, 12th October.

Yoon, C.K. (2007). From a few genes, life’s many forms. The New York Times, New York, 30th June.

Michael M. DelMonte, MSc, MPsychSc, PhD
Fellow of the Psychological Society of Ireland
Principal Clinical Psychologist
St. Patrick's University Hospital
Dublin, Ireland

Michael majored first in Genetics at Trinity College, Dublin, and later in Psychology from the same university. He later went on to complete an MSc and a PhD on meditation - again from Trinity College. Later Michael did an MPsychSc. in Constructivist Psychotherapy in University College, Dublin. Following these studies Michael became increasingly involved in psychoanalysis, including the work of Carl Jung, and is a member of the Irish Forum for Psychoanalytic Psychotherapy, the College of Psychoanalysts in Ireland, the Irish Constructivist Psychotherapy Association and the Psychological Society of Ireland.

Michael has worked for about the past 25 years as Principal Psychologist in St. Patrick's University Hospital, which is linked to Trinity College, where he is also a part-time lecturer in the Department of Psychiatry. He has published about 80 articles (or chapters) in professional journals and books in the area of meditation, mindfulness and psychotherapy.

In 1990 Michael was a co-founder in Tokyo of the Transnational Network for Physical, Psychological and Spiritual Well-Being. He has been a guest speaker at about two dozen international symposia and conferences - some of which were linked to the Network activities. Last but not least, Michael is married, with three children, and his hobbies include hill-walking, philosophy, anthropology, nature, art, music and socializing.