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Compassion as a Skill: A Comparison of Contemplative and Evolution-Based Approaches

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Abstract

The editors to this volume posed a series of fascinating questions relating to how seeing compassion as a skill can help us understand its nature, cultivation and effects within secular contexts. This paper addresses these questions by comparing evolutionary with contemplative approaches to compassion. Recent scientific approaches have explored the evolved roots and biopsychosocial manifestations of compassion and their impact on mental states and prosocial behaviour, particularly in regard to both its facilitators and inhibitors. In contrast, we discuss how the contemplative traditions have approached the origins and cultivation of compassion through observing the mind (e.g. meditation), with a focus on gaining insight into self-transcendent experiences, the nature of inter-connectivity and non-separate existence (also referred to as non-duality), through which compassion arises naturally. Both evolutionary and contemplative perspectives have the same focus which is to understand and prevent the causes of suffering, including the suffering we cause ourselves because of our harmful potentials. However, in terms of training the mind in compassion skills, this paper considers how training approaches linked to the evolutionary model often use thinking, empathising, reflecting and guided behaviour change to activate psychophysiological systems linked to caring and compassion. In contrast, the contemplative traditions focus less on thinking and reflecting and more on creating conditions for direct experiencing. A key reason for doing so is to settle the mind so that subtler levels of consciousness can enable the experience of self-transcendent compassion to arise. Thus, both evolutionary and contemplative approaches can focus on developing mind awareness and the importance of practise, but evolutionary approaches such as compassion focused therapy do not pursue transcendent wisdoms or insights.

Keywords Skillful compassion · Buddhism · Biopsychosocial · Meditation · Interconnectivity · Nonduality · Prosociality · Evolutionary origins · Motivation · Social mentality · Dark side · Mindfulness

Compassion as a Skill: An Evolution-Informed Biopsychosocial and Secular Approach

The editors invited us to address a number of fascinating questions about the nature of skillful approaches to compassion.

A number of important papers in this Special Issue have explored skillful compassion from a number of perspectives, including a Buddhist historical point of view (Condon & Makransky, 2022; Dunne & Manheim, 2022; Quaglia, 2022; Simmer-Brown, 2022). This paper touches on a few of these themes and examines some of the similarities and differences between evolution-derived and contemplative approaches to compassion. We contextualise our approach to compassion in the efforts to alleviate and prevent suffering, including the suffering we ourselves cause through our callousness and cruelty (Gilbert, 2005, 2019; Plante, 2015; Taylor, 2009). We then explore an evolution and biopsychosocial approach to compassion skills followed by consideration of contemplative approaches (see also Gilbert et al., 2023).

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Setting the Background: An Evolutionary Journey and Challenge

Compassion, like altruism, is a form of prosocial behaviour that is designed to help others (Penner et al., 2005; Ricard, 2015). Our understanding of prosocial behaviour, in terms of its evolutionary origins, facilitators and inhibitors, and neurophysiological mediators has developed extensively in the last 20 years, as outlined in a major overview by Wu and Hong (2022). The general findings are that prosocial behaviour has many positive benefits on our epigenetics, physiology, physical health and mental well-being (Brown & Brown, 2015; Wu & Hong, 2022) and the quality of the social relationships we create and are embedded within (Mikulincer & Shaver, 2014). As a form of prosocial behaviour, the focus of compassion is on the identification, alleviation and prevention of suffering (Dalai Lama, 1995; Gilbert, 2020a; Gilbert & Choden., 2013; Mascaro et al., 2020; Seppälä et al., 2017; Stevens & Woodruff, 2018). One approach to understanding the various forms and functions of compassion is to explore its changing use as a solution to different evolutionary challenges (Gilbert, 1989, 2005; Gilbert, 2020a; Gilbert, 2020b; Gilbert & Simos, 2022; Goetz et al., 2010; Keltner et al., 2014; Slavich, 2020) with various psychophysiological mediators (Favre et al., 2021; Kim et al., 2020; Petrocchi et al., 2022; Seppälä et al., 2017; Stevens & Woodruff, 2018; Vrtička et al., 2017; Weng et al., 2018).

However, our dispositions towards prosocial behaviour, including for cooperation, altruism and compassion, also have many evolutionary rooted and socially constructed *inhibitors* (Gilbert, 2005, 2020a, b, 2021; Gilbert et al., 2011; Gilbert & Mascaro, 2017; Kirby et al., 2019; Van Lange & Rand, 2022; Workman et al., 2020). Humans are arguably an incredibly tragic species. On the one hand, we have some extraordinary, inbuilt and socially enhanced prosocial motives to be compassionate, address suffering and create "the good", yet on the other hand, we are the cause of much suffering to us and other animals. The last few thousand years have seen our vigorous pursuit of wars, holocausts, torture, slavery, oppression, exploitation, economic inequalities, and willing support of psychopathic, divisive leaders. Furthermore, the treatment of women in many patriarchal cultures and religions has been, and in some places still is, controlling, suppressive and abhorrent. Viewed together, it is clear we have the potential to be the most vicious, callous, cruel and nasty species that have ever existed on this planet. We are a species of extremes capable of extraordinary compassion but also with a terrible and very frightening dark and harmful side (Baumeister, 1996; Black, 2016; Gay, 1993; Gilbert, 2005, 2019; Marsh, 2019, Taylor, 2009; Zimbardo, 2008). Our harmful side is not only responsible for harm to others and our ecologies but also underpins many forms of mental health difficulty including self-anger, depression, suicidality, substance abuse, paranoia and psychosis (Gilbert, 1989, 2020a; Gilbert & Simos, 2022). Taking the aims of compassion to reduce and prevent suffering, then, we have to address that which stimulates our personal and collective harmfulness (Gilbert, 2005, 2019; Taylor, 2009; Zimbardo, 2008).

Tragically for us, there are many personal, social and biological sources of human harmfulness. Both evolution-based and Buddhist approaches recognise that if compassion is going to address the causes of suffering, then it has to address the causes of human harmfulness. Buddhism sees the causes of harmfulness as arising from the afflictions of the mind such as ignorance, greed and attachment. Western psychology approaches to our harmful side have explored sources such as genes for callousness (Moore et al., 2019); ecological challenges such as famines and diseases (Volk, 2023); and personality traits (Jones & Figueredo, 2013), our child rearing environments and relationships (Narvaez & Bradshaw, 2023; Mikulincer & Shaver, 2017; Siegel, 2020) history of physical and mental trauma (Taylor & Hocken, 2021), social political contexts (Black, 2016; Gilbert, 2019, 2021) and economic contexts that support materialistic self-interest (Kasser, 2016). Be it via fights and contests over resource control, dominance and intragroup conflicts, tribalism and tribal violence, or more basic forms of vengeance and seeking retribution, callousness, as indifference to the harm and suffering we cause, and cruelty as causing harm and suffering on purpose, are evolved, and at times easily triggered potentials within us (Buss, 2019; Gilbert, 2019; Wrangham, 2018). If unregulated, by the rule of law or motives for prosocial behaviour and compassion, our harmful dispositions pose serious challenges to humanity (Gilbert, 2019; Ho et al., 2012).

In contrast, to self-focused competitiveness of "control and hold" (Gilbert, 2021) is an evolved strategy for care and share that promotes egalitarianism. It emerged partly as subordinates began to gang up and shun, exclude or even kill aggressive controlling (mostly) males (Boehm, 1999). Caring and sharing became especially adaptive during the human shift to hunter gatherers (Narvaez, 2017; Narvaez & Bradshaw, 2023; Spikins, 2015). Indeed, many psychophysiological changes occurred in this period including to our hormone systems (e.g. oxytocin; Carter et al., 2017; Kucerova et al., 2023) the autonomic nervous system (Bornemann et al., 2016; Petrocchi & Cheli, 2019; Porges, 2021) and brain (Vrtička et al., 2017). These, along with major changes to our cognitive competencies (Byrne, 2016), supported our evolution into having potentials to be highly social, caring, sharing and cooperative, with a strong desire for helpful social connectedness, at least for ingroups (Camilleri et al., 2023; Mikulincer & Shaver, 2014, 2017; Spikins, 2022).

One way to consider these extremes is to recognise the evolved and contextually sensitive strategies that underpin our compassionate versus harmful sides. Given that evolution generates adaptations to psychophysiology systems as solutions to the challenges of survival and reproduction, and given that some of those challenges relate to access and competition over resources, then how we deal with conflict competition is where we find many of the origins of our helpful vs harmful extremes (Buss, 2019; Workman et al., 2020). Many species including primate groups (but excluding bonobos) are intensely stratified and hierarchical. Threat, aggression and the induction of fear (in subordinates) are the means to up rank-linked power for controlling access to resources and hold onto them. Many primate groups also have violent intergroup clashes. Hence, there are different evolved solutions in response to the competitive challenges of life. Two major ones are anti-egalitarian, to gain control and hold access to resources at the expense of others (Basran et al., 2019; Ho et al., 2012) *versus* cooperative, and to care and share resources (Buss, 2019; Camilleri et al., 2023; Gilbert, 2021). Hence, like us, many primates (and other species) have complex repertoires and motives for both pro and anti-social behaviour. A key question is what social, contextual and cognitive processes can shift us one way or the other (Gilbert, 2005, 2019, 2021)?

In societies and cultures which have exceeded certain group sizes, with opportunities to seize wealth and control, the means of that control is typically threat and violence based and involves the induction of fear to suppress intragroup conflict and subordinate opportunity (Black, 2016; Ho et al., 2012). Some of the worst tortures and depictions of hell realms have emerged from hierarchical societies that use threat and fear to control group dynamics for the benefit of the power of elites. In many of the empires, stretching back many thousands of years, the extent of the wealth discrepancy was/is huge (Black, 2016). To maintain their power, elites were able to tap into our archetypal psychology for submissive obedience and deference and employ individuals as "henchmen and women" to instigate regimes of threat and terror on their behalf. Even today, some political elites use their police forces and armies to suppress populations and torture and kill protesters. When it is not an actual physical threat, competitive societies create vast disparities in wealth, overstimulate the need to strive, achieve, control and hold, and with the poor being in constant fear of lack of opportunity as well as suffering the deprivations of poverty (Gilbert, 2021; Pickett & Wilkinson, 2015; Ryff, 2017). Competitive cultures can advance competitive individuals into leadership positions, who are focused on their own self-promotion and control (Basran et al., 2019) and hold anti-egalitarian views (Ho et al., 2012).

Unregulated competitive societies that lack a compassionate framework are problematic for humans because our bodies and brains basically function best in safe, caring and sharing environments (Brown & Brown, 2015; Gilbert, 1989, 2019; Keltner et al., 2014; Narvaez & Bradshaw, 2023; Petrocchi & Cheli 2019; Slavich, 2020). As noted above, our ancestors began to evolve different solutions to resource control which was to reduce threat-based hierarchies and replace them with egalitarianism and resource sharing, in what were to become hunter-gatherer lifestyles (Boehm, 1999; Dunbar, 2014, 2022; Spikins, 2015, 2022). In hunter-gatherer groups, where group size was rarely above 150, people knew each other from the day they were born to the day they died and where resources were/are scarce, and caring, sharing and egalitarianism were/are essential for survival (Boehm, 1999; Narvaez & Bradshaw, 2023; Ryan, 2019). These changes were also associated with changes in the need for cooperative birthing and child rearing (Hrdy, 2009). This profoundly affected the caring environments children grew up in and orientated them to social trust and sharing and caring (Narvaez & Bradshaw, 2023). Social power hierarchies and those that sought to take more than their fair share were shunned. Rather, taking an interest in the welfare of others was deemed to be crucial for one's own reputation to be accepted and valued. In addition, when others prosper it increases one's own chances to prosper.

Part of our problem is that we are a species with potentials for helpful versus harmful extremes that can be triggered by contexts. Hence, although we can indeed be callous, cruel and vicious, we are also strongly motivated to be caring of others and have created *multiple ways* to address and prevent suffering, in humans and non-humans. Clearly, there are individual differences in the activation of these two potentials within us. Importantly, there are many secular activities such as medicine, social services, teaching, police and rescue services, along with everyday behaviours where *the way* people try to help each other would fit most definitions of compassion. In addition, we are an extraordinarily cooperative, interdependent species, which has given rise to the complex societies we now enjoy. From the food on our table, to the heating in our houses, to the chips in our mobile phones, to surgeries to remove cancer, all of these rely on our interdependency and the shared accumulation of knowledge over many generations and from the efforts of billions of people (Ricard, 2015; Van Lange & Rand, 2022). Furthermore, there are now many studies showing that prosocial behaviour, in the form of taking an interest in others, wanting to make a contribution to others wellbeing, showing gratitude, and developing playfulness and friendliness all have major impacts on a range of physiological systems health, sense of meaning and well-being (Wu & Hong, 2022)

Importantly, most individuals are not aware of the degree to which their culture stimulates and patterns these two evolved brain organising strategies within them, guiding their adopted values and pursued self-identities. Since care and share versus control and hold are two very different ways of

regulating group dynamics, both within and between groups, mind awareness training, allied with orientating people towards compassion values practises and identities, are important antidotes to offset self-focused competitiveness. The importance of mind awareness and compassion training to offset the harmful sides of the mind is of course ancient. More recently, German philosopher Arthur Schopenhauer (1788–1860), who was very influenced by Buddhist thought, saw compassion not for seeking happiness but to prevent suffering.

We have taken this slight diversion because although many people in the Western middle classes have been attracted to compassion, they see it as means of helping them with *personal* problems and to become happy. Rather, we want to stress a different focus for compassion, in tune with early Buddhism and also philosophers such as Schopenhauer. This is that one of compassion's most important functions is to address our harmful side and the "human" causes of suffering and unhappiness, including the cruelties and callousness that we jointly perpetrate or do not stand against collectively. Compassion then is a way of stimulating egalitarian mindsets within communities that are associated with health and well-being, but also having the courage and wisdom to take on the power and terrors that are inherent in the harmful side of ourselves, individually and collectively. Clearly, this points to important issues of skilled, politically and community focused compassionate behaviour (Ekman & Ekman 2017; Ricard, 2015).

