

1

**EVOLUTIONARY
FUNCTIONAL ANALYSIS**

The study of social mentalities, social rank and caring-compassion

Paul Gilbert

The context of the research

The chapters of this book are designed to explore a focus on specific scientific approaches to mental health problems, noting their origins, development and implications for intervention. With that in mind this chapter offers a personal overview of my interest and research in evolutionary and social contextual approaches to mental health problems (Gilbert, 1984, 1989, 2019a). Special interest is given to social mentality theory that is focused on social motives, social cognition and reciprocal dynamic interpersonal behaviours associated with the co-creation of social roles (e.g., status, sexual, friendly, caring) (Gilbert, 1989, 1992, 2017a). It will outline the historical context for the research program of the last 40 years (Gilbert, 2007). ~~I will be reviewing~~ my own research program ~~but~~ not the substantial literature on evolutionary psychology and approaches to mental health problems (see Brüne, 2015; Dunbar, 2017; Dunbar & Barrett, 2007; McGuire & Troisi, 1998; Nesse, 2019; Sapolsky, 2017; Sloman & Gilbert, 2000).

Personal journey

My story begins with my first PhD studies in the 1970s at the University of Edinburgh on the psychological and physiological reactions of anxious and depressed people to success and failure events.

Using the galvanic skin response, I found that they respond similarly to failure events but depressed people under responded to success events supporting the idea that depression was linked to problems of positive affect and poor responses to rewards (Gilbert, 1980). What intrigued me then, and has for the rest of my research life, is why would such a mental state like depression, which seems so maladaptive, causes such misery and can end in suicide, be so prevalent in humans? The World Health Organisation (2018) estimates there are well over 300 million depressed people in the world today, and that suicide 'was the second leading cause of death among 15–29 year-olds'. In addition, many millions more suffer from sub-clinical syndromes and can find life hard and miserable. These questions began my first steps into what is called evolutionary functional analysis (EFA), the need to understand the evolved functional systems underpinning distressing mental states (Gilbert, 1984, 1992, 1989, 1998, 2019a; Buss, 2015).

Working at the Edinburgh Medical Research Council unit in the 1970s, which was doing considerable work in the psychopharmacology of depression, I was interested in exploring the psychosocial processes that might drive some of the physiological underpinnings, vulnerability, triggering, maintenance of and recovery from depression (Gilbert, 1988, 1995, 2013, 2016, 2019a); hence the title of my first book *Depression: From Psychology to Brain State* (Gilbert, 1984). It reviewed the literature on how psychological processes and social contexts could drive physiological ones such as reductions in dopamine and serotonin, elevate cortisol and knock out frontal cortical function. This book also looked at factors that produce discontinuities and non-linear changes in brain state patterns of activation, using what was then called catastrophe theory. The idea was to move away from the concept of fixed states, that change could be non-linear and discontinuous, and consider the ways in which mental states can move dynamically, and at times erratically, with sudden switches rather than smooth transitions. These can all be seen as 'normal functions' of a brain under certain types of contextual stress.

EFA was a steppingstone into a biopsychosocial approach (Gilbert, 1984, 1989, 1995, 2013). It offers a way of thinking about the origins and nature of physical and mental characteristics and asks questions like: why do we have (say) two legs, two arms, sensory faculties, a digestive tract, cardiovascular and immune systems; what is the value of a physical system that can vomit, have diarrhoea and raise temperature, which in certain contexts can also kill us (Nesse & Williams, 1995)? Psychological processes can also be viewed through an evolutionary

6 Paul Gilbert

lens in terms of their distal and proximal origins. So we can ask questions like: why do we have the set of emotions, motives and cognitive competencies that we do? How and why did they get built like that? What are they designed to do? How do they function? What are their underlying mechanisms? How are they regulated? How do different environments impact on their development and function? What do they need in order to function optimally? And of course, why can they be the source of so much mental pain and suffering? EFA today is now helping us understand the nature of many basic motives, emotions and competencies, including processes such as attachment, morality, sexuality, status seeking, affect regulation and competencies like empathy and our unique form of consciousness and conscious awareness (Bernard, Mills, Swenson, & Walsh, 2005; Crawford & Krebs, 2013; Dunbar, 2017; Dunbar & Barrett, 2007; Gilbert, 2019a; Nesse, 2019; Panksepp, 1998; Sapolsky, 2017; Zeigler-Hill, Welling, & Shackelford, 2015). Linking evolution dispositions with life history and maturation trajectories, which vary according to social contexts, gives insight into the sources of a range of mental health difficulties as well as prosocial and antisocial behaviours (Del Giudice, 2016). Indeed, we now know that social contexts can actually shape our genetic expressions, the genes that get turned on and off in us (Cowan, Callaghan, Kan, & Richardson, 2016).

Trade-offs, compromises and constraints

What is crucial to the EFA is the recognition that evolution doesn't build organisms that are designed to be happy, 'mentally well' or always prosocial. Evolution can even create physical forms that don't function that well. This is because evolution is driven by building organisms that pursue survival and reproductive strategies, but in the process there are trade-offs where an advantage in one area can give disadvantages in another. The classic example of a problematic trade-off is the evolution of walking upright and hands-free, which had the downside of narrowing the female birth canal just at the time when the baby's head was evolving to get larger. The unfortunate consequence is that humans have the most dangerous and painful births of all primates. Consider another problematic trade-off, human cognitive competencies. These make it possible for us to be extraordinary in how we impact the world and pursue our survival and reproductive strategies. But they have made us into a species of extremes (Gilbert, 1989, 2018;

Marsh, 2019). We are the most caring of species, not only within close relationships but in professions like medicine. Yet for every pound we spend on medical research we spend far more on tribal violence. We are a terrifying, sadistic and destructive species with our inventions of horrendous ways of killing and torturing each other, the Roman games, the Holocaust and slavery to mention some of the most obvious. These are all consequences of trade-offs arising from the advantages and disadvantages of human intelligence linking up with evolutionary old motivational processes (Gilbert, 2018; Sapolsky, 2017).

Importantly, adaptive function can easily become dysregulated and dysfunctional. For example, diarrhoea and vomiting are the body's natural way of removing toxins; they are adapted defences and are not the 'illness' (Nesse, 2019). However, when they become dysregulated people will die from dehydration and nutrient loss. The down-regulation of positive emotion as occurs in depression and various anxieties can be seen as useful defences in some contexts. But they can become dysfunctional, particularly in a mind that is able to consciously experience its own mental states, consider its future and ruminate on stressful themes (Gilbert, 1992).

Another aspect of evolution is that it doesn't always go well, because it has to work with major constraints from what's gone before. It cannot go back to the drawing board and start again even if the basic design is no longer that adaptive. Evolution can't suddenly design a completely different skeleton which would be better for upright walking and wouldn't give us the associated hip, knee or human birthing difficulties. Given the high prevalence and incidence of mental health problems, not to mention forms of antisocial and immoral behaviour, evolutionary approaches address the issue explored by many evolutionary theorists, and was the subject of a paper over 20 years ago of, 'Why isn't the mind better designed than it is?' (Gilbert, 1998). Strategies that are primarily intended for gene survival and reproduction/replication, along with organisms that are built with trade-offs, compromises and constraints, are part of the answer.

Serious too is the way that modern environments, of megacities with multiple strangers that we have created because of our intelligence, are now contexts that can bring out the worst in us; increasing social wariness and intensifying self-focused competitive psychology and tribal violence (Gilbert, 2018; Sapolsky, 2017). So EFA has little trouble with social constructivist approaches to motivation and emotion that highlight their contextual processes, flexibility and

8 Paul Gilbert

variation (Barrett, 2017; Zeigler-Hill et al., 2015). Many phenotypes for psychosocial functioning are highly sensitive to social contexts in regard to their expression (Sapolsky, 2017). This makes social contextualism powerful because it choreographs our needs, motives and algorithms that are wired into our brains.

