Transformative learning through mindfulness: Exploring the mechanism of change

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Making appropriate perspective transformations as we age is necessary to meet the demands of the rapidly changing conditions within our world. Accordingly, there has been a growing interest in the role of mindfulness in enabling transformations. Still, how mindfulness may facilitate perspective transformations is not well understood. The present paper draws from empirical evidence from psychology and cognitive science to discuss the theoretical possibility that mindfulness may facilitate perspective transformations. A theoretical model is presented that depicts an incremental transformative learning process that is facilitated through mindfulness. Mindfulness affords the adult enhanced attention to their thoughts, feelings, and sensations as they arise in the present moment experience. This metacognitive awareness may moderate the expression of motivational disposition for the present moment behaviour, enabling a more objective assessment of the conditions of the situation. Nonetheless, in accordance with transformative learning theory, an adult would have to become critically aware of and analyse the assumptions that underlie the reasons why they experience as they do in order to convert behaviour change to perspective transformation. Further empirical studies are

necessary to test this assumption of the theoretical model presented in the present paper.

Keywords: *Adult learning, Jack Mezirow, transformative learning theory, mindfulness, perspective transformation, lifelong learning*

Introduction

Understanding how to realise the potential of humans and our sustainable development consists of considering human development from diverse perspectives (Cunningham, 2019; Duke, 2018). This paper addresses a timely issue concerning the need to understand how adults can meet the demands of their ever-changing world through perspective transformations and how mindfulness might facilitate self-directed and appropriate transformational change: a fundamental part of a process of lifelong learning and our continued development (cf. Brown, 2018).

Modern day environmental conditions are rather turbulent and perspective transformations are distinctly advantageous for individuals and societies: there is an ever-growing need for persons who can adapt to change and ambiguity and enact transformations in their meaning perspectives in accordance with their changeable environments (e.g. Longmore, Grant, & Golnaraghi, 2017; Morris, 2018, 2019a, b). The process of transformation is a learning process that involves change in meaning perspectives, especially through everyday informal life experience, where there is an interaction between the learner and their social environment (cf. Akinsooto & Akpomuje, 2018), which includes e-learning experiences (e.g. de Palo, Limone, Monacis, Ceglie, & Sinatra, 2018). Gould (1978) summarised the result of not undertaking transformations: people move sideways in their lives without significant change or growth.

The process of transformation of meaning perspectives has been defined as "the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience as a guide to future action" (Mezirow, 2012, p. 74). An alternative definition was given by Cranton and Wright (2008): "a process by which individuals engage in critical self-reflection that results in a deep shift in perspective toward a more open, permeable, and better justified way of seeing themselves

and the world around them" (pp. 33–34). The transformative learning process, which necessitates that the adult becomes critically aware of and analyses the assumptions that underlie the reasons why they experience as they do, has been positioned as fundamental for human development in our rapidly changing world (Ardelt & Grunwald, 2018). In this regard, in accordance with transformative learning theory, the transformation process can be either epochal (sudden) or incremental (refer to Mezirow, 2012).

Nonetheless, Klein (2018) discussed how "distractions" within contemporary living might detract persons from the mindful awareness needed to enable transformations. In this respect, in recent years there has been an exponential growth in interest in mindfulness (Aldwin, 2015; Hyland, 2017; Miller, 2015; Roeser, 2013). Mindfulness in the present paper is defined in accordance with contemporary psychology as a state or mode of paying particular attention to the present moment experience. Recent research in the field has included understanding how mindfulness may facilitate transformations (e.g. de Angelis, 2018; Hussein, Bedasa, & Mengistu, 2019; Klatt, 2017; Klein, 2018; Lear, 2017) and how mindfulness might be realised in formal educational settings (e.g. Carboni, Roach, & Fredrick, 2013; Frank, Jennings, & Greenberg, 2013; Singh, Lancioni, Winton, Karazsia, & Singh, 2013). In reference to the work of Boyd and Myers (1988), Lear (2017) made the connection between the role of mindfulness and discernment. She explained, "Mindfulness… allows us to slow down and attend to the body, the voices, and senses within. Such knowledge is used spontaneously and intuitively; we become more flexible and open to change" (p. 282).

Still, how mindfulness may facilitate perspective transformations is not well understood. In this paper, a review of the process of perspective transformation is presented, followed by an analysis of the potential of mindfulness for facilitating meaning perspective transformations.