Definitions

A key part of skillful compassion is having clarity as to its functions and definition. On these issues, there is still some debate, with slightly different views on how to conceptualise and measure compassion (Condon & Makransky, 2020; Crocker et al., 2017; Gilbert, 1989, 2017, 2020a; Goetz et al., 2010; Mascaro et al., 2020; Neff, 2003; Strauss et al., 2016). Most current definitions have been derived from Buddhist concepts (Condon & Makransky, 2022; Ricard, 2015; Strauss et al., 2016). For example, Buddhist scholar Geshe Thupten Jinpa (2015; translator to the Dalai Lama) and colleagues, who helped develop the Stanford Compassion Cultivation Training, define compassion as:

a multidimensional process comprised of four key components: (1) an awareness of suffering (cognitive/empathic awareness), (2) sympathetic concern related to being emotionally moved by suffering (affective component), (3) a wish to see the relief of that suffering (intention), and (4) a responsiveness or readiness to help relieve that suffering (motivational). (Jazaieri et al., 2013)

Strauss et al. (2016) offered a systematic and integrative review of a number of different, mostly Buddhist, approaches and came out with their overlapping but also different set of competencies and skills. They concluded:

A range of definitions from Buddhist and Western psychological perspectives were considered and five components of compassion were identified: recognition of suffering; understanding its universality; feeling sympathy, empathy, or concern for those who are suffering (which we describe as emotional resonance); tolerating the distress associated with the witnessing of suffering; and motivation to act or acting to alleviate the suffering. Each of these components has been articulated by several published definitions of compassion, *although no single existing definition explicitly includes all five of them*. (p. 25; italics added)

In listing these qualities as ways of being compassionate, they also point to the skills that need to be developed. In a more descriptive but still Buddhist approach, mindfulness and compassion scholars Feldman and Kuyken (2011) highlight the multifaceted textures of compassion: They suggest that:

Compassion is the acknowledgment that not all pain can be 'fixed' or 'solved' but all suffering is made more approachable in a landscape of compassion.

Compassion is a multi-textured response to pain, sorrow and anguish. It includes kindness, empathy, generosity and acceptance. The strands of courage, tolerance, equanimity are equally woven into the cloth of compassion. Above all, compassion is the capacity to be open to the reality of suffering and to aspire to its healing. (p.143; italics added)

They go on to add:

Compassion is an orientation of mind that recognises pain and the universality of pain in human experience and the capacity to meet that pain with kindness, empathy, equanimity and patience. (p. 145)

As we will note shortly, if compassion is to take on the harmful side then two qualities are essential: courage and wisdom. One of the key distinctions requiring clarity therefore is what compassion actually is. For example, is it a motive, a feeling state or an attitude, and can we distinguish it from *ways of being compassionate*? Simmer-Brown (2022) relates how some Buddhist scholars think the West sees compassion as an emotion, and some definitions include an emotional or affective state component (Goetz et al., 2010). However, Simmer-Brown (2022) notes that the Tibetan language does not have a term that maps closely to concepts of emotion or affective state. Here we note that most approaches regard compassion as a "motive and an intention" and that emotions, thoughts, attitudes and behaviours are *ways of being compassionate* and guide compassion. In other words, just as depression is a mood disorder, with many different possible manifestations, so we can see compassion as a *prosocial motive* that has many different ways of being expressed. This enables us to distinguish the basis of compassion from ways of being compassionate.

A Biopsychosocial and Evolution Approach

The evolutionary and biopsychosocial approach to compassion argues that compassion can be usefully understood in terms of a motive with evolved functions, facilitators and inhibitors, underpinned by biological, psychological and social regulators (Gilbert, 1989, 2005; Gilbert, 2020b; Gilbert & Mascaro, 2017; Keltner et al., 2014; Petrocchi et al., 2022; Seppälä et al., 2017; Stevens & Woodruff, 2018). Compassion focused therapy (CFT) suggests we can use the basic structure of psychological science to identify four basic functions of the mind: motives, emotions, competencies and behaviours and how they are patterned and co-regulated in compassion (Davey, 2019a; Gilbert, 1989, 2014; Gilbert, 2022a). These are outlined in Fig. 1 and described below.

Motives

We can start the explorations with *motives and needs* at the top of Fig. 1. Motives are the essential guiding processes of the mind that coordinate other functions. Baumeister (2016) says:

> The primacy of motivation emphasizes that cognition, emotion, agency, and other psychological processes exist to serve motivation. (p. 1)

> Psychological theorists should therefore devote considerable respect and attention to motivational processes. Broad theories that combine multiple processes should generally give priority to motivation as fundamental, because the full causal chain that leads to behavior and beyond will generally start with motivation. (p. 3)

Motives (including ones for compassion) evolved from the challenges of survival and reproduction to orientate and stimulate organisms to seek out what they need to do to sustain life and reproduce (Buss, 2019; Davey, 2019b). There are three major motives and life tasks:

1. Avoiding harm; all organisms have to be able to identify threats to their existence and take defensive action (LeDoux, 2022).

2. Seeking out resources that are necessary for survival such as food, shelter and opportunities for reproducing (Buss, 2019; Davey, 2019b). Animals have conflicts with each other over these resources. Hence, the motivations to engage in such conflicts and also to avoid serious injury are endemic to many species (Gilbert, 2000).

3. Seeking out and responding to opportunities for resting and digesting — because animals cannot be constantly active, defending against threats or seeking resources 24/7. The psychophysiological states associated with resting and digesting are associated with contentment and feeling safe and socially connected (Petrocchi et al., 2022). These states are related to health (Brown & Brown, 2015; Slavich, 2020) and prosocial behaviour (Keltner et al., 2014; Wu & Hong, 2022). They may also be linked to experiences of self-transcendence and interconnectedness which can underpin Buddhist motives for compassion (Kitson et al., 2020; Stellar et al., 2017; Yaden et al., 2017).

These three "basic" motives give rise to many submotives, such as wanting to pursue a career, have a family and children, become famous or become a hermit and seek enlightenment, as well as small motives such as wanting to go to a party. There are different social motives called *social mentalities*, such as being caring, cooperating, competing and gaining control over resources, even at the expense of others (Gilbert, 1989, 2020b, c). Social mentalities differ from other basic motives because they require skills in the

Fig. 1 Four basic psychological functions © Gilbert (2022b)
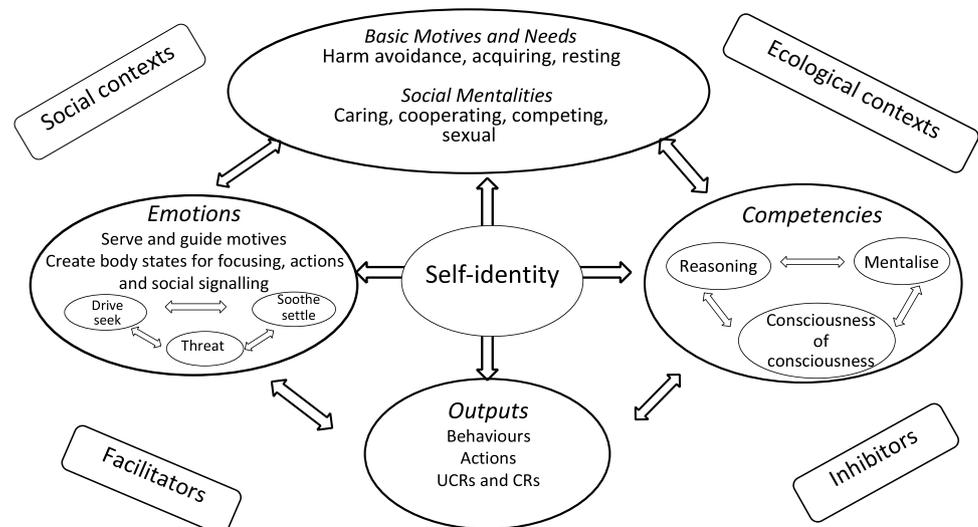
ability to understand social communication for role enactment. For example, an individual has to be able to identify any one signal from another as, say, a sexual signal or a threat signal, or a signal of caring or friendship and then respond appropriately. Social mentalities therefore require feature detectors for certain types of social signal, with processing systems to interpret those specifics signals that carry information about intent and emotional state. They also require the ability to send reciprocal dynamic information thus creating a particular social role relationship (Gilbert, 2017; Gilbert, 2022a, c). Through reciprocal, dynamic interactions, individuals create roles for caring (compassion), help seeking, cooperating, sexuality, competing and so forth.

Motives and Algorithms and the Nature of Compassion

All motives are supported by *if* A *then* do B (stimulus response) algorithms, where A is dependent on evolved feature detectors that trigger B, action responses (Davey, 2019b; Deckers, 2014). Whether it is protecting from threats or seeking food or sexual encounters, understanding the algorithms of a motive is essential to exploring its biopsychosocial manifestations. Harm avoidance motives need feature detectors for threat that trigger physiological systems (such as the amygdala) to deal with threat such as fighting, running away or hiding. In contrast, feeding motives need feature detectors to identify edible foods and how to find them, and prepare the body for consumption and digestion. Sexual motives need feature detectors for sexual opportunities that stimulate bodily processes for courting and mating behaviour. Motives could not evolve without feature detectors, and they would be relatively useless without being linked to output and response systems. The evolution of feature detectors means that the brain can monitor for the presence or absence of certain stimuli and signals. It follows therefore that care and compassion evolved with feature detectors for detecting signals of distress and need, which then trigger physiological, cognitive and behavioural responses to address them. The stimulus detection of suffering, in contrast to the activation of responses to be helpful, is underpinned by different physiological systems and search routines (Di Bello et al., 2021). Individuals who are sensitive to distress (to self or others) but do not know what to do, or feel constrained in acting, can experience high personal distress.

We may wish to get fit and know how to get fit, but still not do what we need to do to get fit. Poulin (2017) noted that we can be quite capable of detecting suffering and know what to do, and even appear to be motivated to do it, but then do not actually perform the actions necessary. Motivation to take action, the wisdom of what action to take and actually taking action are therefore different processes and skills (Di Bello et al., 2020). In addition, people can take actions to address suffering and needs in others but not necessarily from a compassionate motivation. Instead, it is to be liked or to harness a good reputation (Böckler et al., 2016; Catarino et al., 2014). In fact, most of our behaviours have multiple and different motivations behind them rather than one, and many are unconscious to us anyway (Bargh, 2017). Hence, it is possible to behave compassionately *both* from a genuine wish to be compassionate *and* also to be liked or rewarded.

The evolution of caring and compassion motives have different roots with different functions and therefore compassion cannot be regarded as a single skill or process. We can roughly identify three interacting evolved pathways into compassion.

1. One early route was by rescuing and helping the sick and injured. Kessler (2020) highlighted that this behaviour is noted in ants and many other species and can underpin certain forms of human caring. Spikins (2015, 2022) suggested that rescuing and caring for sick and injured individuals was a major element of hunter-gatherer societies and is key to our evolution for compassion. Indeed, humans are highly motivated to rescue others and care for them when ill. The medical and rescue professions depend on this. Importantly, unlike other forms of caring this form of caring is less tribally constrained in that (for example) in disaster areas, and even in war, people will rescue and try to heal the injured regardless of whether they know them or not.

2. A second route to care and compassion was via attachment and the care of offspring (Bowlby, 1969; Cassidy & Shaver, 2016; Gilbert, 1989; Hrdy, 2009; Narvaez & Bradshaw, 2023; Porges, 2021). The parent, primarily the mother, is highly sensitive to the distress and needs of her infants and will provide them with physical resources (food and warmth) and also psychological guidance (Mayseless, 2016). Insight into the evolution of physiological systems such as oxytocin (Carter et al., 2017; Kucerova et al., 2023) and various neurocircuits (Stevens & Woodruff, 2018; Vrtička et al., 2017) and the vagus nerve (Di Bello et al., 2020; Porges, 2021) that support caring attachments have progressed extensively in the last years and are often seen as a template for many forms of caring. This kind of caring however can be limited to kinships and (ingroup) similarity relations and may not transfer so well to out-group strangers or people we do not like. In fact, oxytocin might increase aggressiveness to outgroups in some contexts (De Dreu et al., 2011). We can note too that we lavish extensive resources on our own children while knowing that on the other side of the world children are starving, lack clean water and basic medicines. A preparedness to share resources and make sacrifices for others may be under different regulators than rescue behaviour. Partly because this form of caring

evolved interpersonally and face to face, our abilities to feel and extend compassion can be related to the numbers of people who are suffering and sense of kinship with them (Butts et al., 2019).

3. A third challenge and route to caring and compassion were noted above in relation to hunter-gatherer lifestyles, such that those that shared and gave to others built reciprocal helpful relationships as well as obtained positive reputations status and belonging within the group. Narcissistic non-sharers were excluded and shunned (Boehm, 1999; Ryan, 2019). Hence, altruism and the motive to be attractive and desired became traits that had advantages in terms of sexual and alliance formation (Workman et al., 2020). In addition, the socially affiliative, friendly, playful and helpful interpersonal interactions have profound effects on physiological systems such as oxytocin, the immune and autonomic nervous system along with associated health benefits (Carter & Kinsbury, 2022; Slavich, 2020; Wu & Hong, 2022).

Over hundreds of millions of years, various caring motives have been evolving around these basic algorithms and processes of [A] evolved feature detectors (enabling attention sensitivity) for stimuli and signals of suffering/need that then [B] trigger appropriate actions to alleviate and prevent suffering and address needs. Following these steps enables us to see how we arrive at a definition of compassion as a basic algorithm which is:

> [A] *sensitivity to suffering in self and others with [B] a commitment to try to alleviate and prevent it.* (Gilbert, 2014, p. 19)

This definition is informed by evolution and Buddhist thinking, and with slight variations is fairly typical of most definitions (Mascaro et al., 2020). However, it is recognised that just because individuals have the potential to be sensitive and take action does not necessarily mean they will (Poulin, 2017). In fact, even if people have compassion skills they may, for various reasons, be fearful or resistant to using them (Gilbert et al., 2011; Gilbert & Mascaro, 2017; Kirby et al., 2019). Thus, as noted above the competencies, skills and processes to be sensitive, moved by and understand suffering need to be distinguished from the competencies, skills and processes that guide and enable taking action.

