

Some Concerns About the Psychological Implications of Mindfulness: A Critical Analysis

Daniel David

Published online: 15 October 2014
© Springer Science+Business Media New York 2014

Abstract In this critical analysis, we discuss the construct of mindfulness and address a number of theoretical inconsistencies and potential practical consequences of mindfulness-based clinical practices. We argue that mindfulness practices are potentially powerful psychological interventions that should be well circumscribed (1) to assure clinical safety and access to the best available clinical practices and (2) used as part of a multi-component intervention or as a stand-alone treatment, particularly when empirically supported treatments such as cognitive-behavioral therapies have not achieved desired outcomes.

Keywords Mindfulness · Meditation · Critical analysis · Risks · Panacea

Don't bite my finger, look where I am pointing (McCulloch).

Introduction

According to the Second Noble Truth of Buddhism, suffering (e.g., psychological/emotional distress) ensues from our worldly *attachments* (e.g., needs/desires/wishes/aims/goals). In Buddhism, mindfulness meditation is one of the eight steps of the Marga path—that includes other types of meditation too—intended to help human beings achieve *detachment*, crucial to the end of suffering and attain Nirvana. Accordingly, the aim of mindfulness meditation is liberation from both ego-driven clinging to the cravings of everyday life and from perceptions and self-identity (collectively the “illusory world”) based on personal and social construction. The mechanism for achieving this liberation is *detachment* from our needs/desires/

D. David (✉)
Babeş-Bolyai University, No. 37 Republicii St., 400015 Cluj-Napoca, Romania
e-mail: daniel.david@ubbcluj.ro

wishes/aims/goals. To activate detachment, the goal of mindfulness meditation is to cultivate dispassionate non-judgmental/non-evaluative moment-by-moment awareness of the present experiences, such that individuals do not “cling to” any particular thought, emotion, perception, or sensation (David et al. 2013).

Although the main aim of mindfulness meditation in Buddhism is to attain Nirvana (and/or intermediary higher states of consciousness), mindfulness appears to have secondary psychological consequences that exert a positive impact on mental health and which have become primary goals of mindfulness practice in secular society and clinical practice in particular. Indeed, in psychotherapy, mindfulness practices are often used as emotion regulation strategies (see Brown et al. 2013), particularly for regulating dysfunctional feelings (i.e., distress, emotional problems, and emotional disorders). Mindfulness can be used to advantage independently, as in mindfulness meditation/MM, as well as in the context of multimodal treatments (e.g., mindfulness-based stress reduction/MBSR—Kabat-Zinn 1982; mindfulness-based cognitive therapy/MBCT—Segal et al. 2012).

In psychological terms, detachment activated by mindfulness meditation can be conceptualized as a reduction in motivational relevance, namely (see Grossman et al. 2004) a dispassionate and non-evaluative stance towards the world (i.e., the external and internal stimuli we encounter on a continuous, everyday basis). According to classical emotional theories (see Lazarus 1991), motivational relevance (i.e., the relevance of an event to our needs/desires/wishes/aims/goals) is one of the key primary appraisal mechanisms involved in the generation of human feelings. Accordingly, mindfulness practice, by engendering detachment, decreases motivational relevance from events that activate thoughts that produce feelings (see also Brown et al. 2013). Mindfulness practice can also focus directly on thoughts and feelings, thus attenuating their motivational relevance by approaching them from a dispassionate and non-evaluative perspective. We should make here a clear distinction between mindfulness and various experiential stances. Although mindfulness involves a clear distinction between (1) self (“I”), (2) the mental act (“I see”), and (3) the object/experience (“movie”), the experiential stances will make us feel part of the experience (i.e., part of the “movie”), losing the meta-cognitive component (i.e., “I” “see” “the movie”). Thus, while mindfulness involves an experiential component (i.e., the object/experience.), not any experiential stance is mindfulness.

The Potential Problem

The concept of mindfulness in science has key definitional features: “...dispassionate, non-evaluative and sustained moment-to-moment awareness of perceptible mental states and processes” (Grossman et al. 2004, p. 36). Due to these components mindfulness may promote a better acceptance of our experiences. As one can note, this scientific definition has the original key component of Buddhist’s conceptualization, namely detachment from both ego-driven clinging to the

cravings of everyday life and from perceptions and self-identity (see David et al. 2013).

