BEYOND GROOMING: DESCARTES' *COGITO* AND A DARWINIAN NEUROPSYCHOANALYTIC VIEW OF UNIQUELY HUMAN MENTATION

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Abstract

This paper begins by deconstructing Descartes' *Cogito* as referring to self-reflective thinking, which it argues to be uniquely human. Further examining Descartes' *Meditations*, it proposes and illustrates that the thought processes in contemporary neuroscientifically-informed psychoanalytic depth psychotherapy are prime examples of reflexive thinking unique to *Homo sapiens.* It also postulates a continuum of succorance among mammals, from arched back nursing in rats, through grooming in non-human primates to supportive elements of psychotherapy and psychoanalysis in humans. New research is called for on the selective value of unconscious conflictual neural processes, the acknowledged domain of psychoanalytic depth psychology. Since the paper is not primarily intended for clinicians, no detailed case material will be presented.

Keywords: Descartes, grooming, self-reflection, Darwinian neuro-psychoanalysis, succorance

Introduction: What Descartes meant by "Cogito *ergo sum*"

A strict reading of Descartes supports a seemingly paradoxical view of the self-reflecting properties of the human mind that this essay proposes as unique among all animals. *Cogito ergo sum,* the Latin translation of *je pense, donc je suis* appeared in his *Discourse on Method* (1637):

> *I was then in Germany, attracted thither by the wars in that country, which have not yet been brought to a termination; and as I was returning to the army from the coronation of the Emperor, the setting in of winter arrested me in a locality where, as I found no society to interest me, and was besides fortunately undisturbed by any cares or passions, I remained the whole day in seclusion, with full opportunity to occupy my attention with my own thoughts.*

Without claiming to be a Latin scholar, it appears likely to me that the French words *je pense* appear to be most closely derived from the Latin *pensito* -- I weigh, weigh out (Lewis and Short 1879). Since Descartes himself translated his French words *je pense* into the Latin *cogito,* it seems arguable that he intended a specific connotation of weighing, pondering, considering, rather than of propositional thinking (E.g.: I think *that*….).

I therefore suggest that – *think* that – Descartes' choice of language did not mean thinking in the sense of "thinking that" or "thinking of" or even "thinking about" .It can

be understood as a mental activity of an intransitive nature – the kind of reflective thinking engaged in by philosophers and by poets, who often call it soliloquy. An outstanding example is Shakespeare's *"To be or not to be"* soliloquy in *Hamlet.* The renowned sculptor Auguste Rodin also captured self-reflection in his masterpiece, *The Thinker.*

Reflective thinking is perhaps more a mental state than a mental action (Brickman 1998). I will then be so bold – or so foolhardy—as to suggest that the Latin word *meditatio* would have better approximated Descartes' idea, if indeed he was parsing words at the time. In partial confirmation of my speculation, Descartes entitled his next work *"Meditations"* (1641). My contention, then, is that Descartes' C*ogito* referred to deeper-level cogitation or meditation, and therefore self-reflection. The mind, *qua* mentation, is a loosely defined term referring to the parallel and distributed processing of information within the brain which can include attention, concentration, planning, memory storage and retrieval., rehearsing (within the inner representational world), licking of psychic wounds, and other executive functions as well as dreaming.

Mentation is mainly non-conscious, but in part can also be willingly conscious, and this is also true of self-reflection. Self reflection is an elaboration of theory of mind, the capacity to identify the intentions of conspecifics. Still-controversial reports from many primatologists (E.g. Whiten 1991, DeWaal 1996) indicate that chimpanzees employ theory of mind, or mentalization, in scanning the intentions of conspecifics.

More recently, experiments by Hare, Call, and Tomasello (2001) have refined our understanding of theory of mind behaviors in chimpanzees under competitive conditions which reveal the nuanced nature of that realm of mentalization. Hare et al. have been able to demonstrate the socially adaptive value of theory of mind in subordinates who can, under laboratory circumstances, evade dominant animals in securing food. There are no findings that I am aware of that confirm a capacity to *mentalize one's own thinking* in any non-human animals.