Transformative learning theory – our frames of reference

Frames of reference

In accordance with transformative learning theory, a phenomenon of adulthood is that an adult's biography can take a stronghold in determining how he or she perceives themselves and the world around

them (Arnold, 2017; Varela, 1984; Watzlawick, 1984). Consequently, an adult can "get caught" in their personal history and practice reliving it (Mezirow, 1978, 1991, 2009). Thus, irrespective of the changing social contextual conditions within the present moment life-situation **of the adult, he or she may display a tendency to, habitually, repeat patterns in their behaviour, which includes ways of perceiving, thinking,** judging, feeling, and acting (Arnold, 2017). However, as outlined in the **introduction section of this paper, the process of routinely applying old frames of reference to new life situations could be distinctly disadvantageous for an adult – especially in the face of rapidly changing** social contextual conditions. Specifically, it is possible that an adult's behaviour is no longer fitting, or "as fitting", as it could be in the new present moment life situation (cf. Morris, 2019a).

Examining transformative learning theory through a socio-constructivist perspective, Cranton and Wright (2008) identified that an adult's **experiences from culture, community, and family determine their meaning perspectives in which they frame their lives. They discussed** that the process of socialisation fosters "habits of the mind" (p. 34) – or **frames of reference: an adult's meaning perspectives through which new experience is construed. Moreover, Mezirow (1991) exampled** the "formative learning [that] occurs in childhood through sociali[s] **ation (informal or tacit learning of norms from parents, friends, and** mentors that allows us to fit into society) and through our schooling" (p. 1). He identified that meaning perspectives are, in this regard, "uncritically assimilated" (p. 4) – strengthened by exposure to similar socialised experiences that accommodate, but then validate the "truth" or "fittingness" of the meanings that we make of experience (cf. Piaget, 1981). In such circumstances, meaning-making of experience is uncritically **construed and as a consequence the frames of reference become habits of** expectations (cf. Morris, 2019c, 2020; Mezirow, 1981, 1991).

In this regard, in accordance with constructivist theory, two implicit cognitive processes, assimilation and accommodation, work reciprocally in the process of meaning-making (Piaget, 1981; Rogers, 1969). Assimilation concerns how new perceptual information is "fitted" into **established knowledge structures. Accommodation refers to the process** whereby existing knowledge structures are modified by experience. When **an attempt is made to learn something new, validation is automatically** and first sought; whereby, meaning is construed via the employment of

established knowledge structures, or meaning schemes (Varela, 1984; Watzlawick, 1984). In this regard, an adult's frames of reference consist of meaning schemes, or "habits of expectations... which serve as selective codes governing perception and comprehension" (Mezirow, 1991, p. 37) and are "made up of specific knowledge, beliefs, value judgments, and feelings that constitute interpretations of experience" (ibid, pp. 5–6). Thus, because an adult's frames of reference are determined by their personal biography, frames of reference will likely differentiate between adults, but hold some similarities that are gained through social transactions. However, from the perspective of transformative learning theory, without gaining a critical awareness of one's frames of reference and the assumptions that underlie these meaning perspectives, that determine how an adult "pattern[s]" his or her life (Mezirow, 1978, p. 101), an adult may display repetitive habitual patterns of perceiving, thinking, judging, feeling, and acting (Arnold, 2017).

Moreover, it is important to point out that adult learning literature on transformative learning theory and indeed the major adult learning theories generally position with a constructivist learning perspective (Merriam, Caffarella, & Baumgartner, 2007). However, the present paper draws on recent empirical evidence concerning what is known about cognition and the human perceptual process – through a cognitivist lens – which provides a differential way of viewing the process of transformative learning and how mindfulness could feasibly facilitate the process.

Perceptual processes

In perceptual terms, according to cognitivist theory, an adult's frames of reference concern "top-down processes" that utilise past knowledge structures to make sense of the information acquired in the present moment (Gilbert & Sigman, 2007; Kinchla & Wolfe, 1979). One key advantage of top-down processes is that they enable a person to predict future, up and coming, perceptual information, which affords us with the ability to act and react very quickly. Specifically, it is thought that temporal and spatial patterns of neural activity within the neocortex permits this prediction (George & Hawkins, 2005, 2009). Thus, the adult brain is in a constant state of anticipating future perceptual inputs via monitoring spatial and temporal patterns of the information input (cf. Zacks, Speer, Swallow, Braver, & Reynolds, 2007). This

cognitive activity happens subconsciously, or implicitly, representing an automatic process that happens without conscious intervention (cf. George & Hawkins, 2005, 2009; Wilson, 2002).

