Do not go gentle into that good night,
Old age should burn and rage at close of day;
Rage, rage against the dying of the light?
        Dylan Thomas

Darwin’s, Nietzsche’s, and Freud’s Legacy
(or, What Neuroscience of the Lateralized Brain Might Tell Us About Living With
Death in the 21st Century)

Darwin’s, Nietzsche’s, and Freud’s Legacy is not the death of God, but rather our
own death; the death of our hope of an afterlife; the death of the immortal soul of the
Abrahamic religious traditions; the death of the Cartesian subject, the homunculus, the
little person inside the head that says “I think, therefore I am.”; the death of Kant’s
transcendental ego, the unified, autonomous, objective, and independent I-of-being.
Whether or not God exists is not the critical question. The primary issue is whether our
souls continue to exist after death. If life ends at death, the nature of ultimate reality is of
little relevance given that the solution lies beyond our cognitive limitations.

The primary function of religion is the affirmation of life after death. Darwin’s,
Nietzsche’s and Freud’s legacy is its negation. Knowledgeable people, who accept
evolution but also are committed to a form of Abrahamic monotheism, have been forced
to abandon a literal interpretation of the Garden of Eden narrative of creation. They
therefore must believe that, at a given point in time in the evolutionary process, a divine
intervention transformed ape to human.

The division between theistic and atheistic evolution surfaced when Wallace and
Darwin first co-introduced the theory of natural selection to the prestigious Linnean
Society of London. Wallace believed that adaptation could not account for the uniqueness
of human thought. Natural selection responds to past and present problems, and is not
future oriented. Animals are at the mercy of nature and must adapt accordingly. In natural
selection the solution follows the problem, not anticipates it. The human mind is able to
forestall the adverse influences and circumstances that would drive natural selection.

Wallace, when interviewed as to his differences with Darwin explained, “Darwin
believed that the mental, moral, and spiritual nature of man were alike developed from
the lower animals, automatically, by the same processes that evolved his physical
structure. I maintain, on the other hand, that there are indications of man having received
something that he could not have derived from the lower animals.” The interviewer
responded with the question, “Have you any theory as to how he got that something?”
Wallace answered, “I do not think it is possible to form any idea beyond this, that when
man’s body was prepared to receive it, there occurred an inbreathing of spirit—call it
what you will.” Wallace believed that the soul survives the death of the body.
Darwin, in contrast argued, “there is no fundamental difference between man and the higher mammals in their mental faculties.”iii “The difference in mind between man and the higher animals, great as it is, is certainly one of degree and not of kind.”iv Both animals and humans have minds. If we define the soul as constituted by those aspects of mind that humans possess and animals lack, then we must conclude that while humans possess souls and animals do not, the human soul evolved in much the same way, according to much the same evolutionary principles, as the minds of animals. If there is an evolutionary continuity between our brain and the brain of our common ancestor with the chimpanzee and bonobo then it would follow that also there is a continuity in the evolution of the mind that precludes the immortality of the soul.

Why, in face of the overwhelming evidence for the evolution of the body and the brain, can we not accept the fact that the soul ends when the brain shuts down? The problem is that there remains a loophole or a gap in evolutionary biology. There are only two evolutionary selection processes, natural selection and sexual selection. Neither has yet provided a credible narrative to account for the evolution of our unique mental properties such as advanced self-consciousness, the recognition of other minds, and language. Until we can, we will remain trapped between the dialectical poles of beast and angel.

Darwin never suggested that our minds evolved through adaptation since natural selection favors swift, non-conscious, instinctual responses rather than cognitive calculation. In the first edition of *The Origin of Species by Means of Natural Selection* humans are hardly mentioned.v The declared object of his second book, *The Decent of Man and Selection in Relation to Sex*, was “to consider whether man, like every other species, is descended from some pre-existing form,” and “the manner of his development.”vi

“The sexual struggle is of two kinds” writes Darwin, “in the one it is between the individuals of the same sex, generally male sex, in order to drive away or kill their rivals, the female remaining passive; whilst in the other, the struggle is likewise between individuals of the same sex to excite or charm those of the opposite sex, generally females, who no longer remain passive, but select the more agreeable partners.”vii He went on to write, “For my own part I conclude that of all the causes which have led to the differences in external appearance between the races of man, and to a certain extent between man and the lower animals, sexual selection has been the most efficient.”viii “Through the means just specified, (sexual selection) aided perhaps by others as yet undiscovered, man has been raised to his present state.”

Darwin was committed to the premise that the unique features of the human mind were the product of sexual selection since it alone can account for rapid, species unique, evolutionary transformations. Nevertheless he was well aware that it faced two problems. How can female sexual selection function efficiently in a male dominant species where “in the savage state he keeps her in a far more abject state of bondage than does the male
of any other animal.\textsuperscript{vi} The second quandary is that if females selected males on their intelligence, cognitive abilities would have spiraled dimorphically, primarily in the male.\textsuperscript{x}

The problem that has haunted evolutionary science from the beginning is: \emph{How do we stay true to Darwin’s legacy when faced with the fact that Darwinian selection cannot account for the unique features of the human mind? How did we reach the summit of a mountain impossible to climb through Darwinian selection when Darwinian selection is the only game in town?}

Subsequent developments in evolutionary biology, anthropology, psychology, and paleontology, reveal that monosexual dominance is far more dialectical and reversible within species than was thought to be the case.\textsuperscript{xi} Females are dominant in our genetically closest relative, the bonobo.\textsuperscript{xii} The fossil remains of the earliest known obligate biped \textit{Ardipithecus ramidus} show significantly less female and male canine and body size dimorphism.\textsuperscript{xiii} The second problem, however, remains. The absence of dimorphic cognitive difference between the minds of females and males precludes the possibility that females directly selected males on the basis of their mental abilities.

