OLD AND NEW IDEAS ON THE EVOLUTION OF MIND AND PSYCHOTHERAPY

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Summary

The idea that humans have various innate motives and ways of construing the world is many centuries old. The Darwinian theory of change by natural suggestion provided a model by which these innate processes came into being. Most models of psychotherapy now assume certain degrees of "innateness" that can be focused on needs, motives or cognitive abilities. This paper will briefly explore the history behind some of these ideas, more recent theorising on evolved psychological processes and what can be drawn from them in terms of a better understanding of psychopathology and the process of psychotherapy.

Key Words: Attachment – Compassion – Mechanisms – Mentality – Mind – Psychopathology – Psychotherapy – Shame – Strategies – Unconscious

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Psychotherapy is the process by which the mind of one person impacts on the mind of another to produce changes in emotions, cognitions and behaviours. Ideally these changes are conducive to well-being and prosperity. This raises important evolutionary questions of how the interaction of minds (from how a mother influences the maturation of her infant, to the power of psychotherapy as an interpersonal process) can influence mental states. It also takes us to the heart of debates on the flexibility of human nature that have simmered for many centuries. In fact, as this paper will explore, psychopathologists have often turned to evolution theory for insights into a) the sources of psychopathology (e.g., why we are vulnerable to anxiety, depression and paranoia), and b) the power of human relationships to have healing properties. These are not independent questions because answers to the former clearly impact on the latter.

Some Historical Reflections

Many of the debates we have about the way nature has shaped the mind, the extent of our free will, the influence of the social domain to shape our identities, and even the powerful influence one mind can have on another, have been around for many hundreds of years (Gilbert & Bailey 2000). Consider Baron Holback writ-

ing in 1770 about nature and what he saw as our human lack of free will, an idea that was to become a hallmark of psychoanalysis. He wrote

> "Man is a being purely physical; in whatever manner he is considered he is connected to universal nature, and submitted to the necessary and immutable laws that she imposes on all the beings she contains, according to their peculiar essences or to the respective properties with which, without consulting them, she *endows* each particular species. Man's life is a line that nature commands him to describe upon the surface of the earth, without his ever being able to swerve from it, even for an instant. He is born without his own consent; his organization does in nowise depend upon himself; his ideas come to him involuntarily; his habits are in the power of those who cause him to contract them; he is unceasingly modified by causes, whether visible or concealed, over which he has no control, which necessarily regulate his mode of existence, give the hue to his way of thinking, and determine his manner of acting. He is good or bad, happy or miserable, wise or foolish, reasonable or irrational, without his being for any thing in these various states" (Baron Holbach 1770/1973, p. 585 *italics added).*

Here is a version of the mind 'subjected to nature laws', with 'ideas and passions coming to us involuntarily' that would not be out of place in some modern evolutionary texts. I like this quote because it helps us recognise that Darwinian approaches to our psychol-

ogy had a history of ideas in which to embed themselves. And it helps connect with a history of ideas on the struggle to understand ourselves as both evolved and socially constructed beings. What Darwin was to offer was not only a way of understanding us as carved from nature, but also the processes by which nature gives rise to variety, complexity and change.

His ideas gelled with views within economics relating to industrial progress, competition between markets and survival of the fittest. Darwin recognised that perhaps it was in the struggle for survival and to reproduce that adaptation occurred. He wrote

"Whatever the cause may be of each slight difference in the offspring from their parents – and a cause for each must exist – it is the steady accumulation, through natural selection, of such differences, when beneficial to the individual, that gives rise to all the more important modifications of structure, by which the innumerable beings on the face of the earth are enabled to struggle with each other, and the best adapted to survive" (Darwin, 1859/1979, p. 203-4).

In his landmark book on the history of ideas underpinning the emergence of psychoanalysis Ellenberger (1970) notes that ideas relating to humans as having innate meaning-making competencies (the kind of ideas Holbach was concerned with) can be traced back to Plato, and are constant themes running through the history of philosophy (Plato, Kant and Nietzsche). Darwin, however, was to offer insights in how innate motives and competencies become possible and established in a species. There were three basic implications of this for psychology, psychopathology and indirectly psychotherapy (Gilbert 1992).

1. Darwin's view of a continuity between humans and animals (we are not God made de novo) lent itself directly to the idea that humans, like animals, are (to some extent) driven by instincts which are primarily concerned with survival and reproduction rather than rationality. Rationality will develop if it bestows advantage in the struggle for survival. Further, there is no particular reason why humans should be conscious of much of what goes on in their minds (Nesse & Lloyd 1992). We are, for example, unaware of most of what goes on in our brains; the multitude of neurophysiological process, the neurotransmitters and hormone cycles, that impact on our body-states, motivations and states of mind and alter with maturation. Conscious beliefs and thoughts can be the end products of complex non-conscious processes (Haidt 2001). Although the *science* of non-conscious processing is relatively new (Hassin et al. 2005), the idea that much of what goes on in our minds is outside awareness was central to the early psychoanalytic theorist and lead directly to Freud's id psychology. Even today, this area of psychology remains conceptually complex and controversial.

2. Darwin, and later researchers, demonstrated the existence of intra-individual differences in the ability of organisms to adapt to their environment. Thus, the study of individual differences in terms of psychological ability (e.g., IQ and personality)

and physical ability became of major importance. Indeed, the study of the causes of individual differences (the nature-nurture debates) have been a cornerstone of much work in clinical psychology and psychiatry. The genetic versus the environmentalist controversies owe much to this concept of intra-individual differences in the abilities of conspecifics to adapt and shape their behaviour to the challenges of their social and physical ecologies.

3. Darwinian principles reaffirmed the idea that there are evolved mechanisms/systems that enable organisms to adapt to their environments and learn (be modified beyond what genes can do). The understanding of genes as modes of inheritance, that enable animals to build malleable mechanisms for functions is of course comparatively recent. Today however, we know that we can communicate via 'language' or think in systemic ways because (unlike other animals) we have genes that build the neurophysiological systems for these functions. We also know that to develop these and other abilities in any significant way requires input – the minds of others - interacting with our own. Constraints are also operative: in an absolute sense we cannot grow wings; in a relative sense I may never be able to develop Einstein's mathematical abilities (though can develop mathematical abilities to a degree by study). Constraints also operate in what we can prevent from occurring/arising in ourselves. The Dalai Lama notes that even as a long time Buddhist and meditator this does not mean he does not have sexual feelings or times of anger – it is rather that he has chosen to train his awareness of them (mindfulness) and cope with them in particular ways.

Many of the mechanisms and functional systems we rely on to guide us towards life and reproduction enhancing opportunities exist in other species apart from humans. These mechanisms operate via the inheritance of emotional (Nesse 1998), motivational (Panksepp 1998) and cognitive processes (Geary & Huffman 2002; Gilbert, 1998a, 2005a, b). Thus (like other animals) we are motivated to avoid harm, find food, form attachments and elicit care, and seek out sexual partners. However, mechanisms that orientate us to these things need to be directed by adapting to local conditions. This provided the theoretical rationale to study the processes for learning. We study processes of learning in animals, for their own intrinsic interest, to explore the ways local conditions influence phenotypes, and to offer insights into learning processes in humans (Gray 1987). This has become the domain of comparative psychology which focuses on various forms of learning (classical conditioning, associative learning and instrumental/operant). More recent have been studies of the way physiological systems adapt to social interactions (Hofer 1994) with evidence that human brain maturation and development is significantly influenced by social interactions (Schore 1994, 2001) – and this is partly because we have evolved brains to be highly sensitive to local *social* relationships, especially early in life.