In this respect, Gilbert and Sigman (2007) noted that it is becoming increasingly clear through empirical evidence that top-down processes influence even the earliest stages of sensory processing, including the regulation of attention. Consequently, what is particularly important in respect of adult learning is that an adult's frames of reference will guide what he or she perceives and how they make-meaning of a present moment experience.

Motivational dispositions

At the same time, a distinct disadvantage of top-down influence is its "unconscious" operational nature that guides implicit motivational disposition for behaviour (Levesque & Brown, 2007; Wilson, 2002). One possible consequence is the automatisation of day-to-day behaviour driven by implicit motivational disposition (Levesque & Brown, 2007; Wilson, 2002), where an adult's behaviour is driven by their predetermined frames of reference that are habitually drawn upon without conscious intervention. Top-down influence, represented by implicit motivational disposition, is echoed in patterns of perceiving, thinking, judging, feeling, and acting that tend to repeat themselves (Arnold, 2017; Mezirow, 1991). Subsequently, without proactive intervention, it is possible that "internal control" over meaning-making of experience is not fully realised (Gilbert & Sigman, 2007; Varela, 1984; Wilson, 2002). This idea was depicted in the words of James (1907) that "[c]ompared with what we ought to be, we are only half awake" (p. 322). In sum, top down influence appears to be responsible, at least in part, for the phenomenon of an adult's nature of holding onto certainty, where an adult might not habitually tend toward transformations across the course of their life.

The transformation process

In accordance with transformative learning theory, the transformation process involves gaining a critical awareness of one's cultural and psychological assumptions regarding how we see our relationships and ourselves (Mezirow, 1978). The process of transformation is concerned

principally with a change of one's frames of reference, or in other words, "a movement through time of reformulating reified structures of meaning by reconstructing dominant narratives" (Mezirow, 2012, p. 84). In a review of Mezirow's conceptualisation of transformative learning theory, Calleja (2014) summarised that the transformation process "is about becoming aware of one's own and others' tacit assumptions and expectations, and assessing their relevance for making an interpretation" (p. 119).

Through their seminal empirical study, Mezirow and Marsick (1978) proposed ten phases of perspective transformation (refer to Mezirow, 1991): (1) A disorienting dilemma; (2) self-examination; (3) critical assessment of assumptions; (4) recognition; (5) exploration; (6) planning; (7) knowledge and skill acquisition; (8) testing; (9) competence and confidence building in new roles and relationships; and, (10) application of revised meaning perspectives. More recently, other dimensions of perspective transformations have been addressed, such as contextual, spiritual, and relational considerations (Cranton & Taylor, 2012).

Gaining a critical awareness of our formulated meaning perspectives, and how they were formulated, is key to the process of perspective transformation; this involves an adult critically reflecting on (1) the process and conditions of their experiencing, and (2) the reasons why they experience as they do (Mezirow, 1991). Mezirow (1991, p. 5) discussed that "[w]e allow our meaning system to diminish our awareness of how things really are in order to avoid anxiety, creating a zone of blocked attention and self-deception". Moreover, nonetheless, "[o]vercoming limited, distorted, and arbitrarily selective modes of perception and cognition through reflection on assumptions that formerly have been accepted uncritically is central to development in adulthood" (ibid). Ultimately, perspective transformation,

> *is about more than becoming aware of one's own awareness. Its goal is to help learners move from a simple awareness of their experiencing to an awareness of the conditions of their experiencing (how they are perceiving, thinking, judging, feeling, acting – a reflection on process) and beyond this an awareness of the reasons why they experience as they do and to action based upon these insights. (Mezirow, 1991, p. 197)*

In this regard, the dynamics of perspective transformation should be considered (cf. Mezirow, 1978). In particular, that the transformation process consists of sequential restructuring of one's frames of reference that determine how he or she makes meaning of the present moment experience. Mezirow (ibid) referred to the work of Bruner (1970) who used the term "decentration", which describes the process of moving "through successive transformations toward analy[s]ing things from a perspective increasingly removed from one's personal and local perspective" (Mezirow, 1978, p. 104). Decentration involves the ability to pay attention to multiple conditions of the present moment experience, rather than being confined to or being biased in attending toward single or certain conditions – restrained by frames of reference that provide a boundary for making meaning of the present moment experience. In this respect, Kegan (2009) made the key distinction that the process of transformation is not concerned with what information we know, but rather our way of knowing; highlighting the point that over time the ways we understand and construct experience can become more complex. In the following section, the concept of mindfulness is defined and discussed in respect of how mindfulness is a mode characterised by vividness and clarity toward the present moment experience and how mindfulness can facilitate transformations.