EFA also suggests that concepts like depression are abstract concepts, with dubious reliability in terms of specific syndromes. What is important are the highly variable underlying processes that give rise to those mental states we label depression. Indeed, Akiskal and McKinney (1973) wrote a very influential paper on the heterogeneity of depression highlighting the fact that depressed states represented *final common pathways* from multiple interacting factors.

EFA can help distinguish between genuine pathologies (e.g., dementias; deficient B12) and variations in phenotypic function in response to environmental contingencies, particularly along dimensions of prosperities versus adversities (Nesse, 2019; Nesse & Williams, 1995). This is reminiscent of Hill's (1968) famous question of whether depression is a 'reaction posture or disease' which is still debated today (Gilbert, 2006). Given that most concepts of depression place loss of positive affect central to the difficulty, and indeed my PhD studies supported that, then the evolutionary question would be: what is the adaptive value of toning down positive affect and reward sensitivity, reducing explorative behaviour and confidence, ~~suppressing aggression~~ and becoming behaviourally wary and inhibited? Are there particular contexts where this pattern of responding is likely? And looking at other associated experiences: what is the adaptive value of seeing oneself as inferior or disconnected from others? Asking these questions ~~doesn't~~ mean we are arguing that psychiatric syndromes or psychiatric labels are adaptive. EFA does not ask what the adaptive function of 'depression' is because that's a complex, ~~variant~~ and heterogeneous syndrome. Rather it considers the potential adaptive value of ~~subcomponents~~, in what contexts might they be adaptive and in what contexts may they become maladaptive ~~to turn down spirit of~~ behaviour and positive reward sensitivity. Before thinking of depression as a pathology we need to think about how some of its elements represent defensive strategies subject to genetic, epigenetic and contextual variation. Such mental states, with these subcomponents, ~~should~~ be noted in other species, and the contexts in which they are generated ~~should have~~ some degree of cross species consistency. That then is the background for the research to be discussed.

EFA candidates for depression

There have been many candidates suggested as the core candidates for evolved mechanisms underpinning depression (reviewed elsewhere Gilbert, 1992, 2006, 2007, 2013). One of the earliest ideas was that ~~the~~ depressed-like states are ways of conserving resources in poor payoff environments; that is when invigorated efforts are likely to fail then it's better to reduce activity. One hunkers down and waits for better times. Nesse (2000) offered an updated model of this approach. Linked, but also different, were studies looking at what happens to animals who are confronted by stresses they could not control. This ~~evolved into~~ the *learned helplessness model* of depression suggesting when stress first occurs there is an invigorated effort to try to escape or control it. If, and when, those efforts and struggles fail, and the animal learns that nothing they do will work, ~~explorative and effortful~~ behaviour is switched off, they close down outputs and become withdrawn, passive and inhibited (Peterson, Maier, & Seligman, 1993; Seligman, 1975). These are not consciously chosen strategies but ways in which the physiological system reacts to that kind of stress. Debate arose as to whether this was a learnt phenomenon, or a biological phenomenon related to (for example) monoamine depletion associated with fear, stress and other factors (Weiss, Demetrikopoulos, McCurdy, West, & Bonsall, 2000). Indeed, much earlier, Hans Selye (1936) had proposed a model for stress called General Adaptation Syndrome. Here, the first response is recognition of ~~the~~ threat that alarms and activates the sympathetic stress flight and fight system. If this continues the body tries to ~~resist by~~ parasympathetic regulation and ~~bringing~~ the state back into balance but ~~when~~ this fails, the body enters a state of exhaustion and depletion. So, exhaustion can be produced by both the failed coping efforts of the organism and the degree of extended stress. Hence, running away from a lion is over pretty quickly whereas being trapped in an abusive ~~marriage~~ is an extensive, prolonged stressor. ~~Although females of various species have to cope with aggressive males from time to time there is nothing in nature like being trapped in abusive or hostile marriages for months and sometimes years on end; there is nothing in nature that traps us in jobs we hate or fear losing. In fact, we have created a world of traps for many aspects of our everyday life where we are finding ourselves having to do things when we don't really want to and find stressful over the longer term (Gilbert, 2018; Ryan, 2019). These are completely abnormal contexts. The paradox is that we can create~~

contexts with an evolved mind that we weren't actually evolved to function within. Importantly, what all these models share is that threats and stressors trigger a triphasic response pattern where the first defence is to increase energy expenditure, effort and struggle, but 'if nothing is working' (then there is a switch to closing outputs down and) 'do nothing' (Gilbert, 1984, 1988). A third phase may well be adaptation or gradual recovery. The cognitive therapies also highlight how cognitions could interact with this process. This is partly because our capacity for having objective self-awareness and ability to think about the future means that we can ruminate on themes that constantly stimulate threat and stress processing systems. These forms of rumination prevent the body from moving into a rest and digest recovering and resetting system (Gilbert, 2019a).

What was also important for this model was that these learned helplessness states could be conditioned. For example pairing a particular light with uncontrollable stress produced helplessness states that could reactivate helpless states when presented (see Gilbert, 1992 for a review). These classical conditioning learning models are profoundly important for understanding how 'the body remembers' and can be quickly activated into different patterns through associative learning.

The social dynamics of depression

Attachment

Important though these stress-control models are, they didn't address some of the social behaviours and cognitions associated with depression (Gilbert, 1992, 2006, 2007). These included a sense of isolation and loneliness on the one hand, and tendencies towards inferiority (unfavourable social comparison), submissive behaviour, poor assertiveness and shame and self-criticism on the other. There was no clear reason why people experiencing uncontrollable stresses would end up feeling worthless, inferior and shame prone. We needed a theory that illuminated the social dynamics, social motives and social cognitions of depression. Maybe the type of stress that was producing inhibited-helpless states was important and would texture the defensive response?

Two social theories of depression that implicitly incorporated learned helplessness type concepts, but focused on different types of social threat and stressor, were the attachment and loss model (Bowlby, 1969, 1973,

1980; see Cassidy & Shaver, 2016; Music, 2019 for reviews) and the social competition (Price, 1972; Price, Sloman, Gardner, Gilbert, & Rohde, 1994) and defeat and entrapment models (Dixon, 1998; Dixon, Fisch, Huber, & Walser, 1989; Gilbert, 1984, 1992, 2007; Gilbert & Allan, 1998). The attachment and loss model posits that mammals, and especially humans, are motivated to form attachments with caring others in early life and then throughout life seek to elicit support, guidance and help from others. These relationships have powerful physiological regulating effects. When these are forthcoming individuals feel safe and confident, are able to explore and develop, whereas when these are not available, and individuals feel in unsupportive, neglectful, critical/hostile social environments, they are vulnerable to unregulated stress and mental health problems. Humans have basic needs for support and connectedness. The presence of supportive others suppresses threat and stress processing (see Cassidy & Shaver, 2016; Music, 2019 for reviews). For example, partner support is associated with reduced cortisol and increased oxytocin when facing stress (Grewen, Girdler, Amico, & Light, 2005; Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003; for a review see Petocchi & Cheli, 2019).