The value of studying physiological and anatomical mechanisms of learning in animals rests squarely

on the principle of evolutionary continuity. Should it have been shown that the non-human primate brain (say) operates radically differently from the human brain, then this line of research would have been much less interesting and useful and would have challenged Darwinian principles. As it is, many of the neuroanatomical and biochemical insights (including the mapping of neurotransmitter pathways in the brain and the development of many drugs) have been possible by the study of non-human brains (Panskepp 1998). This does not negate the view that genetic change can also alter the way brains 'come to wire' themselves allowing more complex neural organisations and learning processes (Geary & Huffman 2002). Indeed, there are many debates that the way humans learn, via use of symbol and culture, *is* a radial difference from other animals (Smith 2000). However, as psychotherapists it is often the more basic process of learning (e.g., conditioning and trauma, and emotional memories) and the ways we deal with our innate motives and needs (e.g.. for care, sense of belonging or freedom for bullying) that most concerns our patients and ourselves as therapists.

So psychology and psychopathology have long been confronted by questions relating to our evolution: what basic motivates, and emotional and cognitive competencies are we born with? How do they unfold and develop in line with learning? What is the effect of individual differences? How are we shaped by the environment (e.g., some people are more threat sensitive than others)? And key for this paper: how is it that the mind of one person can have radical impacts on the mind of another? After all psychotherapy depends entirely on this.

Early use of Evolutionary ideas for Psychotherapy

Freud was deeply influenced by the Darwinian impact on social and psychological thought at the end of the 19th century (Ritvo 1990). Many ideas regarding unconscious motives long precede Freud (Ellenberger 1970), as is clear from the writings of Holbach (1770) and others before him. For Freud, and many of his associates, psychopathology emerged from a clash between our evolved and primitive desires and impulses with the dictates of civilization and self-awareness (forms of consciousness). As Ellenberger (1970) pointed out:

> "Psychoanalysis evidently belongs to that "unmasking" trend, that search for hidden unconscious motivations characteristic of the 1880s and 1890s. In Freud as in Nietzsche, words and deeds are viewed as manifestations of unconscious motivations, mainly of instincts and conflicts of instincts. For both men the unconscious is the realm of the wild, brutish instincts that cannot find permissible outlets, derived from earlier stages of the individual and of mankind, and find expression in passion, dreams, and mental illness" (p. 277)

Symptoms arose because primitive and id based impulses run up against opposition in their expression from ego and superego functions. In essence the id impulses and drives were threats to the ego that activate various defence mechanisms. Of course to many casual

observers it was obvious that all animals must take account of the local conditions before pursing a goal. In seeking food an animal needs to be aware of dangers and inhibit such activity in certain contexts; monkeys seeking sexual opportunities need to be aware of possible attacks from a dominant monkey that may seek to prevent them. For Freud , however, the human process of analysing threats to goals and desires was located in ego functions. Thus a Freudian view of mind is a mind at war with itself, in conflicts of desire and sub-components, with distortions in the flow of libidinal energy. Moreover, we may defend against even knowing of certain of our basic desires and motives. It was not (just) these conflicts in themselves that were problematic but that they blocked the flow of energies, and it was this blockage that produced symptoms – a kind of hydraulic view of the mind (Ellenberger 1970). Cure came from analysing markers to these defences via dreams and in free association, revealing these defence mechanisms, making unconscious motivations, conscious and in this way re-setting the flow of libidinal energy.

It was this view of the mind, as having libidinal energy flows serving drives, that lay behind other aspects of his theory, related to development through oral, anal and phallic stages, and libidinal energy getting fixated at various stages, that was to court serious criticism. The idea that libidinal energy could be directed at a parent (the oedipal complex – which Freud saw as an evolved process), and that memories of sexual abuse could be routed in fantasies, became a source of heated debated, possibly obscuring the awareness of the prevalence of sexual abuse.

It was not long before detractors to drive-based theories began questioning these propositions. Ellenberger (1970) suggests that Jung's big conflict with Freud was over the notion that psychopathology was related to problems in libidinal energy - the key idea Freud thought marked his theory as original. Their conflict was *not* on the evolved nature of mind, or the fact of non-conscious processing, for on these they agreed. However, Jung shifted attention away from drives and libidinal energy flows, to replace them with the concepts of archetypes. These are innate meaning-making and object-seeking mechanisms that are shaped via experience. In terms of definition of archetype he argued that we inherit a collective (universal) unconscious suite of meaning making systems that enable us to understand social roles and form templates for specific roles. Common archetypes are related to mother/father (and the disposition to form working models of parental figures and orientate our behaviour to them), hero (the motive to excel and seek recognition from others), persona (the disposition to create social reputations that find acceptance in the minds of others), and shadow (the disposition to exclude from consciousness thoughts, feelings and motives that threaten the persona and ego or self-identity).

Jung distinguished the *collective unconscious* from the personal by suggesting that the *personal unconscious* represented those aspects of personal experience that are rooted in real events. They had at one time been conscious but were either forgotten or repressed. The collective unconscious, however, is the realm of the *inherited universal* predispositions; the inherited, internal motivating systems that form the bedrock of spe-

cies typical behaviours. They may never be clearly seen or understood in consciousness; rather we experience their actions and products. He suggested that:

".... The archetype in itself is empty and purely formal, nothing but a *facultas praeformandi*, a possibility of representation which is given a priori. The representations themselves are not inherited, only the forms, and in that respect they correspond in every way to the instincts, which are also determined in form only. The existence of instincts can no more be proved than the existence of the archetypes, so long as they do not manifest themselves concretely. With regard to the definiteness of the form, our comparison with the crystal is illuminating inasmuch as the axial system determines only the stereometric structure but not the concrete form of the individual crystal. This may be either large or small, and it may vary endlessly by reason of the different size of its planes or by the growing together of two crystals. The only thing that remains constant is the axial system, or rather, the invariable geometric proportions underlying it. The same is true of the archetype. In principle, it can be named and has an invariable nucleus of meaning but always only in principle, never as regards its concrete manifestation..." (Jung 1972, 13-14).

The concept of a *facultas praeformandi*, could be seen as an early forerunner to the concept of a module. Jung was first and foremost concerned with those various universals common to humanity. He attempted to articulate the internal psychic mechanisms that (across various cultures and time) brought into existence (into relationship) various universal life themes, myths, rituals and stories. These life themes (for attachments, seeking sexual partners, joining groups, forming social ranks, heroic quests, worshipping Gods, etc.) arise, he argued, from some kind of pre-wiring, or preparation, of our psychology.

More recent writers have noted that the concept of archetype has been used in different ways, for example as an attention alerting and directing system, a motivational system, and symbol using and forming (Knox 2003). In the case of attachment, for example, mechanisms may operate to make (say) the human face and voice tone particularly interesting to infants, help focus their attention, with abilities to discern facial expressions, especially the smile and voice tone. It is these interest-directing mechanisms that form the infrastructure for templates for developing models of others in relation to self, built up by repeated experience (Knox 2003). These mechanisms may be different to those that underpin *motives* to stay close (proximity maintenance), mechanisms that enable a child to feel soothed via comfort, and different from those that enable us to use symbols (e.g., receive birthday cards or love letters) that indicate we are cared for. And which of these is key to the way we fantasise our wish to feel loved?