The one special property that humans share with chimpanzee and bonobo is the capacity to recognize a mirror image as a sign of one’s self.\textsuperscript{xiv} Why did it further evolve only in humans, particularly in the absence of mirrors? In the knuckle-walking quadruped the sexual organs are generally hidden. In the obligate bipedal hominin the reproductive organs are continually in one’s face. The naked body provides a self-reflective mirror of sexual identity and difference. Self-referential thought emerged when gender differentiation moved from purely instinctual responses, to cognitive interpretation of the visual reproductive organs as signs of gender difference.

If the capacity for self-consciousness was advantageous in the conflict between the reproductive interests of the female in quality and the reproductive interest of the male in quantity, it would be so for both sexes. This would explain the absence of dimorphic differentiation between the minds of females and males. It would be the ongoing dialectics of the “war of the sexes” that would drive the evolution of the self-referential mind.

**Darwin’s legacy in the 21st century in the light of the neuroscience of the lateralized Brain**

In his book \textit{Embodiments of Mind} the neuroscientist Warren S. McCulloch posed the Sphinx-like question: \textit{“What is a Number that a Man May Know it, and a Man, that He May Know a Number?”}\textsuperscript{sv} The mathematician, David Hilbert (1862-1943), undertook a program to place mathematics on a complete and final logical foundation.

1. The program would be universal in that it would explain every mathematical system from natural numbers to set theory.
2. The program would contain no paradoxes or contradictions.

3. The program would be complete in that every axiom would be true and every theorem in the system would be provable.

The set theory of George Cantor (1845-1918) emerged as the most universal framework of reference, in that virtually any mathematical theorem can be formulated as a theorem of set theory. The logician Gottlob Frege (1848-1925) was able to apply his propositional calculus to mathematics by formulating numbers in terms of set theory, thus producing a logic adequate for the task of the formalization of mathematics.

Self-reference inevitably results in paradox, such as “This sentence is false.” If it is false then it is true, and if it is true, then it is false. In the early twentieth century Bertrand Russell (1872-1970) articulated a paradox in set theory that created a foundational crisis for mathematics. We can take as a given that most sets are not members of themselves because the set is not the same thing as its content or members, but we can also take as a given that there are some sets which are members of itself. Conceivably we can have the set of all sets that have the property of not being a member of itself. Hence the self-referential paradox: If the set is a member of itself then it is not a member of itself, and if this set is not a member of itself then it is a member of itself.

Kurt Gödel (1906-1978), a young Austrian mathematician, believed that Hilbert’s project was misconceived. In order to prove anything about itself, the system has to be able to refer to itself. Since defining the truth of a system within the system always results in paradox, the truth of the system must be defined externally. Hence no formal system can be both logical and complete. Gödel then set out to prove that all formal systems by their very nature are incomplete. Given: (a), the system of natural numbers, and (b), its representation in a formal system of mathematical logic consisting of axioms, theorems, variables, and logical operations, Gödel devised a further meta-logical system (c) consisting of nothing but natural numbers. He was then able to make non-paradoxical self-referential statements about the system of natural numbers in an external system consisting of nothing but natural numbers.

He accomplished this by representing every item in the axiomatic system (b) by assigning it a unique natural number in system (c). Any number can be expressed as a product of prime numbers in only one way. The number 9000, for example can be only expressed in terms of prime numbers as the Gödel number \(2^3 \times 3^2 \times 5^3\). Whole statements in the logical axiomatic system (b) are represented in system (c) by a Gödel number that is the product of multiplying the Gödel numbers of its individual items. A logical relationship between two items in level (b) is represented at level (c) by multiplying their two representative Gödel numbers. Gödel succeeded in arithmetizing metamathematics and for this reason his system of Gödel numbers is often referred to as a “calculus”.

Gödel was able to mathematically prove the incompleteness of logical axiomatic systems. He first discovered the undefinability theorem: Truth in a formal system cannot be defined within the system. He then went on to prove his two incompleteness
theorems: If all of the axioms of a formal system are true then it will contain theorems that cannot be proven, and if all of the theorems can be proven then it will contain axioms which will not be true.\textsuperscript{xviii} The structure of non-paradoxical self-reference in Gödel’s brilliant mathematical achievement can be represented by the formula: (a) → (b) → (c) ← (a).

The mental ability of an infant or a bonobo to recognize her mirror image reflects the same formula of non-paradoxical self-reference as a Gödel number. The phenomenological experience of being a self (a) is represented by the mirror image (b). The phenomenological self (a) and its mirror representation (b) are brought into a self-referential convergence at a meta-level of mind (c), as (a) → (b) → (c) ← (a).