Mindfulness

Mindfulness has its roots in Buddhism and other contemplative traditions and is most commonly defined as the state of being awake to what is taking place in the present moment experience (Kabat-Zinn, 1994, 2003). In this regard, Kabat-Zinn (1990) wrote,

> *Moments of mindfulness are moments of peace and stillness, even in the midst of activity. . . It takes a while to get comfortable with the richness of allowing yourself to just be with your own mind. It's a little like meeting an old friend for the first time in years. (p. 60)*

In the forthcoming sections, conceptual links are made between transformative learning theory and mindfulness. Specifically, it seems feasible that mindfulness may facilitate an incremental transformation process, as mindfulness enables metacognitive awareness of one's perceiving, thinking, judging, feeling, and acting relative to the

conditions of their experience (Baer, 2003; Brown & Ryan, 2003; Keng, Smoski, & Robins, 2011). The role of mindfulness as a facilitator of **transformative learning appears feasible given that the transformative** learning process demands "generating opinions and interpretations that are more justified" (Mezirow, 2012, p. 85). Importantly, only through mindful self-examination can one begin to generate and appreciate alternative options and interpretations (Arnold, 2017).

Although there are considerable similarities to the meaning of mindfulness in Buddhism and other contemplative traditions, mindfulness in contemporary psychology has a unique definition. The **most agreed upon conceptualisation of mindfulness in contemporary** psychology is a two-dimensional view. In this respect, Bishop et al. (2004) proposed a two-factor model, defining mindfulness as a mode of "awareness and responding skilfully to mental processes that contribute to emotional distress and maladaptive behaviour" (p. 230). The first **factor concerns a particular mode of attention that focuses on the present moment experience. The second factor concerns emotional regulation.**

Attention

In mindfulness, a particular state of awareness is gained that enables fuller attention to sensations, thoughts, and feelings as they arise. In this regard, Bishop et al. (2004) explained,

> *Mindfulness begins by bringing awareness to current experience – observing and attending to the changing field of thoughts, feelings, and sensations from moment to moment – by regulating the focus of attention. This leads to a feeling of being very alert to what is occurring in the here-and-now. It is often described as a feeling of being fully present and alive in the moment. (p. 232)*

Mindfulness is characterised by vividness and clarity toward an experience (Brown & Ryan, 2003). Sauer et al. (2013) referred to a "vivid **awareness" of sensory and mental processes within the present moment** experience. Kabat-Zinn (1994) discussed that mindfulness refers to the particular way in which attention is payed: "on purpose, in the present moment, and nonjudgmentally" (p. 4) and he later defined mindfulness

as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145).

Rather, a lack of mindfulness is characterised by rumination and absorption in the past and overly fantasising and worrying about possibilities in the future and, thus, taking the person away from attending fully to the experience of the present moment (Brown & Ryan, 2003). Importantly, a lack of mindfulness leads to the potentiation and enactment of automatic and habitual behaviour (Levesque & Brown, 2007).

Acceptance

When considering the second dimension, emotional regulation, acceptance appears to be the starting point. In this regard, Hayes et al. (1999) explained, "[e]tymologically, 'acceptance' derives from a word meaning 'to take or receive what is offered'" (p. 34). Therefore, mindfulness is a mode that encourages a stance of acceptance. Through this active process, careful notice is taken of each thought, feeling, and sensation as they arise in a deliberate and non-judgemental way (Bishop et al., 2004; Hayes et al., 1999).

Mindfulness is a mode indicative of paying attention to and acknowledging each thought, feeling, and sensation: becoming familiar with one's subconscious patterns. Once a thought, feeling, or sensation is acknowledged, during the mode of mindfulness the person directs attention immediately and deliberately back to the present moment (Baer, 2003; Davidson et al., 2003). Mindfulness thus involves the observation of one's sensations, thoughts, and emotions: not to evaluate them in the present moment experience, but rather to note their impermanence and simply to observe whatever is happening in each moment (cf. Baer, 2003).