From a therapy point of view the Jungian position is to posit that an archetype seeks to co-create a role with another (e.g., for affection or sex). However it can end in failure and thus be thwarted (Stevens 2002); that is to say the child cannot form a relationship with another person who provides care (e.g., because of neglect or abuse), or, all ones sexual advances are rejected. In these contexts an archetype can become inflated or

deflated. For example, a child may fail to form a good relationship with his/her mother and form negative meanings in the 'mother archetype'. They will then find (mother-like functions of) support seeking and using others as protective and supportive agents an uncertain or threatening pursuit. An inflated mother/father archetype seeking can lead to feeling unprotected in the world and constantly seeking protectors; while deflation of the mother/father seeking archetype turns the person to be overly self-reliant and secretive. A thwarted persona (e.g., a person struggles to feel socially accepted) can lead to persona inflation where a person spends a lot of their time worrying and fusing over their social presentations/reputations and how they appear to others, or deflation leads to not bothering about their social reputations and may be arrogant. The role of the therapist is to help people recognise and work with these thwarted archetypal motives and help them mature more adaptive archetypal systems that can be integrated into a coherent sense of self (Stevens 2000, 2002; Knox 2003). Because archetypal frustration can lead to a rather 'lopsided' development Jung focused a lot on the processes of integration, and symbols of integration, in the pursuit of becoming individuated and whole. Partly because of Jung's writing style, and partly because of his religious interests, some therapists viewed this work as too mystical and unscientific.

Some of Freud's other detractors also questioned drive theory, defences, and symptoms as related to blocked energies. They posited instead human *needs* for social relationships, and became 'social need' and relational focused therapies. Thus a basic split between drive reduction (based on interpretation and revelation) and relational model therapies (based on providing a patient a relationship that helps development) developed (Greenberg & Mitchell 1983). However, for both camps, be it drives or social needs, these were seen as part of our evolved nature and not socially constructed, although socially shaped in form and expression. The importance of 'need focused and relationship seeking' in evolution thinking is that it blends together the two questions we stated with by offering insights into some sources of psychopathology (thwarted needs and roles) and the power of psychotherapy to provide what is needed via a variety 'corrective' emotional experiences and opportunities of new learning.

Relationships and innate needs

Perhaps the two most notable figures to develop relational and (innate) need focused models of psychopathology and therapy are Heinz Kohut (1977) and John Bowlby (1969, 1973, 1980) (see Gilbert 1992 for a comparison of the two models). Kohut (1977) was against evolutionary theories because he believed that this could lead to over biologising and that the key therapeutic ingredient was empathy. However, it is obviously a contradiction to develop a therapy based *on universal* needs without some idea that they must have evolved from somewhere, somehow. Kohut, who did not always acknowledge his influences, was very much in line with the British objection relations (and social needs) schools of thought (Greenberg & Mitchell 1983). These schools focus on how others act 'as objects' or internal refer-

ence points for self-evaluation, affect regulation and action. There is now good evidence for some of these propositions (that our sense of self, emotional dispositions and actions are shaped by the internalised models and schema we have of how others have, and will, react to us) - albeit framed in new information processing models (Baldwin 2005). For Kohut, these universal needs were mirroring, idealising and alter ego.

Mirroring: Children need to know how they exist in the mind of the other because this facilitates prediction of their responses. Mirroring refers to the 'gleam in the mothers eye', the response of the other that approves, confirms and rewards the (exhibitionistic) behaviours of the child. The response should be empathic in that when the child displays (shows off) or demonstrates to others, the other (e.g., parent) not only recognises the need to praise, smile and socially reward such behaviours but also does it with pleasure. In this sense we discover we are reinforcing to others (Gilbert 1984), we are valued. The adaptive significance of being able to create positive emotions in the mind of the other about the self, leading others to desire to invest in the self, can hardly be overstated. (Gilbert 2003, Gilbert & McGuire 1998).

Idealising needs: A second need is for idealisation. This relates to valuing the other. By idealising another the child is able to internalise a sense of being loved, cared for and esteemed by someone who is stronger, more able, etc. Idealising needs relate to our need to merge with, or be close to, someone who we believe will make us safe, comfortable, and calm. From an evolutionary point of view idealising could also be seen as drawing our attention up-rank in some role (e.g., idealising a sporting person, a compassionate world leader, a beautiful woman/man). It is the adaptive advantage of mimicking up-rank (rather than down-rank) individuals that can also underpin idealizing.

Alter-ego needs: The third need is alter-ego needs, reflecting needs to feel the same as someone else. In evolutionary theory this may relate to ingroup-outgroup, network issues and belonging (Baumesiter & Leary 1995). So at issue here is a sense of belonging, sharing, being like others, having a common purpose, allies and goal(s).

Recent years has seen an increase in research on some of Kohut's ideas with particular emphasis on group-to-self linked identity formation and the importance of a sense of connectedness with, and to, others (Bani et al. 2005).

Unlike Kohut, John Bowbly (1969, 1973) made evolutionary and ethological principles central to his approach. Like so many other of the relational schools he rejected Freud's drive model in favor of a relationship seeking one. The general assumptions of attachment theory can be summarized as follows:

1. Attachment behavior is instinctive and goal directed. There is an inherited predisposition to behave in a way that maintains proximity and communication with attachment figures for the purpose of protection and provisioning (being feed and kept warm). This inherited predisposition has survival value (a K-selected strategy) and as a consequence, has evolved in a variety of species. Thus, infants need relationships with attachment objects to sur-

vive and prosper (i.e., they need investment from others). More recently mechanisms underpinning attachment have been viewed in the context of parent investment with consideration of the various conflicts of interest between parents and offspring and pre and post birth parental decisions and behaviors (Geary 2000).

2. The internal psychic mechanisms (e.g., affects, cognitive orientations, and behavioral patterns) that mediate attachment behavior may only be activated under conditions where the functions of attachment behavior (e.g., to be nurtured and protected) are threatened. In other words, situations which are potentially threatening to survival (e.g., aloneness, separateness, strangeness, noise, strangers) will activate a sequence of behaviors and strategies (e.g., distress calling, searching, clinging) which are designed to maintain proximity to, and protection from, caregivers.

3. Many affective consequences are related to the making and breaking of attachment bonds. For example, uninterrupted, stable attachment may be experienced as security; threat to attachment bonds, as anger and/or anxiety; complete loss of attachment bonds as depression; regeneration of attachment bonds as joy. The actual affective consequences will be a function of many variables, antecedent and subsequent to the actual changes in attachment.

4. Attachment behavior is a source of varied emotional experience. It is present through all stages of life and is not a sign of pathology or regression.

5. In addition to offering survival advantage, by protecting the young infant from predators (and diseases – the mothers milk contains antibodies, and her body a source of warmth (Hofer 1994) attachment objects also provide a secure base from which to explore the environment, a source of reassurance and calming, and also stimulation (Cassidy & Shaver 1999). The ability to explore safely conveys considerable advantage in that it facilitates discrimination learning and the development of necessary skills for adaptation. In depression exploration is significantly reduced.

