The Be SAFE and Certain Model

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Abstract

Through the process of evolution, early humans developed a range of neural processes which helped them to survive as hunter-gatherers. Today, these evolved brain mechanisms continue to underpin our social processing and contribute to our behavioural responses and everyday decision-making.

The BeSAFE&Certain model suggests that the modern human brain strives to maintain a sense of safety and certainty by satisfying six essential psychological needs: belonging, status, autonomy, fairness, expectations, and certainty. The following paper illustrates how the perceived satisfaction or unfulfillment of these needs can lead to a sense of reward or threat that can result in a variety of physical, psychological, behavioural, and emotional effects.

This paper draws on psychological theories, such as the belongingness hypothesis and self-determination theory, neuroscientific evidence that primarily highlights the role of the limbic system, and a range of empirical studies. Additionally, this paper consistently emphasises how the BeSAFE&Certain model can be applied to the context of the workplace, and how an insight into the mechanisms of the social brain can facilitate personal and professional development.

Finally, this paper also aims to highlight how an understanding of the fundamental needs emphasized by the BeSAFE&Certain model can be used by leaders to create a positive environment in which individuals can perform to the best of their ability because they feel cognitively rewarded.

Early Survival

Evolutionary psychologists suggest that humans evolved in an ancestral environment that was characterised by fierce competition for resources, small nomadic communities, a hunter-gatherer lifestyle, and high vulnerability to both predators and disease (Bennett, 2018).

As a result, it was vital that individuals felt that they belonged to their tribes as they relied on the protection and support associated with group membership for survival. The human brain also developed mechanisms which helped our ancestors to survive in their environment by avoiding predators, attracting mates, protecting their children, and forming alliances with others.

These brain processes form part of the evolutionary heritage which continues to underpin our behaviours, emotions, and decisions today, as well as shaping the way in which we respond to the threats and rewards of modern society (Bennett, 2018).

The Limbic System

Our response mechanisms are largely governed by the limbic system which contains a group of brain structures that are associated with emotion regulation, learning, and motivational behaviour (Moseley, 2018).

For example, the amygdala is responsible for emotional responses, such as anxiety and aggression (Rajmohan & Mohandas, 2007). This brain area is vital for survival for two reasons. Firstly, the amygdala is involved in 'fear conditioning'. During this process, individuals learn to associate an unpleasant experience with the object or event that caused it. The fear and anxiety that underpins this association then motivates individuals to escape or avoid the negative stimuli in the future (Moseley, 2018).

According to Mineka and Öhman (2007), the existence of phobias suggests that this mechanism evolved to aid the survival of early humans. This is why we are more likely to be fearful of stimuli that threatened the survival of our ancestors, such as heights, animals, and fire, than by the dangers of modern society, such as guns (Mineka & Öhman, 2007).

Furthermore, although early humans primarily learned to fear physical dangers, modern humans are now often more focussed on social threats. For example, individuals may have experienced social embarrassment or rejection when they made a controversial comment in a group discussion in the past.

The process of fear conditioning would then encourage the individual to associate voicing their contentious opinions with the negative outcome of social rejection, thereby encouraging them to avoid making similar contributions in the future.

The amygdala is also responsible for diverting attention to potential threats and triggering the 'flight-or-fight' response (Moseley, 2018). When a danger is detected in the environment, a distress signal is sent from the amygdala to the hypothalamus which acts as the 'control centre' of the brain. This triggers a physiological response which includes increased adrenaline levels that increase the individual's heart rate and blood pressure, and increased cortisol levels that increase the availability of glucose in the bloodstream which can be used for energy.

Overall, this response aids survival because it enhances our ability to fight or flee from physical dangers (Teatero & Penney, 2015). However, in modern society, this response can also be triggered by social threats, such as rejection from one's group – an individual may 'fight' potential rejection by claiming that they are being treated unfairly, or they may 'flee' from the situation by instead seeking inclusion from a new group.

Unlike the amygdala which responds to threats, the nucleus accumbens is another brain structure in the limbic system which is focussed on reward and motivation (Rajmohan & Mohandas, 2007). This area responds to the release of the neurotransmitter dopamine, which is a chemical messenger that is involved in the experience of pleasure and satisfaction (Moseley, 2018).

This brain area would have been important for early survival because it is involved in predicting the magnitude and value of potential rewards when individuals take risks and make cost-benefit decisions (Cohen et al., 2009). An example of a risky decision faced by our ancestors may have been choosing to pick berries from an area that is known to contain dangerous predators during a period of scarce resources – do they gather food to avoid starvation, but then risk attack, or do they avoid the area to maintain physical safety, but then risk malnourishment?

Similarly, an example of a risky decision faced by modern humans may be choosing to put oneself forward for a promotion and face possible rejection – do we capitalise on the opportunity for professional development, but risk social embarrassment, or do we avoid possible rejection, but potentially miss out on a promotion?

Human Needs and Motivation

Unlike our ancestors who were faced with the physical challenges of avoiding predators and securing food to ensure survival, modern humans must primarily deal with social pressures that can threaten our psychological needs. Maslow (1958), a pioneer in his day, created a foundation for theories of human needs and psychological motivation.