According to Hauser (2000), spider monkeys think, cats think, corvids and scrub jays think, elephants think, dolphins think. According to most dog owners, dogs also think. Humans are known to think, but what other animals beside humans cogitate, self-reflect, meditate, soliloquize, --- *think about thinking*? Regret their thoughts? Experience self-pride or self-contempt? And how can these questions be researched?

The species- significant criterion of self-reflective thinking

Self-reflective thinking fundamentally requires a splitting of self-function--or agency--into two components, the observing self and the observed self (I will be discussing the concretization of mental processes into mental entities presently). Self-reflection is an evolved aspect of theory of mind; often, but not always, implemented in the undisturbed solitude that Descartes described. It is a conversation within one's inner representations of self and of the outer world when the distractions of that outer world do not require the energy for complex mentation and actions devoted to furthering personal and genomic survival. Self-reflection also enables self-narrative formation, again a uniquely human

capacity as far as we know. In turn, the role of self-reflection – also known as reflexivity – has been significantly redefined by contemporary psychoanalytic researchers and clinicians who have been influenced by evolutionary biology and psychology (Fonagy et al.2001) The Fonagy group has built much of its work on the evolutionary arguments of John Bowlby (1969) who located the early emotional development of humans within a continuum of succorance in mammals.

Arguments for a continuum of succorance in mammalian – including human -- life

Grooming, licking, and arched-back nursing in laboratory rats increase hippocampal synaptogenesis and promote cognitive development in pups, according to Liu at al. (2000) at McGill. Naturalistic and in-captivity observations of non-human primates provide evidence of what I would call *alloregulation,* by which I mean affect regulation in one individual through specific behaviors of another conspecific. Anthropoid apes and monkeys have evolved such down-regulating practices in the form of grooming behaviors. In the absence of effective auto- or self-regulation of propensities for socially disruptive or destructive behaviors, grooming has evolved to promote individual comfort and subsequent self-control, thereby facilitating group solidarity, so vital to individual survival of social animals in ancestral and contemporary environments. By down-regulating potentially disruptive affects in individuals, grooming also lubricates social exchanges in dominance hierarchies. Concordant behaviors are thereby furthered, signaling reconciliation, ranking acknowledgement, and peacemaking, along with succorance. (DeWaal 1996, esp. pp.40-88 & 176-182). DeWaal acknowledges, however, that the “double-holding” behaviors of rhesus mothers who pick up and briefly hold

infants of higher ranking mothers has only been observed at the Wisconsin Primate Center (DeWaal 1996 pp.100-101). This is an example of a researcher acknowledging the limitations of generalizing behaviors observed in captive animals, as Boesch (2007) has underscored more recently.

Similar practices occur in packs of canids in the form of licking and assumption of vulnerable, often sexually receptive, body positions. (Solomon & French 1997) Other, less intense and prolonged, examples are in the necking of horses (who are herd animals in the wild), and analogous alloregulatory behavior in other non-primates.(see Riedman 1982). Similar behaviors are regularly observed in impalas, giraffes and elephants. Mutual face and neck rubbing has been frequently observed in prides of lionesses in the wild (Buechner 1973).

In humans, alloregulation is expressed in handshaking, hugging, holding, and stroking in families and close friendships. It is common in American society to feel “touched” by a particularly poignant event. Within the past decade, the developmental advantages of touch in early human infancy have been researched in an increasing number of academic medical centers (Field 1996). The more intimate grooming represented by kissing occurs not only in humans, but in chimpanzees and bonobos as well (de Waal 1996). On further consideration, evidence of skin-contact succorant behaviors akin to grooming exists across most observed mammalian species. DeWaal (1996 pp.40-45) discusses this behavior in dogs and whales as well as primates. A patient of mine, temporarily

bedridden with severe neck pain, was touched softly on the cheek by his pet cat (after she had eaten).

On comparative psychology and the *sapiens sapiens* of *Homo*

The arguments for a continuum of succorant behaviors would tend to bracket the long-standing nature vs. nurture debate within anthropological circles, revived recently by Boesch (2007), by not claiming validation for either point of view. As proposed earlier in this paper, the uniquely human capacity for self-reflection is postulated, in the absence of empirical studies, to be an outgrowth of theory of mind (TOM). Perhaps Boesch's distinctions between developmentalist and deterministic approaches apply to the reports of evidence of TOM in some chimpanzees, gorillas and orangutans as well as some cetaceans and domesticated dogs, cats, and parrots. Refinement of these findings may well be in order, although it would not negate the argument that self- reflective thinking is limited to our (putatively) doubly wise subspecies.