Recently some writers have suggested that the evolution of warmth should be separated from the evolution of protection and care giving (MacDonald 1992). Although Bowbly wrote in terms of the emergence of internal working models of self and others, from the way attachment behaviors are co-enacted by parent and child, he may have been more influenced by Jung than was acknowledged (Knox 2003). Indeed in both Kohut and Bowlby we see the emphasis placed on 1. *universal* needs that can become thwarted, with negative consequences for subsequent development (evolutionists would discuss these in terms of phenotypic variation). 2. the way *we use others* to achieve goals and for maturation; that is to say we inherit mechanisms that are highly sensitive to the minds of others, that roles are co-created and other social beings/minds have a profound affect on our internal psychophysical organization (Cacioppo et al. 2000, Schore 1994, Trevarthen & Aitken 2001).

The Modern Era

The modern era of evolutionary thinking and its application to human psychology probably began with two crucial discoveries. One was the discovery of genes as modes of inheritance in the 1940s. Darwin had little idea how traits were passed from generation to generation. Recent research has shown that life experiences may have impacts on subsequent generation inheritance (Harper 2005). The other was an answer to the question of altruism. Darwin recognised that altruism (helping others at a cost to oneself) was a problem for his theory (Laland & Brown 2002). It was the focus on genes that gave new insights into various forms of altruism. The argument was – helping kin (kin altruism) increase the chances of shared genes being passed on (Dawkins 1976, Hamilton 1964, Geary 2000, Sober 2002). This is called *inclusive* fitness. The reason why sterile ants and bees work for the benefit of the hive became clear – they were clones and so were advancing their genes. Altruism became linked to genetic relatedness. Thus if, say you survived an accident but your ten brothers and sisters were killed your own individual fitness maybe in tact but your *inclusive fitness* has seriously suffered. If you die saving them then your inclusive fitness has still suffered but not as much as if *they* had all died.

By helping non-kin (reciprocal altruism), favours may be returned later and cooperative exchanges ensure - which again increases the chances of an individual's genes (including those for helping) being passed on (Bailey 2002; Trivers 1971, 1985; Sober 2002). The point about this is that kin and reciprocal altruism are believed to have evolved because, although they are helping acts that may cost a donor they are not at the expense of his/her own inclusive fitness, indeed they may benefit it. It is simply a statistical fact that any small mutation, resulting in a trait or behaviour that increases the chances of genes being passed on, can get established in the gene pool (Sober 2002). The point here, however, is that kin altruism is the *evolutionary process* that may give rise to *internal mechanisms* for attachment – that is the motivational and processing systems operating inside individuals that makes attachment possible.

Genes for traits can only be maintained in the gene pool if they do not, over the long term, compromise the inclusive fitness of their hosts. Now there are *many* debates on how one goes from a focus on genes and long-term (generation to generation) replication rates, to the evolution of person-centred motivation, emotional and cognitive systems that guide actions on a moment-to-moment basis (Barrett et al. 2002, Knox 2003, Li 2003, Lickliter & Honeycutt 2003). Attention is now focused on the ways genes interact and are expressed and the multitude of internal and external factors affecting gene expression and their effects - giving rise to phenotypes (Lickliter & Honeycutt 2003, Harper 2005). These, and many other such important issues will not concern us (Laland & Brown 2002, McGuire & Troisi 1998, Smith, 2000). However, one key issue is that no animal is motivated to increase their inclusive fitness, but *they are* motivated to seek things (e.g., to seek mates, care for offspring, help friends) that over the long term have impacted on inclusive fitness (replication rates). Even those who wish to play down genes as linked to motives would probably think twice, if having just given

birth, they were told they could take home any baby they wished but the staff could not guarantee it would be the one they had given birth to.

When sociobiologists began to apply their theories to psychological mechanisms they had rather a hazy idea of psychology, and were often naïve and simplistic (Laland & Brown 2002). They also had little insight into the long history of evolutionary ideas underpinning theories of psychopathology and psychotherapy, and little interest in comparing or contrasting their ideas with those of, say, archetype (Gilbert 1989). Also they wanted to understand universals, but not in order to help individual patients. So their theories tended to focus *strategies in contexts*. Evolutionary psychologists cast their eyes over these strategies and began pondering how minds actually did the costs - benefit calculations (Buss 2003). So for example men are attracted to certain types on women because of specialised modules for assessing reproductive potential. It is obvious of course that genes don't make decisions (e.g., who to have sex with, when to care for children, who to make friends with) - mechanisms and internal processing systems do. And these mechanisms and systems (that genes build) are open to contexts and modification via learning during their phenotypic development. Although it has been known for sometime that certain areas of the brain are responsible for certain functions, the view that there are special and uni-focused processing systems that form discrete modules has always been controversial (Gilbert 2005a, Mithen 1996, Smith 2000). Moreover the degree of modification via learning was to become a source of heated debate (Lickliter & Honeycutt 2003).

Strategy-focused thinking however focuses on phenotypes (Smith 2000). Phenotypic range then becomes important. Suppose we inherit a genotype to be competitive and go getting or for attachment. In an environment that supports this and is relatively benign the trait might do well and the genes prosper and spread. But if the environment is thwarting at every turn then a person might end up feeling a failure and depressed, alone, isolated and alienated, hide away or even suicide. The genes for competitive or attachment behavior will only last so long as some people are doing well and they are being carried forward by this group – but not in the individuals who run on hard times. In this sense there are no genes for depression as such but depression may be a possible phenotype in some contexts due to thwarting of a strategy.

Now this is a fundamental idea because it takes us back to the idea of thwarting of archetypal intent, and the consequent emergence of phenotypes associated with mental ill health. Today we may think of archetypes likes strategies that utilize basic biosocial goals, underpinning special motivational and information processing (Gilbert 1989, 2005ab). However, as therapists the question is: can we help people change their phenotypic profiles and if so how? This question is central to psychopathologists because much depends on deepening our understanding of the relative contributions of genotypes and phenotypes. Take for example to old argument of whether psychopaths are born or bred. How would psychotherapy differ according to the answer to this question? Does the timing of phenotypic scripting impact on psychotherapy such, for example, early abuse constitutes a different therapeutic problem than later abuse?

A view on the evolved mind and therapeutic implications

Unlike previous approaches (that posited mechanisms/archetypes from what emerged in the patient and therapy), modern evolutionary theorists start with wondering about challenges that required solutions. In one sense they don't start with the individual at all – but the adaptive problem. So typically the big challenges are personal survival, mate selection, access and conception, survival of offspring and kin, and resource seeking, obtaining and defending. Attachment systems, alliance building, sexual partnering, and being sensitive to social rank - all have internal mechanisms that help to deal with these challenges. Framed in this way, only Bowlby (1969) began his approach with a focus on an adaptive problem – survival of the young.

It is easy, however, for therapists and theorists to get at loggerheads about this. Some might suggest that evolution based theories that do not start from problem-focused positions (e.g., Freud and Jung) are simply hypothesizing mechanisms whose functions are unclear and unstipulated. For example, the bias of young men preferring younger healthy women means that sexual attraction works to steer them away from the old and diseased. However for the therapist it matters little that this evolved to solve reproductive problems – what matters is the personal lived experience of the strategy and its mechanisms (what Jung would call the archetypal) – does the patient desire such women but is too frightened to approach them? Does he desire them but treat them as objects only for sexual satisfaction? Is he able to love and cherish those he forms sexual bonds with? Does the patient enjoy his desire/fantasies or is he inwardly ashamed of them? and so forth.