In early life a range of complex needs for food, comfort protection and stimulation is provided to the infant by the mother. So crucial is this relationship that they have evolved monitoring systems to keep tabs on each other's closeness and availability. Given the survival imperative to elicit care from the parent, a set of monitoring and defensive manoeuvres evolved for when these are disrupted. These relate to a menu of potentially achieving mechanisms and defensive/protective motivational, emotional and behavioural control systems that serve the function of keeping an infant and mother in close contact with each other (Bowlby, 1969). When separated from their mother, juveniles lose these vital maternal inputs and are at risk from a variety of dangers to which they must now be attentive and respond. The defensive response to separation is *protest-despair*. Protest is (as in the learned helplessness model) an invigorated pattern of responding with specific social attention to engage in urgent searching for the parent and to *signal/communicate* distress to elicit help and/or reunion; i.e., the signal is designed to impact on others. But if this doesn't work, in the sense that it doesn't elicit reunion or caring behaviour from the (m)other, then this 'noisy' defensive behaviour actually becomes a threat, because it increases the risk of signalling its defencelessness to predators, getting lost and getting dehydrated. So, after a period there is an internal

process to shut the infant down and generate hiding behaviour and wait for parental rescue. Despair is a form of behavioural deactivation when protest does not work, and similar to the inhibited states noted in learned helplessness. Despair is thus designed to *stop signalling* and moving in the environment (hunker down) when not to do so is dangerous (for reviews see Cassidy & Shaver, 2016).

Although these are the basic templates and algorithms of defences, they become extraordinarily complex in contexts of disrupted attachment. This is where children are subject to frequent separations, abandonment, neglect or abuse. ~~In the latter case~~, the parent, who should be the source of a secure base and safe haven, is a source of threat, creating serious approach-avoidance conflicts for the infant. This results in the child experiencing 'threat without resolution' because the threatening parent also robs the child of their means of confident resolution via contact with a caring other (Liotti, 2000). This can underpin disorganised attachment (Blizard, 2003). There is not space here to engage in detailed discussions of the maturation of attachment mechanisms and defences under different conditions, but they are profoundly important, not least because individuals can experience rapid switching between protest/activation and despair/deactivation states as part of their mental health problem. These insights have also underpinned explorations of the mechanisms by which compassion focused therapy can reactivate attachment process so they can function as a secure base and safe haven (Gilbert, 2000).

Hierarchy, social power and rank

Importantly, the need to hunker down and give up on exploration and resource seeking could also be triggered in another social context. This is one linked to problems with social competition, status and low rank. Again evolution seems to have given a set of defences for coping with this scenario. This is the social competition hypothesis of depression ~~that had not received much research attention at the time~~ (Price, 1972; Price & Sloman, 1987; Price et al., 1994). This approach noted that in contexts of competing for social and other resources, constant fighting with risk of injury is costly, particularly in small groups where there may be genetic relationships. Hence, two strategies evolved. One is to escalate conflict until winning; the other, in the face of likely injury or defeat, is to de-escalate, submit, withdraw and signal to the more powerful that one is no longer a threat. Technically this was called the

involuntary subordinate strategy (Sloman & Gilbert, 2000). To run this strategy a whole range of physiological systems has to be demobilised so that reward and exploratory-seeking systems are toned down or deactivated, while submissive inhibition is turned on. Again we can see the basic learned helplessness blueprint here but that triggers are specific to social conflict. If a dominant sees a subordinate seeking resources including sexual opportunities (their drive system is active) they will threaten and even attack the subordinate. Evolution thus evolved mechanisms that enabled individuals, who are at risk of hostilities from more powerful others, to monitor themselves in relation to others closely and to express submissive and defeat-like behaviours (Gilbert, 2000; Price, 2000). Such behaviours, in contrast to (say) defiant displays, can terminate the attack impulses in the more powerful. Threatened subordinates need to remain anxiously vigilant to dominant others, and reduce confident and explorative behaviours. Some studies suggest that if they don't, for example, if juveniles become overly challenging, they can be attacked by more dominant individuals and killed (Higley et al., 1996). These important components of social defensive behaviours could play a role in depression vulnerability and presentation because they directly link to social wariness, loss of confidence and reduced reward seeking and explorative behaviour.

John Price and Leon Sloman, who became friends and mentors, and I became very interested in exploring if it was indeed competitive motivational systems that utilised evolved mechanisms for monitoring and judging social rank and social threat that were being triggered in depression (Gilbert, 1984, 1992). Particularly important might be the mechanisms track for signals of social comparison, potential for social conflict, rejection and unwanted low rank. The basic idea was that problems in navigating one's social place and position can manifest as being in unwanted inferior positions, with low social control over access to positive resources, reduced support and investment from others. In addition people can feel trapped in these aversive, rejecting critical situations and relationships. These contextual cues would then (unintentionally) trigger subordinate defences.

Just as attachment, connectedness and access to support and help from others is a fundamental human motive system so is the need for status (see Anderson, Hildreth, & Howland, 2015). As such it has its own algorithms and orientations. Part of the motive and advantages of status is that it opens access to these valuable resources, social esteem, opportunities to have supportive friends and good reproductive partners,

which as noted have physiological regulating effects. People will try and avoid low status if the consequence of low status is loss of these. If (in certain contexts and roles) low status doesn't carry such costs then it's less likely to be intensified as a motive. Anderson, Kraus, Galinsky, and Keltner (2012) showed that it is *social* status, relating to how one is held in the minds of others, one's social reputation, degree of attractiveness and interest to others, rather than socio economic status, that is linked to well-being. Self-esteem relates to having qualities that you feel *others will value* rather than devalue or be indifferent to. It became clear then that one couldn't consider competitive theories of depression without considering *what* is being competed for. That question highlights the interconnectedness between social competition and the drive for social connectedness and social influence.

Competing for what?

While humans can of course compete aggressively as in bullying and ~~domestic violence which are linked to depression~~, many researchers point out that most forms of human competition are about reputation, being attractive to others and social standing (Barkow, 1975; Sznycer et al., 2018). I labelled this *social attention holding potential* (SAHP) (Gilbert, 1989, 1992, 1997; Gilbert, Price, & Allan, 1995). Indeed, given we have a basic motivation for 'status', (Anderson et al., 2015) for which monitoring the SAHP is central, Boksem, Kostermans, Milivojevic, and De Cremer (2011) showed that we have status-attention monitoring systems. Low status individuals monitor status in a different way from high status individuals. One of the reasons for this is that low status individuals are much more vulnerable to downrank threats and losses, and have to be more vigilant (Gilbert, 1995). Evolution did not develop new defences according to the type of competition any more than there is a different anxiety system for an approaching lion, losing one's passport at an airport or hearing of the serious illness of your partner. They will all operate through the amygdala in some way, although the coping behaviours will be quite different, of course. So monitoring SAHP, status and reputation are linked into much earlier evolved defences of activation and deactivation according to the success or failure of competitive and status acquiring and maintaining efforts and contexts. Hence, social putdowns, rejections and being marginalised/ignored are forms of social diminishment that could trigger subordinate defences of involuntary subordinate strategies (Sloman, 2000). The concept of SAHP,

linked to attention monitoring, offered a bridge into the attachment-loss dimensions of depression, in that failure to compete for social place resulted in rejection and loss of access to the positive regulating effects of supportive and caring relationships. It also bridges into the shame literature in that at the heart of shame is a sense of social diminishment as a result of losing SAHP or having negative SAHP and being an object of derision and negative evaluation by others (Gilbert, 2007).

