



PHILOSOPHY AND HEALING: RESTORING AN ANCIENT ALLIANCE¹

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Abstract

We normally do not consider the close proximity of philosophy and medicine. Yet many early philosophers were physicians and drew close parallels between philosophy and healing. This paper will investigate the value of this analogy, specifically with regard to the insights of science in contrast to the appreciation of human design. It will also consider the importance of memory. To re-member implies an intelligent and willed striving for courage and hope in the face of the supreme mystery, namely, death. It leads to the realization that the philosopher's meditation upon death reflects upon the value of life.

A few months ago a well known orthopedic surgeon in Beirut told me I needed a back operation. I had a seriously herniated disc putting pressure on my sciatic nerve, causing numbness and pain in my leg and toes, making it difficult to even walk normally. I decided immediately to get a second opinion, only to be told by another Orthopedic that indeed an operation was necessary. Totally disconcerted by the bad news, as it meant, among other things, a cancelation of philosophy seminars in India, Poland, and the Ukraine, which I had long prepared for, I told my wife I wanted yet a third opinion, but she consistently reminded me that both doctors had impeccable international reputations, and that we had seen "with our own eyes" how the disc was protruding out into the spine. It was true. Each doctor had patiently examined the MRI's with us and pointed out to us exactly what was wrong. But I was still resisting an operation because the pain was slowly going away, and the numbness was subsiding, even though I was still in pretty bad shape. When I had finally resigned myself to what I thought was the inevitable, I met by mere chance a neurologist, to whom I hurriedly explained my case, rather inappropriately, I might add, as the social circumstances of our chance

meeting was not the place for a medical consultation. In spite of this, he gave me his card and told me to make an appointment. I promptly handed him the MRI's when I met him in his office, expecting the worse. After a few moments of examining the pictures he said "OK, let's have the real examination now". Surprised, I blurted out, "But what did you see?" He said, "Well, I just saw some electronic images, but now I want to examine you; I don't treat images, I treat persons". It then occurred to me that the previous doctors had been much more interested in the images of me than in me. While leaving his office, I felt triumphant. No surgery. No more medicine. No more tests, just some more rest, some common sense caution, some physical therapy, and eventually some swimming and light stretching. I had to miss the trip to India, but the philosophy seminars in Poland and the Ukraine, the themes of which just happened to be on the identity of the human person, were back on the table. With renewed vigor I continued my work on the subject of personal identity, armed with a new insight into some of the challenges our ever so technological age presents—challenges that have everything to do with the subject I am privileged to speak to you about today, and which my title, *philosophy and healing: restoring an ancient alliance*, tries to capture.

This brief personal overture is by no means meant to reject technology or specialization in modern medicine or in any other branch of knowledge for that matter, to do so of course would be to unwisely ignore a plethora of advantageous achievements that form the very fabric of improved modern society and culture. But I must say that, as someone who teaches philosophy, and as someone who hopes to become a real philosopher someday, I do read with great sympathy people like Dr. Patricia Benner, who argue convincingly that due to the primacy of instrumental reason, which "surrounds technology in a certain prestige and aura. . . the technological approach in medicine has often sidelined the kind of care involved in treating the patient as a whole person with a life story, and not as the locus of a technological problem".² I am also in sympathy with someone like Andrew Taylor Still, the father of osteopathy, who emphasized in the 19th century the importance of seeing deep and real connections between the mental, physical, emotional, and spiritual dimensions of human beings, something that is today captured somewhat by the concept "holistic health" which, I assume, is now widely accepted by medical professionals worldwide.

Although Still was somewhat revolutionary in his day, a long view of the history of medicine reveals that in some ways he was actually re-