Another key debate concerns specific versus generalized systems. There are many debates on how we should view the innate aspects of our minds and the specialized processing systems they contain. The idea that our minds have numerous subcomponents, set up for specialized work is not new. Freud and Jung fell out on this issue. It was Freud's libidinal energy flows (a general system) against Jung's specialised archetypes. And in academic psychology, at the turn of the last century, Spearman argued strongly in favour of a general factor 'g' that underwrites intelligence and which could be applied to a large variety of different problems. If you are bright then you are bright at solving lots of different problems. Opposing him was Thorndike. He asked:

> Are not our minds made up of an enormous number of highly specialized capacities to operate with particular kinds of problems? Do we have a mind with a capital M that can operate with any kind of material, and on any kind of problem, or are we a bundle of specialized capacities to do particular things? (as quoted by Reisman 1991, p. 105)

In many ways this has turned out to be a false argument because both are true. It all depends on what the problem is. We do have general abilities such as intelligence, and this relates to how the brain works as a system (e.g., it depends on memory and the capacity for abstract thinking amongst other things). We can use our cognitive abilities and self-identity forming systems to override desires. For example, although frightened of a

situation and wanting to run away, I might stay in that situation so as not to lose face or because I believe that staying with my anxiety will help me over come it. I don't eat when I want to, to lose weight or get fit. A general meta-cognitive processing system is overriding desires. But we also have specialised systems. Your attraction to a good quality sexual partner does not depend on how bright you are. Your preference to care for your own rather than other people's children is not determined by your IQ. It is possible to be a brilliant physicist but hopeless at drawing, tone deaf and not very empathic. It is possible to have a keen intuitive intelligence for how to get on in social relationships but be an academic also ran. The brightest women and men do not make the best parents or most desirable sexual partners. It is possible to have a fear of spiders but be socially confident; to be a smooth public speaker but be fearful of intimacy. So the kind of problem we are faced with influences what inner mechanisms we bring to bear on it.

We also know there are specific brain areas that are involved in different types of role. Now here one does need specialist systems because you have to analysis different stimuli/things in different ways. Eye gaze between lovers means something entirely different to eye gaze between enemies. There has to be different motives and actions systems for different things e,g., it is not a good idea to behave towards a pretty lady as you might a cheesecake, or treat your friends like your enemies (Gilbert 1984, 1989, 1993, 1995, 2005a).

We can approach the question of innate versus learned, and specialist versus generalist in a different way, by recourse to understanding the physiological architecture of the brain and study how the brain actually makes decisions (Gilbert 1989, Panksepp 1998); something that is often notably absent in some forms of evolutionary psychology. When we do this we can build a brain from the bottom up, noting key systems that are in place as new challenges bring forth new adaptations and abilities (Gilbert 1989). The evolution of specialised processing systems have to fit with, and modify what already exists and will not be plumbed in as a new module de novo. Rather new competencies evolved that not only offer new abilities but *use old ones in new ways*. For example, although shame relates to challenges to a self-identity, (and animals do not have the cognitive abilities to form self-identities), this threat operates through earlier evolved stress systems, such as the hypothalamic-pituitary-adrenal axis. In essence shame threat can be seen like status threat (Dickerson & Kemeny 2004, Gilbert & McGuire 1998) This leads to the question of the patterning of mind and the way the neural networks form throughout life (Geary & Huffman 2002). There may be specialised systems guiding behaviour but these are being constantly modified, with unfolding maturation and experiences.

Generalist system and strategies: It is now known that the most basic processing systems are related to the fact that all organisms must be able to make some decisions about what is *a threat* and potentially harmful and what *is safe*, in their domain of existence (Gilbert 2001, Marks 1987). This fundamental competency must be maintained *in all* subsequent adaptations and species change. Second, in regard to how threat systems work, evolution does not design a new threat response system

for every type of threat, but as systems evolved to detect different types of threat from sensory information - or later in humans via appraisals of events- they are wired into the basic threat systems. Thus whether we are anxious about avoiding a lion, our child's or our own health, a new date, passing an exam or going to court – we will activate the same neural stress systems in our brains – HPA activity and cortisol are no different according to the threat. Of course, this does not mean there are no individual differences in patterns of appraisal or response,. A lion tamer might respond quite differently to a lion than say a person frightened of cats or dogs. A hypochondriacal patient will respond differently to a pain in the chest than a non-hypochondriacal patient.

These threat-based and affect regulatory systems can have generalised effects, as in someone with intense general anxiety or depression. In those cases the patient can experience problems in a variety of role forming abilities (e.g., lose interest in sex, self-care, child-care and relating to friends). Now clearly we cannot see depression, with its multiple and wide range effect on minds and bodies, as a specific module but rather as a strategy for coordinating various functions of mind (affect, behaviour and cognition). Gilbert (1984) used the term psychobiological response patterns that today I would see as underpinning strategies. It was a forerunner of the idea behind social mentalities (see below).

Putting the Mind Together

My own approach has been to explore the evolved archetypal nature of mental processes as emergent from challenges to life and reproduction. There are two sets of challenges that in my view have given rise to different types of systems. The first I have already mentioned, relates to threat verses safeness decision-making. The second relates to the enactment of specific social roles (e.g., kinships, mateships, and friendships).

Threat and safeness

As noted all living things must be able to make decisions, in their domain of existence, that pertain to whether stimuli impinging on them are threats or safe. This leads to seeking to understanding two key evolved processing and response systems that underpin threat detection and response (Gilbert 1993, 2001; Marks 1987), and safeness detection and response (Gilbert 1993, 2005a).

A considerable amount has been written on the nature of the threat system both in terms of its evolved function and forms, and how it is involved in psychopathology (Gilbert 1993, 2001; Gray 1987; Marks 1987; Rosen & Schulkin 1998). For example threat emotions include anxiety, anger and disgust (Nesse 1998), threat focused responses include fight/flight, submission and expelling (Marks 1987), and cognitive systems are attentive to and biased towards stimuli that are natural threats or are associated with them (Gilbert 1998b). It is now known that we have more mechanisms for coping with threat than we do positive things, and threat processing often takes precedence over other forms of processing (Baumeister et al. 2001). In recent years we

have begun to understand something of their physiological mechanisms (Le Doux 1998, Panksepp 1998) and are aware of their susceptibility to conditioning, and their effects outside consciousness. Threat processing systems are often based in implicit, fast detection and reaction systems (Rosen & Schulkin 1998) and can lead to biases in cognitive systems such as jumping to conclusions, selective attention and over-generalisation (Gilbert 1998b).

What has been less studied are evolved positive affect systems which counteract threat processing and gives rise to feelings of safeness, connectedness and soothing (Gilbert 1989, 2005a). Depue & Morrone-Strupinsky (2005) suggest that there are two basic types of positive affect one related to appetitive/seeking motivation, (dopaminergic) and one to consumatory behaviour (oxytocin and opiate). Different drugs can affect these systems, with (for example) amphetamines tending to increase positive affect associated with drive, but opiate drugs producing a more calm non-striving and 'contented/laid back' form of positive affect. Depue & Morrone-Strupinsky, also distinguish affiliation from agency and sociability. Agency and sociability are linked to control, achievement seeking, social dominance and the (threat focused) avoidance of rejection and isolation. In contrast affiliation and affiliative interactions, have a more calming effect on participants and can alter pain thresholds, the immune and digestive systems, and operate via an oxytocin-opiate system. A number of researchers suggest that the beneficial effects of affiliation are mediated via oxytocin (Carter 1998, Depue & Morrone-Strupinsky 2005, Uväns-Morberg 1998).