To use arithmetic to prove a proposition about arithmetic is to lift oneself up by one’s bootstraps. If there is a ceiling from which a pulley and rope are hanging, you then can attach the rope to yourself and lift yourself up by pulling down on the other end. The system of natural numbers constitutes a floor and the system of Gödel numbers constitutes a meta-mathematical ceiling. The system of axioms, theorems and logical functions connects the floor and ceiling, and thus furnishes the pulley and rope. In a vital footnote Gödel wrote: “the true source of the incompleteness attaching to all formal systems of mathematics, is to be found… in the fact that the formation of ever higher types can be continued into the transfinite…. It can be shown, that is, that the undecidable propositions here presented always become decidable by the adjunction of suitable higher types.”\textsuperscript{xxix}

What Gödel is saying is that any meta-system can become an object-system in terms of a further meta-system \textit{ad infinitum}. The structure of non-paradoxical self-reference denies closure, completeness, or ultimate truth, but provides the potential for recursive generative unlimited spiraling where each ceiling then becomes a floor with a further ceiling. Our species could reach the summit of Mount Impossible if the soul is structured like a Gödel number. Rebecca Goldstein, in her book \textit{Incompleteness}, argues that the significance of Gödel’s incompleteness theorems ranges far beyond mathematics. “Eminent thinkers,” she writes, “have interpreted the incompleteness theorems as having something to say on the central question of the humanities, viz. \textit{what is it that makes us human}…. After all, we are not only living with the truth of Gödel but also the truth of Darwin.”\textsuperscript{xx}

One such eminent thinker who recognized the connection that links Gödel’s incompleteness theorems to the question, \textit{what is it that makes us human}, is the mathematician Louis H. Kauffman who in a paper entitled, “The Mathematics of Charles Sanders Peirce,” asserted: “I believe that the key to understanding Peirce on mathematics is his view of the nature of a human being as a Sign. In this view there can be no essential separation of the human being and the mathematics of language of that being.”\textsuperscript{xxi} Kauffman explains, “It is through this interlocking relationship of Sign and Object that Gödel constructs a text that asserts its own unprovability in the given formal system”. According to Kauffman, “The interlocking relationship of Sign and Object was
already well understood by Peirce.\textsuperscript{xxii}

The philosopher and mathematician Charles Saunders Peirce (1839-1914), the founder of semiotics in North America, was probably the most profound and original thinker America has yet produced.\textsuperscript{xxiii} Peirce recognized that language is not a simple binary code where a signifier represents the signified. Language is a triadic semiotic system where the sign itself, the Representamen, and what it represents, the Object, converge in the form of the Interpretant that constitutes an idea as a new Representamen of a further idea, \textit{ad infinitum}. Peirce called this process unlimited semiosis.

This convergence of ideas and pivot duality of interpretation explains the mystery of the transparency of language where phenomenological experience and words merge into a unified thought that, according to Kauffman, is structured like a Gödel number. The phenomena (a) \textit{white snow} is represented by (b) the words “white snow” where word and image converge into the single idea “white snow” as: (a) \rightarrow (b) \rightarrow (c) \leftarrow (a). According to Peirce, “The idea does not belong to the soul; it is the soul that belongs to the idea.”\textsuperscript{xxiv}

Peirce further declared, “It is that the word or sign which man uses \textit{is} the man himself. For, as the fact that every thought is a sign, taken in conjunction with the fact that life is a train of thought, proves that man is a sign…. Thus my language is the sum total of myself; for the man is the thought.\textsuperscript{xxv}

Rather than floors, ceilings, ropes, and pulleys, we might conceive of the bootstrapping mind as two linked parallel minds, where phenomenological experience and representation are brought into convergence. If we have evolved a “bootstrapping” mind, then we must also have evolved a “bootstrapping” brain. Since the late nineteenth century, neuroscience has been aware that, while the right hemisphere controls the left side of the body, and the left the right side, the processing of language primarily takes place in the left-hemisphere. Lesions in the Broca’s area interfere with speech, but not with understanding. Lesions in the Wernicke’s area permit vocalization but effect language comprehension.

The two hemispheres of the divided brain are linked only at the bottom by a thin wide flat band of neural fibers known as the corpus callosum. In severe epilepsy a kind of electrical “brainstorm” caused by the excessive signaling of nerve cells can spread from the originating hemisphere to the other. Surgically separating the two hemispheres by severing the corpus callosum leaves the patient essentially with two separate brains. While one brain is disrupted the other can continue to function. Through decades of experiments the neurobiologist and Nobel Laureate Roger Wolcott Sperry, along with his then student Michael Gazzaniga, have provided us with an analysis of the structure of the divided brain that invites a convergence of Darwin’s and Gödel’s legacies that can account for the evolution of a bootstrapping soul by the evolution of a bootstrapping brain.

Research on patients who have undergone hemisphere separation or have lost the use
of one hemisphere through brain trauma such as a stroke or lesion reveals that, rather than diminishing in intelligence, each half brain “remains just as intelligent as a whole brain.” Gazzaniga writes, “If brain quantity is so important, you would think that there would be an effect on problem solving and hypothesizing when half the brain is lost, but there is not.” The difference between the human brain and those of our nearest primate relatives is as much a question of its organization as it is of size. While the brains of the bonobo and chimpanzee are more deeply lateralized than any other primate species, the division in the human brain is almost complete. His conclusion is: “Bigger Isn’t the Answer to Better.”

The experiments and studies further prove that “the conscious experience of the two hemispheres was very different.” Each are specialized in regard to their functions. The left brain is the Interpreter “that engages in the human tendency to find order in chaos, that tries to fit everything into a story and put it into a context.” The right hemisphere, on the other hand is more visually and emotionally oriented. In the words of Sperry, “The great pleasure and feeling in my right brain is more than my left brain can find the words to tell you.”