Evolved grooming in *Homo*

A significant aspect of contemporary medical care, beginning with a history of *curanderos* and other healing functionaries in early societies, includes varying degrees of succorance, including hypnosis, moxibustion, acupuncture, acupressure , chiropractic, and placebo effects. These procedures can be regarded as examples of evolved grooming. The alloregulation (downregulation) of pain and discomfort achieved by such procedures often occurs through the activation of endogenous opioids in the brain. The increasing establishment of alternative medicine departments in several prominent U.S. academic

medical centers, i.e. Harvard, UCLA, and Columbia , reflect a new-found respect for the efficacy of these methods.

Avuncular teaching, counseling, and supportive psychotherapy can be considered as types of evolved succorant grooming in humans. This is especially true of massage, cosmetic services, barbering and hairdressing. Earlier in my career, when faced with the task of building a large metropolitan community mental health program, I hired a psychiatrist from another state who had created a smaller local program providing mental health consultation to barbers, bartenders, and hairdressers. All of these serve in most North American communities as front line–although informal–listeners and advisors to their troubled clients and customers. (Brickman 1964)

The roots of psychotherapy in succorant grooming

In the arena of professional caregiving, supportive psychotherapy provides empathy, compassion, instructive advice, and manual-based psychological exercises for those who signal a desire for help. These services can be regarded as evolved grooming consistent with language acquisition in social exchange. Psychotherapy based on depth psychology, such as psychoanalysis, despite denials by many of its practitioners, has been acknowledged by influential contributors in the field to often provide minimal levels of verbal support (Wallerstein 2000). This underlines the evolved roots in grooming of this supposedly ‘interpretation-only’ therapeutic interchange. It is even arguable, for example, that maintenance of the “frame” of time and space parameters so strongly advocated in conventional analytic circles as essential for establishing a secure base for the patient is

also rooted in the alloregulative functions derived from a continuum of grooming behaviors.

Most psychoanalysts and psychodynamic therapists, however, agree that deliberate provision of support in the therapeutic encounter is unwarranted for several reasons, not the least of which is that it can actually impede self-reflection and eventual auto-regulation. On the other hand, many psychoanalytic investigators (E.g. Bion 1963, Winnicott 1965) identify sensations of being "held" as integral to a patient's therapeutic experience. It must be added that such "holding "is strictly figurative in psychoanalytic therapy. It refers to a nurturant type of succorance akin, in the patient's subjective experience, to a marsupial relationship. Most contemporary psychoanalysts probably consider actual holding as likely grounds for ethical complaint, by virtue of the "slippery slope" cautions of analytic ethicists against erotic enactions in therapeutic relationships. In the case of patients who live drastically alienated and isolated lives as a result of early and repeated traumatic experience with caregivers, a carefully titrated amount of literal, but non-erotic, touch by experienced clinicians may be in order with the intent of facilitating trust.

Self-reflective thinking, succorance, and psychoanalytic process.

Aside from meditation (and perhaps contemplative prayer), the most intensive patterned self-reflection is instantiated by the psychoanalytic process, which itself can be conceived as a joint meditation. In this interaction, the nominal patient self-reflects verbally in the presence of a presumably trusted self-reflecting other. That joint undertaking, exploring

the patient's inner representational world, is intended to reduce or possibly eliminate anxiety, shame, depression, imprints of early psychic trauma, as well as self-defeating behavioral patterns and social failures resulting from psychopathology. (Psychoanalysis is meant in this essay to include other socially sanctioned psychotherapies that apply psychoanalytic understandings of human subjective experience, development, and behavior.)