For example, in Maslow's (1958) Hierarchy of Needs, the most fundamental needs are physiological, such as our requirements for food and drink. The second level of the model is the characterised by 'safety' needs which involve the desire for predictability, control, and stability, whilst the third level is defined by 'love' needs which involve interpersonal feelings of belonging and affection.

The fourth level of needs are described as 'esteem' needs which include both the desire for confidence, achievement, and autonomy, and the need for a good reputation and respect from others. Finally, the fifth level is characterised by the need for self-actualisation which involves personal self-fulfilment (Maslow, 1958).

More recent research has highlighted the importance of the socio-emotional and cognitive needs identified by Maslow (1958). For example, according to Gagné, Deci, and Ryan (2014), individuals experience a sense of reward when their psychological needs are met. This feeling is associated with several positive outcomes, such as increased autonomous motivation, improved psychological wellbeing, and more effective performance. In contrast, when an individual's needs are not satisfied, they can experience diminished motivation and increased insecurity which can lead to poorer performance (Gagné, Deci & Ryan, 2014).

In addition, recent research has also applied Maslow's (1958) model to the context of the modern workplace. For example, Kaur (2013) suggests that the hierarchy can be used by industry leaders to identify how they can support their employees to become self-actualised, and therefore become more creative, effective, innovative, and motivated workers.

Ways in which managers can satisfy their employees' needs include; promoting a healthy lifestyle to fulfil their physiological needs, creating a sense of financial security to satisfy their safety needs, providing opportunities to socialise to meet their interpersonal needs, and recognising their accomplishments to fulfil their esteem needs (Kaur, 2013).

However, other studies have also identified criticisms of Maslow's (1958) theory. For example, the sequential nature of the model defines our needs as static, rather than dynamic, whilst the use of a hierarchy limits the applicability of the model by failing to take into account the cultural and social factors that may lead individuals to value certain needs over others (Osemeke & Adegboyega, 2017).

This therefore highlights the importance of developing new and improved models of human motivation that highlight the powerful psychological drives that underpin our behaviour and emphasise the ways in which our fundamental needs can interact and balance each other out.

The BE SAFE and Certain Model

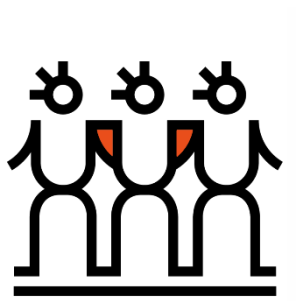
Our model suggests that the human brain strives to maintain a sense of safety and certainty by satisfying six essential psychological needs: belonging, status, autonomy, fairness, expectations, and certainty. The following paper will illustrate how the perceived satisfaction or unfulfillment of these needs can lead to a perceived sense of reward or threat.

This can in turn result in responses from the limbic system that influence our behaviours, emotions, and decisions. This paper will also highlight the various applications of this model. For example, in the context of the workplace, increased self-awareness of the psychological and biological processes that drive our behaviour can facilitate personal and professional development.

An insight into the mechanisms of the social brain can also aid in our understanding of group dynamics. In addition, this knowledge can also be utilised by industry leaders to create a positive environment in which employees feel cognitively rewarded.

Belonging

The Need to Belong



According to Baumeister and Leary's (1995) belongingness hypothesis, all humans are motivated by a fundamental need to develop and preserve strong interpersonal relationships. These connections are characterised by a sense of commitment, stability, and interdependence which results in frequent positive interactions.

Caporael (2001) argues that this drive to establish social bonds likely evolved to aid the survival of our ancestors. For example, group cooperation would have facilitated more efficient hunting, and the sharing of resources between group members would have prevented starvation (Baumeister & Leary, 1995).

The evolutionary basis of this need to belong is also evident in brain structures which facilitate social affiliation. For example, there is an amygdala-based network which exhibits increased activity when participants are shown pictures of their friends or family, when they receive positive social feedback in the form of compliments or collaboration from others, or when they choose to demonstrate prosocial behaviours, such as altruism or cooperation (Bickart, Dickerson, & Barrett, 2014).

The Positive Effects of Belonging

Experiencing a sense of belonging is associated with a range of positive outcomes. For example, Scarf et al. (2016) found that group belonging is associated with long-term increases in resilience, Gailliot and Baumeister (2007) found that belongingness increases self-esteem, and Lambert et al. (2013) found that individuals who exhibited a stronger sense of belonging experienced greater meaning in their life than those who felt a lack of belonging. Furthermore, Hale Ma, Hannum, and Espelage (2005) found that feelings of belonging are associated with better subjective perceptions of general health.

This is supported by research from Begen and Turner-Cobb (2015) who used an objective health measure to investigate the physiological impacts of social inclusion and exclusion. They found that when participants experienced a boost in feelings of belonging through social inclusion, their heart rate decreased, thus exhibiting reduced physiological arousal.

Additionally, Begen and Turner-Cobb (2015) also found that a sense of belonging positively impacted emotional wellbeing through significant reductions in negative feelings. Overall, these studies illustrate how satisfying the need to belong can positively impact one's psychological, physical, and emotional welfare. Furthermore, Waller (2020) suggests that this knowledge can be used by industry leaders to create workplace

environments that promote an organisational culture of psychological safety and belonging.

By facilitating high-quality relationships, emphasising the value of employee contributions, and developing practices that establish shared goals and mutual respect, managers can improve employees' performance by satisfying their need to belong (Waller, 2020).