A second question about competing and striving was the degree to which these were to get 'well above others', seek superiority or whether they were competing to avoid inferiority and rejection. Social disconnection, and being cut off from helpful others, is a major evolutionary threat. In the past being shunned, excluded, rejected and abandoned individuals wouldn't survive. So the research set out on a series of studies exploring striving and competing *to avoid inferiority*, and associated fear of losing out and being rejected for failure (Gilbert et al., 2007, 2009; Basran, Pires, Matos, McEwan, & Gilbert, 2019). This was *running true to* our basic approach to always explore functions behind these processes. The data turned out to be as predicted. Depression and anxiety were linked to striving, competitiveness to avoid inferiority and its consequences such as rejection and marginalisation. The *functions* of achievement, striving and competitiveness are crucial. It is when they are driven via social insecurity, efforts to prove oneself to others and avoid loss of social investment from one's local relationships, that vulnerability to mental health problems arise. In some sense then striving and competitiveness, with its focus on social comparison, are strategic efforts to avoid the survival threat of loss of social interest and investment from others, or outright rejection. This approach has considerable overlaps with studies of perfectionism and the link of perfectionistic processes to excessive competitiveness and competitive-status anxiety *which has been growing in the last 20 years* (Curran & Hill, 2019). Here *was another bridge* linking striving and competitiveness to issues of attachment, social (inter)connectedness and social support. What's different for humans is that other primates are not desperately trying to prove their attractiveness, talents or value to others. This is very much a human competitive domain emerging from the need for social connectedness, being desired and *acceptance*, and the physiological, psychological and practical benefits that flow from that (Gilbert, 2007, 2019b).

There is increasing evidence that neoliberalism is a factor that has unhelpfully accentuated competitive motivation particularly in

younger cohorts who are caught up in increasing levels of anxiety and depression (Curran & Hill, 2019). As these researchers highlight the fear of being marginalised if one can't keep up or present oneself in a certain way has soaked through our culture. Narcissistic anxieties have increased too, while concern for others has lessened (Curran & Hill, 2019)

Shame

Competing for social status, sense of belonging and social investment from others opens up the concern with its opposite, shame. I wrote an early piece on distinguishing shame from guilt on the basis of different evolutionary mechanisms (Gilbert, 1988). Shame is linked to status competition whereas guilt (the feeling of sadness and remorse for causing harm) evolved as a harm avoidance and reparation motivation with the evolution of caring (for reviews see Gilbert, 2019b). Shame can also be distinguished in terms of being externally and internally focused (Gilbert, 1998, 2019b). External shame is focused on the experience of negative evaluation from others whereas internal shame is linked to self-criticism and self-devaluation (Gilbert, 2007). This distinction is now utilised in a number of different models of shame. In a meta-analysis Kim, Thibodeau, and Jorgensen (2011) confirmed this as an important distinction and found that external shame was a good predictor of depression and anxiety.

Defeats

However, the focus on (only) subordinate defences also fitted with social anxiety and other mental health difficulties (Gilbert, 2000, 2001). The social competition theory, and later what I referred to as *social rank theory* (partly because it was perceptions of social rank that ecological research focused on and we developed our self-report measures for) (Gilbert, 1992), suggested that *involuntary subordinate states* may well be vulnerability factors for depression. But what triggered them? This was not dissimilar to Brown and Harris' (1978) idea that we can distinguish between vulnerability factors and provoking agents/triggers. So what was needed to trigger a depressed state was either chronic stress and/or some kind of (social) defeat (Price, 1972; Price & Sloman, 1987). Fearful subordinates might well be stressed, but they aren't necessarily depressed. However, if they experience down rank

attacks they cannot defend against, are hustled, bullied, harassed and defeated they would be vulnerable to depressed states (Dixon et al., 1989; Dixon, 1998; Gilbert, 1992, 2001).

Defeats can make people vulnerable to depression for a number of reasons. First, defeats could be like learned helplessness. Individuals struggled against adversity, but when they could not avoid, escape or control it, the next best defence was to hunker down and stop struggling. A second idea was linked to disengagement from pointless or hopeless tasks, or tasks that could result in serious injury if the individual continued. Another idea was if a defeat required major adaptation over the long term, people's perception of an aversive or loss filled future might trigger a low energy expenditure strategy. Another idea was that the display of defeat states, with loss of muscle tone and body posture, was a signal to an aggressor that one is now weak, out of action and not a threat. The classic display would be the defeated army; indeed, defeats over important conflicts regularly produce diminishment of mood and energy. Finally, given that social defeats can also be about social disengagement (feeling worthless and socially disengaged and lonely) then they may also trigger protest-despair type defences. Indeed, many clients have noted that they often have 'inner ideals' they are trying to live up to, thinking that reaching these ideas will make them socially accepted and reduce risk of marginalisation. If they persistently fail to reach their ideals there can be an overwhelming sense of being defeated and engaged in struggles one can't win. However such defeats go with a sense of failure and feeling inferior associated with a sense of disconnection and loneliness and being cut off or excluded from the core valuable social inputs that regulate threat processing; that is when mental health problems emerge. Again it can be stressed that defeats that don't have these consequences are less likely to be pathogenic (Sturman, Rose, McKeighan, Burch, & Evanico, 2015).

Entrapments

Another major difference between us and other primates is that humans are far more 'caged' (in houses and families) and are not free roaming like most primates who can distance themselves from aggressive others (Ryan, 2019). Thus, as we can't get away from contexts where we have experienced defeat, the concept of entrapment became important too.

When individuals are trapped and want to get away from situations, they become 'flight orientated'. But if they are in some way trapped

and can't execute the flight strategy and behavioural routine then they are in a state of arrested defences, called 'arrested flight' (Dixon et al., 1989; Dixon, 1998). Over time arrested flight could produce inhibited and demobilised states, and in that sense is similar to learned helplessness (Gilbert, 1992, 2001). In addition, humans typically engage in what is called experiential avoidance where they try to get away from aversive memories, thoughts and feelings. We therefore extended this idea of 'entrapment with arrested flight' – an elevated motivation to escape, take flight from, and get rid of internal experiences. We called it internal entrapment. While this pertained to issues of rumination and feeling stuck and trapped in inner thoughts, feelings and mood states, the crucial issue was the degree to which individuals were flight motivated, trying to get away from, suppress or avoid having these experiences. Individuals are trying to get away from their own distressing mental states, thoughts and ruminations, but feel stuck and trapped in them. Brown and Harris (1978) published extensive research showing that the social contexts of women's lives significantly contributed to risk of depression. Following up on the social rank and entrapment model, they investigated and found that humiliation events (involving the loss of status and social power) and feeling trapped in aversive environments were major contributors to depression in women (Brown, Harris, & Hepworth, 1995).

So crucial too was the idea that even defeats might not result in depression if animals could:

- 1 *Escape the context, including the physical context.* When individuals can get away from bullying relations or abusive marriages/partnerships their depression tends to reduce and confidence improves.
- 2 *Be able to give up on a pursuit and do something else.* When individuals experience major losses and defeats in life, their ability to find new meaning and rewarding activities can be crucial to recovery. If they stay stuck in grieving and feeling defeated for what's been lost, depression can become more stuck. This can be a problem where individuals feel they weren't properly parented and constantly seek to find a ~~parenting~~-caring relationship.
- 3 *Be able to elicit support and caring.* In primates access to supportive (and grooming) others offsets the impact of social threat, defeat or attack (Abbott et al., 2004). Similarly eliciting social support and care in the face of defeats and setbacks can offset their impact on depressed states (Brugha, 1995).

Self-monitoring and social mentalities

Biological systems have a built-in monitoring process that will trigger particular reactions in certain contexts. For example, if the temperature goes too high we start to sweat. If it goes too low we start to shiver. If we take in toxins the stomach detects this and then triggers expulsions as vomiting. We don't learn these; they are biologically built-in, basic algorithms. Just as we have these basic *biological* monitoring systems we have ones for monitoring self in relationship to others in the social arenas of life. We have systems that can monitor how we are doing in relationship to others. This monitoring is partly focused on monitoring and evaluating the intent and motivation from others towards the self and how our communications of intent and motives are influencing the minds of others.