The skill of mindfulness

There is sufficient empirical evidence that the skill of mindfulness can be developed with practice (e.g. Davidson et al., 2003; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). This includes the skill in sustaining the mindfulness mode. Bishop et al. (2004) positioned mindfulness as more of a state than a trait and explained, as mindfulness can be purposely initiated and sustained but when no such attention is regulated in this way mindfulness will cease. Although mindfulness is

a skill that can be developed through practice, it is also apparent that genetic disposition has a central role of influence upon tendency toward this state-like mode.

In this respect, Brown and Ryan (2003) proposed that personality characteristics of the individual play a key role. The authors concluded that although the capacity for mindfulness is a given (a) there are individual differences in propensity or willingness toward mindfulness, and (b) mindful capacity varies within persons. In sum, a combination of genetic disposition and mindful training may thus determine skill and inclination toward mindfulness.

Mindfulness as a facilitator of perspective transformations

Since the 1970s, empirical evidence has been gathering regarding how mindfulness can act as a positive self-regulating process. For instance, Shapiro, Carlson, Astin, and Freedman (2006) made the conceptual links between attention, attitude, and intention. They suggested that these axioms of mindfulness are not separate stages, but are interwoven aspects of the process and occur simultaneously. The authors made the hypothesis that these three axioms account for a large proportion of variance in an individual's transformations: attention that is open and non-judgemental leads to "reperceiving" – a shift in perspective – viewed as a "meta-mechanism of action" (p. 377).

Building upon this perspective, in an innovative study Levesque and Brown (2007) conceptualised mindfulness as a pre-response "gatekeeper". The gatekeeper acts to moderate the relationship between implicit motivational processes and behaviour. Their empirical research shows that mindful individuals are more likely to modify their expression of their implicit motivational orientations when desirable. Moreover, Karelaia and Reb (2015) explained that mindfulness may increase the number and quality of options being considered by a person. In this regard, Teasdale and colleagues (Teasdale, 1999; Teasdale et al., 2002) described this phenomenon as metacognitive insight: "actually *experiencing* thoughts as thoughts" (that is, as events in the mind rather than as direct readouts on reality) in the moment they occur" (Teasdale et al., 2002, p. 286, emphasis in original).

Furthermore, Kabat-Zinn (1990) suggested that mindfulness leads to the understanding that conditioned responses are what they are –

conditioned responses – rather than an accurate reflection of truth or reality. Linehan (1987) concurred with this underlying assumption, that thoughts, feelings, and sensations are not always accurate reflections of "reality". Importantly, metacognitive insight may moderate "automatic" **behavioural patterns, which would otherwise occur in the absence of any conscious involvement or intervention, triggered by cues within the** environment (cf. Baer, 2003; Bargh, Chen, & Burrows, 1996; Bishop et al., 2004). In this respect, Baer (2003) pointed out that,

> *Training in self-directed attention can result in sustained exposure to sensations, thoughts, and emotions, resulting in desensiti[s]ation of conditioned responses and reduction of avoidance behaviour… cognitive change appears to result from viewing one's thoughts as temporary phenomena without inherent worth or meaning, rather than as necessarily accurate reflections of reality, health, adjustment, or worthiness. (p. 130)*

Moreover, Robins, Keng, Ekblad, and Brantley (2012) elaborated further on this explanation and described mindfulness as an "additional" learning process, or higher order process. They explained that, "[o]ver time, **individuals might develop greater insight into their habitual tendencies of thinking, which then allows them to alter negative patterns of thinking and/or react differently to them" (p. 118).**

In this regard, there is empirical evidence from various clinical studies which shows that mindfulness training can assist adults to "step-out" **of unfavourable patterns of behaviour. Examples include, but are not limited to, reducing the ruminative patterns associated with anxiety and** depression (Hofmann, Sawyer, Witt, & Oh, 2010), the reduction of binge eating (Kristeller & Hallett, 1999; Mantzios & Wilson, 2015), and a range of other health benefits (refer to Eberth & Sedlmeier, 2012; Grossman, Niemann, Schmidt, & Walach, 2004 for reviews).