The studies suggest “that one hemisphere cedes control of a task to the other hemisphere if the other hemisphere specializes in that task. This is cued by one hemisphere to the other simply by a faster speed of response.” At the same time, each hemisphere constitutes a complete brain in that the each can perform the task of the other brain, but not necessarily as well. The right hemisphere can process language if the left brain is damaged. Although “consciousness involves a multitude of widely distributed specialized systems and disunited processes,” their products are integrated in a dynamic manner such that we experience consciousness as a unity.

Gazzaniga reports, “we have collected evidence that, following midline section of the cerebrum, common normal consciousness unity is disrupted, leaving the split-brain patient with two minds (at least), mind left and mind right. They coexist as two completely conscious entities, in the same manner as conjoined twins are two completely separate persons.” The experiments demonstrated that when the link between the two hemispheres is severed, the products of each can no longer be brought into convergence. Thus if an image of snow is shown only to the eye connected to the right hemisphere the patient is unable to recall the word “snow” from its left hemisphere.

Ian McGilchrist, in his study of the functional lateralization of the brain, asserts that the “defining feature of the human condition” is the capacity for self reflection which he defines as “our ability to stand back from the world, from our selves and from the immediacy of experience,” that “enables us to plan, to think flexibly and inventively, and in brief, to take control of the world around us rather than simply respond to it passively.” Self-reference, he points out, cannot be accommodated within a single hemisphere since it would result in self-referential paradox.
The process of thought begins in the realm of the right hemisphere. Then, “the right hemisphere delivers something to the left hemisphere, which the left hemisphere then unfolds and gives back to the right hemisphere in an enhanced form.” Truth in a lateralized hemisphere can only be confirmed within the other hemisphere. Neither hemisphere can ever alone be complete, and each specialized hemisphere adds something to the content it receives from the other and passes it back to be experienced as a unified consciousness. It is the corpus callosum that acts principally as the agent of hemisphere differentiation and integration. Thus we have the bootstrapping spiral of right hemisphere passing (a) phenomenological perception to the left hemisphere for (b) linguistic representation and systemization, that is passed back to the right hemisphere where (a) and (b) converge as a unified thought as: (a) \( \rightarrow \) (b) \( \rightarrow \) (c) \( \leftarrow \) (a).

Gazzaniga asks the question, “What is going on in the brain to produce this magnificent ability that humans have, how did it come about, and how do you capture it?” “Natural selection,” he points out “pushes for nonconscious processes. Fast and automatic is the ticket for success.” The brain and all these processes evolve, he suggests, “to enable us to make better decisions that increase our reproductive success.”

Leonard Shlain, in his study of brain lateralization, *The Alphabet Versus The Goddess: The Conflict Between Word and Image*, writes, “The single most powerful sexual organ humans possess is their brain. Sights, smells, sounds, and thoughts are all capable of tickling the procreative apparatus into a heightened state of readiness…. The complex process, refined by nature over millions of years, secures the continuation of the species.”

A comparison of the primal properties of each hemisphere reveals that those best serving the reproductive interests of the female are specialized functions of the right hemisphere, while those best serving the reproductive interests of the male are specialized in the left. Shlain’s thesis is that the war of the sexes directly correlates with the dialectics of the right and left brain. If one takes the functional properties of the right and left hemispheres as outlined by the various studies and apply them to sex and reproduction, one will discover that misogyny, whether in the male or in the female, is left brain oriented and its opposite, philogyny is right brain oriented.

**Nietzsche’s legacy in the 21st century in the light of the neuroscience of the lateralized Brain:**

Nietzsche was the first to realize the full implications of the Darwinian evolution. The death of God was a peripheral, loss, mentioned more in passing. The demise of the transcendental, unified, autonomous, objective, immortal soul was central. Nietzsche asserts we must “declare war, relentless war unto death,” against the “atomistic” and “metaphysical” needs “which Christianity has taught best and longest, the soul atomism… the belief which regards the soul as something indestructible, eternal, indivisible, as a monad, an atomon: this belief ought to be expelled from science.” He offered a new “soul-hypothesis” in terms of “soul as subjective multiplicity,’ and “as social structure of the drives and affects’”. 
In *Composing the Soul: Reaches of Nietzsche’s Psychology* Graham Parkes suggests, “The most radical feature of Nietzsche’s psychology … is his conception of the psyche as a multiplicity, in contrast with the traditional idea of the soul as something unitary.” According to Nietzsche, “‘The Subject’ is the fiction that many similar states in us are the effect of one substratum.” In his summation in his final book, *Ecce Homo: How One Becomes What One Is*, he writes:

> It is not error as error which horrifies me… it is the utterly ghastly fact that anti-nature itself has received the highest honours as morality, and has hung over mankind as law, as categorical imperative! … That contempt has been taught for the primary instincts of life; that a ‘soul’, a ‘spirit’ has been *lyingly invented* in order to destroy the body; that one teaches that there is something unclean in the precondition of life, sexuality….