In order for animals to form any kind of reciprocal role, be it for sexual relations, cooperation, attachment and so forth individuals have to be able to monitor their own outputs in relationship to the behaviours of the other; to their conspecifics. Social behaviour requires coordinated interactions for these interpersonal dances. The attachment system the child has will monitor the availability and accessibility of the parent. Crudely, the monitoring system is 'parent present and available then suppress threat system'; 'parent not present or available activate threat arousal and seeking behaviour'. Physiologically the presence of the parent stimulates the vagal brake and the absence of the parent releases that brake (Porges, 2017). A distal but nevertheless related experience is that when we feel lonely we want to contact somebody we like or think cares about us; loneliness is the feeling that will trigger desires/motives to seek connectedness. So our self-to-other monitoring system is biologically plugged in to our emotions for threat awareness, drive and reward, and safeness (Gilbert, 2019a). How we monitor our sense of social acceptability and connectedness is very much tuned by our early life experiences, but the point is that we are monitoring how we are existing in the mind of others.

If individuals are indeed being triggered into involuntary subordinate strategies, then the internal monitoring system will not be telling them how confident they are, how strong they are and how likely they are to succeed if they just keep going; quite the opposite. A threatened subordinate in the wild who was not controlled by this evaluative and warning system would get hammered! The monitoring system will be giving thoughts and feelings that incline them to back off, that they are

weaker, they can't achieve the outcome and risk getting injured. If you then textured this with actual (early life) experiences of being criticised and bullied then you have a very powerful internal regulator because they are tuned to subordinate strategies and will be playing memories of putdown, loss and attack.

Self-criticism

This raises an important theme relating to self-criticism. In social conflict situations, when an animal realises they are in an inferior position and have to submit to avoid injury, there has to be some monitoring system that tells them they are the weaker member. John Price called this *the internal referee* of social competition. It operates physiologically to turn off engagement systems and turn on submissive subordinate systems (the involuntary subordinate strategy). Having a monitoring system that basically is conveying information 'you can do this. . . , but you can't do that. . .'; 'if you try to do this (make a sexual advance) then you will be attacked by powerful others' could well be an early blueprint for self-criticism. Clearly self-criticism is considerably more complex but it operates like some judge of competence and ability. Clients quickly pick up that self-criticism is much more intense in contexts of status threat and concerns inferiority and rejection. In a series of studies Fournier, Moskowitz and Zuroff (2002) showed that in organisational settings individuals who felt inferior tended to be quarrelsome with those below them but submitted more and inhibited anger more to those above.

Another aspect of these basic defences is the way in which they have become linked into self-monitoring systems. It is well known that we can create images in our minds that stimulate the same physiological pathways as the unconditioned stimulus. For example, feeling hungry and seeing a wonderful meal or just *imagining* a wonderful meal stimulates the same hypothalamic pathways. Seeing something sexual or imagining something sexual stimulates the same physiological pathways. It is therefore possible for us to create internal images of ourselves and the world where we feel inferior and trapped and thus stimulate those defences. Given that the social rank and defeat defences were designed to deal with hostile signals from others, then if we generate those in ourselves in the form of self-criticism it's quite possible that our own hostile self-criticism can stimulate the defensive pathways (Gilbert, 1992, 2000). Indeed we have good neurophysiological evidence for

this now (Longe et al., 2010). To put it simply self-criticism operates through the same physiological systems, activating the same strategies as criticism/threat from a dominant other. Once ~~owned~~ self-criticism can stimulate involuntary subordinate strategies, ~~and over time a relentless sense of defeat and loneliness~~. These two constantly run together because individuals who feel defeated but well-loved and connected are less vulnerable to depression.

There is considerable work on self-criticism and its link to a range of ~~pathologies~~ (Kannan & Levitt, 2013). In addition, some years ago I noted that even when people are trying to generate positive and helpful statements for the self as in cognitive therapy, the emotional tones and texture of those thoughts could still be hostile. Indeed, the basis of compassion focused therapy began by trying to help people generate supportive, kind and compassionate emotional *motives, tones and textures* in their own coping thoughts rather than hostile ones (Gilbert, 1998, 2000, 2019a). So in effect it wasn't (just) the cognitive content but the emotional tone of people's self-monitoring thoughts that was impacting physiological systems. What EFA allows is the potential to see how and why the signals we create in our minds, and the internal models of self and the world we create, stimulate these basic physiological patterns of various social defences.

Exploring the interaction between these processes, Sturman and Mongrain (2005) found that self-reported entrapment and unfavourable social comparison mediated effect of self-criticism on the number of previous episodes of depression. Feeling inferior compared to others, self-criticalness and feeling trapped in that position are particularly depressogenic.

Summary

This research tradition has followed an EFA approach exploring how two fundamental survival and reproductive ~~motivational systems~~ operate as physiological and psychological regulators. The first is linked to how individuals compete for resources and create different types of hierarchies which are linked to different types of monitoring and self-evaluative systems and physiologies. For example, social rank systems utilise forms of social comparison, sensitivity to self-other ~~competencies~~ and menus for enacting dominant-submissive behaviour. Mammals also need the help of others to survive and therefore have a range of evolved physiological and psychological processes that are regulated

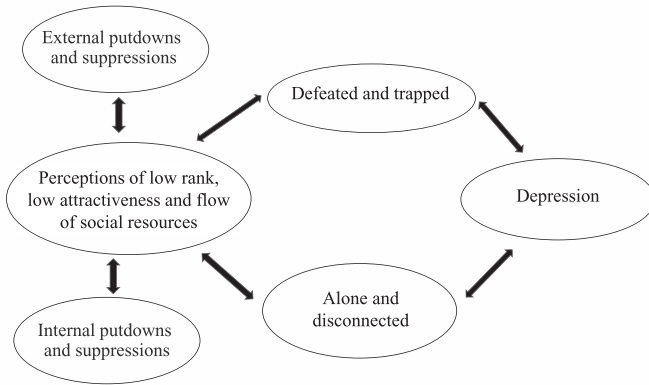


FIGURE 1.1 Simple interaction between rank and social connectedness for depression (copyright P. Gilbert)

via the helpfulness or otherwise of relationships. Research over the last 30 years has shown how these systems interact and become major regulators of a range of process underpinning mental health problems. One of the crucial implications of this approach is how sensitive our minds and bodies are to their embedded social contexts (Gilbert, 1995). After all, evolution has been all about developing mechanisms of being sensitive to social context and the co-creation of social roles.

Figure 1.1 gives a simple overview of these processes.

It starts with the idea that external putdowns, criticisms, rejections and being bullied through to forms of abuse, sensitise individuals monitoring of the social rank and relative power; their abilities to be connected and valued social agents. In addition, individuals can experience considerable suppression of desired goals because of operating in demanding or toxic environments. For example, individuals who desperately want to get away from stressful jobs or marriages but can't afford to. These are forms of arrested defences which have overlaps with the learned helplessness literature (Gilbert, 2001). Part of this suppression is also the inability to form or unavailability to form helpful connectedness with others.

Individuals can also experience considerable internal putdowns, for example, from replaying trauma memories, or hostile self-criticism. Social and paranoid anxieties may suppress people's social reward seeking and relationship developing behaviours. These drive a sense of being defeated and trapped and at the same time an awareness of

lacking social resources and sense of disconnectedness. Given that social resources in the forms of socially connectedness, sense of belonging and feeling cared about and cared for, have powerful physiological effects to dampen the threat system, being cut off from them has health implications. In effect having a sense of connectedness and a valued sense of status and control, increases the sense of 'being in safe environments' which operate through systems like the vagal nerve (Petrocchi & Cheli, 2019) and can suppress threat processing (Kelly, Zuroff, Leybman, & Gilbert, 2012).