covering a vision of medicine that was really quite ancient, one, that is, wherein many medical doctors were also philosophers. If we take even a superficial glance at the history of philosophy, in fact, we see that some of the most prominent philosophers were also medical doctors. Beginning with Hippocrates himself, who was known simply as the wise man, and whom Aristotle referred to as the “great Hippocrates” a rare compliment coming from Aristotle, continuing with Galen, Moses Maimonides, Ibn Sina, and many more, one could almost say that to be a doctor in the ancient and medieval world in both east and west meant also to be a philosopher. The famous Stoic philosopher and great Roman Emperor, Marcus Aurelius, carefully chose a certain Galen as his court physician not only because of Galen’s superior medical knowledge, but because of his wisdom, exemplified in his well known treatise titled *That the best Doctor is also a Philosopher*—something a philosopher of the caliber of Marcus Aurelius—could certainly appreciate. Galen argues in this 2nd century treatise that if the major impetus in becoming a medical doctor is anything other than the complete devotion to the art of healing the patient, then another profession should be chosen. When it comes to making money, Galen is even more stoical than his stoical emperor since he argues that not only is the doctor not to be motivated by financial profit, but must learn to despise it. For Galen, in fact, healing is an art, having much in common with music and poetry. The famous medieval Jewish philosopher/physician, too, Moses Maimonides, in his celebrated medical oath, which echoed the major tenets of the Hippocratic Oath itself, spoke about the medical profession as a divine calling, a vocation, a love of wisdom. And Ibn Sina, perhaps the greatest Islamic philosopher ever, who had considerable influence on Thomas Aquinas, one of the greatest Christian philosophers ever, saw his own life as a philosopher and physician as profoundly and naturally complementary: one was all about the soul or the mind, the other was all about the body, but both, more than anything else, had to do with the love of healing, the loving desire to heal the whole human person—a desire that had everything to do with knowing what it meant to be human, and with *Philia-Sophia* loving wisdom, in other words, with being a philosopher.

Now although we can speak about the *healing* of the soil or the oceans or the planet, all these uses of the term are only analogous uses; they are all derived from and even presuppose and require a more fundamental healing, namely, a healing of the human person. But a great deal is assumed here. First and foremost, an assumption concerning the very



existence and nature of such a thing as the human person, and secondly, the assumption that something has gone wrong with it. Questions concerning human nature, personhood, and the meaning of healing a wounded humanity have traditionally been reserved for the domains of philosophy, psychology, and theology, but with the advent of the biological revolution in 1953,³ biology has gotten in on the discussion as well. This is especially true of questions concerning human nature and personhood in so far as they relate to queries into the complex processes of the brain; such queries have developed into what some are calling a new science of mind. Aided by remarkable accomplishments in molecular biology, this new science of mind or biology of the brain attempts to unite philosophy, psychology, and psychoanalysis in novel ways when it comes to questions concerning human nature and personal identity-leading to controversial positions such as the one suggesting that it is “each person’s brain [that] creates the consciousness of a unique self and the sense of free will”.⁴ And so whereas Still’s ideas at the end of the 19th century regarding the need to see how the physical, mental, emotional, and spiritual dimensions of the human person are all connected might enjoy widespread support today, under the modern heading of “holistic health” the very meanings of the physical, mental, emotional, and spiritual have undergone and are still undergoing radical changes that make it difficult to put forward a clear account of what constitutes personal human identity or to describe accurately what is meant by human nature. It seems to me that if any talk about the connection between healing the human person and loving wisdom, that is, philosophy, is to make any sense, we must try to better understand these changes.

To do this, it seems proper to begin with the physical, seemingly the least complicated among the four, and to point out that with the influential work of the 17th century French philosopher and mathematician, Rene Descartes, matter and the physical were reduced to mere extension and set in dualistic opposition to mind. This conception of the material or the physical had significant influence on the thought of important physicists and was partly responsible for the emergence of ‘classical’ Newtonian physics, wherein the movements of matter were thought to be completely predictable and stable given a conception of time and space as absolute. For centuries, classical Newtonian mechanics held sway until a new conception of matter began to develop in the 20th century. At a public lecture in Greece some four decades ago, the great physicist Werner Heisenberg gave voice to what this new conception of matter was when he stated:

If I endeavor today to take up some of the old problems concerning the structure of matter and the concept of natural law, it is because the development of atomic physics in our own day has radically altered our whole outlook on nature and the structure of matter. It is perhaps not an improper exaggeration to maintain that some of the old problems have quite recently found a clear and final solution. So it is permissible today to speak about this new and perhaps conclusive answer to questions that were formulated here [in Greece by philosophers] thousands of years ago.⁵

The radical alteration of outlook, of course, is a reference to the way twentieth century physics overcame the “classical” Newtonian view of matter as constant and predictable. More specifically, Heisenberg’s investigations into what takes place when elementary particles collide at adequately high levels of energy led him to assert that eventually all particles are either destroyed, leaving behind just radiation, or are converted into other particles. From this observation, he concluded that there must be an underlying *substratum* that potentially provides for all of the different forms of matter, but which does not have any of its properties. In a particularly precise formulation of this, wherein we are able to see exactly what he meant when he stated that “it is permissible today to speak about this new and perhaps conclusive answer to questions that were formulated here [in Greece by philosophers] thousands of years ago”, he explains:

We can say that all particles are made of the same fundamental substance, which can be designated energy or matter; or we can put things as follows: the basic substance “energy” *becomes* matter by assuming the form of an elementary particle.⁶

What is remarkable about this to me is that we find one of the twentieth century’s most important physicists answering a fundamental question about matter in terms so strikingly close to those of Aristotle’s that it sounds like Aristotle himself. Moreover, the work of scientists such as Michael Faraday and Philip Anderson have shown analogously that because matter is neither a conductor nor an insulator, it only stands

to reason that it is supple enough to *potentially* become both, again, a very Aristotelian sounding description of matter as a kind of potency with infinite flexibility and unlimited suppleness.

For a long time now my hunch has been that just as the new physics has to some extent vindicated Aristotle's doctrine of matter, modern molecular biology will eventually vindicate his doctrine of form and soul. What I mean is that if it were not for the new physics, we would never have had the breakthroughs in molecular biology that we have had. And if the new physics really does vindicate Aristotle's doctrine of matter, then the breakthroughs in molecular biology, which are essentially dependent upon the new physics, must also be somehow related to Aristotle's doctrine of matter. I thus concluded some years ago now that since Aristotle's doctrine of matter necessarily presupposes and includes his doctrine of form and soul or mind, then both modern twentieth century physics and modern molecular biology, which depends upon it, also accepts, to some degree, perhaps unwittingly, Aristotle's doctrine of form and soul or mind. I will not attempt to lay out the entire argument here,⁷ as it is long and arduous and presupposes a mastery of Aristotle's linguistic apparatus, but I do want at least to suggest that Aristotle's treatise *On the Soul* is not at all outdated by new developments in biology, and that the new biology may in some ways come to vindicate some of Aristotle's penetrating insights. This traditional philosophical account of the soul, in fact, complements what Still had to say about the second component of what it means to be human, namely, the mental, and which now I would like to say something about.

This seems especially important today given the advent of the new science of mind or biology of the brain, which, as mentioned, has recently been attempting, due to the dramatic and exciting achievements in molecular biology, to unite philosophy, psychology, and psychoanalysis in novel ways, particularly when it comes to questions concerning human nature and personal identity—and has generated a number of controversial positions regarding the origin of mind—positions related in particular to the complex phenomenon of memory. If we are to say something meaningful about the healing of the human person, in other words, we should seek to address the question of the nature of mental reality in the light of what is, perhaps, one of the greatest mysteries of all, namely, the mystery of what it means to be human. As early as the end of the 5th century BCE, in fact, Hippocrates states in a treatise titled *On Ancient Medicine* “that the only source for precise knowledge on the [nature of

man] is medicine”, but then he goes on to tell us that to acquire such knowledge the doctor “must embrace medicine itself correctly in its totality” which is to say “in that *historia* [history] or investigation that consists in knowing what man *is*, the causes of his formation, and all the rest, with precision”.⁸

It has probably become evident by now that I will not speak to you this afternoon about ethics, at least not directly. Nor, then, will I address directly the complex subjects of bioethics and medical ethics, which is what one might expect from my title; after all, what else would a philosopher addressing medical professionals and doctors speak about? I have avoided these subjects not only because I am not a competent bioethicist, but because a lot of what goes on in bioethics and medical ethics today is misleading in that it misses what philosophy has traditionally understood by ethics as a branch of philosophy organically joined to the other major branches of philosophy: aesthetics, anthropology, metaphysics, and epistemology. My impression is that, today, the rich and ancient branch of philosophy known as ethics has been trivialized, often times with the best of intentions, by lawyers, judges, medical professionals, doctors, journalists, economists, and professionals in advertising and marketing.⁹ Even the few competent bioethicists who really know ethics in this fuller sense as an integral branch of philosophy, and who also know biology deeply, must face the ever-growing challenge from the legal arena, which dictates the agenda and development of bioethics in ways that tend to be legalistic and reductionist. By focusing directly on the mystery of what man is, to quote Hippocrates, or of what it means to be human, that is to say, on philosophical anthropology, rather than on ethics, which because of these present day trends, tends to digress into various kinds of moralizing, I hope to provide a wiser, that is, a more philosophical account of this mystery—one that sees aesthetics, metaphysics, epistemology, *and* ethics as all integral and important elements of this search. I shall seek to do this, as I’ve indicated, in the context of what leading experts are saying about the new science of mind or biology of the brain as it relates to exploring the mystery of consciousness, memory, personal identity, and free will.