In *Nietzsche’s New Darwinism* John Richardson argues that drives and instincts are Nietzsche’s main explanatory devices of his psychology, sociology, epistemology, and philosophy. According to Nietzsche, “All instincts that do not discharge themselves outwardly *turn inward*—this is what I call the *internalization* of man: thus it was that man first developed what was later called his ‘soul…. [T]he existence on earth of an animal soul turned against itself, taking sides against itself, was something so new, profound, unheard of, enigmatic, contradictory, and pregnant with a future that the aspect of the earth was essentially altered.” “While ‘we’ believe we are complaining about the vehemence of a drive, at bottom it is one drive *which is complaining about another*; that is to say: for us to become aware that we are suffering from the *vehemence* of a drive presupposes the existence of another equally vehement or even more vehement drive, and that a *struggle* is in prospect in which our intellect is going to have to take sides.”

Commencing with *The Birth of Tragedy* Nietzsche developed the dialectics of two instinctual drives that he designates as the Apollonian and the Dionysian. Unlike a Hegelian dialectics, there can never be a synthesis. According to Nietzsche, “just as reproduction depends upon the duality of the sexes, their continuing strife and only periodically occurring reconciliation” these two very different drives “run parallel to each other, for the most part openly at variance; and they continually incite each other to new and more powerful births, which perpetuate an antagonism.” The Apollonian versus Dionysian dichotomy mirrors the fundamental dialectics of the human psyche.

Nietzsche’s *Apollonian* and *Dionysian* polarity is now widely recognized as a metaphor for a functional right brain—left brain dichotomy in the life of the human mind. McGilchrist derives the title of his study of brain lateralization, *The Master and His Emissary: The Divided Brain and the Making of the Modern World*, from a story in Nietzsche where a master is overthrown by his vizier with whom he had provided with trust and responsibility. The first half documents the cognitive functions of each hemisphere, arguing that those of the right hemisphere are primary in comparison to the
left. The second half is an analysis of the history of the western world from ancient times to the present, explained in terms of the triumph of the left hemisphere over the right.

Dionysus is the god of the loss of boundaries of the self. He is the god of drama and the theater, the god of madness, the god of intoxication, the god of sexual ecstasy, the god of unification with nature. He is the god of the maenads, and the god of male masochism. He is the god of patricide and philogyny. Apollo is the god of individuation, separation, definition, system and logic. He is the god of clarity, form, and structure, the god of difference and boundaries. He is the god of separation from nature, and thus the god of culture. He is the god of matricide and misogyny.

Nietzsche creatively used metaphor and mythic structures throughout his writing. The will to power, the eternal return, the Übermensch are best understood as metaphors for a new evolutionary psychology. Nietzsche responded to his own question, “What then is truth?”, with the answer, “A mobile army of metaphors, metonyms, and anthropomorphisms.” He took the essence of an ancient Minoan myth to create his own grand mythic structure, Thus Spake Zarathustra. In his interpretation of this famous text, Laurence Lampert, explains: “the marriage symbol par excellence for Nietzsche is that marriage that followed the abandonment of a woman by a heroic man … the marriage of Ariadne and Dionysus that followed the abandonment of Ariadne by Theseus. It is towards this mystery that the fable of Zarathustra moves, the mystery of male and female culminating in marriage, in the fruitful complementarity of Zarathustra and Life.”

Nietzsche realized that Darwin necessitated a radical revision of all knowledge and values that presuppose the existence of the Abrahamic, Cartesian, Kantian, unified and autonomous soul as the knowing subject of objective truth. Nietzsche chose to write esoterically from a Dionysian perspective through aphorisms, poems, contradictory fragments of text, and multiple layers of extended metaphors and mythic references, rather than producing a systematic presentation of his thought.

If we view Nietzsche’s legacy in the light of the neuroscience of the lateralized brain it can be seen to constitute a grand parallel of Gödel’s famous incompleteness proof; open and incomplete as a process of becoming, but without paradox. The phenomenological and experiential world of the right brain (the Dionysian) that is represented in terms of the language, logic, and systems of the left brain (the Apollonian) are returned to the Dionysian right brain to converge with the phenomenological and experiential world in the form of the wisdom of myth and metaphor. To paraphrase the words of the neurobiologist Roger Sperry: “The Dionysian feelings, affectual states in my right brain are more than my Apollonian left brain can find the words to tell you.”

Freud’s legacy in the 21st century in the light of the neuroscience of the lateralized Brain:
In his classic three-volume biography of Freud, Ernest Jones asserts that it was Darwin “who pointed the way” for Freud to understand nature and man’s place in nature. The theories of Darwin attracted Freud, “for they held out hope of an extraordinary advance in our understanding of the world.” Freud, according to Jones, “closed the still remaining gap in the doctrine of human evolution” left by “Darwin’s brave attempt, in his book The Expression of the Emotions in Man and Animals.” “It was for this reason,” Jones proclaimed, “that I bestowed on Freud the title of the Darwin of the Mind.”

The commonality between the fundamental concepts of Nietzsche and Freud is obvious when read in their original German. Bruno Bettelheim, in Freud and Man’s Soul, writes, “The English translations of Freud’s writings are seriously defective in important respects and have led to erroneous conclusions, not only about Freud the man but also about psychoanalysis.” Of all the mistranslations of Freud’s phraseology,” Bettelheim writes, “none has hampered our understanding of his humanistic views more then the elimination of his references to the soul (die Seel).”