For instance, in a meta-analytical review of empirical studies that examined the effect of mindfulness-based interventions upon a range of health conditions (39 studies, N = 1,140 in total) Hofmann et al. (2010) concluded that mindfulness-based interventions are promising, in particular, for **treating anxiety and mood problems in clinical populations (with effect sizes** of 0.97 and 0.95 [Hedges' g] for improving anxiety and mood symptoms, respectively). However, van der Velden et al. (2015) pointed out, in their systematic review of empirical mindfulness-based intervention studies with

clinical depressive populations, that little is known about precisely *how* such mindfulness-based interventions work. They further discussed that research that assists to understand the mechanisms of change, especially regarding how to achieve long-term change, could inform our scientific understanding of the processes leading to therapeutic change; which could in turn help therapists and treatment developers to improve patient treatments, especially treatments that lead to long-term transformations.

In this regard, scholars have considered that mindfulness may function as an "additional" learning process (cf. Robins, Keng, Ekblad, & Brantley, 2012), but, to date, not as a *transformative learning* process. In this regard, it is important to point out that considering the change process as one of "transformative learning" rather than just one of "learning" seems fundamental, because transformative learning is associated with deep, meaningful, and *long-term* perspective transformation (rather than, perhaps, short-term behaviour change). The present paper is therefore novel in this respect and presents a theoretical model (cf. Figure 1), grounded from studies in psychological, cognitive, and adult learning science domains, which provides a new direction for further empirical investigations.

Contributions to transformative learning theory

Based on the discussion above, Figure 1 depicts a summary of an incremental transformative learning process that is facilitated through mindfulness. A key assumption of the model is that it does not intend to represent all forms of transformative learning, but rather that mindfulness is one potential facilitator of perspective transformations in certain situations. The model is now discussed in further detail.
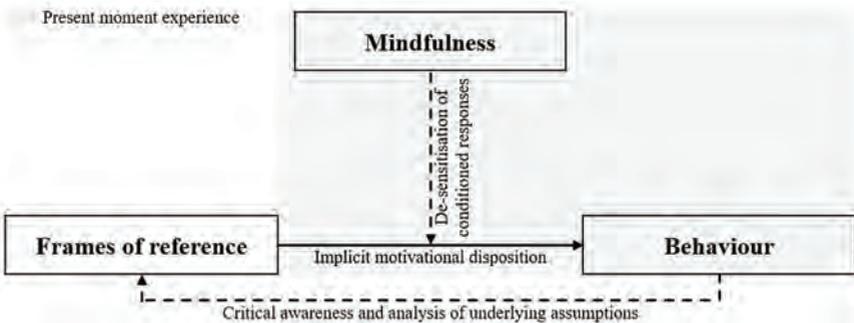

Figure 1. The Incremental Transformative Learning Process Through Mindfulness

Present moment experience

In terms of transformative learning theory, one's frames of reference act to govern perception and comprehension by providing implicit motivational disposition for his or her present moment behaviour (Mezirow, 1978, 1991, 2012). These frames of reference may represent "limited, distorted, and arbitrarily selective modes of perception and cognition" (Mezirow, 1991, p. 5). In this respect, Figure 1 shows that an adult's frames of reference act as a top-down influence in an "unconscious" operational nature and guide one's implicit motivational disposition for behaviour.

However, in the present paper, I have discussed empirical studies that suggest that the mode of mindfulness affords the adult enhanced attention to their thoughts, feelings, and sensations as they arise in the present moment experience – metacognitive awareness of the conditions of their frames of reference. This metacognitive awareness may moderate the expression of motivational disposition for the present moment behaviour, termed desensitisation of conditioned responses (Figure 1): enabling a more objective assessment of the conditions of the present moment situation. Because mindfulness is defined and characterised by "bringing a sense of objectivity" to the present moment experience it seems feasible that the mindfulness mode can assist the transformative learning process in terms of encouraging decentration, which involves "analy[s]ing things from a perspective increasingly removed from one's personal and local perspective" (Mezirow, 1978, p. 104).

The key benefit for the adult in this regard is that mindful individuals increase the number and quality of options being considered and consequently adults are more likely to modify their expression of their implicit motivational orientations when desirable (cf. Figure 1); when they consider that their implicit motivational dispositions for behaviour are not fitting for the conditions of the present moment experience. Thus, mindfulness can result in (1) a reduction in avoidance behaviour, and (2) present moment behaviour that is based on an increased number and quality of options being considered.