One such leading expert is Eric Kandel, winner of the 2000 Nobel Prize in Physiology or Medicine, who in his book, *In Search of Memory*, reveals that, like many of the great doctors of old, his deepest interests are philosophical. Fascinated by the phenomenon of memory, as the title of his book indicates, he dwells upon how essential memory is not only

for “enabling us to solve the problems we confront in everyday life”, but for the very continuity of individual identity. At one point he states, “[w]e are who we are because of what we learn and what we remember”.¹⁰ As a physician, his interest in the new science of mind is undoubtedly motivated by his hope to discover better treatments for memory loss and post-traumatic stress disorder, both of which we now know contribute to psychiatric disorders such as depression and schizophrenia, but the ultimate impetus in his research has to do with, in his own words, “penetrating the mystery of consciousness, including the ultimate mystery: how each person’s brain creates the consciousness of a unique self and the sense of free will”.¹¹ With this, Kandel reveals both his deep philosophical interests and his philosophical assumptions—assumptions which seem to be gaining ground in elite circles and which, in my judgment, need to be questioned at a fundamental level. For so much is at stake here in terms of what it means to be human that will in turn determine what *human* healing is really all about. There is no doubt, then, that Kandel is both philosopher and physician, and seems to have become a kind of model for many elite and cutting edge physicians to emulate. His desire to merge philosophy, psychology, and psychoanalysis with the biology of the brain is certainly a step in the right direction with respect to both holistic learning and holistic healing and, in this, his approach to both education and the human being is commensurate with the approach of the great ancient and medieval doctor/philosophers of old, who pursued knowledge in an integrated, interdisciplinary, and non-fragmented way.

Thanks to Kandel’s discoveries, and the many related scientific breakthroughs of the late 19th and 20th centuries in, for instance, magnetism and electricity, the various theories (often times competing) of evolution, early genetics, the theory of relativity, quantum mechanics (mentioned above), molecular biology and biochemistry, the thermodynamics of non-linear open systems far from equilibrium, astrophysics and others, the reductionism of 17th century mechanism has finally been overcome.¹² We have come a long way from the Cartesian reduction of matter to mere extension; the multi-layered variety and complexity of natural phenomena revealed by these developments in science is staggering, but what is even more impressive is that in the midst of this remarkably diverse and nearly unfathomable vision of nature, there are still those rare geniuses like Kandel who strive for unity and integration in knowledge and resist the almost inevitable fragmentation and departmentalization accompanying intense specialization.

In spite of all this, however, Kandel's efforts to develop this new science of mind by merging philosophy, psychology and psychoanalysis with what he consistently calls *the* biology of the brain rather than *a* biology of the brain, may also be moving towards a reductionism, albeit different than the mechanistic reductionism that the late 19th and 20th century discoveries in science overcame. But reductionism, if in fact this is where he is going, in whatever form is reductionism and therefore is always misleading. Just as the Cartesian mechanical philosophy tried to reduce all the other sciences, including philosophy, to a particular mathematical method, Kandel, too, reveals certain reductionist tendencies, but in terms of a biology of the brain, a biology which he insists on calling *the* biology of the brain, as if there were only one biological approach, and which he uses synonymously with the phrase the new science of mind, or biology of mind insisting in both cases on not using the definite article to qualify *mind*. We should not, he says, refer to the new science of *the* mind, or to the new biology of *the* mind, but to the new science of mind or the new biology of mind. These are not pedantic hair splitting particularities, but reveal what the elite in this field hold and teach concerning the very meanings of the terms mind and brain. To their great credit, and against Descartes' mind/body dualism, they hold, as Aristotle did, that the human mind and the human brain are inseparable, but in stressing the unity, they tend to lose sight of the subtle distinction, or better yet to explain the subtle distinction in ways that tend to reduce mind to brain. Explaining the first of five principles upon which the new science of mind is based, a science which Kandel believes will be as important to the 21st century as the biology of the gene was to the 20th, he states,