As an essentially verbal interchange, psychoanalytic therapeutic practice constitutes succorant behavior which goes beyond grooming. It pivots on the uniquely human capacity for self reflection and the use of language. Although its interactions are primarily verbal, an increasing number of psychoanalysts practice, and advocate, acute clinical awareness of prosodic nuances, bodily states ("body language") and neurocirculatory changes, such as blushing, sweating and increased respiratory rate, in their patients (Stern et al. 1998). These non-verbal phenomena are regarded as clues to either conscious or unconscious affect states. In sum, self-reflective thinking is an obligatory portal for seeking psychodynamic help, or succorance, and succorance in turn has a long evolutionary history in pre-verbal mammals mediated through bodily contact and grooming behaviors.

Darwinian neuro-psychoanalysis: accommodating a new synthesis

Freud's depiction of a universal *epistemophilic instinct* (Freud 1909) can be said inductively to energize much of the unique self-reflective capacity of *Homo sapiens sapiens.* In other words, a uniquely human need to assign meaning to subjective

experience helps to generate the self-reflected *cogito* that made Descartes famous. The very *non-Cartesian* findings of cognitive neuroscience, by highlighting the emotional foundations of all socially interactive behavior, identify neuronal plasticity as one of the major neurobiological attributes enabling change under the impact of the analytic process.

Specifically, the encodings of implicit and procedural memory have been found to be modifiable through psychotherapy (Tronick 2001). The approximation of evolutionary biology and cognitive neuroscience amounts to a new synthesis for psychoanalytic theory. This new synthesis has been enhanced, for instance, by the experimental studies in molecular biology by the Nobelist psychiatrist Eric Kandel (1998, 1999), who views psychoanalysis as potentially enriching neurobiology in attempts to understand the vicissitudes of human mentation and behavior.

It is important to add at this point that brain science is still at a very early stage in its development, and has many years to go to reach its proper maturation. The suppositions underlying many of this essay's examples of reconciled neurobiological and psychoanalytic thinking, despite their identified bases in empirical studies, reflect an expectation that further studies will update and eventually supplant current neurobiological as well as conventional psychoanalytic thinking.

In that vein, most natural and social scientists are unaware of recent advances in psychoanalytic theory and clinical practice that embody significant footnotes and

emendations to Sigmund Freud's original instinct theory (Freud 1933) While educated as a neuropathologist, Freud found the localizationist hypotheses of the neurologists of his time thoroughly improbable, and, while maintaining that psychoanalytic theory should be built upon a biological bedrock (Freud 1932), he reluctantly departed from the umbrella of natural science in favor of a pure, largely disembodied psychology (Solms and Saling 1986). ("The" dynamic unconscious, for example, could not be localized in a specific anatomical area of the brain. In actual fact, recent neurobiological understandings of the widespread neural connections involved in all psychological functioning no longer imply that specific non-sensory and non-motor processes can ever be locatable in such a geographic manner).

This disembodied concept led to classical Freudian theories of development and psychopathogenesis that portrayed an individual beset with unconscious conflicts between instinctual urges seeking satisfaction and opposing intrapsychic elements attempting to forestall negative and self-defeating behaviors by means of symptomatic compromise formations. While the evolutionary significance of instinctual forces (the"id") and the fundamentally social nature of the human species were implied in the concept of the "super-ego", psychoanalytic theory and clinical process were cast in a mechanistic model of intrapsychic conflict known as metapsychology. Therapy was devised to bring these conflicts to awareness by undoing repression through free association and dream interpretation on the analyst's couch. Because of their lack of conventional empirical verifiability, these theoretical speculations were prime targets for disparagement and scorn from a wide variety of scholars in the natural and social

sciences (E.g. Grunbaum 1986) As recently as 2004, a renowned neuroscientific researcher saw fit to refer to "the notoriously lax intellectual standards of Freudian psychology" (Ramachandran 2004 p.8). To a psychoanalyst increasingly informed by Darwinian neuroscience, a prevalent continuing aspect of psychoanalytic conceptualizing can in fact be justly labeled as notoriously lax.