We also drew attention to the motive to *prevent* suffering which has two dimensions to it. First, we have to address needs because if needs are not addressed individuals will clearly suffer. To put this another way, compassion looks to the future in the sense that we act now to minimise future suffering. Indeed, we train in skills not just to help us in this moment but to help us in the future and create a desired future. Second, prevention also involves preventing others from causing harm. This takes us into a complex area about the use of the rule of law and law enforcement. It raises complex questions about defensive aggression, as for example today Ukraine is trying to defend its territory. It raises questions about how war is conducted. If compassion is to address our harmful side then it has to address the prevention of those who stimulate and enact harmful callous desires and behaviours in their communities — be this criminal gangs or international leaders.

Emotions

Emotions are different to motives and are in the service of motives (Baumeister, 2016). In his book on the evolution of emotions, *Good Reasons for Bad Feelings*, Nesse (2019) says:

> Emotions are specialized states that adjust physiology, cognition, subjective experience, facial expressions, and behaviour in ways that increase the ability to meet the adaptive challenges of situations that have reoccurred over the evolutionary history of a species. (p. 53)

Emotions come and go, and their basic function is to change physiology and the orientation of attention, thinking and behaviour to meet the challenge of pursuing motives. Hence, we can identify particular types of emotion associated with the three basic life tasks and life motives. Emotions that are associated with harm avoidance and threat include those such as anxiety, anger and disgust. Emotions associated with seeking and achieving resources tend to be what we call positive emotions such as joy, excitement and pleasure. Emotions associated with rest and digest, and with sources of satisfaction, are associated with a sense of peacefulness, safeness and contentment.

There have been many models which point out that how we understand our emotions significantly impacts our behaviour towards ourselves and others. For example, Irons (2019) highlights stages associated with emotion such as awareness of changes in the body, awareness of triggers, ability to label and recognise emotion including that we can have more than one emotion at the same time, and ability to understand and make choices about how to behave in any particular emotional state as opposed to being controlled by it. Some individuals will avoid certain emotions both on purpose and also non-consciously, which can make compassion difficult if they are engaging with suffering that stirs up painful emotions. Key skills of compassion will therefore be attention sensitivity allied with emotional tolerance and empathic insight in the face of suffering which support wise action.

Competencies

Competencies are a third class of evolved functions. These are processes that facilitate action and emotion regulation. For example, birds need wings to fly and a brain that will navigate their flight. The motives for and reasons they are flying could be various, such as escaping a predator, looking for food or returning to the nest, but the brain systems and competencies they are using to fly will be exactly the same, regardless of reason. One of the important distinctions between humans and other animals is the degree of complexity of our cognitive competencies (Gilbert, 2022a). These include competencies for:

1. Complex insightful reasoning, use of language and meta-cognition, problem-solving, and creating "science" with the ability to accumulate knowledge generation to generation (Byrne, 2016; Stewart-Williams, 2018). When these "thinking" competencies are used in the service of compassion, they give rise to understanding the nature and causes of suffering that guide ways of how to cope, alleviate and prevent it. For example, scientists were able to identify the virus that caused the symptoms and then develop vaccines for COVID-19.
2. Using empathy and mentalising for understanding the nature and processes of the minds of self and others (Luyten et al., 2020). Empathy can be a crucial skill for not only understanding the nature of suffering, connecting to people's experiences and being moved by their distress but also importantly the ability to stand back and work out what is likely to be helpful. Indeed, only being empathic to distress without a focus on how to be helpful can be overly stressful and lead to burnout.
3. Becoming *aware of being aware* or *conscious of being conscious*, which is the basis of mindfulness and our ability to "on purpose" observe, come to understand our minds and travel the journey to "enlightenment" (Siegel, 2012, 2018; Williams & Kabat-Zinn, 2013). Mindfulness can be used in different ways; one of which is to train the mind to settle and quieten the default mode that can enable altered states of consciousness (Yaden et al., 2017). The other is to be sensitive of what arises in the mind and be discerning as to how to work with our dark sides so we do not overly amplify them nor act on them harmfully; in Buddhism, this is to distinguish the wholesome from the unwholesome (Austin, 2009; Gilbert & Choden., 2013; Huxter, 2016)

Together, these competencies offer the basis for knowingly and intentionally, that is paying attention and knowingly developing intentions that enable a choice of action. Unfortunately, they also come with built-in (non-conscious) biases and at times deep irrationalities because the brain is not evolved to be rational as such and uses many (jump to conclusions) shortcuts (Gilbert 1998; Nesse, 2019). These built-in biases are partly why we can be so harmful to ourselves and others and why we need to learn to become mindful of them. In addition, individuals can be skilled in one competency but not necessarily another. For example, individuals may be extremely intelligent and win Nobel Prizes, but may be poor at empathy and vice versa. Or they may practise a form of mindfulness but are still not that empathic or sensitive to others. Indeed, developing the skills for the different competencies supporting compassion may require specific training such as empathy training, mindfulness training or the use of imagery and metacognition (Favre et al., 2021; Singer & Engert, 2019). Crucial, too, is the motivation behind the use of competencies because any of these competencies can be used to be helpful or harmful. Empathy, for example, can be used to be deceptive or to ingratiate oneself with others in order to exploit them. One of the reasons we have designed such horrific tortures is because we can use empathy to maximise pain and terror.

Behaviours

Behaviours depend on competencies to engage in actions, and through actions we learn and change. In other words, skills grow from the doing. In Fig. 1, UCR stands for unconditioned response. These are the responses that are built into us and are relatively automatic. For example, we suddenly see a snake or somebody jumps out at us and we automatically go into anxiety. CR stands for conditioned response. These are the behavioural responses we learn through experience. To some extent compassion requires us to be sensitive and mindful to our UCRs and CRs especially if they link to impulsive or unhelpful behaviours.

Many behaviours are not simple responses to stimuli but emerge out of motives and goals shaped by various complex cognitive competencies. For example, we want to drive or play the piano but these require dedicated practice behaviours integrated with a knowledge of cars and roads, and for the piano, music. To become skillful we need both. No matter how much one studies and intellectually knows about driving or playing the piano, unless one actually drives or plays, one will not get better at it. Intellectual wisdom cannot be translated into experiential wisdom. The same applies for compassion, self-transcendent states and insight. People may be highly motivated to engage in insight or compassion practices or actions but do not follow through with actual actions (Poulin, 2017). Translating motives and "know-how" into behaviour change is one of the challenges for many change-based interventions. *Knowing, intending and wanting to* and *actually doing* are different. At times it is doing things *with others* that give us that push into action. This is what makes the support of the "sangha" or community so important for facilitating behaviour change. Skillful compassion arises then from the integration of multiple processes.

Compassion and Knowing Awareness

The competencies for *insight* and *knowing intentionality* are crucial for compassion because compassion is more than just the caring "instinct". Lions are clearly motivated to hunt and kill but not knowingly. They cannot decide if they need to train to run faster, lose weight or choose to become a vegetarian because hunting causes suffering. Humans can help or harm, with *aware* intention, with *knowing*, self-aware insight into the nature, causes and experiences of suffering. Partly because we have the three types of competencies outlined above, we can work out what is likely to be *causing* suffering and distress, and what is likely to be helpful or not. For example, with empathy, "I know that you are suffering today *because* it is the anniversary of the death of your beloved partner". Another empathic recognition for action might be "taking you out to meet friends for support or just being with you today". It is when we *knowingly and intentionally* orientate ourselves to be helpful to self and others that we enact compassion. Without this, compassion may become synonymous with more automatic caring. This is depicted in Fig. 2.

Hence, compassion can be viewed as the motive that stimulates and guides us to *knowingly* notice suffering in self and other sentient beings, *knowingly* and empathically connect to make sense and understand the nature and causes of the suffering, and *knowingly* use empathy and our basic knowledge to search for and implement possible solutions (Gilbert & Choden, 2013). These competencies may also enable us to become aware of, and then override, our inhibitors to compassion such as not being compassionate to strangers (Kirby et al., 2022; Loewenstein & Small, 2007)

Compassion and caring differ in another way. We may care for our gardens, prized possessions and cars. If they become damaged, we will be upset about that, but we will not have compassion for the garden or car because we know they do not have a conscious experience of suffering. Compassion is what we feel for the *conscious* suffering of a sentient other. Care alone does not require sentience. Furthermore, we tend to attribute degrees of sentience and compassion to different levels of biological complexity. For example, we might have less compassion for worms and slugs than for dogs and chimpanzees.

This bears closely on the concept of *dukkha*, which is important in Jainism, Hinduism and Buddhism. There are different types of *dukkha* arising from the fact that we, as self-aware conscious beings, have conscious experiences of suffering that are (1) inherent in pain, disease and death; (2) inherent in change and the arising of loss of the wanted (i.e. grief) and the emergence of the unwanted; and (3) due to being aware of the suffering inherent in existence itself, including in other sentient beings. Indeed, these forms of *dukkha* can only arise because of our consciousness awareness. Clearly, artificial intelligence cannot experience *dukkha*. It follows, then, that the way we use our new brain competencies impacts how we experience and cope with fear, pain, loss and misfortune.

The Power of Beliefs

Linked to our evolved cognitive competencies is the way we form beliefs that bring different motives, cognitive competencies and sources of information together. Our beliefs are not just about things and people in the world, and our expectancies, but also about ourselves and the kinds of minds we have and the people we are and want to become. Beliefs arise from, and also direct, our cognitive competencies, frame how we see and think about the world, the minds within it,

Fig. 2 Adapted from Caring to Compassion. From *Living Like Crazy* (Gilbert, 2019), with permission from Annwyn House
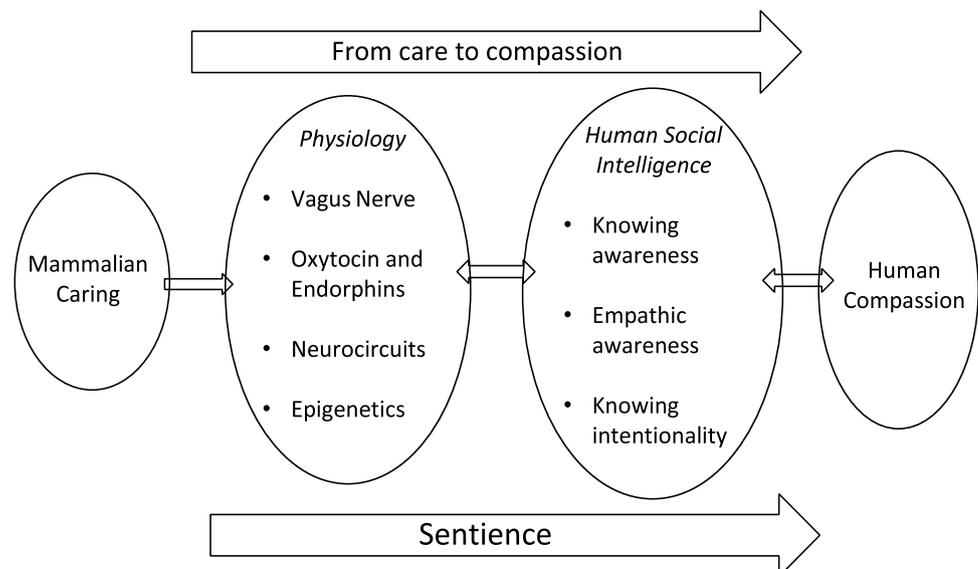
and choose what values to pursue. Beliefs can guide us to what we want to know, what we turn away from and hence what is knowable. If we believe that Buddhism is (say) a dysfunctional religion then it is unlikely we will want to learn about it and discover its wisdoms and mind trainings. People can develop beliefs that support prosocial but also very harmful behaviours (Eidelson & Eidelson, 2003). Beliefs can fuel fear and avoidance of compassion; that compassion is a weakness or is undeserved (Gilbert et al., 2011; Kirby et al., 2019). Indeed, beliefs can guide us to compassion or intense cruelty, as well as a sense of hope or despair (Beck, 2002). Buddhism does not describe concepts like beliefs as such but certainly has many; for example, the four noble truths represent basic beliefs while the eightfold path represents beliefs about the nature of ethical behaviour (Huxter, 2016). Buddhism generates many beliefs about how to liberate ourselves from the illusions of a separate self and the benefits of doing so, but recognises that belief and faith are not enough and these have to be experienced for wisdom to really change the mind.

Buddhist psychology has key beliefs about the causes of suffering as being linked to types of attachment that generate ignorance, greed and grasping. The obvious antidote is to guide people to develop non-attachment and non-grasping on the basis that all things are impermanent (Austin, 2009). In other words, the process of non-attachment is an essential compassion practise and skill because of how it undermines the three causes of suffering. Western psychotherapy approaches this issue of over attachment or clinging-grasping in slightly different ways. For example, Ellis (1979; see Dryden et al., 2010), the founder of rational emotion behaviour therapy, highlighted that people get into trouble when they turn a preference into a *must* a *have to* and *awfulise*. He called it "mustabating the self" and highlighted that humans make unreasonable "have to" *demands* on themselves, life and the world that are impossible to meet for reasons linked to not accepting limitation, and imagining catastrophic outcomes. Mustabating and demanding can be linked to beliefs such as "unless I succeed I'm nothing"; "I must not upset people or make mistakes"; "I have to be loved or admired otherwise I will be alone"; and "it is awful and unbearable to be alone or rejected and therefore I *must* at all costs stop it from happening". In fact, individuals can become highly competitive and non-compassionate because they have a fear of inferiority, being left behind and marginalised, or are distrusting of others to help them (Gilbert et al., 2007; Basran et al., 2019). Crucially, there is clearly a connection between motivation to avoid harms and these beliefs (Gilbert, 1992). This indicates that the more threatened we feel, the more such beliefs can dominate our emotions and behaviours. Therefore, to address *attachment and striving*, we have to address underlying fears which are mostly to do with fear of rejection and marginalisation.

This approach does not stress the importance of non-attachment, which can be easily misunderstood in the West as non-engagement, but rather the importance of having rational-helpful desires and preferences (not demands) supported by rational-helpful beliefs, with the skills to cope with the ups and downs if the preferences do not work out. Like a potential surfer who wants to ride the wave, first they must learn how to swim and be OK with falling off. When there is fear of falling off and drowning then they will grasp the surfboard and fail to learn how to ride or not try at all.