. . . mind and brain are inseparable. The brain is a complex biological organ of great computational capability that constructs our thoughts and emotions, and controls our actions. The brain is responsible not only for relatively simple motor behaviors, such as running and eating, but also for the complex acts that we consider quintessentially human, such as thinking, speaking, and creating works of art. Looked at from this perspective, mind is a set of operations carried out by the brain, much as walking is a set of operations carried out by the legs, except dramatically more complex.¹³

The analogy is an interesting one per se: the legs are to walking as the brain is to the mind. At one level, I can imagine any one of our ancient or medieval philosopher/doctors agreeing with it, but to turn the analogy into a *principle*, and the very first one at that, is problematic on a number of fronts—not the least of which is the way it is then taught dogmatically at elite institutions as a fundamental tenet of the new science of mind, a premise of sorts which ultimately leads to the conclusion that the new science or biology of mind, using the power of molecular biology, promises to explain the *remaining* mysteries of life including how the brain “creates the consciousness of a unique self and the sense of free will”. And this, to be sure, our pre-Cartesian, medieval and ancient doctor/philosophers would certainly not agree with, and, whatever it is worth, nor would I.

Cognizant of just how reductionist this sounds, those in the field are quick to point out, as Kandel does, in a defensive mode, that for “biologists working on the brain, mind loses none of its power or beauty when experimental methods are applied to human behavior”. These same biologists, among whom he is one of the most prominent of course, he goes on to say, “do not fear that mind will be trivialized by a reductionist analysis, which delineates the component parts and activities of the brain. On the contrary”, he argues, “most scientists believe that biological analysis is likely to increase our respect for the power and complexity of the mind”.¹⁴ I suspect he is right here, but be this as it may, what he avoids really explaining and defending, which is typical of those in the field, is actually what matters most, namely, the thesis that the human mind, consciousness, memory, creative thinking, and spirituality all “originate” in a physical organ. This is simply assumed to be the case based on the novel and incredible ability to identify how each mental function in the brain (from simple reflexes to complex creative acts) is “carried out by specialized neural circuits in different regions of the brain”,¹⁵ and, moreover, based on the fact that we now know that “these circuits are made up of the same elementary signaling units, the nerve cells”, and that the “the neural circuits use specific molecules to generate signals within and between [these] nerve cells”. Admittedly, these are extraordinary accomplishments, but I do not see how such remarkable achievements prove in any way that the “brain creates the consciousness of a unique self and the sense of free will”. They only indicate just how intricate the complex functions of the brain are to the phenomena of consciousness, memory, creative thinking, free will, and spirituality. In other words, what the astonishing success of

the biology of the brain has shown is just how inseparable the human mind (or human soul, to use the traditional word) and the human brain really are. But this insight is as old as Aristotle himself, who in developing the thought of his master, Plato, argued strongly against any mind/body or spirit/matter dualism and provided a sophisticated account of the differences without, however, compromising their fundamental unity. Thomas Aquinas, in fact, one of the most famous medieval Aristotelian philosophers goes so far as to say that the human mind or soul is not even what it is without the physical body. This Aristotelian account dominated the western intellectual tradition right up until the time that Descartes rejected it and introduced a matter/mind, body/soul dualism, which, as I've mentioned a few times now, was finally overcome by the scientific discoveries of the late 19th and 20th centuries, discoveries, which, like Heisenberg's theory of uncertainty, vindicated to some extent Aristotle's rich and supple account of matter as potency. We are still waiting, however, for the biological revolution to vindicate his account of form or soul which cannot be separated from his account of matter; the two are mutually dependent and intertwined and are not intelligible unless taken together. For this reason, I think the biological revolution, which *itself* cannot be understood, and would not have occurred, without the prior revolution in physics, will also lead to some kind of vindication of Aristotle's account of substantial form and soul. This vindication may very well come from the new interpretations that some molecular biologists are putting forth with respect to what the new science identifies as its fifth and final principle, namely, the fact that "specific signaling molecules have been conserved—retained as it were—through millions of years of evolution. . . [some of which] can be found today in our most distant and primitive evolutionary relatives: single-celled organisms such as bacteria and yeast and simple multicellular organisms such as worms, flies, and snails [that] use the same molecules to organize their maneuvering through their environment [which] we use to govern our daily lives and adjust to our environment".¹⁸ From this amazing discovery, proponents of the new science then conclude "that the human mind evolved from molecules used by our lowly ancestors and that the extraordinary conservation of the molecular mechanisms that regulate life's various processes also applies to our mental life".¹⁹ To argue, however, from the astounding discovery regarding the similarity of signaling molecules in all living organisms (from the simplest to the most complex) to the conclusion that the human mind therefore evolved from molecules used by our own lowly