When Belonging is Threatened

One of the criteria that must be satisfied in order to categorise the need to belong as a fundamental human motivation is that the failure to fulfil this need should negatively impact the health and wellbeing of individuals in a way that exceeds temporary distress (Baumeister & Leary, 1995).

This is evident in research which has identified a range of negative effects associated with social exclusion or a lack of belonging. For example, Eisenberger, Lieberman and Williams (2003) found that, when participants were excluded from a virtual ball-tossing game, they exhibited increased neural activity in the anterior cingulate cortex (ACC) which is the same brain structure that responds to physical pain.

This suggests that when our feelings are 'hurt' by social exclusion, the brain responds to this social pain in a similar way to when it responds to physical injuries. According to MacDonald and Leary (2005), this is an adaptive mechanism which helped early humans to learn negative associations and remember which groups that they should avoid in the future.

This is because groups that exclude someone are unlikely to be reliable sources of safety or support. In fact, they may cause harm to the individual. Consequently, experiencing social pain in an intense and memorable way appears to be an evolutionary survival mechanism which reduces the threat of future rejection (MacDonald & Leary, 2005).

Furthermore, according to DeWall and Baumeister (2006), experiencing threats to belonging may also inhibit future attempts at interpersonal connections due to emotional numbness.

The researchers found that, when participants were primed with a lack of belonging by being told that they would be alone in the future, they exhibited signs of emotional insensitivity. This included emotional regulation deficits such as diminished emotional expression and reduced empathy towards others.

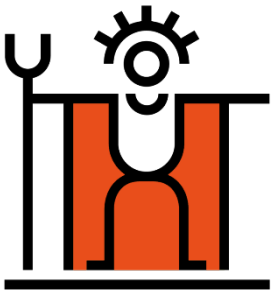
However, DeWall, Baumeister, and Vohs (2008) found that social exclusion does not always lead to diminished self-regulation. In this experiment, the researchers primed participants with a lack of belonging and then assigned them to one of two tasks. If participants were told that their task would be used to assess their health, they exhibited

decrements in self-regulation which were indicative of the ‘numbness’ identified in previous research.

However, if participants were told that their task would be used to assess their interpersonal skills, they did not exhibit these deficits. These findings support the assumptions of the social reconnection hypothesis which suggests that failing to satisfy the need to belong intensifies our desire for social acceptance, and that offering individuals the opportunity to connect with others can mitigate the negative effects of social exclusion (Maner, DeWall, Baumeister, & Schaller, 2007).

Status

The Need for Status



The desire for status is viewed as a universal social motive (Huo & Binning, 2008). In the early environment of our ancestors, humans developed two possible approaches to achieving status (Cheng, Tracy, & Henrich, 2010).

The dominance technique refers to the use of intimidation and the withholding of resources as a way of inducing fear and encouraging compliance from subordinates. In our ancestral environment, physically dominant individuals would have likely adopted this basic and forceful approach to establishing their authority and status within the group. In contrast, the prestige technique refers to a process whereby individuals who possess respected skills or attributes are given status.

This approach evolved when early humans developed the ability to gain cultural information and learn from others. Early humans would have been motivated to be deferent to 'prestigious' group members who possessed useful knowledge, in order to be able to copy their skills and strategies and thus increase their own chances of survival (Cheng, Tracy, & Henrich, 2010).

This latter approach is evident in how status is ascribed in modern society. Today, achieving a sense of status can indicate that an individual perceives themself to be a useful group member, that they possess specific attributes which are important to the group, or that they fulfil an authoritative role (Huo & Binning, 2008).

The Positive Effects of Status

Research has identified a variety of positive psychological and behavioural effects associated with the satisfaction of the need for status. For example, Willer (2009) found that participants who received 'high status' feedback perceived there to be greater solidarity and greater cohesion within the group than those who were given 'moderate status' feedback.

This feedback was regarding how 'prestigious', 'respected' and 'honourable' participants were thought to be. This suggests that status (in the form of perceived admiration from others) can improve individuals' social perceptions of group dynamics. Also, Willer (2009) found that participants who received 'high status' feedback were more likely to identify with other group members and contribute to the group than the 'moderate status' feedback participants. This suggests that status can also encourage prosocial helping behaviour.

Additionally, Mahadevan, Gregg, and Sedikides (2019) found that higher social status is also associated with higher self-esteem. According to the hierometer theory, self-esteem is an evolved psychological mechanism that is used to navigate social hierarchies by tracking status.

This cognitive information is then used in cost-benefit decisions about risky status-seeking behaviours which can result in interpersonal conflict (Mahadevan, Gregg, & Sedikides, 2019). However, Anderson, Brion, Moore, and Kennedy (2012) suggest that if individuals experience a particularly strong desire for status, this can lead to a negative, intense version of high self-esteem: overconfidence.

This highlights how we must manage and pursue our desire for status in a way that will enhance our psychological wellbeing, but not lead to arrogance or misguided self-regard.

When Status is Threatened

According to Adler, Epel, Castellazzo and Ickovics (2000), if individuals perceive themselves to be of a low status, they can experience negative physiological effects. For example, participants who reported a lower subjective social standing were more likely to exhibit high cortisol reactivity and reported taking longer to get to sleep than their high-status counterparts.