One of the more grievous of the mistranslations, according to Bettelheim, occurs where the German Trieb and Instinkt are both translated as instinct. Psychoanalysis, Freud asserts, “unhesitatingly ascribes the primacy in mental life to affective processes.” “I am in fact of the opinion,” he states, “that the antithesis of conscious and unconscious is not applicable to instincts. An instinct can never become an object of consciousness — only the idea that represents the instinct can…. If the instinct did not attach itself to an idea or manifest itself as an affective state, we would know nothing about it.” Bettelheim points out, “Freud used the German word ‘Instinkt’ when it seemed appropriate to him—to refer to the inborn instincts of animals—and he shunned it when he was speaking of human beings.” Instincts are unalterable while “drives can be changed in various ways into their opposites, directed against the person himself, or suppressed, or sublimated.”

Freud was the Darwin of the soul. “I have proposed that two groups of such primal instincts should be distinguished: the ego, or self-preservative, instincts and the sexual instincts,” he wrote. Sexual instincts are primary since survival is only of evolutionary value if it enhances reproduction. In his Three Essays on Sexuality Freud declared, “all comparatively intense affective process, including even terrifying ones, trench upon sexuality.” He goes on to say, “It may well be that nothing of considerable importance can occur in the organism without contributing some component to the excitation of the sexual instinct.”

Freud referred to ‘the It,’ das Es, (the id), ‘the I,’ das Ich, (the ego), and ‘the above I,’ das Über-Ich, (the super ego) as the three agencies that constitute the “the anatomy of the soul,” (die Seel). The soul occupies the conscious, the preconscious and the unconscious. The knowledge that we do not dare is repressed outside of the realm of the “I” in the unconscious and emerges as neuroses. He posed the question as to how self-reflection is possible when das Ich, the I, or ego is in its very essence a subject; how can
it be made into an object?” He answers, “The ego can take itself as an object, can treat itself like other objects, can observe itself, and do Heaven knows what with itself” because that is the function of the Above I, to observe and reflect on the I. “Its parts can come together again afterwards.”

In the light of Darwin’s, Nietzsche’s and Freud’s legacy, and the neuroscience of the lateralized brain, the anatomy of the soul is similar to a Gödel number. The right brain phenomenological perception of the sexed body, and its left brain representation in terms of signifiers of sexual identity, language, myth, and social and philosophical systems, are passed back and fourth through the corpus callosum to converge as a unified consciousness having the self-reflective structure, \((a \rightarrow (b) \rightarrow (c) \leftarrow (a))\). In the process of self-reflection the ego (the I) becomes the Other to the super ego (the above I). Since the bodies are sexed, the soul will be gendered. For the female as the knowing Subject, the male is Other. For the male as knowing Subject, the female is Other.

Nietzsche did not view the evolution of the Übermensch as the product of biological selection but as a cognitive transformation. As stated by Deleuze, “The Overman is defined by a new way of feeling: he is a different subject from man… A new way of thinking… A new way of evaluating….” The Overman, as the knowing Subject, is to the human, as Other, what the over I or super-ego is to the ego. The Übermensch comes into being when the Apollonian signifiers of sexual identity, language, myth, and social and philosophical systems fully reconverge with the Dionysian phenomenological perceptual universe. Thus the Übermensch emerges as a Dionysus overcoming of the Apollonian. Freud proclaimed, “Where ‘It’ (id) was, there ‘I’ (ego) shall be.” In the ongoing evolution of the soul, where the “I” was, the above “I” shall be as the human self-reflectively reconnects with nature as a part of nature.

Freud wrote, “The great question that has never been answered, and which I have not yet been able to answer, despite my thirty years of research into the feminine soul, is “What does a woman want?” According to Appignanesi and Forrester in *Freud’s Women*, the creation of psychoanalytic theory was inseparable from the distinct and important part women played in its creation. The reason that Freud could not find the answer is because, unlike Nietzsche who measured the truth of the left brain by his right, Freud did the opposite. Freud censored any Dionysian truth that didn’t fit into his Oedipal logic.

Psychoanalysis had only one father but several mothers, of whom Lou Andréas-Salomé (1861-1937) was one. Ernest Jones reports Freud as describing Salomé “as the only real bond between Nietzsche and himself.” She met Nietzsche at the age of 21 and was the women in the infamous photograph Nietzsche had taken with he and the philosopher Paul Rée pulling a cart in which Lou stood holding a whip. At the age of fifty she came to Freud in 1911 as a famous writer, essayist and authority on Nietzsche, to be trained as a psychoanalysts, and they corresponded regularly until her death.
As a psychoanalyst she later provided an analysis of Nietzsche’s psyche in which she describes his descent into Dionysian madness as a voluntary entry “into the primary ground of life” as a final affirmation required by his truth. In Freud she recognized the necessity of a “consistent and fluid dualism between the rational, and the irrationality of the life drives.” Among the highest and most intelligent men of Europe she remained their equal. Some as colleagues, and others as lovers, but none were allowed to be both; hence her long marriage to the linguist Friedrich Andréas, was never consummated.

Salomé embodied the answer to Freud’s question: “What does a woman want?” Appignanesi and Forrester describe her as “her own `sovereign’ person…. devoid of ‘all feminine frailties and perhaps most human frailties…. she saw woman as the superior and happier sex…. “[H]er measure of all things is not man, but woman – the woman who is herself…. She is whole, complete, like the original egg cell; she exists in a unity of spirit, intellect, body and feeling.” She was the epitome of Nietzsche’s “Women who master the masters…. women with lofty, heroic, and royal souls…. capable of and ready for rule over men….” In a sense she was an Übermensch.