A regrettable effect of Freud's conceptual migration from his neurophysiological roots is understandable in view of the limitations of neurological knowledge of his day. A major consequence has been the intellectually questionable – and increasingly unsupportable – practice among analysts to concretize brain functions into psychic entities. Starting with Freud himself, psychoanalytic discourse has been cast in the grammar of anthropomorphic metaphor, abounding in terms such as: *the* Id, *the S*uperego, t*he E*go, *the* self – all struggling on an intrapsychic battleground within "*the* unconscious". These concretizations can be comparable to a theological system incorporating immaterial vectoring entities in unremitting conflict with one another—unseen inner *dybbuks* flaunting the banners of instinctual reward and punitive consequence, polarized forces representing mature versus destructive behaviors. This polarized world view paradoxically reflects a type of regression to pre-Enlightenment medieval ontologies contrary to Freud's embrace of scientific thinking. An increasing tide of neuroscientific research comprehends these intrapsychic phenomena as functions rather than entities, as ever-changing, connecting, and parallel processing neuronal networks within the brain's assemblage of billions of neurons and trillions of synapses (LeDoux 2004). The

paramount and ultimate vector of biological existence is not “instinctual” gratification, but propagative survival, according to Darwin (1869) and Dawkins (1976).

While the use of metaphor is unavoidable in any attempt to convey understanding of events in the world, descriptions of brain-based behavior are better employed by using verbal and adverbial metaphor, rather than resorting to nouns and adjectives. An example is the use of the word”selfing”, referring to recursive neuronal circuitry (Edelman 1992) rather than “the self” (Brickman 2008 in press). This grammatical point is less trivial than it may seem, as neurodarwinian impacts on psychoanalytic thought will be illustrated below.

For close to 100 years, psychoanalytic theory has devolved into a variety of competing thought collectives, comparable to competing theories in anthropology, social psychology, and linguistics. While not promising total ideological integration, recent studies in attachment theory and neuroscience have fostered an increasingly discernible drift toward intersubjective, rather than positivistic and mechanistic, thinking. As mentioned above, a major historical figure in psychoanalysis, John Bowlby (1969), has compellingly introduced Darwinian and ecological perspectives on child development and sociality into the field. Accordingly, an anti-Cartesian view of the mind as embodied and rooted in the long history of natural selection of our social species is coming into greater focus. Many psychoanalysts, however, continue to agree with Freud (who obviously was not consistent) that our science is only verifiable through the intensive case study method and should not be judged by empirical perspectives that require non-

treated controls and deliberately varied, and frequently unethical, alternative treatment techniques. This was the same Sigmund Freud who later in his career defined the *Weltanschauung* of psychoanalysis as identical to the world view of science in general (Freud 1933).

Nevertheless, recent advances in cognitive and affective neuroscience, accompanied by research in molecular neurobiology and electronic imaging, have contributed to increasing biologization of psychoanalytic theories of development and psychopathogenesis. If psychoanalysis is increasingly, if ponderously, approximating itself with biology, the principles of Darwinian natural selection of behavioral phenotype must inevitably apply. Likewise, since sociality is the midwife of cultural influences on individual behavior [Fiske 1992, Cosmides & Tooby 2005}, a more thorough familiarity with the social sciences has begun to be implanted into psychoanalytic understandings. It is in the spirit of such an accommodationist stance, with postulated connections to both social and neural science, that the view of psychoanalytic theories of pathogenesis and cure can be reconsidered in terms of a continuum of alloregulatory and succorant behaviors. Empirical studies of psychoanalytic theory and practice, however difficult to implement, would be a desirable outcome of such efforts.

Contributions of attachment theory and relational learning theory

In the basically asymmetrical analytically informed therapeutic relationship, the therapist does not promote himself as the authoritative arbiter of “the truth” of the patient’s inner representational world. A state of open receptivity encourages warded-off psycho-

emotional conflicts to emerge from within the interactive process itself. This praxis reflects a more specific concern with the relational aspects of human behavior than was the case in analytic technique from the time of Freud until near the end of the 20th Century, when "making the unconscious conscious" was a guiding principle.

Reports of the conceptual foundations and technical implications of this ideological shift are to be found, for example, in the research of Fonagy and his associates at University College London in attachment theory and reflective thinking (2002). Also, Stern and the Boston Process of Change Group (1998), as mentioned above, have thoroughly studied the key role in analytic therapy of procedural learning and non-verbal aspects of interaction within a relational ambience in the consulting room. These theories propose that attachment styles developed in early childhood inform adult relationships including those occurring in the consultation room, and that a non-authoritative co-subjective therapeutic process not relying exclusively on linguistic interaction can bring about modifications in behavioral patterns through new implicit learning.