There have been a number of fascinating comparisons between Buddhist approaches and rational emotive behaviour therapy (Holt & Austad, 2013; Kwee & Ellis, 1998) and other cognitive approaches (Tirch et al., 2016). In their different ways, they both address the way our recently evolved cognitive competencies, such as the way we reason, the way we empathise or don't, and our ability to be mindful and discerning of what is helpful versus unhelpful, play key roles in our mental states. Western therapies might explore unconscious fears or unprocessed trauma or look at the beliefs that underpin "grasping and greed" or certain attachments, because they are not always what they appear on the surface. In Western psychotherapy, they may be revealed through processes of therapist-guided discovery, Socratic inquiry, reflection and behavioural experiments.

Rather than working through unconscious processes or trauma, Buddhism places emphasis on mind training such as with meditation and at times specific behavioural practises and experiments. A classic story is of a woman experiencing profound grief over the death of her child. Asking the Buddha how she could cope, he advised her to find mustard seeds from a house that had not been touched by grief. Searching high and low for such a house, she encountered many stories of grief and in that way understood the nature of common humanity and the reality of suffering. Monks must rely on the charity of others to provide their food and in this way understand the importance of interdependence and gratitude. Interestingly, insofar as one of the primary fears of humans is social disconnection and aloneness which can give rise to "grasping", if people have an experience of self-transcendence associated with interconnectedness and love, then that could settle that fear system in a way quite different to Western psychotherapy.

Courage and Wisdom as Central to Compassion

Being motivated and having cognitive competencies and beliefs that guide and inspire compassion require other characteristics for compassion to be utilised. Central ones are courage and wisdom, because compassion intention is not enough to ensure appropriate compassionate actions (Gilbert, 2009; Jinpa, 2015; Ricard, 2015). If a person jumps into a river to save someone but cannot swim, or enters a

burning house without proper safety equipment, they are going to cause more problems than solve. Courage without wisdom can be reckless. Equally, if a person knows how to swim or firefight but is too anxious to act on that knowledge, then their knowledge and wisdom are ineffective. So both are necessary. In a fascinating interpretation of the way various historical Buddha images began to emerge, Vessantara (1993) indicates that they became associated with these different qualities and skills of mind:

> as Buddhists over the centuries meditated on the archetypal Buddha, more and more forms appeared. They sprang up profusely like wildflowers in different shapes and colours […] All these forms were expressions of the life and vitality of the Dharma […]

> To begin with, two new Buddhas appeared. These expressed the two great aspects of Enlightenment – Wisdom and Compassion. As people dwelt on these qualities as embodied in, Skakysmuni, so they took on a life of their own and became two new archetypal Buddhas. (p. 62)

Compassionate courage and wisdom became sources of meditation in their own right, with different bodhisattva images representing courage and wisdom. One meditated on them, imagining them flowing into oneself, and becoming them to try and stimulate these qualities within oneself (Gilbert & Choden., 2013; Leighton, 2003; Vessantara, 1993). In the secular approach to compassion, people practise different skills of courage and wisdom relating to the different types and contexts of suffering. Firefighters who risk their lives or clinicians who risk COVID-19 infection need physical courage but also specific skills and wisdoms for intervention. Standing up against injustice and risking ridicule is a different type of courage needing different skills. Working in a hospice with end-of-life care again requires different kinds of courage and skill. And being a good parent requires special skills, too. Clearly, one might be good in one context but not another. A courageous firefighter might not make the most empathic friend or parent.

Courage and wisdom are also at the heart of people's journeys through psychotherapy because they often have to engage with states of mind they find frightening and painful (Rachman, 1990). It is not uncommon for therapists to work with veterans who have shown extraordinary physical bravery, risking death and physical injury, but who struggle when it comes to their own emotional pain. As one veteran said, "I have the courage to die but not to cry". Clearly, then there are different forms of courage: one linked to physical risk and one linked to the ability to tolerate emotional pain. Both Western psychotherapy and the contemplative approaches agree that mind training can be about fostering courage so that we do not use our mental training to get rid of emotional pain as a form of avoidance, but rather to be able to accept, tolerate and work through the pain.

Zimbardo (2015) highlighted what he calls *heroic* compassion, where the "archetypal hero" knowingly engages risks to achieve some goal. Hence, we could define courage as the knowing engagement in risk of harm or loss to self in order to pursue an intention. Motives are crucial in respect of whether courage and wisdom are used to be harmful or helpful. A skilled burglar may show courage in taking a risk to climb through high windows, or a drug trafficker in risking detection. Forms of compassionate courage may involve altruistic sacrifice when we give up some of our resources and privileges to help those less fortunate than ourselves, for example, donating a kidney to save someone's life (Kirby et al., 2022). Other forms, including assertiveness, risk taking, forgiveness, kindness and tenderness, are all *ways of being compassionate* rather than compassion itself. Indeed kindness has been shown to be different to compassion in relationship to the emotions that are generated (when engaging in compassion emotions are more threat focused) and the courage and sacrifices involved (Gilbert et al., 2019).

Compassion as a Multi-skilled Process

Seeing compassion as an algorithm, with two different components of engagement and response, supported by the competencies for (1) reasoning and conceptualising, (2) mentalizing, and (3) observing and mindfulness that facilitate *knowing intentionality*, enables the distinguishing of different processes underpinning compassion (Gilbert, 2009, 2014, 2022b). For example, we can further differentiate specific competencies that can be targets for therapeutic intervention. CFT has suggested six competencies or processes underpinning our ability *to engage* with suffering and distress. These include (1) being *motivated* to address suffering and thereby (2) attune our feature detectors to be *sensitive* to distress; (3) being *moved by* distress as in our personal *sympathy* reactions; (4) being able to *tolerate* that distress from turning towards suffering; (5) being *empathically able to gain insight* into the nature and causes of distress; and (6) *non-judgemental*, condemning or harshly critical.

When it comes to the action components, we have to (1) switch our *attention* away from the nature suffering into what is likely *to be helpful*; (2) run *imaginary scenarios* in our minds that orientate us to helpfulness; (3) use our *reasoning and empathy* skills for working out what is likely to be helpful; (4) set out to *act on our wisdoms*, (5) when needed, to *ground ourselves* in our body and that supports helpful action; and (6) *tolerate the feelings and emotions* that arise when we engage in action. For example, sometimes helping people in some situations can involve threat to the self and anxiety.

The twelve competencies are only guides that support compassion cultivation. They are not meant to be exhaustive lists. Rather they are identifiable trainable *skills*. In other words, we can develop our own and our client's skills for paying attention, helpful reasoning, empathy, emotion tolerance, mindfulness and so forth. These competencies form the bedrock for the core compassion qualities of the wisdom of how to understand and act, the courage of how to understand and act, and the commitment to be sensitive to suffering in self and others and take action (Gilbert, 2022a). Importantly, all these competencies can also be expressed as "flow" in the sense that there is the sensitivity, empathy and helpfulness we give to others, that we can feel coming from others, and we can direct to ourselves. Condon and Makransky (2020) highlight the importance of the moral and ethical principles of compassion, particularly the focus on compassion for others for compassion to be sustainable. In regard to training and therapy, some competencies may require more efforts than others but training in these competencies and skills in the context of a secure and safe therapeutic relationship is at the heart of compassion focused therapy (Gilbert, 2010; Gilbert & Simos, 2022) (Fig. 3).

In an effort to explore and measure competencies for engagement and competencies for action, Gilbert et al. (2017) developed the compassion engagement and action scales (CEAS). We developed three complementary forms for the flows of compassion that measure: self-compassion, compassion to others, and compassion from others. These were translated into a number of different languages and have now been used in a number of studies (Arı et al., 2022; Asano et al., 2020; Duarte et al., 2021; Matos et al., 2021, 2022). In terms of the effects of CFT on harmful behaviour, there is growing evidence that it is helpful for those who have harmed others and are being treated in forensic contexts (Ribeiro da Silva et al., 2019, 2021).
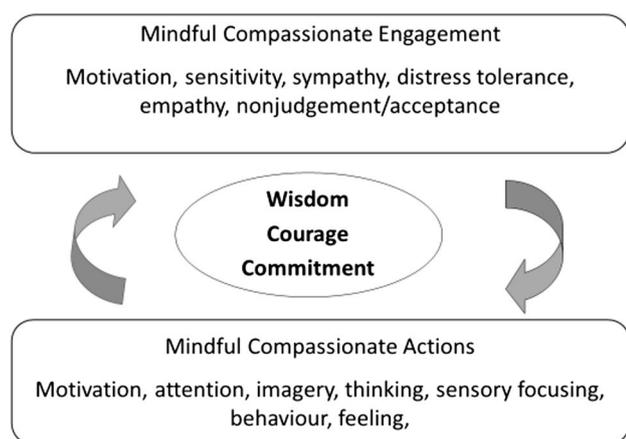

Fig. 3 Compassion process with engagement and action competencies. From *Mindful Compassion* (Gilbert & Choden, 2013), with permission from Little Brown

Summary

In summary, an evolutionary and biopsychosocial approach to compassion, and its benefits, views compassion as a *basic motive* (Mascaro et al., 2020). Motives are different processes with different functions from emotions, competencies and behavioural dispositions. Motives orchestrate them in different ways according to context (Gilbert, 2020a, b; Gilbert & Simos, 2022). We can track the origins of care-focused motives and their evolved psychophysiological processes over hundreds of millions of years (Cassidy & Shaver, 2016; Mayseless, 2016; Seppälä et al., 2017) and how caring became "compassion" when we evolved the competencies for different types of "knowing" that made us able to (1) reason and understand the relationships between cause and effect and can have insight into how things work in the world (Byrne, 2016; Stewart-Williams, 2018); (2) consciously and knowingly empathically resonate with suffering in sentient beings (Luyten et al., 2020); and (3) develop a form of mind awareness from evolving self-awareness and "conscious of being conscious". These different skills and competencies of compassion have become a focus for mind training in this approach. The contemplative traditions that train the brain and the mind overlap with these factors but also have a different focus and source of insight for cultivating compassion.

The Contemplative Traditions and the Pursuit of Self-transcendence and "Enlightenment" as Paths to Compassion

One crucial distinction between secular and the more contemplative traditions is that the secular traditions set out to strengthen and develop cognitive competencies including the importance of identity formation as a compassionate self. The contemplative traditions do this to a degree, such as with the concept of Bodhicitta, but at the same time teach meditative exercises that tone down conceptual thinking, to bring individuals constantly into the present moment, settling the default mode, and thereby opening possibilities for new states of consciousness. Creating the conditions for experiencing different states of consciousness and self-transcendence is not at the heart of Western psychotherapy (although see Germer & Siegel, 2012; Siegel, 2018), but it is in the contemplative traditions (Laukkonen & Slagter, 2021).

Mind Training in Buddhism

Although, compared with those of Western psychology, the different schools of Buddhism have different ways of mapping our inner psychology, the issue of mind training is central to both. A crucial focus of Buddhism's mind training is

mindfulness (Brown et al., 2015; Germer & Siegel, 2012; Gilbert & Choden, 2013) with a specialist journal *Mindfulness* dedicated to its study. Mindfulness has two crucial aims. One is to become an observer of one's mind so that one becomes familiar with the arising of different, thoughts, emotions and motives, keeping track of these in relationship to intention particularly compassion intention. Then, rather than unhelpfully ruminating on them or acting them out impulsively, to be able to choose how to act helpfully not harmfully. The second skill of mindfulness is to enable the mind to settle, quieten the default mode, create the conditions for more subtle awareness of the nature of consciousness and eventually move into self-transcendent and non-duality states (Kitson et al., 2020; Ornstein & Ornstein, 2021; Siegel, 2023; Yaden et al., 2017). Mindfulness also supports compassion in that it facilitates maintaining one's behaviour on the eightfold path (Huxter, 2016). As noted above, empathy is very important for skillful acting with compassion. The eightfold path has within it the notion of developing empathic awareness because it requires us to be sensitive to the impact we can have on other people so as not to cause them to suffer. Hence, we can have empathy for what has happened to others, but also empathy for our impact on others. These are regulated through different processes.

Changing the Experience of Consciousness

Whereas Western psychotherapy seeks to help people understand and utilise basic biopsychosocial processes to shape compassion and helpful mental states, the contemplative traditions have a very different focus. This relates to enabling people to experience new and enlightened states of consciousness that dissolves illusions of a separate self and generate profound changes in the experience of consciousness itself. Indeed, one key route to the inspiration to pursue compassion came from some (but by no means all) mystical self-transcendent experiences (Ornstein & Ornstein, 2021; Yaden et al., 2017). As humans evolved self-awareness and "consciousness of being conscious" minds, they could *knowingly* explore questions about the nature and meaning of their short existence in ways that no other animal could (Dunbar, 2022). From the earliest known societies, humans used substances and rituals to try to create experiences that transcended their everyday ones and that gave insight into alternative realities (Dunbar, 2022; Muraresku, 2020). Luke (2019) and Muraresku (2020) outline the fascinating history of the use of psychedelics to deliberately create altered states. Luke (2019) reviewed some of the typical paranormal experiences people have and found that other practices employed to produce such states include complex breathing patterns, fasting, intense exercise and spinning. Common to

such altered states is losing a sense of a separate, individual self to "being one with all", such as one with nature, with the universe, or with a representation of God. In addition, these self-transcendent states were often associated with feelings of overwhelming love, awe and joy that left individuals with a genuine increase in compassion for all beings, partly through that sense of complete connectedness (Ornstein & Ornstein, 2021; Siegel, 2023; Yaden et al., 2017). More recently, psychedelic-induced experiences have been used to help people with depression, anxiety, trauma and the fear of death, with promising results (Carhart-Harris et al., 2018; Nayak & Johnson, 2021; Schimmel et al., 2022; Stellar et al., 2017; Tagliazucchi et al., 2022). Again, it appears to be the sense of loving, safe interconnectedness, "a merging of the self" and self-transcendence, which are crucial (Stellar et al., 2017; Schimmel et al., 2022).