The French psychoanalyst Christine Olivier in, Jocasta’s Children writes, “Psychoanalysis will make its contribution via the extent to which it can make conscious and explicable a conflict between the sexes that has hitherto been unconscious and inexplicable…. That has been the aim of psychoanalysis ever since the time of Freud.” Females must write “the other psychoanalysis,” where they have the Voice, if females are to survive in the “underlying sex war,” which is now raging. “Is that not exactly where we can locate man's panic fear of women: the possibility that she might speak up in and from the same place where he is?”

Sabina Spielrein (1885-1942) forged the essential link between Darwin’s dialectics of sexual selection and Freud’s theory of the primacy of the sexual drive, thus positioning psychoanalysis as an extension of evolutionary biology. Sent from Russia to the psychiatric hospital of the University of Zurich this highly intelligent but severely traumatized, nineteen year old came to Jung, first as patient, then as analysand, research assistant, and lover; a relationship Jung terminated when it threatened his marriage and career. She received her doctorate in 1911 and was elected a member of the Vienna Psychoanalytic Society where she presented a paper entitled “Destruction as the Cause of Coming into Being.” She later returned to Russia to rejoin her husband and was a founding member of The Russian Psychoanalytic Institute and Director of the child psychology department of the First Moscow University. In 1942 she and her two daughters were murdered by the SS along with thousands of other Jews.

Appignanesi and Forrester describe her paper as audacious, as she, “understood, with remarkable clarity, that psychoanalysis would only make sense if it could be realigned with the theory of evolution.” The paper addresses two questions. Why does the pleasurable sex drive at the same time produce shame, fear, and disgust? Why should a drive that serves life also be entwined with violence and death? “The instinct for self-preservation,” she writes, “is a simple drive that originates exclusively from a positive
component,” the preservation of the individual. In contrast, “The instinct for preservation of the species... arises with both positive and negative components.” Spielrein explains, “corresponding to the biological facts, the reproductive drive ... consists psychologically of two antagonistic components, a destructive drive as well as a drive for coming into being.” The procreative act per se leads to self-destruction,” because nature values the individual only so far as it serves the preservation of the species. “The depth of our psyche knows no ‘I’ but only its summation, the ‘We’.

For we humans, “It would be highly unlikely if the individual did not at least surmise, through corresponding feelings, these internal destructive-reconstructive events.” Just as birth entails eventual death, the sexual drive functions at the expense of the ego. “‘Where love reigns, the ego, the ominous despot dies.’ When one is in love, the blending of the ego in the beloved is the strongest affirmation of self, a new ego existence in the person of the beloved. If love fails, the image becomes one of destruction or death, a psychic or physical alteration in the individual image under the influence of an exceptional power such as the sexual act.” “Death is horrible; yet death in the service of the sexual instinct, which includes a destructive component, is a salutary blessing since it leads to a coming into being. However, eternal life brings men no blessing as we see in the legend of the fountain of life.”

“Freud’s disagreed, commenting, “What troubles me most is that Miss. Spielrein wants to subordinate the psychological material to biological criteria; this dependence is no more acceptable than a dependency on philosophy, physiology or brain anatomy.” Many years later Freud adopted the concept of a death instinct, writing, “A considerable portion of these speculations [concerning the death instinct and the possibility of primary masochism] have been anticipated by Sabina Spielrein in an instructive and interesting paper which, however, is unfortunately not entirely clear to me.”

From an evolutionary perspective Spielrein recognized the destructive drive as a component of the sex drive. Freud, on the other hand proclaimed, “Our hypothesis is that there are two essentially different classes of instincts: the sexual instincts, understood in the widest sense — Eros, if you prefer that name — and the aggressive instincts, whose aim is destruction.” He defined it as “an urge in organic life towards death as a restoration of an earlier state of things, a drive towards destruction directed against the external world.” There is no evidence to support a death instinct, but much to support a convergence of sex and death.

Since females and males have different bodies and hence different minds, it is inevitable that the female as Subject and the male as Other, will bring themselves and the world into being differently than does the male as Subject and the female as Other. From the evolutionary perspective each sex will seek to maximize its own reproductive interest. The reproductive interest of the female in quality is maximized when they select males who dominate other males but are submissive to females. Conversely, the reproductive interests of males in quantity are maximized when females are submissive. From Spielrein’s evolutionary perspective the answer to Freud’s question “What does the
female want?”, is to freely select males who are dominant in male-male competition but are submissive to females.

As the two hemispheres pass mental content back and forth through the corpus callosum we can expect that components of the ego and sex drive will converge in unified consciousness just as the images of the eye controlled by the right hemisphere converges with the images of the other eye in unified vision. Since there are two functionally laterialized hemispheres, it should not be surprising that one favors the sexual and the other the ego drive. The fear of death is a product of the instinct for self-preservation. The reproductive instinct drives males to risk death, and the sex drive demands the surrender of the ego for the reproduction of the species. Hence the sex drive is primary.

What forced Freud to replace the ego drive with the death drive in Beyond the Pleasure Principle? The year prior in A Child is Being Beaten: A Contribution to the Study of the Origin of Sexual Perversion he describes children reporting masturbating to the fantasy of a boy receiving a spanking or whipping from a mother or governess. Girls were erotically aroused in watching and boys by the thought of receiving the beating. Freud concluded that the fantasies were not based on experiences a child might have had but was a primal fantasy reflecting a traumatic conflict within the psyche. This discovery decimated Freud’s phallic centered Oedipal logic and his Pleasure Principle.