Underpinning research and scales development

Evolutionary psychology is now a flourishing, rich and multivariate discipline (Buss, 2015; Dunbar, 2017; Dunbar & Barrett, 2007; Zeigler-Hill et al., 2015). Over the last 40 years there's also been a gradual movement to use EFA to investigate the different motivational systems that orientate individuals to life strategies making them vulnerable to mental health problems, antisocial behaviour or increase prosocial behaviour (Brüne, 2015; Chua, Lukaszewski, Grant, & Sng, 2016; Gilbert, 1989, 1998, 2019a; McGuire & Troisi, 1998; Nesse, 2019).

Social rank measures

What was lacking however were self-report scales that could tap into the dynamics of social competition linked to low rank states (Gilbert, 1984, 1989, 1992). So Steve Allan and I started to develop a set of self-report scales that could tap three core aspects of perceived social rank. These were: 1. a social comparison scale based on a Likert measure (Allan & Gilbert, 1995); 2. a submissive behaviours scale derived from the work of Buss and Craik (1986) and 3. an external shame scale exploring the degree to which people thought others saw them as inferior, flawed or inadequate (Allan, Gilbert, & Goss, 1994; Goss, Gilbert, & Allan, 1994). We distinguished submissive behaviour from assertiveness and found that depression was highly correlated with self-reported submissive behaviour and lower assertiveness (Allan & Gilbert, 1997; Gilbert & Allan, 1994).

Shame measures

Although some shame researchers focused on self-evaluation and exposure others are more social and contextual, arguing that we

experience shame from how we feel *others* perceive and react to us. This is in line with sociologist Cooley's (1902) concept of *the looking glass self* whereby we experience ourselves positively or negatively according to how we sense we exist in the minds of others. The child does not experience shame until they are made aware of some negative social judgement about some attribute of self, as judged in the mind of another. Being judged negatively (looked down on or seen as inferior, rejectable or worthy of attack) is obviously a dimension of social rank theory. Therefore, we set about developing measures for external shame (the other as shamer scale; OAS) and sought to distinguish it from internal shame (Gilbert, 1992; Goss et al., 1994; Allan et al., 1994). The scale has now been used in many studies. Kim et al. (2011) published a major meta-analysis and review that demonstrated that external shame was indeed a powerful predictor of depression and other forms of psychopathology.

Types of inferiority

When it comes to feeling inferior and low rank we were interested in whether this was experienced for all qualities of self, as might be implied by the generalised global self-esteem literature, or only in those domains where one felt unable *to compete* for resources and social place. For example, do depressed people see themselves as inferior when it comes to prosocial traits such as being caring, trustworthy or helpful? The answer seems to be 'no they don't' especially when controlling for submissiveness. It is in the resource control and dynamics of life that depressed people see themselves as inferior (McEwan, Gilbert, & Duarte, 2012).

Measuring defeat and entrapment

As noted, the issue of defeat and entrapment had always been prominent and explicit within the social rank model. Hence, in 1998 we developed the social defeat and entrapment questionnaires to explore people's sense of being defeated by life and in relationships (Gilbert & Allan, 1998). Our 1998 paper showed that in both student and depressed populations external and internal entrapment are highly associated with depression. In the depressed group they are also highly correlated with hopelessness. Interestingly, internal entrapment (feeling trapped in states of mind and thinking that one wanted to escape

from) had a slightly higher correlation ($r = .62$) to depression than external ($r = .54$). To some extent this also overlaps with concepts such as experiential avoidance, a wanting to get away from one's feelings, memories and intrusive thoughts. The association of depression with defeat was .73 in the students and .77 in the depressed population. In a follow-up study, Gilbert, Allan, Brough, Melly, and Miles (2002) explored self-report measures of social rank variables including social comparison, submissive behaviour and external shame along with defeat and entrapment in relationship to anhedonia and anxiety in 81 inpatients and 193 undergraduates. Depression was highly correlated with rank variables and once again in the clinical group anhedonia and anxiety were strongly correlated with entrapment ($r = .63$) and defeat ($r = .79$).

The study of defeat and entrapment states has now been replicated all over the world using our scales and various hybrids (Taylor, Gooding, Wood, & TARRIER, 2011; Sturman et al., 2015). Unlike Taylor, Wood, Gooding, Johnson, and TARRIER (2009), who argued for a single factor combining defeat and entrapment, Höller et al. (2020) developed a short version of a scale combining defeat and entrapment scale and tested it on a large group of out and inpatients. They found two clear separate factors. Suicidal ideators and suicide attempters scored significantly higher on entrapment in defeat than non/low ideators and attempters.

In 2004, Gilbert, Gilbert and Irons explored life events using the *life events and difficulties schedule* of Brown and Harris (1978) in 50 depressed patients. In regard to arrested flight, 88% of the group acknowledged strong desires to escape difficulties in their life but most felt unable to. Transcript analysis from the LEDS also indicated strong themes of entrapment. It found 38.7% felt trapped before becoming depressed. Feeling trapped by the depression itself (no energy to do anything) was also an issue. Fantasies of escaping were common, but making actual plans to get away less common, possibly because that was anxiety provoking. A variety of reasons was given for not escaping. In regard to arrested anger, 82% felt they suppressed their anger and 56% felt this problem predated their depression.

Recently these concepts have been used to develop a semi-structured interview for people who have suicidal ideation and have engaged in self harm. The study was conducted in an accident and emergency service for people who had recently self-harmed. Both clinicians and clients found that a sense of entrapment, arrested flight and arrested flight were very prominent in these individuals. Interestingly, thinking

about and discussing these themes with clinicians was viewed as very helpful (Clarke et al., 2016).

Competing to avoid inferiority

As noted earlier understanding how and what people are competing for, and the fears of failure to be able to compete, was the driving force behind the fears and inferiority studies. Again, we pioneered some of the scales for that measurement (Gilbert, Broomhead et al., 2007; Gilbert, McEwan et al., 2009).

The transition from pure research to application

There have been many studies using these scales and confirming that submissive behaviour, feeling inferior in the eyes of others and unfavourable social comparisons are highly linked to depression, social anxiety and other mental health problems. Wetherall, Robb, and O'Connor (2019) conducted a major systematic review of the data for social rank theory finding good evidence from many sources showing these are salient issues of depression. What is central for mental health problems is *involuntary* and unwanted subordination. If we are happy being in lower ranking positions, which sometimes we are of course, especially if we feel others above us are helpful and supportive, then depression doesn't follow. It's only when the rank is associated with aversive outcomes that problems arise. This is because it triggers social defensive mechanisms in a way that being happy in a subordinate position obviously does not.

Taylor et al. (2011) provided a systematic review on a large body of evidence investigating the links among defeat, entrapment and psychopathology in the domains of depression, suicidality and posttraumatic stress disorder (PTSD). In the case of PTSD they looked at the concept of mental defeat and its prediction of severity and recovery. More recently Carvalho et al. (2013) further explored the relationship between entrapment, defeat and depression in nonclinical and depressed patients again supporting the strong association between entrapment and defeat in depression. Sturman and his colleagues have also generated a number of studies developing the social rank theory of mood disorders. In a recent study, Sturman et al. (2015), which also offers a review of their pioneering work, found that self-criticism was linked to increased sensitivity to defeat and number of perceived defeating

events. Griffiths, Wood, Maltby, Taylor, and Tai (2014) showed that defeat and entrapment were highly predictive of depression and anxiety 12 months later. Griffiths, Wood, and Tai (2018) found that defeat and entrapment are predictors of depression and burden in carers; defeat and entrapment have also been shown to be important in other mental health difficulties such as psychosis (Valmaggia et al., 2015). Selten, van der Ven, Rutten, and Cantor-Graae (2013) gave an update on the social defeat model of psychosis including its overlap with animal models and neurophysiological pathways. Arrested defences and entrapped defeat states have also been linked to self-harm (Clarke et al., 2016). Siddaway, Taylor, Wood, and Schulz (2015) conducted a meta-analysis with over 40 studies ($n = 10,072$):

Perceptions of defeat and entrapment were strong (around $r = .60$) and similar in size across all four psychiatric disorders. Perceptions of defeat were particularly strong in depression ($r = .73$). There was no between-study heterogeneity; therefore moderator analyses were conducted in an exploratory fashion. There was no evidence of publication bias.