Another mystical experience that is attracting increasing scientific attention is near-death experiences (NDE) and the potential for "consciousness" to exist separately from biology, typically referred to as an out-of-body experience (OBE). While some NDEs can be frightening (Cassol et al., 2019) Greyson (2010) and Woollacott and Shumway-Cook (2020) note that most are associated with a sense of self-transcendence, cosmic unity and overwhelming joy. NDE accounts also typically describe a form of unconditional love that is not like human love (see below). Crucial to this paper, NDEs not only reduce the fear of death but also increase a sense of compassion and connectedness (Cavarra et al., 2022; Greyson, 2010, 2021). One of the central controversies is the degree to which these experiences are any more than complex neurophysiological changes and (as science fiction writers show) our ability to create amazing fantasies (Dunbar, 2022), or do they offer windows on more complex understanding of the nature of consciousness (Greyson, 2021; Woollacott & Shumway-Cook, 2020)?

An increased sense of unconditional compassion is also consistent with a pre-planned form of NDE invoked through meditation, known as the meditation-induced NDE (MI-NDE), that has been studied in advanced Buddhist meditators (Van Gordon et al., 2018). As part of the key features of the MI-NDE, such as an OBE, altered perception of time and space, volitionally manifesting a non-corporeal form, and helping other beings was identified as both a rationale for and an outcome of the practice. All these experiences typically became referred to as self-transcendent (Coxhead, 1985; D'Aquili & Newberg, 1993; Ornstein & Ornstein, 2021; Wilber, 2007; Yaden et al., 2017), although this term is now used in different ways (Kitson et al., 2020). Neuroscientists are beginning to identify particular brain areas that appear associated with particular experiences, such as self-transcendence and timelessness (Ornstein & Ornstein, 2021).

Doors to Non-duality

Related to self-transcendent experiences, as generated in the ways discussed above, are the dimensions of non-dual consciousness awareness that emerge out of mindfulness and other mind trainings. One of the main aims of Buddhist mindfulness and compassionate mind training is to facilitate people's experience of transcendental states, *and* experience "the non-duality of consciousness" as the *ground of all being* (Austin, 2009; Spira, 2008). Non-duality means that everything is a property of one "process", such as energy (Siegel, 2016, 2023). In this approach, consciousness is not created by the brain or electrical chemical processes but is a property or dimension of all things (Austin, 2009; Ornstein & Ornstein, 2021). One of the functions of mindful "present moment awareness" is to facilitate receptivity to non-duality experience (Austin, 2009; Spira, 2008). Whether or not consciousness is only an emergent property of the brain or not, meditative techniques are known to use a range of practices that have neurophysiological effects. These are seen as able to facilitate the experience of the non-duality of consciousness and of the interconnectedness of all things (Austin, 2009; Ornstein & Ornstein, 2021; Siegel, 2023). This experience is different from Western psychotherapy because it dissolves the distinctions between self and other, object and subject, time and space.

Non-duality of consciousness is at the heart of Buddhist approaches to insight and compassion (Anālayo, 2015; Van Gordon et al., 2017). However, when we think about insight we have to ask: insight into what? Van Gordon et al. (2021) suggest that there have been three stages by which Western science has become interested in Buddhism insight and compassion. The first stage was interest in the relationship of mindfulness and attention to mind states. This was of special interest to those helping people with stress, painful states and self-regulation (Germer & Siegel, 2012; Kabat-Zinn et al., 1985). The second was concerned with ethical and moral principles and the eightfold path. The third stage is becoming interested in the dynamic of consciousness itself, that is, the nature of emptiness (Sanskrit: *śūnyatā*), the non-duality of consciousness as it underpins, and is the source for, the arising and falling of all things (Austin, 2009; Siegel, 2016, 2023; Van Gordon et al., 2017).

Siddhartha's Journey This insight of non-duality as being at the heart of all existence (*śūnyatā*) was the basis for placing compassion as central to cultivating the mind (Vessantara, 1993). It is at the centre of Siddhartha's journey into enlightenment (Buddhahood). As a wealthy prince, he lived his early life in 'golden palaces' shielded from the realities of life. However (the story goes), when one day he did leave the palace, and supported by a brave attendant, he ventured down into the local village, he was confronted by the realities of disease, ageing and death. Coming from a background of wealth and privilege, where he had had little contact with such realities, he was overwhelmed with distress and so set out to find solutions for such suffering. Originally, he joined the ascetics, who (like the Jains) perceived the source of suffering as linked to the body, bodily needs and processes. Hence, freedom from suffering was through control and conquest of the body. They followed a non-violent way of life and focused on compassion (non-harm) towards all living things. He may have been aware of mystical experiences generated by various substances. Crucially, he was already highly oriented to compassion motivation before his enlightenment.

Indeed, despite intense efforts that resulted in Siddhartha almost starving to death, he realised this "body focus" did not ultimately lead to any powerful insights. So, it is said, he decided to sit under the classic bodhi tree and simply observe his mind. Years of meditation had already developed in him a capacity for deep mindful observation. In his emaciated state (and such states have profound effects on the brain and mental states), he began to sense a nature of consciousness that lies behind all things. He became "enlightened" by entering a completely new state of *non-duality*. In this (self-transcendent) state of mind, there is the awareness of both the emptiness and the fullness, the interconnectedness, timelessness and spacelessness of consciousness itself (Anālayo, 2015; Spira, 2008; Van Gordon et al., 2017; Vessantara, 1993). He became aware that it is from this domain of consciousness that all things arise and fall in ever-changing patterns.

The difficulty with non-duality is that it defies description and scientific dissections, and to be understood, has to be experienced. Nonetheless, in a study involving advanced Buddhist meditators, meditation on emptiness and non-duality was found to outperform mindfulness meditation against outcomes of non-attachment, mystical experiences, compassion, positive affect and negative affect (Van Gordon et al. 2019). Furthermore, compassionate farsightedness was identified as a key component of the non-dual experience, with one advanced meditator describing their experience as follows:

> Existence is happening. It's unfolding in front of you and you're watching it. But you're also part of it. You are it. You're dancing with it. Oh, it's so beautiful. All things and life forms are included in your view. And the sense of love and compassion is overwhelming. It comes naturally. Do you see? You touch every mind and atom with your heart and mind. (Van Gordon et al., 2019, p. 269)

Scholars agree that emptiness is not a good English term because it does not mean nothingness — nothing would mean there is no consciousness at all to be aware of anything, whereas *śūnyatā* is a *heightened* sense of consciousness of all things. It really means empty of individual or independent existence; that everything is a changing flux of patterns which scientists suggest are energy patterns at some sub-atomic levels (Siegel,

2016, 2023). For this reason, emptiness can also be interpreted as "fullness", because if it is accepted that phenomena are empty of an independent existing essence, then by default they are "full" of all things (Van Gordon et al., 2017).

In this tradition, then, compassion arises from the awareness of one's true nature as being one of consciousness of interconnectedness. This brings liberation from the sense of an *individual*, *separate self*, allied with an expansive, boundless and timeless experience of consciousness itself. The essence of a snowflake is not a snowflake; rather, it is water, and the essence of water is organised subatomic matter, then energy and so on. Hence, self-transcendence is not a reduction but an expansion, because we lose the blinkers and filters of our biological created self-constructs that hide our true non-dual self-transcendent nature (Hood, 2012). However, for some unprepared individuals, the notion of emptiness and dissolution of a self can be intimidating and difficult to grasp or accept.

Western psychotherapists, philosophers and neuroscientists are also becoming increasingly interested in these different states of non-dual experience and the nature and emptiness of consciousness in relationship to quantum mechanics (Ornstein & Ornstein, 2021; Siegel, 2016, 2023; Stellar et al., 2017; Van Gordon et al., 2017, 2021; Velmans et al., 2021; Wilber, 2007). Until recently, it has been difficult to scientifically test some of the predictions of quantum mechanics, but in 2022 three physicists won the Nobel Prize for doing exactly that (Davis, 2022). In the quantum world, matter emerges out of energy and as such can behave in ways that are unpredictable, such as photons are affected by being consciously observed. As Niels Bohr, one of the originators of quantum mechanics, famously noted, "if we are not shocked by the implications of quantum mechanics we have not understood it". Many scientists are also exploring how quantum mechanics has implications for our understanding of consciousness, and how what we take as reality, may well be illusionary (Khan, 2021; Velmans et al., 2021).

On the surface, it might be difficult to reconcile how a state of non-duality, which transcends notions of "self" and "other", can propel compassionate action. However, enlightened states of "acceptance of the is-ness of things" do not reduce motivation to create positive change, or just a laissez-faire attitude towards life. Indeed, this awareness invigorates the motivations for wanting all other beings to be enlightened and thereby free of suffering and the causes of suffering (Dalai Lama, 1995). However, in this context, the term "motivation" needs to be interpreted correctly, because in the non-dual state, compassion is self-arising due to it being a fundamental property of the enlightened mind. Just as water does not try to be wet, the enlightened mind does not need a goal of being compassionate in order to relieve others' suffering. In a sense, in the enlightened state, compassion is spontaneous, and because there is no separation between self and other, it is particularly potent

and direct — what needs to be done is done, at the right time and in the right way (Shonin et al., 2014).

Hence, as an enlightened being, the Buddha dedicated his whole life to teaching the benefits of meditation to enable the mind to experience non-duality (insight) and how to harness the mind for compassion. Helping others takes one's attention away from the self and stimulates a sense of interconnectedness, which helps to create the conditions for experiencing enlightenment. In addition, Buddhist history has many examples of enlightened beings known as bodhisattvas entering into the human realm purely in an effort to bring enlightenment, as in the story of Chenrezig (Gilbert & Choden., 2013).

Dangers

The editors invited consideration of potential dangers from efforts at Buddhist and secular integration, such as the common danger due to the translation of words conveying concepts across languages and cultures. For instance, in some languages, the word "compassion" does not actually exist, or can be seen as pity, which is a completely different notion. Philosophers Arthur Schopenhauer and Friedrich Nietzsche had heated debates about the value of compassion to underpin morality because Nietzsche defined compassion as pity, whereas Schopenhauer took the Buddhist view (Cartwright, 1988).

The use of the word "love" is another problem area. The experience of enlightened states, particularly with their sense of complete interconnectedness, self-transcendence, joyfulness and "infinite oneness", is sometimes described as one of overwhelming "love" (Yaden et al., 2017). However, this is very different to our *evolved* feelings of love linked to liking, desire and dopamine, of "I love you and you love me", or "I love pizzas". In addition, the Buddhist concept of love is "a wish" or "desire for", that is "the wish for all beings to be free of suffering and the causes of suffering". In English, this is more closely related to the words "altruism" and "benevolence" rather than the word "love". A doctor will try to operate as best s/he can whether s/he likes the patient or not. The medical motivation is not based on "love" but on the desire to alleviate and prevent suffering. That motive can stand separate to the motive to love and to want to be loved or feel affection and warmth. The definition of love is therefore crucial. Indeed, Anālayo (2015) and others have noted that, although now installed in Western approaches, the term *loving-kindness* can be problematic for the same reason. He argues it is better to focus on the concept of *benevolent wish*, where benevolence is the wish for one (and others) to be free of suffering, of the causes of suffering, and to experience the causes of happiness (Dalai Lama, 1995). As a modern take, compassion therefore emerges as *insightful empathic benevolence*, which seeks to help us with the

suffering we are all caught up in. This suffering is partly the result of being a DNA-built, without our consent, short-lived, wanting and fearing, vulnerable-to-sickness, conscious and self-aware, socially textured being. We exist as separate beings in the boundaries of our skin. However from the contemplative point of view — we suffer this too because we are ignorant of our true interconnected, non-biological, non-dual consciousness nature. It is unclear whether some secular approaches to compassion that have now proliferated on the internet and promoting "love" understand the different meaning and experience of love from self-transcendence. Instead, some may be engaging what the Dalai Lama (2001) calls sentimentality. The problem with this is that individuals then start to try to create feelings of love which can get in the way of benevolent self-transcendence and psychotherapy (Gilbert & Simos, 2022). Research also shows that kindness tends to drop away for people we do not like, whereas this is less the case for compassion and addressing suffering (Kirby et al., 2022). Hence, benevolence and altruism are better terms to focus what underpins compassion (Anālayo, 2015; Ricard, 2015).

As noted, the concept of non-attachment is also tricky because it does not actually mean detachment or disengagement. It is a much more subtle relationship between self and world. In Western psychology, attachment relates to the way we link our sense of ourselves to what we own or what we achieve in the world, and the way we seek to form a self-identity which we will then defend, reasons why Leary (2004) called this *the curse of the self* and Hood (2012) the *self-illusion*. Also as noted above, attachment refers to the way we fixate on these things and turn them into "absolute musts and have to's". The dialectical conflict between identifying with a sense of self and not comes from developmental studies of how a sense of self emerges through childhood. Without a sense of self, of what hurts and what brings pleasure, what brings acceptance and what brings shame and rejection, what values to aspire to and live by, biological life would become almost impossible. There is therefore a balance to be struck. Thus, non-attachment does not mean that one is not fully engaged in relationships; that one cannot fully love and grieve with the loss of love. It seems easy for westerners to use the concept of nonattachment as another vehicle to emotional avoidance — seeking a simple protection against the pain of loss or failure. Indeed, one would argue that it is the courage, wisdom and emotional maturity to be able to tolerate (potential) grief that allows one to love fully.

Another area where non-attachment can be confusing is in the nature of self-transcendence. In a sense, if one has experienced states of non-duality, where one phenomenon embodies all phenomena, then the concept of attachment to any particular thing seems irrelevant. Indeed, it seems to be the experience of being part of, and one with, all things that corresponds to self-transcendence and the loosening of ego-based attachments that loosens self-attachment identity (Siegel, 2023; Yaden et al., 2017). In other words, once individuals experience that their existence is implied in all things (and vice versa), the striving of a self-identity becomes less important and one seeks the joys and freedom of non-duality.

Non-duality transcends the notion of being "inter-connected", which seems to imply "duality" on account of one thing being connected to another thing(s). Hence, Siegel (2023) refers to being "intraconnected". Beyond being a functional label, it is impossible to assign an absolute separation between one phenomenon and the next. For example, it is incredibly difficult to locate the exact separation line where a valley connects to a mountain, where a wave begins, and arguably it is more accurate to say that the two phenomena exist inseparably and flow into one another. Thus, notions such as interconnectedness can constitute useful didactic means for beginning to think about non-duality and self-transcendence, but can also incur limitations.