Inter subjectivity and empathy. Knowing that our minds are highly influenced by the signals from others opens up questions of the evolved mechanisms that facilitate this. There are a range of such mechanisms such as theory of mind and symbolic thinking (Gilbert 2005a). Mirror neurons are neurons that fire when we observe emotional expressions or actions by others. For example, when we watch things happening to others, e.g., watching a sad or exciting film, we can feel sad or excited ourselves. Based on new findings of mirror neurons Preston and de Waal (2002) present the *perception action-model of empathic learning* with a review of neurophysiological data that shows that signals expressed by one person can directly stimulate corresponding systems in recipients. Mirror neurons may be one mechanism by which the moment-to-moment sharing of emotion in the infant–mother dyad can have such an impact on the infant's brain (Gilbert 2005, in press). The moment-to-moment interactions form the basis for intersubjectivity - what is going on in the mind of one person and their displays, affects the mind of another (Trevarthen & Aitken 2001). Thus the positive affect in, and displayed by, the mother stimulates positive affect in the infant, and negative affects displayed in the non-verbal communication of the mother stimulates negative affects in the infant. These subtle but important modes of communication may be especially important in psychotherapy and help patients re-organise affect systems below the level of awareness – that is to say via the voice tone empathic resonance and emotions expressed by the therapist the patient is internalising these signals in subtle ways (Stern 2004).

To cut a long story short, whatever the mechanisms

of internalisation are, infants need inputs of soothing and warmth to help them regulate their own affect and especially threat systems – they are not able to do this for themselves. Lack of such signals, or too many threat signals (abuse) means the (positive affect) soothing system is under-stimulated, and stress systems over-stimulated resulting in problems in the maturation of frontal and pre-frontal cortex, affect regulation systems, self-identity formation (Gerhardt 2004) and theory of mind abilities (Siegel 2001). Although this can be seen as pathology it could also be suggested that in hostile environments it is an adaptive phenotype(s). For example, in hostile non-supportive environments it maybe advantageous to have threat-based emotions easily aroused, and not be trusting, or helpful to others. From a therapeutic point of view we rarely think of phenotypes as linked to environments but rather whether people *feel* happy or not, are 'emotionally regulated' and have similar moral codes to the therapist – but most of these are therapist-values designed for safe environments. Borderline personality disorder patients can be very distrusting, quick to respond with anger or anxiety and be uncertain of their self-identities. This may be maladaptive in supportive caring environments but adaptive in hostile and abusive environments. If the frontal and prefrontal cortex are important for empathy, social affiliation and being able to regulate negative affects (Schore 1994), then what value are these in highly hostile environments? How could such mature without signals that the environment is caring and signals that stimulate these affect systems? Similar arguments have been made for sexual maturity and mate choice (Belsky et al. 1990). Hence the experience of threat vs, safeness, especially early in life, may have profound effects on phenotypic development and the neural infrastructure that support them. Such has important implications for psychotherapy.

2. Social roles: All animals must engage in social tasks if they are to survive and reproduce. In mammals, parents must recognise their own offspring and provide care. Individuals must recognise their own kind and group membership, be motivated to form sexual relationships, compete for resources within groups, defend themselves and their resources, and form co-operative and alliance building relationships with others. Social roles are co-constructions because they require individuals to send specific kinds of signals that activate role-forming motives in 'the other' and then be able to detect and analysis signals coming back to the self. An infant expresses a distress call/signal and the mother is moved by it and provides soothing signals that the infant then responds to; an individual sends signals (displays) of sexual interest that stimulates the sexual interest in a conspecific and sets in motion a sequences of co-created interactions and 'dances'. There is a range of such co-constructed relationships, e.g., for attachment, co-operative, sexual and dominant-subordinate interactions that depend on specialised social motives and processing systems. Thus social behaviour is *motivated and guided* by evolved, strategically focused mechanisms for reproduction and survival (Gilbert 1989, 2005a,b). These social role seeking and forming motivational systems can conflict and people are not always conscious of them (Gilbert 2000, 2005b).

Many of our dispositions for forming certain types of social role are adapted for the small-group living Pleistocene era and can be comprised in the modern large-group living era (Bailey 2002, Reiners 2001/2005). In this paper, however, we can focus on the idea that to competently enact any role requires a suite of attentional, motivational, cognitive and other guiding systems that are sensitive to the unfolding and changing behaviours from co-actors as role sequences unfold. These role-focused guiding systems have been referred to as *social*

Table 1. *Self-Other Role Co-Creations*

	Self As	**Other AS**	**Monitoring Threat/safeness**
Care-seeking	Needing seeking	Providing alleviating	Availability access
Care-giving	Providing alleviating	Needing seeking	Distress in other empathy
Co-operating	Sharing belonging	Sharing belonging	Similarity cheating
Competing	Power comparing	Power comparing	Relative power talents abilities
Sexual	Attracting attracted	Attracting attracted	Attractiveness

Innate motivational (seeking) systems with range of emotional and cognitive processing systems that link to a 'sense of self'' A Self As…

Diagram 1

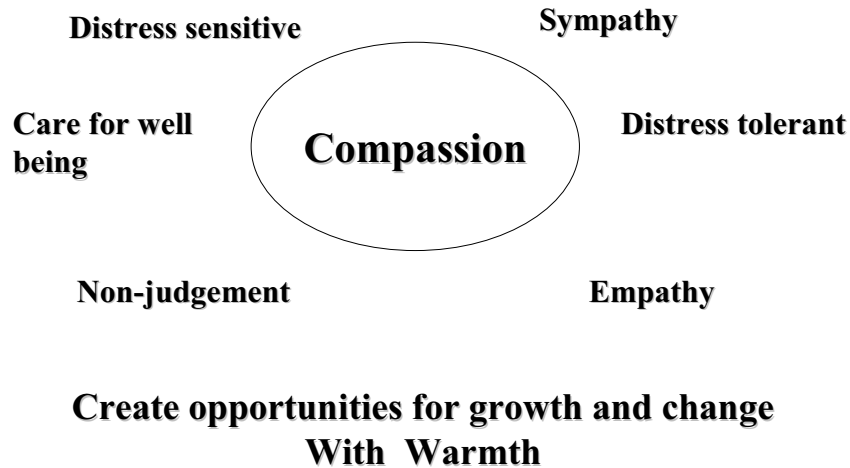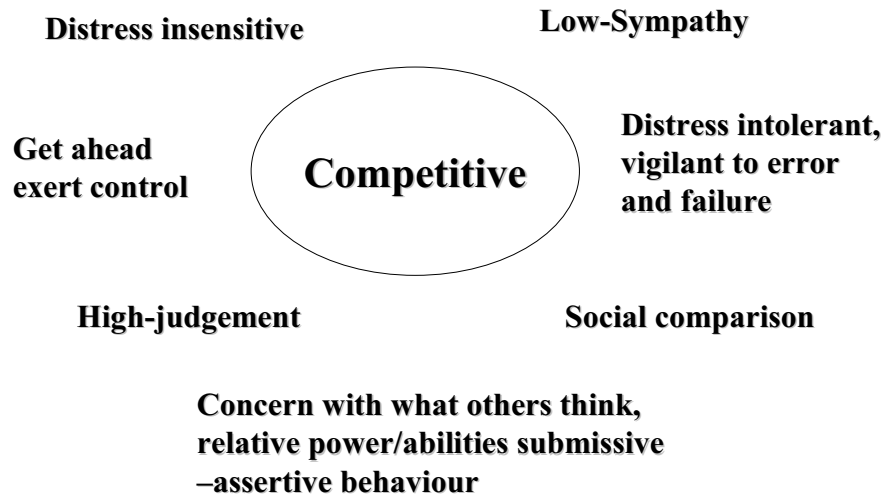## Components of compassion
from the Care Giving Mentality