The high correlation of over .7 of defeat with depression is now shown in many studies. As these authors suggest, defeat and entrapment may well be trans-diagnostic and should be a focus for therapeutic intervention.

Self-monitoring and self-criticism

As noted earlier we can generate internal signals that stimulate natural defences. For example, anticipating, imagining or remembering a threat may be enough to stimulate the physiological pathways of the threat system, even in the absence of an actual threat stimulus. So the question was: could self-criticism be looked at this way; that is, can we generate internal signals that stimulate our social rank defences, particularly anxiety and demobilisation depressed states? Again we could keep the basic blueprint of learned helplessness, in the sense that attacks could first invigorate us and then if we don't succeed we get defeated, demoralised and demobilised (Whelton & Greenberg, 2005). Now this idea of self-criticism had been around for centuries (see Gilbert, 1992, for reviews). Freud (1917) argued that individuals, particularly children, could become fearful of expressing anger towards those they depended

on because of the risk of counter-attack, rejection and disengagement. His idea was that the anger got directed to the self. This was called 'anger turned inward'. Freud was very influenced by Nietzsche, who argued that 'no one blames themselves without a secret wish for vengeance' (Ellenberger, 1970). As noted earlier there is now clear evidence that self-criticism, self-blame is linked to the nature of the *relationship*. Insofar as psychotic voice hearers can experience dominant critical voices attacking them Birchwood, Meaden, Trower, Gilbert, and Plaistow (2000) found that subordination to voices was closely linked to subordination and marginalization in other social relationships. In a study of people with schizophrenia who heard malevolent voices, and with self-critical depressed people, Gilbert et al. (2001) found

evidence that . . . malevolent voice hearers and self-critical depressed people experience their hostile, internally generated voices/thoughts as powerful, dominating and controlling (i.e. have typical characteristics of a hostile dominant). Moreover, these voices/thoughts activate evolved subordinate defences such as fight/flight and these are associated with depression in both depression and schizophrenia. (p. 1117)

With the cognitive revolution, which saw self-criticism as forms of negative (cognitive) self-judgements, it became somewhat divorced from any underlying defensive motivation (for reviews see Gilbert & Irons, 2005). There is increasing evidence that perceptions of *social rank* have an impact on self-criticism (Sturman et al., 2015). Gilbert and Miles (2000) developed a measure called *sensitivity to social put down* and showed that individuals who felt *inferior* as measured by social comparison tended to blame themselves if they were criticised by others as those who had higher social comparison scores blamed others for being critical. Self-blame for being criticised by others was linked to *psychopathologies variables*.

In our research we wanted to explore both the forms *and* functions of self-criticism: not only why people self-criticise but also how. So we developed a self-criticism scale to do this (Gilbert, Clarke, Kempel, Miles, & Irons, 2004). This gave rise to two scales: 1. the forms of self-criticising/attacking and self-reassuring scale (FSCRS) and 2. the functions of self-criticising/attacking scale (FSCS). The FSCRS asks people how they think about themselves 'when things go wrong in our

lives or don't work out as we hoped'. There were three clear factors. One was an ability to be self-reassuring and remind oneself of one's capabilities and past efforts. In regard to the self-critical items our factor analysis suggested two self-critical forms. One focused on a sense of disappointment and inadequacy while a second was more focused on self-hatred. Self-hatred turned out to be the more pathogenic, again highlighting the subtlety of important differences and function of these processes. The data suggested that you could be critical and disappointed with yourself but not hate yourself (maybe because you think you could or should be better), but self-hatred is different. Indeed, self-hatred was highly correlated with self-persecution and hurting the self ($r = .80$).

There is now a large literature on self-criticism measured with the scale, its relationship to processes such as perfectionism and a range of psychopathologies. A recent large meta-analysis confirmed a three factor solution which is stable and highly predictive of mental health problems (Halamová, Kanovský, Gilbert, Troop, Zuroff, Hermanto et al., 2018; Halamová, Kanovský, Gilbert, Troop, Zuroff, Petrocchi et al., 2018).

A new focus for therapy: motivation switching and the role of caring motives

As the data on the competitive mentality and its role in mental health difficulties became stronger ~~and stronger~~, ~~our~~ therapeutic interest switched ~~more and more~~ to how we could produce motivational shifts. In particular, how could we help people shift out of self-focused, competitive (and rank) motivational systems as ways of organising their self, and focus on sharing and caring? One of the reasons was because the physiological systems of these motivational systems are very different. In fact, over the last 20 years there has been considerable research looking at the complex physiological systems that underpin caring behaviour and the experience of being cared for. (For recent reviews see Gilbert (2017a) and Seppälä et al. (2017).)

One of the tasks was to develop an evolution and social mentality based approach to compassion, including its definition. Currently there are a number of variations, debates and controversies around compassion definitions (Gilbert, 2017b, 2017c). Most theorists interested in evolutionary approaches recognise that compassion evolved from mammalian caring behaviour, particularly maternal behaviour, where the stimulus (S) of the algorithm was some kind of

distress or need signal, and the response function (R) was some kind of action to address need and/or alleviate stress. So compassion is rooted in mammalian motivational systems with an identified algorithm that leads to the definition of it being a 'sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it' (Gilbert, 2017a). This algorithm also has identifiable physiological patterns and profiles linked to the frontal cortex, the evolution of the myelinated vagus nerve and hormones like oxytocin (Carter, Barta, & Porges, 2017; Porges, 2017). Importantly the recipient of care, particularly the infant in the first instance, is highly physiologically regulated by caring, including brain maturation and even epigenetic processes (Cowan et al., 2016). ~~Importantly these basic systems are also the ones that operate for adult caring.~~

However, there is more to compassion than just caring; otherwise all primates that care for their infants would be regarded as compassionate. It is our new brain competencies for certain types of thinking, forms of social intelligence, self-awareness and intentional behaviour that turn caring into compassion (Gilbert, 2017a). Indeed, these competencies change many types of motives. For example, the suffering a predator causes its prey is not regarded as sadistic or cruel because the predator has no intention of causing suffering; it acts to eat. In humans, however, we can have a deliberate intention to cause pain and suffering quite knowingly and in those circumstances we do call the behaviour cruel and sadistic. This is an example where it's the knowing, self and future aware – intentionality – of our behaviour that changes it. To sum up then we have algorithms which evolved with specific physiological profiles to enact and respond to caring behaviour. These can be triggered as antidotes to overly engaged self-focused competitive motives.

As part of our research endeavour we needed to develop measures of compassion and its inhibitors: what stops people from being compassionate to themselves or to others or receptive to the compassion from others. So our first scales were primarily fears of compassion because that was the therapeutic task (Gilbert, McEwan, Matos, & Rivas, 2011). The scales are being used internationally, resulting in a major meta-analysis which highlights the fact that fears of being compassionate to oneself and fears of being open to compassion from others is highly associated with mental health difficulties (Kirby, Day, & Sagar, 2019). It's also very clear that giving and receiving compassion are two quite different processes. Subsequently we developed scales to measure the three flows of compassion: compassion to self, openness

to the compassion from others and compassion to others (Gilbert et al., 2017). These are now being used around the world. They have been contrasted with the more antisocial aspects of human behaviour (Basran et al., 2019).