ancestors, and that the extraordinary conservation of the molecular mechanisms that regulate life's various processes also applies to our mental life, is problematic on a number of different levels: first, a strict identification is made here between mind and brain without any discussion of why in the long tradition of science and philosophy, many good thinkers have always made a clear distinction between the two, without however dualistically separating them. Second, to say that the human mind evolved from molecules used by our lowly ancestors ignores what other molecular biologists are saying about these so-called "lowly ancestors", namely, that those closest to us may not have been so lowly after all. I refer here to the developments that took place about a quarter of a century ago, when John Gribbin and Jeremy Cherfas challenged traditional paleontological theory by suggesting in their book, *The Monkey Puzzle* (1982), that the common ancestor we share with the gorilla and the chimpanzee had distinctly human characteristics. They also suggested that the paleontologists had been off by about fifteen million years in terms of when this common ancestor lived, putting the date around five, rather than around twenty, million years ago. In 1997, fifteen years after the publication of *The Monkey Puzzle*, Simon Easteal of the Australian National University declared that in using the latest procedures in molecular biology, he and his colleagues had interpreted the DNA evidence in such a way as to confirm what Gribbin and Cherfas had already suggested, that is, that apes are descended from man, not man from the apes. Superficial commentary hurriedly pitted the biologists against the paleontologists, suggesting that the latter's work had become irrelevant overnight. More informed investigations, of course, point out the obvious error in such claims by underscoring the fact that without paleontology, the so-called molecular clock²⁰ is useless. It is not my concern to analyze how this molecular clock works; it is enough to say that the ticks in this clock can only be counted once a reasonably accurate date for the split between any two species has already been provided, and such a split cannot be determined without the fossil evidence of the paleontologists.

The real breakthrough came in 1967 when Berkeley's Vincent Sarich and Allan Wilson, building upon the work of George Nuttall and Paul Ehrlich, eminent biologists of the late nineteenth century, and especially upon the work of Morris Goodman in the late 1950's, began to count the ticks of the molecular clock beginning with the split between Old World monkeys and apes, which the fossil evidence had reasonably situated at about thirty million years ago.²¹ Simply speaking, the count-

ing had to do with comparing monkey proteins with ape proteins. When the counting was over, Sarich and Wilson claimed that gorillas, chimps, and humans, all shared a common ancestor as recently as about five million years ago. The 1980 specification of the entire DNA sequence for the virus phiX 174, which led to the completion of the first map of the entire human genome some twenty years later, seems to have vindicated the findings of Sarich and Wilson, as well as improved upon the accuracy of the date of the existence of the common ancestor that humans, chimps and gorillas all have in common, putting it between 3.6 and 4 million years ago. The new date stunned the scientific world because according to reliable fossil evidence, our ancestors may have learned to walk upright well before this date. In the light of this new evidence, Gribbin and Cherfas felt confident in their hypothesis that the common ancestor was probably more human like than ape like,²² and went searching for further evidence.

Where this search will ultimately lead is hard to say, but the point I'm trying to drive home here is that although evolutionary theory is virtually impossible to deny, the variations on the evolutionary theme are diverse, complex, and nowhere near being agreed upon by the scientific community. Therefore, to speak about evolution as if it were one thing, the details of which are unambiguous and well known facts, is to go way beyond the available evidence. Even the stunning genetic fact that chimps and humans and gorillas are genetically as close (or closer in the case of chimps and humans) as the goat is to the sheep or the zebra is to the horse,²³ 98.4% to be exact, needs to be qualified. That is to say, some scientists are quick to remind us that although we were able to specify the entire DNA sequence for the virus phiX 174, which in turn led to the completion of the first map of the entire human genome about a decade ago, it is still the case that the functions of about 97% of the human genome is still waiting to be identified and remains largely undetermined; to call this genetic material "junk" DNA, they tell us, simply because we have not been able to identify its function, is misleading. Scientists like W. W. Gibb's argue in fact that we may still find some gems among the so-called junk.²⁴