In A Sexual Profile of Men in Power, the researchers concluded that “the force of this sex drive is related directly, indeed is indistinguishable from, the power drive, and that it is perhaps intrinsic to our political system that the men who get to the top will also have a high sex drive.” They found that “By far the most common service politicians demand from call girls is to be beaten.” They also reported finding a strong compulsion to display their genitals. “The “strong need to dominate,” of high reproductive value to females in terms of resources and protection, “co-exists in precarious equilibrium with an equally intense need for submission.” The proliferation of female dominant — male submissive pornography on the Internet confirms Spielrein’s evolutionary psychoanalysis.

In the animal mind the connection between instinct and emotional and behavioral response is automatic, instantaneous, and direct. In the human mind instincts are experienced ideationally as drives. Drives manifest themselves in the form of agonistic affectual states such as the terror of death, misogyny and philogyny. Instincts, drives, emotions, affectual states, and conceptual structures converge in the form of various complexes that shape our institutions and social relationships. In its original sense, as used within the discourse of psychoanalysis, a complex is “a basic structure of interpersonal relationships and the way in which the individual finds and appropriates his place in it.”
Patriarchy is the manifestation of the male’s ego defence mechanisms against the sex drive, and takes the form of at least three different complexes as ego defence mechanisms.

1. The Perseus Complex: To dominate and control the female and deny death, manifested in such forms as the Abrahamic religious traditions and the affectual state such as manifested in Jehovah curse of the female saying, “Your desire shall be to your husband, and he shall rule over you.” The misogyny implicit in the Perseus Complex is symbolized in Cellini’s famous statue of Perseus holding the severed head of the Medusa, the female who would be Subject to the male as Other.

2. The Apollonian Complex: To deny and transcend sexuality as manifested in celibacy, and to free the spirit from its animal sexually driven body. Saint Paul proclaims, “It is good for a man not to touch a woman.”

3. The Thanatos Complex: To rage and destroy as manifested in rape, sadism, and murder wherein violence and death and sex converge.

There is a fourth male defence mechanism to the primacy of the sexual drive and the fear of death that constitutes a reversal of patriarchy.

4. The Dionysian Complex: To embrace, desire, surrender, and submit to female domination where violence against the ego becomes eroticized in the form of the fetishes of male masochism. The ritual deconstructions of the male ego are marked by sexual pleasure wherein the fear of death is transcended.

Creationism and Islam one hundred fifty years after Darwin is Apollonian insanity, as is prohibition against birth control, family planning, and abortion when the world population is expanding exponentially; as is corporations conceived as persons and fertilized eggs as babies; as is celibate priests sexually molesting children. The list could go on and on. What Darwin’s, Nietzsche’s and Freud’s Legacy in the light of the neuroscience of the lateralized brain can tell us about living with death in the 21st century is that the cure for the Apollonian insanity of patriarchy is a desperate politics of Dionysian madness: the empowerment of females.

The riddle which the Sphinx posed to Oedipus was: “What is the creature that has one voice, walks on four legs in the morning, two legs at noon, and three in the evening?” Shakespeare puts into the mouth of his character Hamlet, the question, “To be or not to be?” It is now re-phrased for the twenty-first century. *To become or not to become?* That now is the question.

How does one go gentle into that good night, And not rage, rage against the dying of the light?

Nietzsche closed his body of work with the words: “Have I been understood? — Dionysus against the Crucified.” Nietzsche’s grand mythic metaphor is the merger of Dionysus and Ariadne — the death of the ego in the cause of ongoing life. We can go
gently into that good night when the unification of the two minds takes place in the right hemisphere. When in the left, there is no jouissance of philogyny to transcend the fear of death and misogyny.


xxiii. Fisch, Max H. (1981), “Introductory Note,” in Sebeok, Thomas A. *The Play of Musement*. Bloomington: Indiana University Press, 17. As a philosopher he was the founding genius of the philosophical movement called Pragmatism. As a mathematician, logician, and theoretician he recognized the possibility that a non-Euclidean geometry may better hold for physical space than a Euclidean geometry would, declaring suggesting that the philosophical consequences of non-Euclidean geometry might “lead to a new conception of nature, less mechanical than that which has guided the steps of science since Newton’s discovery.”


xxix. Ibid, 62.
xxx. Ibid, 85.
xxxi. Ibid, 91
xxxi. Ibid, 66, 102.
xxxii. Ibid, 59-60.
xxxiv. Ibid., 21
xxxvi. Ibid., 190.
xxxvii. Ibid., 331.
xxxviii. Ibid, 30.
xxxix. Ibid, 79.
xl. Ibid, 69.
xliii. Ibid.
l. Ibid, 33.


lxxxv Appignanesi and Forrester, *supra* note 73 at 218.

lxxxvi Spielrein, *supra* note 84 at 174.


xciii Appignanesi and Forrester, *supra* note 73 at 219.


xcv Freud, Sigmund. (1920) *Beyond the Pleasure Principle*. XVIII, S. E., 7.


ciii Genesis 3: 16.

civ I Cor. 7:1.


cvii Nietzsche, *supra* note 46 at 134.