Into the therapy

Part of the impetus for recognising how essential it was to change motivational processing systems became apparent from working with one particularly chronically depressed person who had attempted suicide multiple times. She had had many years of different types of therapy including cognitive and psychodynamic and was competent at generating alternative thoughts to offset her sense of being unlovable and unwanted and as an adopted child. So I asked her to speak them out in exactly the way she heard them in her mind. It was a new Socratic question for me. The emotional tone of the thoughts was extremely bullying and aggressive even though the content was supportive. It was a bit of an eye-opener and I subsequently began to ask clients regularly to speak in the tone that they actually hear or create coping thoughts in their minds. If you could help clients overcome the embarrassment of saying exactly how they heard them, sure enough, coping thoughts were often hostile in emotional tone. In addition, clients acknowledged some irritation at having to try to monitor or write down their thoughts, although they wouldn't necessarily admit that to the therapist unless the therapist asked, 'How irritated might you feel that you have to monitor thoughts and then try to counteract them?'

Hence, the first movement of CFT was to help create compassion motivation and emotional tones to texture coping efforts. I would try to help the client get into a motivational state of wanting to be helpful to themselves. This proved to be much more difficult than anticipated, and I discovered many fears, blocks and resistances to moving into a compassionate, caring orientation for the self. Sometimes it was to do with the fact that being supportive and kind to oneself was just very unfamiliar and didn't seem real. Sometimes it opened up attachment difficulties that linked to neglectful or abusive experiences. Commonly, beginning to experience a 'kind-supportive' voice in one's head triggered overwhelming grief. When some chronically depressed individuals started to engage in compassion, they would touch a deep sense of loneliness they had carried for many years. The focusing on capacities for tolerating intense grief became a major element in CFT. Sometimes

individuals had a lot of rage or shame about the past and indicated then that they didn't deserve compassion. Sometimes depressed people could be very hesitant to accept care or believe it. They tended to have views that people are caring only because it's in their interest to be caring, or if a caring person really knew about them, and what goes on in their mind, they would not be caring. Pauley and McPherson (2010) conducted a qualitative study that asked depressed people about being self-compassionate. It revealed many fears and inhibitors. Hence, as the therapy developed, it became clear that the therapist needed to work with the fears, blocks and resistances to compassion. So our next theme of research was to explore and measure the fears, blocks and resistances of compassion (see Kirby et al., 2019 for an overview of this research and meta-analysis on the measures).

The impact and legacy of the research and lessons learnt

The last 40 years has shown that it's possible to take an evolutionary function analytic model and develop measures to tap into core evolved motivational systems and their regulators. It's very clear that humans pursue different strategies for their life tasks of survival and reproduction. Some are highly self-focused and competitive; others are much more caring and sharing. A combination of genes and early and later social contexts play their roles. Crucially, however, different motives and different strategies carry different vulnerabilities to mental health problems. As we began to understand the dark side of competition (Gilbert et al., 2009) it became more urgent to help people switch from being overly regulated through competitive psychologies to caring and sharing. This is not only to facilitate and buffer against mental health difficulties but also to promote prosocial and moral behaviour (Gilbert, 2019a).

Contrasting compassion with competition

We now can contrast compassionate and competitive motivations in terms of how they orientate attention, focus our thinking, trigger emotions, choreograph our interpersonal behaviour with others around us and physiologically pattern our bodies.

Figure 1.2 shows that competitive psychology is focused on social ranks and one's position within these ranks: who to compare with, who can threaten or support us, who to associate with and who to impress.

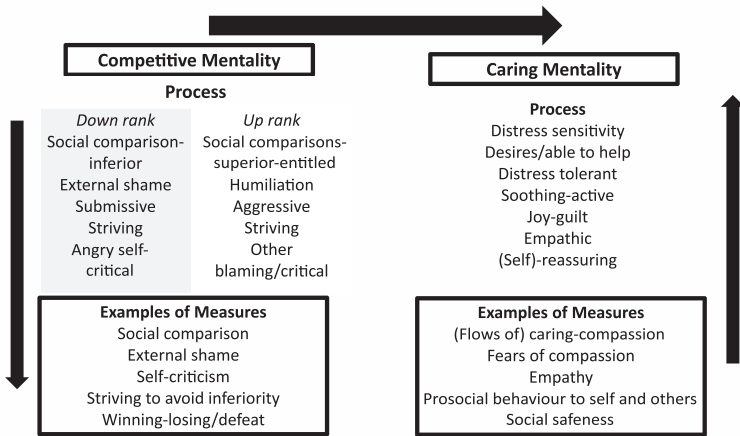


FIGURE 1.2 Moving from a competitive to a caring social motive and mentality (copyright P. Gilbert)

Individuals who are down-rank focused tend to be concerned with being inferior compared to others and are submissive and self-critical. As noted earlier there is now considerable evidence that depressed and socially anxious individuals are rank focused and concerned with their social attractiveness in the minds of others. These individuals also tend to be self-critical which can then give a sense of personal diminishment, shame, defeat and entrapment.

In contrast, individuals who are up-rank focused tend to be narcissistic with a sense of being relatively superior and entitled and have a tendency to blame others for difficulties. They can also be aggressive if confronted. There are many leaders in the world today who fit that latter category (Basran et al., 2019). For the most part these individuals do not present themselves for therapy because they often lack insight and are not that bothered about the distress they cause others. If they start to get anxious or depressed or run into addiction problems they might come to therapy. This is unfortunate because in a way it's precisely these individuals whom the rest of us would love to see getting some kind of therapy to help them change and become more compassionate!

Given that the competitive motivational system, with its focus on social rank, can underpin many psychological difficulties, what compassion training and compassion focused therapies try to do is to help people engage in motivational shifting. That is to shift attention,

thinking and concerns from competitiveness into caring. There is a focus on developing insight into how caring and compassion focused mental states create more meaningful experiences in life, have major physiological impacts on well-being and create prosocial and supportive social contexts (Goleman & Davidson, 2017). ~~A key focus is that compassion training can't simply focus on 'caring motives' without also recognising the other motivational systems that compete with them and often create the fears, blocks and resistances to compassion.~~ Compassion will partly help offset other motivations when they become harmful. Part of the training is to target physiological systems such as the vagus nerve and frontal cortex by for example teaching breathing and postural exercises and using various visualizations that are designed to stimulate different physiological systems (Gilbert & Choden, 2013).

At the bottom of Figure 1.2 there is a note of some of the scales that this research endeavour has developed over the years. They enable opportunities to identify changes in the processes the scales measure as part of the therapeutic progress. It is well recognised that measures of change can't rely on self-report alone. Hence, compassion focused therapy is beginning to look in more detail at the physiological changes such as in heart rate variability and neurophysiological changes that can occur with compassion training. That's the next body of work – assuming one lives long enough!

Conclusion and personal observations

Exploring the nature of the human mind requires considering how and why it got to be the way it is. This offers a functional analysis of what people need in order to prosper, flourish, buffer against mental health difficulties and behave morally and prosocially in the world. It's clear that humans are a multi-minded species of extremes; they can be both caring but also terrifyingly cruel to others and at times themselves, even to the point of self-hatred. Understanding the roots of these processes, as residing in the basic evolved motives and algorithms of the mind, is central for how to change them. In addition, understanding the social contextual shaping of these processes is key to move communities and nations to a more compassionate focus. Currently it is well recognised that we have become increasingly locked into tribal conflicts and neoliberalism overly stimulating us to adopt competitive self-focused motives. Amongst the tragedy and trauma and chaos of COVID-19,

faith in the market, narcissistic self-gratification and neoliberalism are quickly fading. These do not provide the context to address many of the social ecological problems that we have nor create the social conditions for wellbeing or reduce the high rates of mental health problems we have in our communities. Understanding the conflict between competitive and compassion motives is therefore a crucial challenge for all of us. What we have learnt, however, is that switching people to compassion motives is not always easy, and at times they can be highly resistant.

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