None of this of course is meant to call into question the importance of the biological revolutions in 1953, 1980, and 2000; it is meant, rather, to challenge the position which uncritically reduces mind or soul to brain based on the premise that these biological revolutions of the 20th century are essentially the natural outcome of the very first biological

revolution in modernity, that is to say, the revolution spawned by Charles Darwin's work in the 19th century. We tend to forget that what was so revolutionary about the 1859 publication of Darwin's *The Origin of Species* was not the idea of evolution per se, an idea which we find among the ancient Ionian philosophers,²⁵ but an idea that concerned the very purpose of biology itself. Before Darwin, the purpose of biology by and large had been understood as an attempt to explain *design* in nature, but Darwin "proposed. . . that evolution's driving force [was] not a conscious, intelligent, or divine purpose, but a "blind" process of natural selection, a completely mechanistic sorting process of random trial and error based on hereditary variations".²⁶ In many ways, of course, this idea was completely predictable given the influential epistemological assumptions of the 17th century mechanical philosophy, and it is perfectly commensurate with such a philosophy. But for some strange reason, many of the very scientists who otherwise welcome the overthrow of this mechanical philosophy in say, the new physics, continue to hold on to a variation of this mechanistic view when it comes to the new science of mind. Kandel, in fact, draws a clear straight line from Darwin to modern biology right up to the new biology of the brain and suggests that just as modern biology, following Darwin's "blind" process assumption, "ask[ed] us to believe that living beings, in all their beauty and infinite variety, are merely the products of ever new combinations of nucleotide bases, the building blocks of DNA's genetic code",²⁷ so eventually will the new biology, following this same Darwinian assumption, ask us to believe that "consciousness is a biological process that will eventually be explained in terms of molecular signaling pathways used by interacting populations of nerve cells".²⁸ I have no doubt that Kandel is right, what I call into question, rather, is whether or not any of these explanations are complete, or ever will be complete, without taking up the question of what it is that accounts for the ultimate *unity* of the human organism.

Naturally, this quandary surrounding the question of unity is recognized as the crux of the issue by many proponents of the new science, including Kandel, and to his great credit, he seeks such unity in the mystery of memory; this is why so much of his brilliant research on the brain focuses on memory. But the problem is that investigations into memory, whether taken up by the neuroscientist, the philosopher, or the psychologist, will not provide any kind of unity when it comes to questions of personal identity, human nature, or what is meant by healing this nature unless one overcomes the mechanistic, "blind" process assumption and

admits that purpose and design are at the heart of what memory itself is: “[i]n fact, design seems to be a common thread that runs through the whole of nature. Time and again, in cases that have been catalogued since the dawn of biology, nature reveals that (1) its inhabitants are remarkably suited to fit their environment and (2) the various parts and systems that constitute organisms are remarkably suited to work in concert with one another”.²⁹ And when it comes to the phenomenon of memory, to deny design would be to deny memory itself; even the etymology of the word itself reveals that to re-member or to re-group or to re-gather is necessarily concerned with achieving unity for the purpose of survival, but not the kind of survival that implies “*chance* mutations, driven blindly by the engine of natural selection”,³⁰ but the kind that implies an intelligent and willed striving for courage and hope in the face of the supreme mystery, namely, death. With this, we have come to the utmost meaning of all we have been considering: philosophy, healing, what it means to be human. It was for a good reason that Plato said “all philosophy is but a meditation on death”. The great philosopher/doctors of old emphasized that it was this, above all, that set human beings apart from the higher animals, and I suppose we would have to add today, above super-computers. A meditation upon death brought the lover of wisdom, the philosopher, to see that although death could only be postponed, and not overcome, life was still worth living. To heal the patient meant, above all, to help the patient realize this timeless truth, and the memory of this truth was said to live on in the really genuine healers. The physicians who were able to preserve this truth and hand it on to their patients, were the ones considered to be philosophers, lovers of wisdom. It seems fitting then, to bring this very modest meditation on an enormous topic to a close with a quote from a sixth century philosopher by the name of Boethius, who towards the end of his life, as he was facing his own death, penned the following words to describe his own ultimate healing:

*The Clouds of my grief
finally dissolved and I drank in the light
With my thoughts recollected
I turned to examine the face of my physician.
I turned my eyes and fixed my gaze upon her, and
I saw that it was my nurse in whose house
I had been cared for since my youth—the house of philosophy.*

Endnotes

¹This key note address was given at the 12th Annual Chicago Trauma Symposium/www.chicagotraumasymposium.com on August 5th, 2010

²See Charles Taylor's *The Ethics of Authenticity* (Cambridge: Harvard University Press, 1991) 6.