These indicators are reflective of hyperactivity in the hypothalamic-pituitary-adrenal (HPA) axis which is referred to as the human threat-response system. As a result, experiencing a lack of status appears to result in physical symptoms of chronic stress. Furthermore, Adler, Epel, Castellazzo and Ickovics (2000) also observed the negative emotional effects of a lack of status, such as a lack of perceived control and pessimism. Overall, this research highlights the detrimental impact of long-term threats to status.

Moreover, Santor and Zuroff (1997) identified how short-term threats to status, such as being outperformed by a colleague or being challenged by a friend, can result in different outcomes depending on the different interpersonal traits exhibited by individuals, such as dependency or self-criticism.

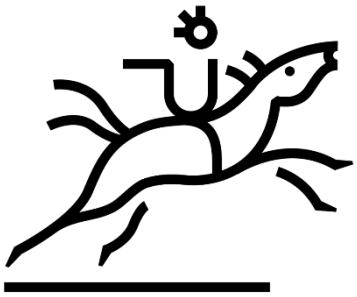
Participants who were labelled as ‘dependent’ were more concerned with fostering interpersonal relationships, whilst those who were labelled as ‘self-critical’ were more concerned with maintaining a sense of status. During group interactions, dependent participants promoted social cohesion by minimising conflict, praising friends even when they disagreed, and adopting the input of their friends who had under-performed them. In contrast, self-critical participants responded to threats to status in a confrontational way by withholding praise from those who disagreed with them, choosing to ignore the input of those who had outperformed them, and failing to minimise disagreements (Santor & Zuroff, 1997).

Overall, this research demonstrates how individual personality differences can impact the interpersonal outcomes of threats to status: some individuals may be motivated by a greater need to maintain their relationships and thus respond with deference to the group, whilst others may be motivated by a greater desire to re-establish their authority and thus respond with retaliation behaviours.

This therefore demonstrates the difference between those who place a higher value on fulfilling their need to belong and those who perceive the satisfaction of their need for status to be more important.

Autonomy

The Need for Autonomy



Self-determination theory suggests that all humans are innately motivated to fulfil a need for autonomy (Ryan & Deci, 2000). Autonomy is often characterised by a sense of personal choice which allows individuals to act in an authentic way that is congruent with their values and beliefs (Ryan & Ryan, 2019).

As a result, autonomous actions include taking responsibility for one's activities and engaging in self-directed behaviour (Fazey & Fazey, 2001). In the context of the workplace, an individual's need for autonomy may be satisfied when, for example, they are given the opportunity to develop their own solutions, rather than being told how to approach a problem. This is because our sense of autonomy is strengthened when we are able to develop our own unique approach, when our sense of choice is emphasised, and when we are encouraged to use our own initiative (Visser, 2010).

Furthermore, Ryan and Deci (2000) also suggest that fulfilling our need for autonomy can increase intrinsic motivation. This is defined as our innate desire to explore and learn from new challenges. Ryan, Kuhl and Deci (1997) therefore argue that maintaining individual autonomy is an evolved, adaptive mechanism that contributed to the socio-cognitive development of our ancestors.

This is because an enhanced motivation for exploration would have allowed early humans to experience novel situations and thereby refine their survival skills and broaden their knowledge (Ryan, Kuhl and Deci, 1997).

In addition, autonomy is also defined by an internal locus of control. This is when an individual perceives the outcome of events to be the result of their own behaviour or attributes, rather than the consequence of external factors, such as fate or luck (Rotter, 1966).

Those with a high internal locus of control therefore believe that they have *earnt* a reward or *deserve* a punishment because their autonomous decision-making and actions are directly related to the outcomes that they experience. An internal, rather than an external, locus of control therefore increases an individual's sense of autonomy because they believe that they possess the ability to exert control over the outcome of events (Dijkstra, Beersma & Evers, 2011).

This belief can have a range of positive impacts. For example, Dijkstra et al. (2011) found that employees who demonstrated a high internal locus of control experienced less psychological distress from interpersonal conflict at work. The researchers found that

this was because those individuals were more likely than their external locus of control counterparts to use problem-solving strategies to manage conflict (Dijkstra et al., 2011). Those with an internal locus of control were likely motivated to adopt an active, rather than a passive, approach to conflict resolution because of their greater belief in their ability to control and change the situation.

The Positive Effects of Autonomy

In an experiment which measured participants' level of accuracy during a button-press task, Legault and Inzlicht (2013) found that autonomy increases self-regulation. Participants' levels of autonomy were measured via a personality scale which established whether individuals possessed an *'autonomous orientation'* which is characterised by a preference for new challenges and opportunities for independence, or a *'controlled orientation'* which involves a preference for structure, deadlines and clear instructions.

Overall, Legault and Inzlicht (2013) found that participants who exhibited greater autonomous motivation made fewer errors during the experimental task than those with a lower sense of autonomy. The researchers suggested that making fewer mistakes is indicative of increased self-regulation which is defined as the ability to monitor and manage our thoughts, emotions, and behaviours.