As mentioned above, increased verbal insight into these processes, while helpful at the cognitive level, takes second place to the acquisition of new procedural knowledge. In contemporary American lingo, it is a matter of not only "talking the talk", but more importantly, "walking the walk". These new findings rely on recent neuroscientific confirmations of continued synaptic plasticity in the adult brain (Braun & Bogerts 2001, (Ansermet & Magistretti 2007). Interestingly, these recent perspectives on procedural learning do not necessarily invalidate the effectiveness of more conventional analytic

treatment based on earlier theoretical models. The argument of relational/intersubjective analysts is that, even in those clinicians guided by earlier formulations with their rich vocabulary of anthropomorphic metaphorizing, the "bottom line" effectiveness of psychodynamic therapies seems better explained by the neurodarwinian concepts of procedural learning, including the detoxification of self-defeating attachment styles.

The impact of evolutionary biological thinking on psychoanalytic perspectives

Carrying forward the earlier discussion of the grammar of analytic concepts of unconscious mentation, recent advances in neuro-psychoanalysis suggest a selective advantage of good-enough innate anticipatory neural networks that prepare for the exigencies of human social life. Faulty or self-defeating preparative neural networks and consequent behaviors can seriously disadvantage an individual's social, physical, and genomic survival in many ways. In like manner, a fragmented or totally absent life narrative, even when unconsciously held, deprives an individual of a sense of a robust life trajectory, thereby generating a depressive and anxiety-laden *Weltanschauung.*

A new conceptual triad of psychology, sociality, and evolutionary neurobiology has been increasingly influential in psychoanalytic theory and technique. This conceptual triad is illustrated, for example, by the conclusions of Fonagy and his co-investigators (2001) that the capacity to attune oneself to the intentional states of conspecifics, also known as theory of mind or mentalization, is enhanced significantly by psychoanalytic therapy, and may in fact be the gold standard of therapeutic efficacy. This is further discussed below.

While anticipatory neural networks would seem to be worthy candidates for natural selection, theory of mind has undoubtedly been naturally selected as an advantageous mental process furthering personal and genomic survival. Its universal presence in *Homo sapiens* seems to have been enhanced by the acquisition of language. In turn, the mixed blessing to our species of language acquisition allows for more effective communication as well as more effective deception of one's intentions. Darwin's "The Expression of Emotions in Animals and Man" (1872) was a splendid description of the array of vocal, facial, gestural, postural, and motoric phenomena in all animals that reflect the perception as well as the response to perceived intentions of conspecifics and others. Many of these maneuvers among non-human animals are deceptive; their persistence indicates their contributions to the organisms' survival through natural selection.

Self deceptive inner conversations, often supported by verbalized beliefs, can be highlighted as a significant factor in a wide range of human behaviors beyond those considered neurotic. For example, the confident skin glow and common belief in the blessings of pregnancy in the expectant young mother-to-be protectively ignore the desperate zero-sum arms race in her uterus between herself and her parasitic fetus The skin glow itself may be an effect of increased blood pressure in the pregnant woman – a neurocirculatory campaign in her unknowing struggle. In extreme cases this internal struggle can lead to fetal death through starvation on one side, or, through eclampsia, to maternal cardiovascular damage, or death through uncontrollable hypertension in the mother.

Linguistic considerations in clinical interaction: toward reconciling three theories.

In humans, the self-deceptive sector of language has evolved to prevent the inadvertent communication of self-doubt – a form of undercutting one's effectiveness in social exchange. In ordinary social intercourse, subjects and their relational others rely on language to convey intention and response. In such cases, the inevitable, generally more subtle, non-verbal cues inconsistent with what is actually said and heard, are more or less ignored. This can serve the survival ends of the subject – as long as the intentional counter-currents remain concealed by the spoken word.