As we have noted, the concept of emptiness is fundamental in Buddhist thinking but again easy to misunderstand (Anālayo, 2015). In English, emptiness can also mean "nothingless" or "without anything". The Buddhist meaning however is empty of *individual existence*. Everything is pattern generation. For example, brains are patterns of electrochemical activity that is constantly changing. The atoms of our brains may have been part of a mountain or dinosaur. Every 7 years our bodies have completely regenerated the atoms they are using to make us. So today the fascination is to try to explore how energy gives rise to matter gives rise to a form of "self"-awareness which is also at the heart of self-transcendence. Self-transcendence is not annihilation but "expansion into" or a "dissolving of boundaries" (Austin, 2009; Ornstein & Ornstein, 2021; Siegel, 2016, 2023). The question remains therefore if self-transcendent and non-dual states, and the urges to compassion that arise from them, are simply the products of neurocircuits or are of a brain that has an expanded awareness of the domains of consciousness (energy fields) beyond biological, yet may also depend on the biological. For example, in order to experience colour, we need eyes and a brain, but the source of the experience lies in light frequencies falling on the eyes. Furthermore, human vision is sensitive to only a very narrow bandwidth of energy, hence a narrow range of experienced colours; eyes cannot create colour experience out of nothing. While neuroscientists debate the circuits that seem important for consciousness, physicists are debating the implications of quantum mechanics and consciousness. How these sciences, including those from the contemplative traditions, unfold and reveal new insights will have major implications for how we see ourselves as a species and want to relate to each other to create a more compassionate world.

As noted throughout this paper, western psychotherapy has as its focus helping people organise their minds and brains to address mental health problems and promote

well-being. Creating the conditions for non-dual experience and insight is not (usually) its focus. However, experienced meditators and psychotherapists have explored these variations in therapeutic goals and how one can inform the other (Gill et al., 2015). What is agreed is a need for better precision in terms of what different practises are designed to do, in what context and for whom. This is especially important for compassion research and when we are trying to develop practises not only to help individuals develop compassion but also for helping groups and communities.

Conclusion

Despite the dangers and different ultimate aims, there are multiple areas where scientists and psychotherapists, and practitioners from the contemplative traditions, are pooling their wisdoms and research efforts. The Mind and Life Institute was set up specifically to facilitate such research. In the field of psychotherapy, there has been much written on how to integrate Buddhist and contemplative concepts with psychotherapeutic interventions such as cognitively based compassion training (Mascaro et al., 2017), how the cognitive and other therapies relate to contemplative and mind training practise (e.g. Gilbert & Choden., 2013; Holt & Austad, 2013; Tirch et al., 2016) and integrate mindfulness and compassion (Germer & Siegel, 2012). These are likely expanding research areas which are recruiting multiple methodologies for measuring different psychophysiological systems. The degree to which altered states of consciousness can be induced to stimulate compassion is one of the major growth areas. This relates to one of the most important questions facing humanity: What is the nature of consciousness and mind in the universe?

The evolutionary model of the nature of compassion and its sub-skills arise from very different routes when compared with concepts and experiences generated by contemplative awareness and altered states of consciousness. Figure 4 presents this overview in more detail. On the left-hand side of the figure is an outline of how biological minds evolve and with various states of consciousness, and then later self-consciousness and then conscious of being conscious. Clearly, these states of consciousness are radically changed by altering neurochemistry, such as in various psychotropic substances like psychedelics, but also more tragically, brain injury. The issues of "consciousness of consciousness" and in particular "self-awareness and knowingness" are dimensions of consciousness that are not easily described but are extremely important for understanding how we become sensitive to suffering and want to do something about it. It is also clear that we are capable of this type of consciousness and self-awareness because of the way our brain has evolved. It is clear, too, that if we change our neurochemistry, then we can change our experiences of the nature and the content of consciousness. The big debates concern whether this dimension of our minds is purely dependent on evolved physiological systems or not. Given that we now know animals have forms of self-awareness, the question would be, can they experience self-transcendence, or is that a dimension of a certain type of self-consciousness? In that view more, it is not that our brain is experiencing consciousness but that our brain is creating experiences within consciousness. In other words, we are streaming experiences into consciousness. The colour red does not exist in the light frequencies, but the experience of redness in consciousness is created by the brain.

Fig. 4 Comparison of evolutionary and contemplative approaches to the nature of consciousness in mind © P. Gilbert 2023
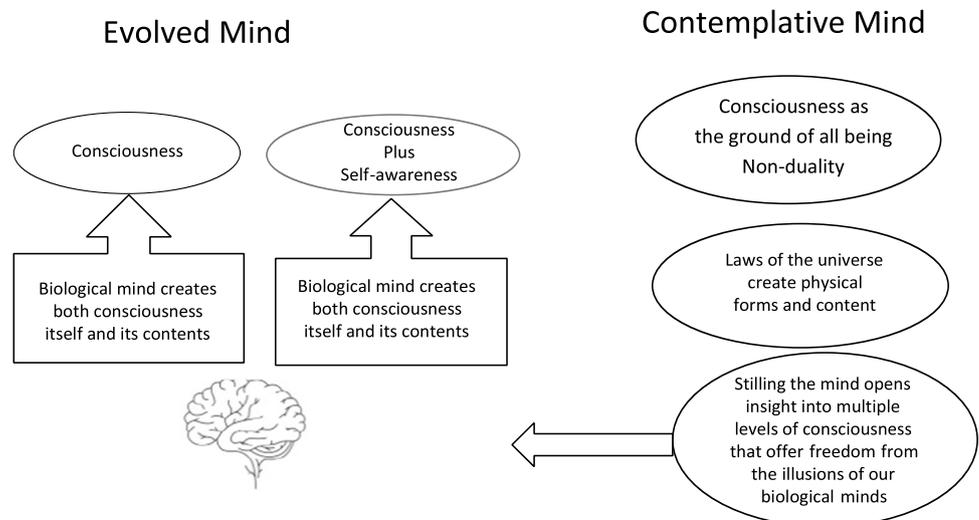
The right-hand side of Fig. 4 reflects the latter view, that consciousness is a property of the universe itself; it is the ground of all being but is itself empty, without content, so we are not experiencing consciousness, consciousness is experiencing us as manifestations of energy patterns which constitute it. Experiencing these self-transcendent domains of consciousness yields such radical changes in experience that the sense of a grasping individual self becomes irrelevant.

Compassion, then, can arise because in training the mind, we train a range of psychophysiological systems that have evolved with and support caring and compassion. CFT hones in and develops ways of thinking, empathising and reflection whereas the contemplative traditions seek to move away from thinking and reflecting in order to settle the mind and enable the experience of subtler levels of consciousness. Experiences of transcendence and "oceanic love" then give rise to compassion, and the wish for all beings to be free of suffering and its causes, in a different way. It is unknown to what extent the latter depends on the former, although as the studies of NDEs suggest, perhaps like in quantum mechanics, all is not as it seems (Woollacott & Shumway-Cook, 2020). What is exciting is how individuals are coming together to share ideas on compassion using basic science including the emerging scientific investigations on the nature of consciousness. One thing is for sure that humanity needs to find a way to develop compassion to and for all, if we are not to stumble into a future of increasing competitive self-interest, tribal and personal conflict with the escalating damage and suffering that it will cause.

References

Anālayo. (2015). *Compassion and emptiness in early Buddhist meditation*. Windhorse.

Arı, E., Cesur Soysal, G., Basran, J., & Gilbert, P. (2022). The compassionate engagement and action scales for self and others: Turkish adaptation, validity, and reliability study. *Frontiers in Psychology, 13*, 780077. https://doi.org/10.3389/fpsyg.2022.780077

Asano, K., Kotera, Y., Tsuchiya, M., Ishimura, I., Lin, S., Matsumoto, Y., Matos, M., Basran, J., & Gilbert, P. (2020). The development of the Japanese version of the compassionate engagement and action scales. *PLoS ONE, 15*(4), e0230875. https://doi.org/10.1371/journal.pone.0230875

Austin, J. H. (2009). *Selfless insight: Zen and the meditative transformation of consciousness*. MIT Press.

Bargh, J. (2017). *Before you know it: The unconscious reasons we do what we do*. Simon and Schuster.

Basran, J., Pires, C., Matos, M., McEwan, K., & Gilbert, P. (2019). Styles of leadership, fears of compassion, and competing to avoid inferiority. *Frontiers in Psychology*, 9, 2460. https://doi.org/10.3389/fpsyg.2018.02460

Baumeister, R. F. (1996). *Evil: Inside human cruelty and violence*. WH Freeman/Times Books/Henry Holt.

Baumeister, R. F. (2016). Toward a general theory of motivation: Problems, challenges, opportunities, and the big picture. *Motivation and Emotion, 40*(1), 1–10. https://doi.org/10.1007/s11031-015-9521-y

Beck, A. T. (2002). Prisoners of hate. *Behaviour Research and Therapy, 40*, 209–216. https://doi.org/10.1016/S0005-7967(01)00103-6

Black, W. (2016). *Psychopathic cultures and toxic empires*. Frontline Noir.

Böckler, A., Tusche, A., & Singer, T. (2016). The structure of human prosociality: Differentiating altruistically motivated, norm motivated, strategically motivated, and self-reported prosocial behavior. *Social Psychological and Personality Science, 7*(6), 530–541. https://doi.org/10.1177/1948550616639650

Boehm, C. (1999). *Hierarchy in the forest: The evolution of egalitarian behavior*. Harvard University Press.

Bornemann, B., Kok, B. E., Böckler, A., & Singer, T. (2016). Helping from the heart: Voluntary upregulation of heart rate variability predicts altruistic behaviour. *Biological Psychiatry, 119*, 54–63. https://doi.org/10.1016/j.biopsycho.2016.07.004

Bowlby, J. (1969). *Attachment and loss. 1. Attachment*. Basic Books.

Brown, S. L., & Brown, R. M. (2015). Connecting prosocial behavior to improved physical health: Contributions from the neurobiology of parenting. *Neuroscience and Biobehavioral Reviews, 55*, 1–17. https://doi.org/10.1016/j.neubiorev.2015.04.004

Brown, K. W., Creswell, J. D., & Ryan, R. M. (Eds.). (2015). *Handbook of mindfulness: Theory, research, and practice*. Guilford Press.

Buss, D. M. (2019). *Evolutionary psychology: The new science of the mind* (6th ed.). Routledge.

Butts, M. M., Lunt, D. C., Freling, T. L., & Gabriel, A. S. (2019). Helping one or helping many? A theoretical integration and meta-analytic review of the compassion fade literature. *Organizational Behavior and Human Decision Processes, 151*, 16–33. https://doi.org/10.1016/j.obhdp.2018.12.006

Byrne, R. W. (2016). *Evolving insight: How it is we can think about why things happen*. Oxford University Press.

Camilleri, T., Rockey, S., & Dunbar, R. (2023). *The social brain. The psychology of successful groups*. Cornerstone Press.

Carhart-Harris, R. L., Roseman, L., Haijen, E., Erritzoe, D., Watts, R., Branchi, I., & Kaelen, M. (2018). Psychedelics and the essential importance of context. *Journal of Psychopharmacology, 32*(7), 725–731. https://doi.org/10.1177/0269881118754710

Carter, S., Bartal, I. B., & Porges, E. (2017). The roots of compassion: An evolutionary and neurobiological perspective. In E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 178–188). Oxford University Press.

Carter, C. S., & Kingsbury, M. A. (2022). Oxytocin and oxygen: the evolution of a solution to the 'stress of life'. *Philosophical Transactions of the Royal Society B, 377*(1858), 20210054. https://doi.org/10.1098/rstb.2021.0054

Cartwright, D. E. (1988). Schopenhauer's compassion and Nietzsche's pity. *Schopenhauer Jahrbuch, 69*, 557–567. http://www.schopenhauer.philosophie.uni-mainz.de/Aufsaetze_Jahrbuch/69_1988/Cartwright.pdf

Cassidy, J., & Shaver, P. R. (2016). *Handbook of attachment: Theory, research and clinical applications* (3rd ed.). Guilford Press.

Mindfulness

Cassol, H., Martial, C., Annen, J., Martens, G., Charland-Verville, V., Majerus, S., & Laureys, S. (2019). A systematic analysis of distressing near-death experience accounts. *Memory, 27*, 1122–1129. https://doi.org/10.1080/09658211.2019.1626438

Catarino, F., Sousa, J., Ceresatto, L., Moore, R & Gilbert, P. (2014). An exploration of different empathic competencies in submissive and genuine compassion. *Journal of Social and Clinical Psychology*, *33*, 399–412.

Cavarra, M., Falzone, A., Ramaekers, J. G., Kuypers, K. P., & Mento, C. (2022). Psychedelic-assisted psychotherapy – A systematic review of associated psychological interventions. *Frontiers in Psychology, 13*, 887255. https://doi.org/10.3389/fpsyg.2022.887255

Condon, P., & Makransky, J. (2020). Sustainable compassion training: Integrating meditation theory with psychological science. *Frontiers in Psychology, 11*, 2249. https://doi.org/10.3389/fpsyg.2020.02249

Condon, P., & Makransky, J. (2022). Compassion and skillful means: Cultural adaptation, psychological science, and creative responsiveness. *MindRxiv Papers.* https://doi.org/10.31231/osf.io/n8bjd

Coxhead, N. (1985). *The relevance of bliss: A contemporary exploration of mystic experience*. Wildwood House.

Crocker, J., Canevello, A., & Brown, A. A. (2017). Social motivation: Costs and benefits of selfishness and otherishness. *Annual Review of Psychology, 68*, 299–325. https://doi.org/10.1146/annurev-psych-010416-044145

D'Aquili, E. G., & Newberg, A. B. (1993). Religious and mystical states: A neuropsychological model. *Zygon, 28*(2), 177–200. https://doi.org/10.1111/j.1467-9744.1993.tb01026.x

Davey, G. (Ed.). (2019a). *Psychology BPS textbooks*. Wiley.

Davey, G. (2019b). Motivation. In G. Davey (Ed.), *Psychology BPS textbooks* (pp. 209–261). Wiley.