Also, when errors were made, Legault and Inzlicht (2013) observed error-related negativity (ERN) in participants' brains. This activity is generated by the anterior cingulate cortex when the brain identifies that it has made an error. The researchers found that participants who exhibited greater autonomy also displayed greater ERN. As a result, this study highlighted a possible explanation for the self-regulatory benefits of autonomy: autonomous motivation increases the sensitivity of a neural mechanism which is responsible for detecting self-control errors.

Ultimately, this means that when individuals have a strong sense of autonomy, they are better at recognising and correcting their own mistakes. This finding could therefore be applied to the context of the workplace: giving employees the freedom to complete tasks independently may allow to them become more effective autonomous workers.

Furthermore, Çekmecelioglu and Günsel (2011) highlighted how providing employees with a sense of autonomy can result in several positive outcomes. For example, they found that being given independence and discretion when completing tasks results in higher creativity and improved job performance. The researchers suggested that this was likely due to the sense of empowerment that is associated with autonomy, as well as increased self-confidence and motivation.

Additionally, Çekmecelioglu and Günsel (2011) found that autonomy is also associated with reduced role ambiguity. This is a type of stress that employees can experience when they are uncertain about others' expectations regarding their role. The researchers

suggested that this was likely due to the feeling of control created by a sense of autonomy.

When Autonomy is Threatened

A study by Hoegl and Parboteeah (2006) found that failing to give employees autonomy over operational decisions can inhibit group performance. The researchers found that, if projects largely reflected the external demands of managers due to restrictive instructions and limited freedoms, this meant that employees were less like to identify with the project. This therefore reduced their willingness to contribute to the project.

Overall, Hoegl and Parboteeah (2006) found that a lack of autonomy due to micromanagement reduces the quality of teamwork by negatively affecting the effort expended by individual members, the balance of member contributions, and overall group cohesion.

Additionally, Trépanier, Fernet and Austin (2013) investigated how the satisfaction or unfulfillment of the basic needs identified by self-determination theory, such as autonomy, linked to workplace outcomes. The researchers found that the fulfilment of all three needs that they studied – autonomy, competence, and relatedness – were associated with work engagement and improved job performance. However, only failing to meet the need for autonomy was associated with occupational 'burnout' which is characterised by impaired psychological wellbeing and chronic stress that results in feelings of hopelessness and helplessness.

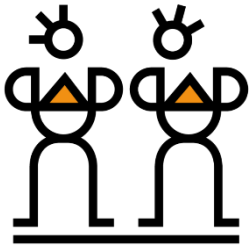
Trépanier, Fernet and Austin (2013) stated that this was an unsurprising finding because the symptoms of occupational burnout clearly reflect the sense of restriction and lack of control that is created by reduced autonomy. Unfortunately, there are a variety of common workplace situations which can result in these negative feelings, such as one's contributions ignored, or being micro-managed or excessively monitored (Trépanier, Fernet and Austin, 2013).

Although this research clearly illustrates the negative effects of failing to satisfy the need for autonomy, Langfred (2004) found that too much freedom can also be damaging to group performance. In this study, the researcher found that high levels of trust within a self-manging team can discourage members from monitoring one another's performance. When this behaviour is combined with high individual autonomy, group performance is inhibited due to reduced coordination and communication between team members.

Consequently, this highlights the importance of achieving an appropriate balance between autonomy and management.

Fairness

Fairness Heuristic Theory



Fairness is defined as the satisfaction of one's subjective expectations for justice (Gołuńska & Holda, 2013). Individuals can differ in their expectations and beliefs about fairness due to the multi-faceted nature of the construct. For example, perceptions of fairness may be based on: whether one feels that they have been given the opportunity to convey their needs, opinions, or concerns, whether one believes that they have been treated with respect, or whether one feels recognised and valued by authority figures (Lind, 2001).

The Fairness Heuristic Theory suggests that investing in interpersonal relationships can be costly if we are not treated fairly (Lind, 2001). For example, on one hand, group membership can provide us with the opportunity to broaden our individual capacities to obtain greater resources and achieve a stronger sense of social identity.

However, on the other hand, affiliation with a wider social group can also leave us vulnerable to exploitation if other members fail to make similar sacrifices for the group. As a result, Fairness Heuristic Theory suggests that we use our perceptions of fairness to shape our interpersonal behaviour and avoid the possible negative outcomes associated with unfair treatment (Lind, 2001).

For example, if individuals believe that they have been treated fairly, they are more likely to promote the needs of the group over their own needs and to engage in more cooperative actions (Lind, 2001). In contrast, if individuals believe that they have been treated unfairly, they are more likely to behave in a self-orientated manner to protect themselves from further exploitation (Lind, 2001).

The Positive Effects of Fairness

Positive responses to fairness are underpinned by a feeling of reward in the brain. For example, Tabibnia, Satpute, and Lieberman (2008) found that, when participants were presented with fair monetary offers from their partners during an experimental sharing task, they exhibited increased activity in the amygdala, striatum, and ventromedial prefrontal cortex.

These brain structures are associated with reward processing and automatic responses. This suggests that responses to fairness are both positive and intuitive (Tabibnia, Satpute & Lieberman, 2008). Moreover, the automatic nature of this response suggests that it may be an evolved mechanism.

For example, an innate preference for fairness would have aided the survival of early humans who lived in small nomadic communities because it would have ensured the equitable distribution of resources and reduced the likelihood of intergroup conflict (Bøggild & Petersen, 2016).