The work of the language philosopher J.L. Austin in *How to Do Things with Words* (1975) focuses on his supposition that language can be most usefully understood as action rather than as communication alone. Hence, he regards the behavioral role of spoken language as "*speech acts*", thereby distinguishing the *performative* from the *constative* aspects of verbal utterances. Generally speaking, a constative speech act is a relatively simple one which can be confirmed or negated as a fact, exemplified by a statement such as "It's raining outside". One to whom this remark is addressed would tend to either agree or disagree.

A *performative* speech act, always more complex, conveys meaning rather than simple observation. It can reflect various facets of intentionality, including a conscious or unconscious intent to influence the hearer's attitude or behavior, or what the speaker perceives as the hearer's intentional stance or behavior.

To the extent that speech act theory can serve as an evolved evolutionary foundation suitable for reconciliation with psychoanalytic thought, I suggest that the predominantly verbal track of psychoanalytically-informed psychotherapy, requiring the therapist to decode the meaning-saturated *metalanguage* of the patient's utterances, potentially illuminates the understanding of performative speech acts. Psychoanalytic therapists are crucially concerned with intentionality in their patients and in themselves. Non-verbal cues have been empirically shown to be major portals of access to the structures and functions of meaning underlying even the most seemingly trivial utterances – even by therapists themselves – provided self-reflective attunement is in play. Austin's speech act theory, then, is reconcilable with psychoanalytic theory, via a common connection with the evolutionary biologist Robert Triver's (2002 pp. 271-293) theory of the adaptational functions of deception and self-deception.

In psychodynamically-informed psychotherapeutic exchanges, the therapist must be trained and experienced in picking up non-verbal cues, thereby enabling perception of a more authentic inner narrative than the tale the patient often defensively yet unwittingly tells others and himself. The tool kit of an effective dynamic therapist is enhanced by a capacity for applying linguistic and mentalization theory. In fact the prominent contemporary psychoanalyst, Peter Fonagy, cited above, and his co-investigators, view psychoanalysis and its dynamic offshoots as most successful to the extent that it enhances the patient's theory of mind by means of "mentalized reflexivity" (Fonagy et al 2002 pp.435-468) This enhancement of theory of mind allows the patient to come to terms more effectively with his own emotional states as well as those of others.. This theory of

psychopathogenesis and cure, substantially based on attachment developmental theory, is an impressive example of Darwinian neuro-psychoanalytic thought.

The narrative nature of the human inner world

The work of Llinas and Pare (1998) has demonstrated that no animal with a cerebral cortex has direct and unfiltered sensory access to its physical and social surrounds. Over millions of years, brains have developed a survival-oriented representational function which has co-evolved with the increasing encephalization and corticalization of the brain. At the pre-reptilian and reptilian levels, interaction with the physical and biological surrounds requires no inner representation. The largely reflexive limbic system (amygdala and hippocampus) activities, such as feeding, fighting, freezing, fleeing, or mating, require no cerebral filtering. The increasing complexity of life in social mammals has required the evolution of more complex cortical and subcortical neuronal assemblies for humans to subordinate the foundational limbic system behavioral tendencies with a huge welter of activational and inhibitory neural circuits, synapses and inner world representations. These neural phenomena seem to organize human subjectivity in terms of variations on a self-postulated narrative theme. Much of the psychoanalytic literature portrays these narrative constructs as ongoing unspoken yet influential ‘conversations’ between a putative self representation and representations of formative others from early in the individual’s life.

The survival value of these inner conversations would require their adaptational suitabilty to interpret the world in closer correspondence to what is real – or, at least, to what is

confirmed by valued others as real. In virtual competition with these adaptational inner representations, a persistent unconscious reservoir of conflictual neural processes, conventionally known as “the unconscious”, serves as an index of emotionally-drenched memories and their complex neuropsychological innervative connections throughout the brain. The inner representations of the world influenced by these assemblies compete for applicability as models for “here and now” experience. Much of human behavior, especially in the neurotic band of the spectrum, constitutes what Freud and his followers have called compromise formations – symptoms and actions reflecting, neuropsychologically speaking, a balance between excitatory and inhibitory neural circuits. Again, it is important to add that the neural processes underlying these behaviors are yet to be clearly mapped through neuroimagery studies.