As mentioned above, in psychological terms, detachment is conceptualized in the appraisal theory (Lazarus 1991) as reduced motivational relevance of a target event (e.g., life event, thought, feeling). Motivational relevance is a primary appraisal mechanism (i.e., “how relevant is this event for my needs”), the first chain in the cognitive link (i.e., primary appraisal, secondary appraisal, coping, reappraisal) connecting the target event to human feelings.

Starting from the basic components of the mindfulness concept, it follows logically the thesis that mindfulness, by its detachment component (i.e., dispassionate non-evaluative attitude), should generate a reduction in the intensity of overall affect related to the target event.

Do we have support for this thesis? We think that strong support for this thesis emerges from various sources. However, before exploring this support, let us briefly analyze the context in which such a thesis could pose a potential problem.

The Psycho-socio-cultural Context of the Problem

The outcome of a general reduction in the intensity of affect, hypothetically produced by detachment, regardless of its positive or negative valence, may not be a universally desired clinical outcome. Indeed, in our Western culture, the healthy alternative to dysfunctional feelings related to a target activating event is not necessarily flat or minimal affect (low arousal), but functional feelings. In this context it is worth mentioning that when we use the terms “target activating event”, we do not refer only to stressors (i.e., a critical activating event like the death of a love one), but also to domains affected by clinical conditions (e.g., family relational issues). Indeed, in some clinical conditions, we cannot identify clear critical activating events of the problems; however, the general clinical condition is typically operationalized in smaller problems (i.e., the list of problems) during the psychotherapy process.

Mental health and mental disorder exist on a continuum, with flexible demarcations among health and disorders depending on the intensity, frequency, duration, and/or functional impairment of diverse components of psychological well-being (e.g., affect/feelings) (see for example Mental Health. A Report of the Surgeon General 1999).

Beliefs may serve as an important mediator between events and feelings (see for details David et al. 2010). For example, when we prepare for an important exam, if we interpret the possible outcome irrationally (e.g., “I should absolutely succeed/not accept to fail, otherwise it is catastrophic.”; see the concept of irrational beliefs in Ellis 1994), then a dysfunctional feeling of anxiety/panic would likely ensue. By contrast, if we think about the impending exam rationally (e.g., “It is crucial to succeed and I will do my best, but I can accept that sometimes I can not control the outcomes.”; see the concept of rational beliefs in Ellis 1994), then a functional negative feeling of healthy anticipatory anxiety/concern would ensue. Accordingly, whereas anxiety/panic will impede preparation and negatively influence exam

performance, concern would motivate proper preparation. A too relaxed attitude resulting from a lack of motivational relevance (e.g., the exam is not relevant to our needs and values) could also prove detrimental, because it does not mobilize necessary resources to excel on the exam. Indeed, according to the Yerkes–Dodson law (Yerkes and Dodson 1908) an optimal level of arousal is necessary to optimize performance in complex, life-like tasks, the very definition of positive adaptation and mental health for human beings.

Thus, when people encounter negative activating events (e.g., exam, social rejection, academic failure), functional negative feelings related to the event (e.g., sadness, concern, annoyance, remorse) spur motivation needed to cope with and/or solve problems related to such events to reduce their likelihood of occurrence in the future or soften their impact in the present. In these situations, dysfunctional negative feelings related to the event (e.g., depressed mood rather than sadness; anxiety/panic rather than concern; anger rather than annoyance; guilt rather than remorse) can stymie adaptive action, often generating either insufficient motivational relevance (e.g., depressed mood) and/or excessive motivational relevance (e.g., anxiety and anger). Thus, the primary objective of many psychological interventions is to not to diminish affect or produce detachment on a global basis, but rather to transform dysfunctional negative feelings (e.g., depressed mood) into functional negative feelings (e.g., sadness), in order to, increase the use of problem solving strategies and functional feelings, reduce suffering, and improve social functioning and the overall quality of life (see for details David et al. 2010).