In the context of the workplace, there are a variety of positive outcomes associated with receiving fair treatment, such as experiencing a strong sense of commitment to the organisation, feeling motivated to exhibit helping behaviours, and being driven to engage in effective conflict resolution (van den Bos & Lind, 2002). Also, individuals who believe that they have been treated fairly tend to perform better and report greater job satisfaction (van den Bos & Lind, 2002).

Furthermore, research by Lips-Wiersma, Haar, and Wright (2020) found that fairness is a significant antecedent of meaningful work characteristics, such as unity with others, self-integrity, and balancing workplace tensions.

The Negative Effects of Unfairness

The Ultimatum Game (UG) is a social decision-making task that is often used in psychology experiments to investigate participants' responses to fairness (Gabay, Radua, Kempton, & Mehta, 2014). In this game, the *proposer* receives a sum of money and is asked to choose the amount that they would like to share with the *responder* who can either accept or reject the offer. If the responder chooses to reject the offered amount, both players receive nothing (Gabay et al., 2014).

Takagishi et al. (2009) found that, when participants were presented with an unfair offer, they often exhibited increased brain activation in the anterior insula which is often associated with feelings of disgust. This therefore highlights the intense, negative emotions that we experience in response to unfair treatment. Furthermore, a meta-analysis conducted by Gabay, et al. (2014) found that, when participants chose to reject unfair offers, there were consistent increases in activation in the anterior putamen.

This structure is part of the reward system and is involved in social processing. Consequently, Gabay, et al. (2014) argued that this may reflect the rewarding experience of punishing those who have violated the social norm of fairness. This therefore suggests that revenge can be a pleasurable experience.

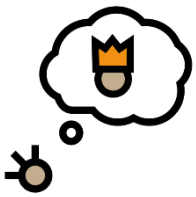
In the context of the workplace, there are a variety of negative outcomes associated with experiencing unfairness. For example, individuals may respond to unfair treatment by; engaging in antisocial or uncooperative behaviours, reporting low levels of job satisfaction and high levels of work stress, or failing to comply with company policies through overt disobedience (van den Bos & Lind, 2002).

These negative responses may be underpinned by a desire for vengeance. For example, Schweitzer and Gibson (2008) found that perceived unfairness increases the use of

unethical behaviours that reflect retaliation and revenge. The researchers also found that engaging in unethical behaviour aimed at the perpetrator of perceived injustice can help individuals to feel more satisfied and less angry (Schweitzer & Gibson, 2008). Overall, this suggests that negative behavioural responses to unfairness are underpinned by strong emotional reactions that motivate individuals to seek retribution.

Expectations

Role Theory



According to role theory, positions in society are underpinned by specific role expectations which reflect both important social norms and shared beliefs about appropriate behaviours (Biddle, 1986).

These expectations are also often shaped by our experiences, thereby suggesting that expectations can be a combination of those that we create for ourselves and those that we perceive to be held by others.

For example, Moore, Grunberg, and Krause (2015) found that employee expectations of professional development support, job training opportunities and rapid promotion were significantly greater amongst 'Generation Y' workers who were born between 1982 and 2000 than 'Baby Boomer' workers who were born between 1946 and 1964. This therefore highlights how perceived expectations can differ between individuals based on their personal characteristics.

Additionally, role theory also suggests that expectations can cause stress for an individual in several ways (Biddle, 1986). Firstly, *role conflict* can occur when an individual is faced with two or more conflicting expectations. This phenomenon is reflected in the experience of many Western women who are often exposed to a conflict between traditional female expectations associated with the role of a housewife and the modern expectations associated with having a successful career (Biddle, 1986).

Furthermore, *role ambiguity* (which involves unclear expectations and insufficient guidance) and *role overload* (which is characterised by too many expectations) can also result in high levels of stress (Biddle, 1986).

Expectations and The Brain

According to Berridge and Kringelbach (2011), the process of experiencing a reward is characterised by three cyclic stages: 'wanting', 'liking', and 'learning'. The 'wanting' stage involves the period of desire or expectation that precedes a reward and the 'liking' stage is defined by the pleasure of experiencing the reward. The separation of these phases is underpinned by neuroscientific evidence that suggests that they are supported by a distinct anatomical pathway.

For example, Salimpoor et al. (2011) observed greater dopamine release in the dorsal striatum during the anticipation of hearing music, whilst brain structures in the ventral striatum exhibited greater dopamine release when participants emotionally experienced the music. Dopamine is a neurotransmitter that is part of the reward system in the brain

which allows us to feel pleasure and satisfaction, so this research illustrates how the mere anticipation and expectation of something good can evoke positive feelings.

Furthermore, the last 'learning' stage of this reward cycle involves strengthening the association between the object that caused the reward and the positive feelings of reward. This will make the object appear more attractive in the future (Berridge & Kringelbach, 2011). Also, this will lead to an increased sense of 'wanting' which heightens our expectations and anticipation for positive future encounters with the object.

Moreover, the brain also responds to the negative experience of unmet or violated expectations. For example, breaches to expectations increases activity in the caudate nucleus in the dorsal striatum which is an area that is associated with trial and error learning (Schiffer & Schubotz, 2011).