Distress sensitive   **Sympathy**

**Care for well
being**   **Compassion**   **Distress tolerant**

Non-judgement   **Empathy**

**Create opportunities for growth and change
With Warmth**

Diagram 2

Components of competing
from the rank-forming mentality

Distress insensitive   **Low-Sympathy**

**Get ahead
exert control**   **Competitive**   **Distress intolerant,
vigilant to error
and failure**

High-judgement   **Social comparison**

**Concern with what others think,
relative power/abilities submissive
–assertive behaviour**

mentalities (Gilbert 1989, 2005a,b). Social mentalities co-ordinate different elements of cognitions, emotions and behaviours in goal relevant ways. A rough classification of these is given in **table 1**

From **table 1**, it can be seen that with each goal (e.g., care-seeking) the self is experienced in one way and another person in another way. Note also that each role has it own domain of threat that will require special attention.

A key aspect of a social mentality is the way a mentality represents a co-ordinating and patterning of different psychological and physiological processes. The same processes are organised in entirely different patterns according to the role that is being sought or enacted. See **diagrams 1 & 2**

Consider, for example, a compassion based goal. The aim is to foster development in another and alleviate distress (Gilbert 2005a, in press). However, a set of abilities (not just a motive or desire to care) are necessary, such as being sensitive to distress, being emotionally moved by distress in others (sympathy), able to tolerate distress (rather than run away or avoid it), develop empathy and understanding for the causes of the distress and to be non-judgemental. Care giving based compassion then recruits these qualities of mind.

In contrast, consider a competitive and rank focused based goal. Here the motivation is to get ahead of others or have control over others. Now under this motivation and goal, those qualities noted above may be organised differently. One should be: relatively *in*sensitive to the distress one causes others when competing with them (this is especially so in the case of hostile rivals/enemies). One can be highly judgemental of opponents and those we seek to control for our own interests. Unlike for compassion, social comparison is important (are others bigger, more powerful and competent than you; can you win if you take them on). So to compete or fight with one's enemies one must *turn off* certain processes that are associated with care-concern, guilt over harming, sympathy and compassion. Consider the bomber pilot who gets a buzz from hitting his target and causing intense suffering below. He does not lack caring abilities, and expresses them to his family when he goes home. Nor does he lack a functioning frontal cortex. Rather when in *the role* of bomber pilot those care-focused ways of thinking and feeling about fellow human beings and the suffering he is causing are turned off – even, we might say dissociated. Indeed, it is the ease by which we can turn off care for others, and pattern our minds in certain ways for certain roles that can be the source of our greatest terrors (Gilbert 2005a).

Although there may be specialised systems for certain kinds of affect processing (e.g. threat versus safe) and motivational systems (e.g. sexual, affiliative, appetitive, aesthetic) it is in *the way in which these blend* together that give rise to complex behaviours which is of interest to the therapist. To what extent is a patient's competitive behaviour modified by their care giving and capacities for sympathetic empathy with others? To what extent are people's worries about their impact on others a major inhibitor of competitive behaviour (O'Connor 2000)? To what extent are people able to develop a sense of connectedness and work as a team player, in contrast to having to be a (competitive) individualist? How can

we extend a sense of kinship beyond our own small group, to encompass a sense of common humanity, – something that, since we evolved in small groups may be hard for us to do (Bailey 2002, Reiners 2001/2005)? According to Jung it is the integration and blending of these different elements of mind which give rise to individuation and well-being. To other therapists it is in our symbolic abilities and abilities to choose certain moral values, adopt them into a sense of self-identity, that is key (Gilbert 2005a). As a therapist then we can acknowledge these evolved biosocial goals and mentality systems and work with patients to develop certain of their qualities as well as blend them. Of course it makes a difference if someone has the internal capacities to act in certain ways (e.g., as caring and empathic) but does not do so because of anxiety in performance, beliefs, specific roles, self-presentations, or contexts, in contrast to someone who may not have these abilities (e.g., a psychopath).

Another important psychotherapy theme is the transference/counter transference. One way of thinking about this is the co-construction of different role forming during the therapy. So for example at one moment a patient may appear to be in a care eliciting role, activating in the therapist a sense of sympathy and wanting to be helpful to the patient; in the next moment as the therapist "draws closer" this alarms the patient who then becomes defensive and competitive. This behaviour then surprises and maybe annoys the therapist who responds in kind. This behaviour on the part of the therapist has the impact on the patient of feeling rejected. This shifting in the co-construction of roles is well recognised within the psychotherapeutic literature but from an evolutionary point of view what is happening here is moment-to-moment movement between different evolved role forming processes which have their own social mentalities (e.g. ways of attending and processing information and coding for threat vs safeness).

Recent cognitive competencies: A third element (in addition to basic threat/safeness and role forming) pertains to the more recently evolved cognitive competencies that give rise to symbolic thinking, meta-cognition, abilities to fantasise and pretend (Wells 2000) and provide the basis for self-identities and self-other schema. These competencies are complex and give rise to various forms of meta-representations, such as abilities to use symbols and theory of mind that involves abilities to attribute feelings and intentions to others (Suddendorf & Whitten 2001). These competencies are commonly directed by threat/safeness and role forming systems. Thus if a person has been abused they are more likely (compared to a non-abused person) to be focused on the possible hostile or exploitive intentions of others, including those in the therapeutic relationship. What cognitive therapists sometimes call cognitive distortions are actually forms of better safe than sorry, or threat-directed, thinking (Gilbert 1998b).

Cognitive therapy is probably the therapy most identified with this domain. Cognitive therapists recognise that thoughts and beliefs can trigger innate defences and constellate around evolutionary important strategies (Beck 1987, 1999). Sometimes simple interventions, such as helping people change perspectives can be helpful. The reason for this is because our cognitive systems are not physiologically neutral. For example,

whether we see a meal or fantasise a meal, we can still activate the pituitary hormones preparing us for eating behaviour, e.g., salivating and an increase in stomach acids. Whether we see something sexual or fantasise it we can still activate the pituitary hormones preparing us for sexual behaviour and feel aroused. Thus the way we think, interpret, imagine and ruminate can have major impacts of states of mind

Cognitive therapists therefore target forms of attention allocation, attributional process and rumination. In fact increasingly cognitive therapies are working transdiagnostically and developing therapies that impact on certain domains such as: as attentional, memory, rumination and cognitive systems (Harvey et al. 2004). In working with trauma the therapists need to understand the *multiple* processing systems that can be involved (Dalgleish 2004), such as how *different* memory systems work (e.g., sensory memory is different from verbal memory). Therapists are now focusing on working with sensory (often involuntary) memory systems (Lee 2005) and using imagery (Hackman 2005, Lee 2005). Therapists become more like orchestra conductors listening to and for different elements of the mind. Some therapies focus on helping people become more accepting of their emotions rather then engaging in avoidance, maladaptive affect control such as using drugs or self-harm, and ruminating (Leahy 2002, 2004). These types of therapies make explicit the difference between our automatic activation of affects from the appraisal and meta-cognitive meanings given to them (Hayes et al. 2004).