When people experience positive activating events (e.g., promotion at work), they are likely to experience functional positive feelings (e.g., excitement/hope or happiness/satisfaction), which can enhance executive functioning (see pre-goal feelings—Davidson 1994) and promote coding of information in long-term memory (see post-goal feelings—Davidson 1994). In contrast, dysfunctional positive feelings are detrimental to mental health and can be conceptualized in at least three ways. First, dysfunctional positive feelings could be manifested as post-goal feelings prior to actually having attained a goal and/or pre-goal feelings that arise after a goal is attained (see Davidson 1994; Tiba and Szentagotai 2005). More specifically, if a low arousal positive affect (e.g., satisfaction/relaxation) is experienced with high frequency before goal attainment (e.g., getting a high score on a test), then the motivational and cognitive resources might not be mobilized sufficiently to achieve the desired outcome. Conversely, if a high arousal positive affect (e.g., excitement) is experienced with high frequency immediately after a goal is attained, then long-term encoding and memory processing of events related to goal attainment might be less than optimal (see Davidson 1994 for details).

Second, dysfunctional positive feelings may also stem from irrational beliefs. For example, if a person absolutely demands to get what he/she wants and cannot accept if it does not happen, yet somehow gets what he/she wants, the resultant positive feelings may reinforce the irrational beliefs (i.e., demandingness) and constitute a cognitive vulnerability to psychopathology. Indeed, because the individual does not have a rational expectation (e.g., flexible preference: “I want to get X and I will do my best, but I, nevertheless, accept that despite my best efforts, I will not necessarily get what I want.”), but an irrational one (i.e., demandingness), in the

future, when he/she will not get what he/she demands, his/her suffering will intensify (see for details David et al. 2010; Ellis 1994).

Third, dysfunctional positive feelings could be either inappropriate (e.g., too low and/or too high) or of very high intensity (e.g., elation in hypomanic/maniac states) in relation to specific tasks to accomplish (see the concept of optimum motivation mentioned above, Yerkes and Dodson 1908).

The Empirical Status of the Problem

In this section, we examine the support for our thesis that mindfulness is an emotion regulation strategy that, by engaging detachment, reduces the affect overall, be it positive and/or negative.

Researchers have determined that mindfulness, practiced on an independent basis (see Ebert and Sedlmeier 2012) and/or in the context of a more encompassing multimodal treatment (see MBSR—Bohlmeijer et al. 2010; MBSR—Chiesa and Serretti 2009; MBCT—Chiesa and Serretti 2011; MBSR—Grossman et al. 2004; MBSR/MBCT—Hofmann et al. 2010; MBCT—Piet and Hougaard 2011), reduces negative feelings overall, both in clinical and nonclinical population. Some findings are less impressive in terms of treatment effect size (see MBSR—Bohlmeijer et al. 2010) and/or show no effect when rigorous experimental control is used (see MBSR—Toneatto and Nguyen 2007), whereas other findings are more impressive (see MBSR—Grossman et al. 2004). Nevertheless, because multimodal treatments (i.e., MBSR) that incorporate mindfulness practice generally produce more impressive outcomes compared with mindfulness practiced alone, it has been argued that mindfulness meditation might be only one of the main factors mediating the positive effects of mindfulness-based multimodal treatments (see for details Ebert and Sedlmeier 2012), not the exclusive one. Moreover, researchers have not yet adequately evaluated the independent effect of mindfulness meditation relative to the broader nonspecific factors of psychotherapy (e.g., positive expectancies, therapeutic alliance) in which mindfulness practice is embedded. More importantly, although mindfulness reduces dysfunctional negative feelings, we could not locate studies showing that it increases functional negative feelings. Accordingly, it is imperative that future studies address these issues to determine whether mindfulness practice is best employed as a primary or secondary treatment approach, following other empirically supported interventions, and whether it is as impactful as a stand-alone treatment or best used to amplify or synergize the effects of other approaches in a multi-component treatment package.

Concerning positive affect, apparently contrary to expectation, some data show that mindfulness enhances positive affect (see for example MBSR—Nyklicek and Kuijpers 2008). Again, these changes purportedly produced by mindfulness meditation are not clearly isolated from general or nonspecific effects of psychotherapy. Nevertheless, because mindfulness fosters detachment (i.e., reduces motivational relevance), we would expect that positive feelings would be experienced more as pleasantness/low arousal affect (e.g., calm, relaxed, peaceful, satisfied serene), rather than as pleasantness/high arousal (e.g., happy, excited) (see

Russell 1980 for these affect distinctions). Indeed, mindfulness has several components and thus, they could have various effects. The “dispassionate non-evaluative/non-judgmental” component may impact on motivational relevance; if it is reduced, then motivation incongruence (i.e., another primary appraisal mechanism) will also be reduced, thus fostering acceptance. Reducing motivational relevance and incongruence could indeed reduce our affect overall. However, by its more experiential component of “moment by moment awareness of the experience”, mindfulness might support openness and curiosity that in combination with low motivational incongruence could theoretically foster positive affect. However, because of the low motivational relevance, logically, the positive affect should be of low arousal.