Critical awareness and analysis of assumptions

In accordance with transformative learning theory, the process of perspective transformation concerns a process of an adult moving

toward a "more open, permeable, and better justified way of seeing themselves and the world around them" (Cranton & Wright, 2008, pp. 33-34). Mezirow (1991) proposed however that to achieve this deep and meaningful change involves an adult becoming critically aware of and analysing, *both*, "the conditions of their experiencing (how they are perceiving, thinking, judging, feeling, acting – a reflection on process) and… the reasons why they experience as they do" (Mezirow, 1991, p. 197). These are two key assumptions of the transformative learning process that underline transformative learning theory (Mezirow, 1978, 1991, 2012).

In this respect, the mindfulness mode may satisfy the former of these two assumptions, by affording the adult enhanced attention to and awareness of their thoughts, feelings, and sensations as they arise in the present moment experience – which is a reflection on the process and the conditions of their experiencing. Nonetheless, in accordance with transformative learning theory, in order to enable transformations in the adults underlying frames of reference, the adult learner would also have to satisfy the latter of these two assumptions. That is, the adult must become critically aware of and analyse the reasons why they experience as they do. This is depicted as a necessary stage of the transformation process in Figure 1.

Furthermore, empirical studies are required to test the theoretical model presented in Figure 1. An important direction for further studies on mindfulness and transformations, therefore, concerns testing this second assumption of transformative learning theory – that to convert behaviour change to change in meaning perspectives would necessitate the adult becoming critically aware of and analysing the assumptions that underlie the reasons why they experience as they do. In the studies examined in the present research, which provided accounts of transformations facilitated through mindfulness, it is possible that, for some adults, the enhanced attention to and awareness of their thoughts, feelings, and sensations as they arose in the present moment experience might have encouraged them to begin to examine the assumptions that underlie their frames of reference and where these assumptions came from (cf. Figure 1). Qualitative studies with semi-structured interviews could examine this possibility by analysing the process of perspective transformations facilitated through mindfulness. Moreover, it is also possible that some adults would benefit from support in this regard. For example, a therapist or educator could provide support by prompting

the adult to deeply and critically reflect on the assumptions that underlie their frames of reference, and where they came from. In this regard, for example, a randomised-controlled trial could employ a mindful intervention with or without a support treatment, to examine and test this model assumption (cf. Figure 1).

Conclusion

The present paper draws from empirical evidence from psychology and cognitive science to discuss the theoretical possibility that mindfulness may facilitate perspective transformations. Mindfulness denotes a skill that can be learned and practised, but genetic dispositional differences should also be considered. Empirical research shows that mindful individuals are more likely to modify their expression of their implicit motivational orientations when desirable. Mindfulness leads to the understanding that conditioned responses are what they are – conditioned responses – rather than an accurate reflection of truth or reality.

In the present paper, a theoretical model is presented that depicts a summary of an incremental transformative learning process that is facilitated through mindfulness (Figure 1). A key assumption of the model is that it does not intend to represent all forms of transformative learning, but rather that mindfulness is one potential facilitator of perspective transformations in certain situations. Specifically, mindfulness affords the adult an enhanced attention to their own thoughts, feelings, and sensations as they arise in the present moment experience. This metacognitive awareness may moderate the expression of motivational disposition for the present moment behaviour, termed desensitisation of conditioned responses: enabling a more objective assessment of the conditions of the present moment situation.

The key benefit for the adult in this regard is that mindful individuals increase the number and quality of options being considered and consequently adults are more likely to modify the expression of their implicit motivational orientations when desirable. This would seem especially important when an adult's implicit motivational disposition for behaviour is not fitting for the conditions of the present moment behaviour – especially relevant in modern day environmental conditions that are rather turbulent. For the adult, mindfulness can result in (1) a reduction in avoidance behaviour, and (2) present moment behaviour

that is based on an increased number and quality of options being considered. Nonetheless, in accordance with transformative learning theory, an adult would have to become critically aware of and analyse the assumptions that underlie the reasons why they experience as they do in order to convert behaviour change to perspective transformation – which represents a deep and meaningful shift in perspective toward a more open and justified way of meaning-making. Further empirical studies are therefore necessary to test the theoretical model presented in the present paper.

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