Davis, N. (2022). *Three scientists share physics Nobel Prize for quantum mechanics work*. The Guardian.

Deckers, L. (2014). *Motivation: Biological, psychological, and environmental* (4th ed.). Psychology Press.

Di Bello, M. D., Carnevali, L., Petrocchi, N., Thayer, J. F., Gilbert, P., & Ottaviani, C. (2020). The compassionate vagus: A meta-analysis on the connection between compassion and heart rate variability. *Neuroscience Biobehavioral Review, 116*, 21–30. https://doi.org/10.1016/j.neubiorev.2020.06.016

Di Bello, M., Ottaviani, C., & Petrocchi, N. (2021). Compassion is not a benzo: Distinctive associations of heart rate variability with its empathic and action components. *Frontiers in Neuroscience, 15*, 223. https://doi.org/10.3389/fnins.2021.617443

De Dreu, C. K., Greer, L. L., Van Kleef, G. A., Shalvi, S., & Handgraaf, M. J. (2011). Oxytocin promotes human ethnocentrism. *Proceedings of the National Academy of Sciences, 108*(4), 1262–1266. https://doi.org/10.1073/pnas.1015316108

Dryden, W., David, D., & Ellis, A. (2010). Rational emotive behavior therapy. In K. Dobson (Ed.), *Handbook of cognitive behaviour therapies* (3rd ed., pp. 226–276). Guilford.

Duarte, C., Gilbert, P., Stalker, C., Catarino, F., Basran, J., Scott, S., Horgan, G., & Stubbs, R. J. (2021). Effect of adding a compassion-focused intervention on emotion, eating and weight outcomes in a commercial weight management programme. *Journal of Health Psychology, 26*(10), 1700–1715. https://doi.org/10.1177/1359105319890019

Dunbar, R. (2022). *How religion evolved: And why it endures*. Oxford University Press.

Dunbar, R. I. (2014). *Human evolution: A pelican introduction*. Penguin UK.

Dunne, J. D., & Manheim, J. (2022). Compassion, self-compassion, and skill in means: A Mahāyāna perspective. *Mindfulness*. https://doi.org/10.1007/s12671-022-01864-0

Eidelson, R. J., & Eidelson, J. I. (2003). Dangerous ideas: Five beliefs that propel groups toward conflict. *American Psychologist, 58*(3), 182–192. https://doi.org/10.1037/0003-066X.58.3.182

Ekman, P., & Ekman, E. (2017). Is global compassion achievable? In E. M. Seppälä, E. Simon-Thomas, S. I. Brown, M. C. Worline, L. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 41–49). Oxford University Press.

Ellis, A. (1979). The theory of rational-emotive therapy. In A. Ellis & J. M. Whiteley (Eds.), *Theoretical and empirical foundations of rational-emotive therapy* (pp. 33–60). Brooks/Cole.

Favre, P., Kanske, P., Engen, H., & Singer, T. (2021). Decreased emotional reactivity after 3-month socio-affective but not attention- or meta-cognitive-based mental training: A randomized, controlled, longitudinal fMRI study. *NeuroImage*, *237*, 118132. https://doi.org/10.1016/j.neuroimage.2021.118132

Feldman, C., & Kuyken, W. (2011). Compassion in the landscape of suffering. *Contemporary Buddhism, 12*, 143–155. https://doi.org/10.1080/14639947.2011.564831

Gay, P. (1993). *The cultivation of hatred: The bourgeois experience: Victoria to Freud*. W. W. Norton.

Germer, C. K., & Siegel, R. D. (2012). *Wisdom and compassion in psychotherapy: Deepening mindfulness in clinical practise*. Guilford Press.

Gilbert, P. (1989). *Human nature and suffering*. Routledge.

Gilbert, P. (1992). *Depression: The evolution of powerlessness*. Psychology Press.

Gilbert, P. (1998). Evolutionary psychopathology: Why isn't the mind better designed than it is? *British Journal of Medical Psychology, 71*(4), 353–373. https://doi.org/10.1111/j.2044-8341.1998.tb00998.x

Gilbert, P. (2000). Social mentalities: Internal 'social' conflicts and the role of inner warmth and compassion in cognitive therapy. In P. Gilbert & K. G. Bailey (Eds.), *Genes on the couch: Explorations in evolutionary psychotherapy* (pp. 118–150). Psychology Press.

Gilbert, P. (2005). Compassion and cruelty: A biopsychosocial approach. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 3–74). Routledge.

Gilbert, P. (2009). *The compassionate mind: A new approach to the challenge of life*. Constable & Robinson.

Gilbert, P. (2010). *Compassion focused therapy: The CBT distinctive features series*. Routledge.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*, 6–41. https://doi.org/10.1111/bjc.12043

Gilbert, P. (2017). Compassion as a social mentality: An evolutionary approach. In P. Gilbert (Ed.), *Compassion: Concepts, research and applications* (pp. 31–68). Routledge.

Gilbert, P. (2019). *Living like crazy* (2nd ed.). Annwyn House.

Gilbert, P. (2020a). The evolution of prosocial behavior: From caring to compassion. In L. Workman, W. Reader, & J. H. Barkow (Eds.), *Cambridge handbook of evolutionary perspectives on human behavior* (pp. 419–435). Cambridge University Press.

Gilbert, P. (2020b). Compassion: From its evolution to a psychotherapy. *Frontiers in Psychology, 11*, 586161. https://doi.org/10.3389/fpsyg.2020.58616

Gilbert, P. (2020c). Evolutionary functional analysis: The study of social mentalities, social rank and caring-compassion. In J. N. Kirby & P. Gilbert (Eds.), *Making an impact on mental health* (pp. 4–42). Routledge.

Gilbert, P. (2021). Creating a compassionate world: Addressing the conflicts between sharing and caring versus controlling and holding evolved strategies. *Frontiers in Psychology, 11*, 582090. https://doi.org/10.3389/fpsyg.2020.582090

Gilbert, H. (2022a). The therapeutic relationship in compassion focused therapy. In P. Gilbert & G. Simos (Eds.), *Compassion focused therapy: Clinical practice and applications* (pp. 385–400). Routledge.

Gilbert, P. (2022b). Compassion focused therapy as an evolution informed, biopsychosocial science of the mind: History and challenge. In P. Gilbert & G. Simos (Eds.), *Compassion focused therapy: Clinical practice and applications* (pp. 24–89). Routledge.

Gilbert, P., & Choden. (2013). *Mindful compassion*. Constable Robinson.

Gilbert, P., & Mascaro, J. (2017). Compassion: Fears, blocks, and resistances: An evolutionary investigation. In E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, L. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 399–420). Oxford University Press.

Gilbert, P., & Simos, G. (2022). *Compassion focused therapy: Clinical practice and applications*. Routledge.

Gilbert, P, Broomhead, C., Irons, C, McEwan, K, Bellew, R., Mills, A & Gale, C. (2007). Striving to avoid inferiority: Scale development and its relationship to depression, anxiety and stress. *British Journal of Social Psychology*, *46*, 633–648. https://doi.org/10.1348/014466606X157789

Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy, 84*, 239–255. https://doi.org/10.1348/147608310X526511

Gilbert, P., Catarino, F., Duarte, C., Matos, M., Kolts, R., Stubbs, J., Ceresatto, L., Duarte, J., Pinto–Gouveia, J., & Basran, J. (2017). The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care, 4*(1), 1–24. https://doi.org/10.1186/s40639-017-0033-3.

Gilbert, P., Basran, J., MacArthur, M., & Kirby, J. N. (2019). Differences in the semantics of prosocial words: An exploration of compassion and kindness. *Mindfulness*, *10*(11), 2259–2271. https://doi.org/10.1007/s12671-019-01191-x

Gilbert, P., Huxter, M & Choden. (2023). An exploration of evolution-informed Compassion-Focused Therapy and Buddhist approaches to insight meditation: A three-way exploration. *Mindfulness*. https://doi.org/10.1007/s12671-023-02141-4

Gill, M., Waltz, J., Suhrbier, P., & Robert, L. (2015). Non-duality and the integration of mindfulness into psychotherapy: Qualitative research with meditating therapists. *Mindfulness, 6*(4), 708–722. https://doi.org/10.1007/s12671-014-0310-6

Goetz, J. E., Keltner, D., & Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin, 136*(3), 351–374. https://doi.org/10.1037/a0018807

Greyson, B. (2010). Implications of near-death experiences for a post-materialist psychology. *Psychology of Religion and Spirituality, 2*(1), 37–45. https://doi.org/10.1037/a0018548

Greyson, B. (2021). *After: A doctor explores what near-death experiences reveal about life and beyond*. Random House.

Hrdy, S. B. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Harvard University Press.

Ho, A. K., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N., & Sheehy-Skeffington, J. (2012). Social dominance orientation: Revisiting the structure and function of a variable predicting social and political attitudes. *Personality and Social Psychology Bulletin, 38*(5), 583–606. https://doi.org/10.1177/0146167211432765

Holt, S. A., & Austad, C. S. (2013). A comparison of rational emotive therapy and Tibetan Buddhism: Albert Ellis and the Dalai Lama. *International Journal of Behavioral Consultation and Therapy, 7*(4), 8–11. https://doi.org/10.1037/h0100959

Hood, B. (2012). *The self illusion: Why there is no 'you' inside your head*. Oxford University Press.

Huxter, M. (2016). *Healing the heart and mind with mindfulness: Ancient path, present moment*. Routledge.

Irons, C. (2019). *The compassionate mind approach to difficult emotions*. Little Brown.

Jazaieri, H., Jinpa, G. T., McGonigal, K., Rosenberg, E., Finkelstein, J., Simon-Thomas, E., Cullen, M., Doty, J. R., Gross, J. J., & Goldin, P. R. (2013). Enhancing compassion: A randomized controlled trial of a compassion cultivation training program. *Journal of Happiness Studies, 14*, 1113–1126. https://doi.org/10.1007/s10902-012-9373-z

Jinpa, T. (2015). *A fearless heart – Why compassion is the key to greater well-being*. Piatkus.

Jones, D. N., & Figueredo, A. J. (2013). The core of darkness: Uncovering the heart of the Dark Triad. *European Journal of Personality, 27*(6), 521–531. https://doi.org/10.1002/per.1893

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8*, 163–190. https://doi.org/10.1007/BF00845519

Kasser, T. (2016). Materialistic values and goals. *Annual Review of Psychology, 67*, 489–514. https://doi.org/10.1146/annurev-psych-122414-033344

Keltner, D., Kogan, A., Piff, P. K., & Saturn, S. R. (2014). The socio-cultural appraisals, values, and emotions (SAVE) framework of prosociality: Core processes from gene to meme. *The Annual Review of Psychology, 65*, 425–460. https://doi.org/10.1146/annurev-psych-010213-115054

Kessler, S. E. (2020). Why care: complex evolutionary history of human healthcare networks. *Frontiers in Psychology*, *11*, 199. https://doi.org/10.3389/fpsyg.2020.00199

Khan, F. (2021). *Confirmed! We live in a simulation*. Scientific American. https://www.scientificamerican.com/article/confirmed-we-live-in-a-simulation/

Kim, J. J., Cunnington, R., & Kirby, J. N. (2020). The neurophysiological basis of compassion: An fMRI meta-analysis of compassion and its related neural processes. *Neuroscience Biobehavioral Review, 8*, 112–123. https://doi.org/10.1016/j.neubiorev.2019.10.023

Kirby, J. N., Day, J., & Sagar, V. (2019). The 'flow' of compassion: A meta-analysis of the fears of compassion scales and psychological functioning. *Clinical Psychology Review, 70*, 26–39. https://doi.org/10.1016/j.cpr.2019.03.001

Kirby, J. N., Gerrish, R., Sherwell, C., & Gilbert, P. (2022). The role of likeability in discriminating between kindness and compassion. *Mindfulness, 13*(6), 1555–1564. https://doi.org/10.1007/s12671-022-01900-z

Kitson, A., Chirico, A., Gaggioli, A., & Riecke, B. E. (2020). A review on research and evaluation methods for investigating self-transcendence. *Frontiers in Psychology, 11*, 547687. https://doi.org/10.3389/fpsyg.2020.547687

Kucerova, B., Levit-Binnun, N., Gordon, I., & Golland, Y. (2023). From oxytocin to compassion: The saliency of distress. *Biology, 12*(2), 183. https://doi.org/10.3390/biology12020183

Kwee, M., & Ellis, A. (1998). The interface between Rational Emotive Behavior Therapy (REBT) and Zen. *Journal of Rational-Emotive and Cognitive-Behavior Therapy, 16*(1), 5–43. https://doi.org/10.1023/A:1024946306870

Lama, D. (1995). *The power of compassion*. Harper Collins.

Lama, D. (2001). *The life of Shabkar: Autobiography of a Tibetan yogin*. Shambhala.

Laukkonen, R. E., & Slagter, H. A. (2021). From many to (n)one: Meditation and the plasticity of the predictive mind. *Neuroscience & Biobehavioral Reviews, 128*, 199–217. https://doi.org/10.1016/j.neubiorev.2021.06.021

Leary, M. R. (2004). *The curse of the self. Self-awareness, egotism and quality of human life*. Oxford University Press.

LeDoux, J. E. (2022). As soon as there was life, there was danger: The deep history of survival behaviours and the shallower history of consciousness. *Philosophical Transactions of the Royal Society B, 377*(1844), 20210292. https://doi.org/10.1098/rstb.2021.0292

Leighton, T. D. (2003). *Faces of compassion: Classic bodhisattva archetypes and their modern expression – An introduction to Mahayana Buddhism*. Simon and Schuster.

Loewenstein, G., & Small, D. A. (2007). The scarecrow and the tin man: The vicissitudes of human sympathy and caring. *Review of General Psychology, 11*(2), 112–126. https://doi.org/10.1037/1089-2680.11.2.112

Luke, D. (2019). *Otherworlds: Psychedelics and exceptional human experience*. Aeon Books.