In a manner similar to the body’s immune system, neurodynamic systems of conflictual unconscious processing have evolved to segregate noxious memories from conscious declarative and autobiographical memory and to attempt self-healing behaviors. The motivational sources of behaviors generated largely by conflict-derived unconscious functioning are most readily accessed through interpersonal dialogue with trusted others. Psychoanalysts and psychodynamic therapists hope to exemplify such trusted others. Often, successful psychotherapy results can pivot on session-to-session joint resolution of therapists’ occasional failures to be trustworthy.

This shimmering, intricately and multiply interconnecting neural reservoir (metaphors fail here), this cerebral immune system, propagates a host of behavioral devices such as

denial (largely employed to prevent confessions and actions that would be adverse to the survival of the individual and his genome), self deception, splitting and isolation, projection, intellectualization, dreaming, creative artistic activity, and compensatory symptom formation. These "mental mechanisms" are not always considered psychopathological; at times, for example, denial and self-deception can be advantageous to fitness. The behavioral expressions of these devices are the building blocks of compromise formation discussed above, with the possible exception of many behaviors and inner mental states induced by addictive practices.

The adaptational role of conflictual unconscious processing

A neurodarwinian perspective, therefore, suggests the evolutionary survivability of conflict-derived unconscious functioning as an adaptive functional tool, a neuro-psychological immune system conceivably evolved to manage individual suffering in a social world conceived at times as overwhelming. Dreams, fantasies, "unthought" ideas are among the self-healing activities of that conflict-laden domain of unconscious mentation. Borrowing from naval parlance, the self-healing aims of such an adaptive tool suggests the 'sick bay' function of a ship at sea, where medical personnel promote the goals of the voyage by attending to the injuries of officers and crew so they may remain on partial or full duty until fully healed. A limping, bandaged or depressed member of the ship's company remaining in the succorant care of sick bay personnel is not a critical deterrent to the vessel's continued voyage. Absent an evolved neurobiological capacity for processing the effects of trauma, insecure attachment, abandonment experiences and other hurtful events during early development, destructive and self-destructive behaviors

would abound, to the detriment of individual and group survival. Further research is clearly necessary to identify a more detailed evolutionary rationale for this prime domain of psychoanalytic interest.

Conclusion

Beginning with a re-interpretation of Descartes' famous *Cogito,* I argue that the form of contemplative thinking the philosopher had in mind was self-reflective rather than transitive in nature.. Furthermore, self-reflective thinking, as an evolved aspect of theory of mind, appears to be uniquely human, and characterizes psychoanalytically-informed psychotherapy. But a non-Cartesian, thoroughly embodied, psychoanalytic view of psychological and emotional dysfunction is not limited to thought processes when it is informed by evolutionary neurobiology and psychology. It allows us to conceive of psychodynamic therapy as enhancing theory of mind, or mentalization in social contexts. It also allows us to understand the widespread practice of self-deception, and the roots in a continuum of succorant animal behaviors of all forms of psychotherapy. A major implication of such a more contemporary psychoanalytic view is that more research is needed to reveal the selective value of unconscious neuro-psychological processing of intrapsychic conflict. Additional research should also attempt to illuminate the more immediate adaptational function of psychotherapeutic processes based on a reconciliation of Darwinian, neurobiological, and depth psychological perspectives which the author identifies as *Darwinian neuro-psychoanalysis*.

In contrast to mentation in non-human animals, two uniquely human roles of embodied conflict-derived unconscious functioning are evolutionarily understandable: a) as a

naturally selected type of self-deception to keep oneself unaware of what is felt to be socially objectionable or dangerous in one's inner representational world, thereby impeding human conspecifics from mentalizing one's hidden intentions; and b) as a self-healing module of the human organism evolved to correct maladaptive predictions, potentially enhanced by the healing effects of the self-reflective, and basically succorant alloregulative *meditations á deux* entailed in psychoanalytically informed psychotherapy.

While the possibilities and problems of addressing these formulations through empirical research are akin to the problems in using observations of present-day hunter gatherer life to scientifically confirm or falsify theories of the nature of human life during ancestral times, a truly scientific theory of conflict-derived unconscious functioning, while being explored at present, is yet to be successfully accomplished (see Luyten et al 1997).

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