In addition, Somerville, Heatherton, and Kelley (2006) found that expectancy violations (which are instances in which our expectations are not met) increase activity in the dorsal anterior cingulate cortex which is a brain structure that is activated following contradictions in information processing (Pavlović, Pavlović, & Lačković, 2009). Ultimately, this suggests that our brain thinks something is 'wrong' when are expectations are not met.

The Power of Expectations

The human brain constantly aims to make predictions by matching incoming sensory information with preconceived expectations (Clark, 2013). As a result, our subjective experiences are heavily influenced by our preconceived ideas about what we will encounter.

This was demonstrated in an experiment by Koyama, McHaffie, Laurienti and Coghill (2005) when they manipulated the amount of pain that participants expected to feel. They found that expectations of decreased pain greatly reduced participants' perceived pain intensity. Moreover, Koyama et al (2005) found that lowering individuals' expectations of pain also reduced activation in brain structures associated with pain, such as the somatosensory cortex.

This demonstrates how expectations not only shape our perceptions, but also the neural processes that underpin our actual sensory experiences. This therefore illustrates the power of our preconceptions: expectations can become reality.

Our expectations can also shape our social perceptions at an interpersonal level. For example, prejudice expectations are characterised by an individual's awareness of their social group's stigmatised identity and therefore an assumption that they will be the target of discrimination (Inzlicht, Kasier & Major, 2008).

Inzlicht et al. (2008) investigated this phenomenon with women who may have prejudice expectations regarding sexism. Participants were presented with videos in which an

animated face slowly changed from an expression of contempt to an expression of happiness across a 15-second period. Half of the faces were male, and half were female. The participants were asked to press a button when they identified the point at which the facial expression began to change.

Inzlicht et al. (2008) found that women with high stigma consciousness were slower to press the button for the male faces than the female faces, meaning that they reported seeing contempt last longer on the male faces. This indicated that women with prejudice expectations were more sensitive to negative social cues from men, and perceived a greater amount of disdain from them, despite there being no real difference. This clearly illustrates how the participants' preconceptions of disrespect or condescension associated with men influenced their perceptions of those that they expected to be perpetrators of sexism.

Overall, this illustrates the importance of recognising our expectations and understanding how they can unconsciously influence our perceptions of others – we can often get what we expect!

Certainty

The Need for Cognitive Closure

Certainty is defined as strong conviction that ones' belief or knowledge about the outcomes of both present circumstances and future events is accurate (Rock & Cox, 2012).

Humans appear to differ in their general desire for certainty. For example, some individuals exhibit a need for cognitive closure (NFCC) which is characterised by a desire for order, consistency, and predictability, as well as a general dislike of ambiguity (Webster & Kruglanski, 1994).

In contrast, other individuals may possess the need to avoid cognitive closure which involves a preference for variety and a high tolerance for uncertainty (Calogero, Bardi, & Sutton, 2009). Some theorists argue that the NFCC can develop in response to various early experiences. This includes being socialised into socio-cultural norms which promote orderliness and clarity, experiencing parental inconsistency as a child which may lead to a learnt association between uncertainty, fear and punishment, or growing up in an unstable environment characterised by life-threatening ambiguity, such as a warzone (Webster & Kruglanski, 1997).

The need for cognitive closure (NFCC) can influence the ideals and values held by individuals. For example, those with a high NFCC tend to value conformity and stability, whilst those with a low NFCC tend to value creativity and new experiences (Calogero, Bardi, & Sutton, 2009).

This may therefore affect how individuals appraise others and therefore who they choose to interact with. For example, people with a high NFCC may negatively view a person as unpredictable, disruptive, and non-committal, whilst those with a low NFCC may positively view the same person as spontaneous, innovative, and flexible. In addition, the need for cognitive closure (NFCC) can also influence an individual's interpersonal skills.

For example, Webster and Kruglanski (1997) argue that a need for closure reduces one's willingness to put cognitive effort into processing new information and trying to understand alternative views. Consequently, this can inhibit their ability to empathise or take the perspective of those with contrasting norms, values, or opinions. This can therefore increase their tendency to reject or avoid those who are dissimilar to them, and thus rely on stereotypical or prejudiced notions (Webster & Kruglanski, 1997).

Overall, this highlights how an individual's ability to both tolerate and appreciate uncertainty has important implications for their everyday social functioning (Rock & Cox, 2012).

Neural Responses to Uncertainty: Threats and Rewards

Familiar situations which lack ambiguity allow our brains to function on 'autopilot' – where structures such as the basal ganglia and motor cortex which are involved in the learning and execution automatic behaviours help to produce 'hardwired' responses – thus allowing us to conserve cognitive resources for more complex tasks (Rock, 2009).

Familiarity also has a rewarding effect on the brain: increased certainty is associated with increased activation in the reward centres of the brain, such as the ventral striatum (Rock & Cox, 2012). However, when uncertainty is encountered, the brain exhibits a threat response by increasing activation in the amygdala which is responsible for diverting attention to potential dangers and triggering the 'flight-or-fight' response (Moseley, 2018). The additional neural energy required to focus on objects or situations that provoke uncertainty can have negative cognitive effects, such as inhibiting memory, diminishing performance, and distracting individuals from the present situation (Rock, 2009). This therefore explains why some individuals appear to 'freeze' in the face of uncertainty.