Thoughts and beliefs matter then because they can form complex feedback loops which are both activating and activated by evolved systems (Gilbert 1992, Harvey et al. 2004). The therapeutic question here is the ability to alter motivation and emotional systems via changes in the way people assess events and their thoughts and emotions. Behaviourists have long argued that we need direct exposure to feared or avoided situations to help us change.

Self-identity. Self-identity is not (strangely) something the cognitive therapists have focused on (Gilbert 1989, 2005a) preferring instead to refer to various self-related schema. However one of the key evolved abilities that is probably specific to humans and emerges from our symbol forming abilities is that of self-identity (Gilbert 2005a). This is of course a vast area but central to it is the need to create positive affect in the minds of others so that they will chose us for roles. Ideally we want to be admired by our bosses, liked by our friends, desired by sexual partners and loved by our intimates (Gilbert & McGuire 1998). To 'know' that others feel positively about the self *is to make the world safe* because we do not anticipate harmful intent from others but ones of support, care and soothing. It also means that we anticipate success in various role-forming efforts. In contrast shame is coming to feel that we are unattractive to others in some way, with expectations of rejection or harm. Thus shame is linked to our defence systems. When activated it recruits various defensive emotions (anger, anxiety) and behaviours (escape, submissiveness) (Gilbert & McGuire 1998, Gilbert 2003).

Shame is a co-constructed experience that begins in the minds of others and their reactions to us. When we internalise it we are forming inner models of self that regulate behaviour and ascribe meaning to our various internal experiences (e.g., ashamed to feel certain things), characteristics or behaviours. Although we can understand the evolved functions of shame and the profiles of defensive strategies for it (Gilbert & McGuire 1998), as therapists we can only heal shame by our sensitivities and empathy with it. The point is however that to consider the evolutionary origins and functions of shame, and placing in its social contexts enables us to use empathy for shame more effectively (Gilbert & Irons 2005). For example, we can anticipate that a patient will often not tell the truth when it comes to potential shameful information (e.g.,. how much one is drinking or sexual fantasies). We use empathy and gentleness to try to create enough safeness for such to be revealed.

The four domains

These four domains of functioning, *basic threat and safeness processing, role seeking and forming, cognitive symbolic and meta-cognitive processing, and identity forming*, have evolved at different times and become patterned and choreographed via life's experience and learning. As we have noted they do not always work well together (see also McGuire & Troisi, this volume). A patient may experience a flush of anxiety from the threat systems that they meta-cognitively appraise as dangerous evidence of an on-coming heart attack, or shameful. Animals may have fears and anxieties, but lacking the higher meta-cognitive processing competencies, are unlikely to have concerns about heart attacks or being shamed and rejected because they are anxious. Monkeys do not worry about going to work and upsetting the boss because of poor quality work.

Direct emotional conditioning can also compromise role seeking. A patient, who has been abused, may want to form a close attachment relationship with their therapist but as they begin to experience feelings of closeness this triggers threat systems (because closeness is associated with harm from another) and they are overwhelmed by anxiety that logical thinking cannot easily overrule. They may not fully appreciate that closeness seeking is normal and an important way to handle stress and that if this system is disturbed or thwarted this can be problematic (Stevens 2000, 2002). So if the only way one can defend oneself from others is to keep distant, then this will thwart various relationship seeking motives, reduce opportunities for new learning, and cut one off from various sources of positive affect and opportunities to feel safe via eliciting the supportive care of others.

Meta-cognitive systems open up possibilities for rumination, planning and anticipating the outcomes of our behaviours (Wells 2000). This is highly advantageous in many ways but if the ruminative focus centres on threats and losses these create feedback loops that continuingly activate various threat forms of processing, leading to chronic stress that does not settle even when the person is out of the feared or problematic situation (Gilbert 2001).

Mind-to-mind. Evolutionary approaches then help us think about how our brains and minds are organised, the evolved functions of minds, our needs, various trade

offs in their design, the ways various aspects of our minds do not always work well together, and the social context (e.g., abuse and low soothing) that can lead to distressing phenotypes. For me evolutionary psychology in psychotherapy is as it has long been; understanding human needs and maturation processes as part of a common humanity. As a therapist a lot of what we do is to help people confront and work with the feared (both outside and inside a person), de-shame people, work with trauma, alter self-identities, and feel safe enough to engage the world in new ways. Evolutionary approaches enable us to be empathic to the suffering of others because we are all the same species struggling to free ourselves from suffering and often enacting scripts that we neither designed nor consciously want. The way our therapeutic interventions can alter phenotypes and change the wiring and neural networks in the brain is the subject for future research (Cozolino 2002). Such research may allow better targeting of our therapies and develop a more compassionate approach to self and others (Gilbert 2005a, Gilbert & Irons 2005).

Finally, we can address the question that was posed earlier: how can the mind of one person have such an impact on the mind of another? There is one reason only – that we have evolved minds that are highly sensitive to the relationships in which they are embedded. This is shown in our needs for attachment for protection and nurturance, mirror neurons and intersubjectivity, our need for other minds to mature, develop and regulate our own, and shape our self identities – right down to way our genes are expressed. So important is our social embeddness that evolution has given rise to a range of abilities to understand other minds as well as be influenced by them. It is against this backdrop of evolved design that the psychotherapists can work in the way they do – to use their mind to heal and help the minds of their patients. The history of ideas outlined here shows that schools of psychotherapy may differ on theories about how minds work and what they think it is that heals (e.g., exposure vs interpretation), but it is the roles of educator, validator, encourager, mentor, soother, conceptualiser, empathiser, that the therapist brings his/her mind and understanding to the task of mental suffering. We need to have evolved abilities to do, and learn how to do, all this.

Conclusions

This paper explored the historical backdrop to evolutionary thinking in psychopathology and psychotherapy. There is a very long history to the idea that we are evolved beings with various needs, motivations and cognitive abilities. The advent of understanding genes as the means of transmitting knowledge to build traits and the recognition that gene replication lies behind evolutionary change, has had an impact on the way we think about mental processes. We understand now that much of our psychology evolved as solutions to adaptive problems. Conscious and unconscious processes are goal directed but because we have different goals and different mentalities to solve different types of problem, they can be in conflict.

It is impossible to specify a particular psychotherapy that we can call evolutionary because nearly all therapies have some kind of assumption about our common humanity, our universal emotional and maturational needs, and the power of others to help regulate inner states. The details of the mechanisms of transmission of biosocial goals and traits are less interesting to the therapist than are the functions and forms of them. Thus, for example the analysis of attachment theory and the way one may use attachment mechanisms within a therapy is not much changed by knowledge that such systems are "K-selected". What insight into evolved functions and design does do however, is to advise that many negative feelings are there for good reasons, that phenotypes that we might label personality disorder may not be disorders at all but are advantageous in particular environments, and that therapeutic engagement can be respectful of people in their social environments.

As a society we might not like phenotypes that develop in (say) the context of threat but they are reflections of underlying evolved mechanisms and strategies seeking expression. Evolutionary psychology has strong messages in the efforts at prevention (Gilbert 2005a). One impact of evolutionary psychotherapy is to think in terms of innate human needs (especially for safeness early in life, and sense of being valued by others in later life) and the idea that some forms of mental illness may not be illnesses at all but forms of phenotypes that can fit certain ecologies. And for therapy it is the way the mind of the therapist influences the mind of the patient that counts and the complex abilities to do is made possible by evolution.

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