Luyten, P., Campbell, C., Allison, E., & Fonagy, P. (2020). The mentalizing approach to psychopathology: State of the art and future directions. *Annual Review of Clinical Psychology, 16*, 297–325. https://doi.org/10.1146/annurev-clinpsy-071919-015355

Marsh, A. A. (2019). The caring continuum: Evolved hormonal and proximal mechanisms explain prosocial and antisocial extremes. *Annual Review of Psychology, 70*, 347–371. https://doi.org/10.1146/annurev-psych-010418-103010

Mascaro, J., Negi, L. T., & Raison, C. (2017). Cognitively based compassion training: Gleaning generalities from specific biological effects. In E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, L. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 247–257). Oxford University Press.

Mascaro, J. S., Florian, M. P., Ash, M. J., Palmer, P. K., Frazier, T., Condon, P., & Raison, C. (2020). Ways of knowing compassion: How do we come to know, understand, and measure compassion when we see it? *Frontiers in Psychology, 11*, 547241. https://doi.org/10.3389/fpsyg.2020.547241

Matos, M., Duarte, C., Duarte, J., Pinto-Gouveia, J., Petrocchi, N., & Gilbert, P. (2022). Cultivating the compassionate self: An exploration of the mechanisms of change in compassionate mind training. *Mindfulness, 13*(1), 66–79. https://doi.org/10.1007/s12671-021-01717-2

Matos M, McEwan K, Kanovský M, Halamová J, Steindl SR, Ferreira N, Linharelhos M, Rijo D, Asano K, Vilas SP, Márquez MG, Gregório S, Brito-Pons G, Lucena-Santos P, Oliveira MDS, Souza EL, Llobenes L, Gumiy N, Costa MI, Habib N, Hakem R, Khrad H, Alzahrani A, Cheli S, Petrocchi N, Tholouli E, Issari P, Simos G, Lunding-Gregersen V, Elklit A, Kolts R, Kelly AC, Bortolon C, Delamillieure P, Paucsik M, Wahl JE, Zieba M, Zatorski M, Komendziński T, Zhang S, Basran J, Kagialis A, Kirby J, Gilbert P (2021) The role of social connection on the experience of COVID-19 related post-traumatic growth and stress. PLoS One 16(12):e0261384. https://doi.org/10.1371/journal.pone.0261384

Mayseless, O. (2016). *The caring motivation: An integrated theory*. Oxford University Press.

Mikulincer, M., & Shaver, P. R. (Eds.). (2014). *Mechanisms of social connection: From brain to group*. American Psychological Association.

Mikulincer, M., & Shaver, P. R. (2017). An attachment perspective on compassion altruism. In P. Gilbert (Ed.), *Compassion: Conceptualisations, research and use in psychotherapy* (pp. 187–202). Routledge.

Moore, A. A., Blair, R. J., Hettema, J. M., & Roberson-Nay, R. (2019). The genetic underpinnings of callous-unemotional traits: A systematic research review. *Neuroscience & Biobehavioral Reviews, 100*, 85–97. https://doi.org/10.1016/j.neubiorev.2019.02.018

Muraresku, B. C. (2020). *The immortality key: The secret history of the religion with no name*. St Martin's Press.

Narvaez, D. (2017). Evolution, child raising and compassionate morality. In P. Gilbert (Ed.), *Compassion: Concepts, research and applications* (pp. 31–68). Routledge.

Narvaez, D., & Bradshaw, G. A. (2023). *The evolved nest: Nature's way of raising children and creating connected communities*. North Atlantic Books.

Nayak, S., & Johnson, M. W. (2021). Psychedelics and psychotherapy. *Pharmacopsychiatry, 54*(4), 167–175. https://doi.org/10.1055/a-1312-7297

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223–250. https://doi.org/10.1080/15298860309027

Nesse, R. M. (2019). *Good reasons for bad feelings: insights from the frontier of evolutionary psychiatry*. New York: Dutton.

Ornstein, R. & Ornstein, S.M. (2021). *God 4.0: On the nature of higher consciousness and the experience called "God"*. Malor Books.

Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology, 56*, 365–392. https://doi.org/10.1146/annurev.psych.56.091103.070141

Petrocchi, N., & Cheli, S. (2019). The social brain and heart rate variability: Implications for psychotherapy. *Psychology and Psychotherapy: Theory, Research and Practice, 92*(2), 208–223. https://doi.org/10.1111/papt.12224

Petrocchi, N., Bello, D., & M., Cheli, S., & Ottavianni, C. (2022). Compassion focused therapy and the body help visual logical underpinnings of prosociality informed clinical practise. In P. Gilbert & G. Simos (Eds.), *Compassion focused therapy: Clinical practice and applications* (pp. 345–359). Routledge.

Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: A causal review. *Social Science & Medicine, 128*, 316–326. https://doi.org/10.1016/j.socscimed.2014.12.031

Plante, T. G. (2015). *The psychology of compassion and cruelty*. Pergamon.

Porges, S. W. (2021). Polyvagal theory: A biobehavioral journey to sociality. *Comprehensive Psychoneuroendocrinology, 7*, 100069.

Poulin, M. J. (2017). To help or not to help: Goal commitment and the goodness of compassion. In E. M. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, L. Cameron, & J. R. Doty (Eds.), *The Oxford handbook of compassion science* (pp. 355–367). Oxford University Press.

Quaglia, J. T. (2022). One compassion, many means: A big two analysis of compassionate behavior. *Mindfulness, 1–13*. https://doi.org/10.1007/s12671-022-01895-7

Rachman, S. J. (1990). *Fear and courage*. W. H Freeman.

Ribeiro da Silva, D., Vagos, P., & Rijo, D. (2019). An evolutionary model to conceptualize psychopathic traits across community and forensic male youth. *International Journal of Offender Therapy and Comparative Criminology, 63*(4), 574–596. https://doi.org/10.1177/0306624X18823624

Ribeiro da Silva, D., Rijo, D., Brazão, N., Paulo, M., Miguel, R., Castilho, P., Vagos, P., Gilbert, P., & Salekin, R. T. (2021). The efficacy of the PSYCHOPATHY.COMP program in reducing psychopathic traits: A controlled trial with male detained youth. *Journal of Consulting and Clinical Psychology, 89*(6), 499–513. https://doi.org/10.1037/ccp0000659

Ricard, M. (2015). *Altruism: The power of compassion to change yourself and the world*. Atlantic Books.

Ryff, C. D. (2017). Eudaimonic well-being, inequality, and health: Recent findings and future directions. *International Review of Economics, 64*, 159–178. https://doi.org/10.1007/s12232-017-0277-4

Ryan, C. (2019). *Civilized to death: The price of progress*. Simon & Schuster.

Schimmel, N., Breeksema, J. J., Smith-Apeldoorn, S. Y., Veraart, J., van den Brink, W., & Schoevers, R. A. (2022). Psychedelics for the treatment of depression, anxiety, and existential distress in patients with a terminal illness: A systematic review. *Psychopharmacology, 239*(1), 15–33. https://doi.org/10.1007/s00213-021-06027-y

Seppälä, E. M., Simon-Thomas, E., Brown, S. L., Worline, M. C., & Cameron, C. D. (Eds.) (2017). *The Oxford handbook of compassion science*. Oxford University Press.

Shonin, E., Van Gordon, W., & Griffiths, M. D. (2014). The emerging role of Buddhism in clinical psychology: Toward effective integration. *Psychology of Religion and Spirituality, 6*(2), 123–137. https://doi.org/10.1037/a0035859

Siegel, D. (2012). *Mindsight*. Spectrum.

Siegel, D. J. (2018). *Awareness*. The science and practise of presence.

Siegel, D. J. (2016). *Mind: A journey into the heart of being human.* .

Siegel, D. J. (2020). *The developing mind: How relationships in the brain interact to shape who we are* (3rd ed.). Guildford Press.

Siegel, D. J. (2023). *Intraconnected: Mwe (Me+We) as the integration of self, identity and belonging*. Norton.

Simmer-Brown, J. (2022). Activity of the armless mother: Applications of compassion and skillful means from Indo-Tibetan Buddhism. *Mindfulness*. https://doi.org/10.1007/s12671-022-01868-w

Singer, T., & Engert, V. (2019). It matters what you practice: Differential training effects on subjective experience, behavior, brain and body in the ReSource Project. *Current Opinion in Psychology, 28*, 151–158. https://doi.org/10.1016/j.copsyc.2018.12.005

Slavich, G. M. (2020). Social safety theory: A biologically based evolutionary perspective on life stress, health, and behavior. *Annual Review of Clinical Psychology, 16*, 265–295. https://doi.org/10.1146/annurev-clinpsy-032816-045159

Spikins, P. (2015). *How compassion made us human: The evolutionary origins of tenderness, trust and morality*. Spear and Sword Books.

Spikins, P. (2022). *Hidden depths: The origins of human connection*. White Rose University Press.

Spira, R. (2008). *The transparency of things*. Non-Duality.

Stellar, J. E., Gordon, A. M., Piff, P. K., Cordaro, D., Anderson, C. L., Bai, Y., Maruskin, L. A., & Keltner, D. (2017). Self-transcendent emotions and their social functions: Compassion, gratitude, and awe bind us to others through prosociality. *Emotion Review, 9*(3), 200–207. https://doi.org/10.1177/1754073916684557

Stevens, J., & Woodruff, C. C. (2018). *The neuroscience of empathy, compassion and self-compassion*. Academic Press.

Stewart-Williams, S. (2018). *The ape that understood the universe: How the mind and culture evolve*. Cambridge University Press.

Strauss, C., Taylor, B. L., Gu, J., Kuyken, W., Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. *Clinical Psychology Review, 47*, 15–27. https://doi.org/10.1016/j.cpr.2016.05.004

Tagliazucchi, E., Llobenes, L., & Gumiy, N. (2022). Psychedelics, connectedness and compassion. In P. Gilbert & G. Simos (Eds.), *Compassion focused therapy: Clinical practice and applications* (pp. 360–370). Routledge.

Taylor, K. E. (2009). *Cruelty: Human evil and the human brain*. USA: Oxford University Press.

Taylor, J., & Hocken, K. (2021). People hurt people: Reconceptualising criminogenic need to promote trauma sensitive and compassion focussed practice. *The Journal of Forensic Practice, 23*(3), 201–212. https://doi.org/10.1108/JFP-04-2021-0015

Tirch, D., Silberstein, L., & Kolts, R. (2016). *Buddhist psychology and cognitive behaviour therapy conditions guide*. Guilford Press.

Van Lange, P. A., & Rand, D. G. (2022). Human cooperation and the crises of climate change, COVID-19, and misinformation. *Annual Review of Psychology, 73*, 379–402. https://doi.org/10.1146/annurev-psych-020821-110044

Van Gordon, W., Sapthiang, S., Barrows, P., & Shonin, E. (2021). Understanding and practicing emptiness. *Mindfulness, 12*(7), 1845–1848. https://doi.org/10.1007/s12671-020-01586-1

Van Gordon, W., Shonin, E., Dunn, T., Sapthiang, S., Kotera, Y., Garcia-Campayo, J., & Sheffield, D. (2019). Exploring emptiness and its effects on non-attachment, mystical experiences, and psycho-spiritual wellbeing: A quantitative and qualitative study of advanced meditators. *Explore: The Journal of Science and Healing, 15*(4), 261–272. https://doi.org/10.1016/j.explore.2018.12.003

Van Gordon, W., Shonin, E., Dunn, T., Sheffield, D., Garcia-Campayo, J., & Griffiths, M. D. (2018). Meditation-induced near-death experiences: A 3-year prospective study. *Mindfulness, 9*(6), 1794–1806. https://doi.org/10.1007/s12671-018-0922-3

Van Gordon, W., Shonin, E., & Griffiths, M. D. (2017). Buddhist emptiness theory: Implications for psychology. *Psychology of Religion and Spirituality, 9*(4), 309–318. https://doi.org/10.1037/rel0000079

Velmans, M., Kelly, E., & Marshall, P. (2021). Is the universe conscious? Reflexive monism and the ground of being. In E. Kelly & P. Marshall (Eds.), *Consciousness unbound: Liberating mind from the tyranny of materialism* (Vol. 5, pp. 175–228). Rowman & Littlefield.

Vessantara. (1993). *Meeting the Buddhas: A guide to Buddhas, bodhisattvas and tantric deities*. Windhorse Publications.

Volk, A. A. (2023). Historical and hunter-gatherer perspectives on fast-slow life history strategies. *Evolution and Human Behavior, 44*, 99–109. https://doi.org/10.1016/j.evolhumbehav.2023.02.006

Vrtička, P., Favre, P., & Singer, T. (2017). Compassion and the brain. In P. Gilbert (Ed.), *Compassion: Concepts, research and applications* (pp. 135–151). Routledge.

Weng, H. Y., Lapate, R. C., Stodola, D. E., Rogers, G. M., & Davidson, R. J. (2018). Visual attention to suffering after compassion training is associated with decreased amygdala responses. *Frontiers in Psychology, 9*, 771. https://doi.org/10.3389/fpsyg.2018.00771

Wilber, K. (2007). *Integral spirituality: A startling new role for religion in the modern and postmodern world*. Shambhala.

Williams, J. M., & Kabat-Zinn, J. (2013). *Mindfulness: Diverse perspectives on its meaning, origins and applications*. Routledge.

Woollacott, M., & Shumway-Cook, A. (2020). The mystical experience and its neural correlates. *Journal of Near-Death Studies, 38*(1), 3–25.

Workman, L., Reader, W., & Barkow, J. H. (2020). *The Cambridge handbook of evolutionary perspectives on human behaviour*. Cambridge University Press.

Wrangham, R. W. (2018). Two types of aggression in human evolution. *Proceedings of the National Academy of Sciences, 115*(2), 245–253. https://doi.org/10.1073/pnas.1713611115

Wu, Y. E., & Hong, W. (2022). Neural basis of prosocial behavior. *Trends in Neurosciences, 45*, 749–762. https://doi.org/10.1016/j.tins.2022.06.008

Yaden, D. B., Haidt, J., Hood, R. W., Jr., Vago, D. R., & Newberg, A. B. (2017). The varieties of self-transcendent experience. *Review of General Psychology, 21*(2), 143–160. https://doi.org/10.1037/gpr000010

Zimbardo, P. (2008). *The Lucifer effect: How good people turn evil*. Rider.

Zimbardo, P. (2015). Transforming society by teaching everyday people the characteristics of a modern hero. *The Futurist, 49*(1), 24.