³I refer here to the discovery of the structure of a part of the human cell called deoxyribonucleic acid, better known as DNA, by Francis Crick and James Watson. It was revolutionary in that it provided "an intellectual framework for understanding how information from the genes controls the functioning of the cell. That discovery led to a basic understanding of how genes are regulated, how they give rise to the proteins that determine the functions of cells, and how development turns genes and proteins on and off to determine the body plan of an organism". See Eric R. Kandel's *In Search of Memory: The Emergence of a New Science of Mind* (New York: W. W. Norton and Company, 2006) xi.

⁴Kandel, *In Search of Memory*, 11.

⁵Werner Heisenberg, "Natural Law and the Structure of Matter, in *Across Frontiers* (New York: Harper and Row, 1974) 104.

⁶*Ibid.*, 115. (my emphasis in italics)

⁷For the full argument see my "Soul Matters: Apes, Anthropology, and Aristotle" in *Transdisciplinarity In Science and Religion* ed. Eric Weislogel (Bucharest: Curtea Veche Publishing House, 2009) 197-234. Also available on-line at www.metanexus.net under "conferences, 2008".

⁸See Pierre Hadot's *The Veil of Isis: An Essay on the History of the Idea of Nature* (London: The Belknap Press of Harvard University Press, 2006) 19. In some ways, I have taken this quote out of context because part of what Hippocrates is resisting here is the influence of certain kinds of philosophy upon medicine. However, I do maintain that the thrust of what I am trying to argue here is warranted.

⁹See *Bioethics in Central Europe* ed. Vasil Gluchman (Slovakia: Filozoficka fakulta PU v Presove, 2009). The title is somewhat misleading, as many of these conference proceedings are not limited to analyzing the situation of bioethics only in Central Europe, but have a global perspective.

¹⁰*In Search of Memory*, 10.

¹¹*Ibid.*, 11.

¹²See Richard Khuri's "Values and Science: A Philosophical Examination of Values Suggested by Recent Developments within the Sciences"—a presentation given at an international conference in Venice, 2010. Soon to be published by. . .

¹³*In Search of Memory*, xii.

¹⁴*Ibid.*, 9.

¹⁵*Ibid.*, xii.

¹⁶*Ibid.*

¹⁷For a full treatment of what exactly is meant by "substantial form" in the modern context of the biological revolution, see my *Soul Matters: Apes, Anthropology, and Aristotle* in *Transdisciplinarity In Science and Religion* ed. Eric Weislogel (Bucharest: Curtea Veche Publishing House, 2009) 197-234. Also available on-line

at www.metanexus.net under “conferences, 2008”.

¹⁸*In Search of Memory*, xiii.

¹⁹*Ibid.*

²⁰“Credit for the concept of a molecular clock is given to Emile Zuckerkandal and double Nobel Prize winner Linus Pauling. They are supposed to have been the first to realize that because mutations are random events DNA should accumulate them at a relatively steady rate”. See John Gribbin’s and Jeremy Cherfas’ *The First Chimpanzee: In Search of Human Origins* (New York: Barnes & Noble, 2001) 114.

²¹*Ibid.*, 23, 114, 125, 129.

²²*Ibid.*, 1-3.

²³*Ibid.*, 1.

²⁴See W. W. Gibb’s “The unseen genome: gems among the junk” in *Scientific American*, (2003) 289 (5): 46-53.

²⁵Anaximander, the student of a certain Thales who is known as the Father of Philosophy in the West, composed a long poem *On Nature* wherein he suggests that plants and animals evolved from mud and that humans evolved from fish.

²⁶This is how Kandel puts it: see *In Search of Memory*, 8.

²⁷*Ibid.*, 8

²⁸*Ibid.*, 9

²⁹See Thomas B. Fowler’s and Daniel Kuebler’s *The Evolution Controversy* (Grand Rapids: Baker Academic, 2007) 237.

³⁰*Ibid.*