Nevertheless, when a novel situation creates a moderate amount of uncertainty, the brain can exhibit a mild threat response which produces an optimum amount of adrenaline and dopamine which motivates problem-solving and restructures 'threats' into 'challenges' (Rock, 2009).

Overall, this suggests that the amount of uncertainty perceived by an individual can define whether a situation is identified as overwhelming or manageable – an ability that may be underpinned one's need for cognitive closure.

Conclusion

Interaction Between Needs

Although this paper has primarily focused on each domain in isolation, it is important to highlight how each of the Be SAFE and Certain needs are interconnected. Overall, there are four possible types of interaction between these different elements. Firstly, the satisfaction of one need can result in the fulfilment of another. For example, Lout and Pettit (2012) found that satisfying an individual's need for status can contribute to their feeling of belonging.

The researchers found that having status alters one's perceptions of other people's intentions: those with high status tended to trust others more than those with low status because they were more likely to believe that other people held positive, benevolent intentions toward them (Lout & Pettit, 2012).

Secondly, the satisfaction of one psychological need can result in the unfulfillment of another. For example, fulfilling one's need for certainty can inhibit an individual's ability to establish social belonging. As previously discussed, Webster and Kruglanski (1997) argue that a need for cognitive closure reduces one's willingness to put cognitive effort into processing new information and trying to understand alternative views.

Consequently, this can inhibit some people's ability to empathise or take the perspective of those with contrasting values, thereby increasing their reliance on stereotypical concepts which can be perceived as discriminatory (Webster & Kruglanski, 1997).

Thirdly, the unfulfillment of one need can result in another need also being unmet. For example, failing to satisfy one's need for clear expectations can threaten their sense of certainty. According to role theory, when employees experience role ambiguity (which is characterised by vague or unclear expectations) this can leave them feeling uncertain about what tasks they should be doing (Eatough, Chang, Miloslavic, & Johnson, 2011).

Moreover, this can hinder an employee's ability to capitalise on opportunities to pursue their goals within the organisation, thereby resulting in more general uncertainty about their future at the company (Eatough, et al., 2011).

Finally, the unfulfillment of one need can, surprisingly, result in the satisfaction of another. For example, the uncertainty-identity theory highlights how feelings of self-uncertainty can motivate individuals to increase their identification with their group, thereby using their sense of belonging as a defensive mechanism (Hogg, 2009).

Self-Awareness

Increasing our understanding of how the satisfaction or unfulfillment of the fundamental needs emphasized by the Be SAFE and Certain model can affect our own behavioural tendencies and emotional reactivity can enhance our ability to manage our responses to threats and rewards.

This self-awareness is particularly significant because the importance and value attributed to each psychological need varies hugely between individuals (Rock & Cox, 2012). For example, as previously discussed, people differ in their preferences regarding certainty – some individuals have a need for cognitive closure, whilst others possess a need to avoid cognitive closure (Webster & Kruglanski, 1994; Calogero, Bardi, & Sutton, 2009).

One strategy for improving our responses to psychological threats is engaging in mindfulness. This is a meditative technique that enables individuals to consciously focus their attention on their moment-by-moment experiences and thus reduce their emotional reactivity to present events (Didonna, 2008).

This technique works by increasing activity in the prefrontal cortex which is involved in emotion regulation and decision-making (Treadway & Lazar, 2008). Mindfulness also appears to enhance the capacity of the prefrontal cortex to inhibit and regulate responses from the amygdala when individuals are presented with threatening emotional stimuli (Treadway & Lazar, 2008). This is important because the amygdala is responsible for the primitive 'fight-or-flight' response which can lead to adrenaline-fuelled reactions.

Leadership

An awareness of how the satisfaction or unfulfillment of these needs may affect other people can also improve one's leadership ability and capacity for effective collaboration. For example, a skilled leader will possess an understanding of how their behaviour may induce feelings of threat or reward in others (Rock, 2009).

For example, employees may feel that they belong to the group when they receive positive social feedback in the form of compliments regarding their performance. Similarly, employees may experience a sense of status if they are told that their contributions are valuable, and they may feel that they have autonomy when they are not micro-managed. Also, employees might believe that they receive fair treatment if they are given the opportunity to voice their opinions and concerns. Additionally, employees may experience a sense of reward from being given clear expectations regarding their role, and they may also feel a sense of certainty when the team has a clear, structured plan to maintain productivity.

This suggests that the role of a leader involves being able to recognise situations in which individuals may feel psychologically threatened (Rock, 2009). For example, if changes are

made to the procedures of a team without consultation or input from the employees, individuals may experience a sense of unfairness and a lack of status because this suggests that their opinions do not matter to the managerial team. If these situations are unavoidable, a leader must then try to offset the potential negative outcomes of unsatisfied needs by attempting to fulfil other needs.

For example, a leader could increase the sense of belonging experienced by their employees by creating shared goals to overcome challenges that are related to the imposed changes, thus highlighting that the team will adapt and thrive together. As a result, this emphasises the potential power of leaders to increase rewards in one area in order to balance threats to another.

Overall, this highlights how an understanding of the fundamental needs emphasized by the Be SAFE and Certain model can be used by leaders to create a positive environment in which individuals can perform to the best of their ability because they feel cognitively rewarded.

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