Indeed, according to Costa and McCrae (1992), extraversion is associated with positive emotionality, although, compared with general positive affect, extraversion is related to higher arousal positive affects. Interestingly, Giluk (2009) found evidence for a smaller correlation between mindfulness and extraversion ($r = 0.12$), compared with the correlation of mindfulness with general positive affect ($r = 0.34$), and suggested that this finding is related to the fact that extraversion has a component of activation (i.e., sensation-seeking; excitement) that is absent in mindfulness.

We could not locate studies that compared the impact of mindfulness on low (e.g., calm, satisfied) versus high (e.g., excited, happy) arousal positive feelings in relation to an activating event. Indeed, theoretically, we would expect a strong association of mindfulness with low arousal positive feelings, rather than with high arousal positive feelings. A potential impact of mindfulness on increasing high arousal positive feelings in relationship to the targeted activating event on which we mindfully meditate would be incongruent with detachment, namely a dispassionate non-evaluative attitude that theoretically accompanies mindfulness. Accordingly, future psychotherapy studies are needed, with controls for demand characteristics and nonspecific effects and specific effects (e.g., classical cognitive restructuring), to document whether mindfulness (a) increases positive affect; (b) increase positive affect differentially (e.g., dysfunctional versus functional, high versus low arousal), and (c) can be claimed to be an efficacious treatment component independent of the broader treatment in which it is embedded (Ebert and Sedlmeier 2012).

Recent Meta-analytical Behavioral Data and Neuroscience Data

More recently, several studies coming from various scientific fields started to offer a more direct and strong support for the thesis that mindfulness, by its detachment mechanism related to motivational relevance, reduces both positive and negative affect.

At psychological level, a recent large meta-analysis (Goyal et al. 2014) (47 trials, 3,135 participant) showed that mindfulness meditation programs reduces the negative affect. However, its effects were not better than any other active treatments (e.g., pharmacotherapy, behavioral interventions). Moreover, a key finding for our thesis showed that there was no effect of mindfulness meditation programs on increasing positive mood. Both conclusions are fully consistent to our thesis.

At neurobiological level, Brown et al. (2013) showed that dispositional mindfulness modulate the late positive potential (LPP) of the event-related brain potential to both positive and negative stimuli. LPP has been related to the processing of the motivationally relevant information (Brown et al. 2013). Therefore, LPP is larger for motivationally relevant information. More precisely, Brown et al. (2013) found that dispositional mindfulness dampened evaluation of both positive and negative stimuli. The authors interpreted these results as showing that “mindfulness may temper the early response to unpleasant and other motivationally salient affective stimuli before a subsequent emotional response has the opportunity to arise” (Brown et al. 2013, p. 98). Indeed, mindfulness was associated to lower LPP for both positive and negative stimuli. This conclusion is fully consistent to our thesis.

Potential Negative Implications of the Problem

In psychotherapy, mindfulness was initially conceptualized as a tool that should be used when standard evidence-based treatments—like cognitive-behavioral therapy—fail or do not achieve optimal, long-term outcomes. For example, mindfulness-based cognitive therapy (Segal et al. 2012) was developed to treat severe chronic depressed patients to prevent relapse and recurrence (see also Chiesa and Serretti 2011 for other applications like residual symptom changes). Indeed, because, based on our current psychotherapy knowledge, it is difficult to adequately treat (get, feel, and stay better) some chronic and/or severely affected patients (e.g., to transform dysfunctional feeling of depression into functional feelings of sadness), the solution is to reduce suffering (feeling better) by reducing the motivational relevance (detachment) and thus the intensity of the negative affect (e.g., both depressed mood and healthy sadness).

Yet mindfulness has more recently come to be viewed as a first line intervention, be it independent and/or part of multimodal treatments, for many psychological disorders and conditions, rather than circumscribed to some clinical context as described above. From the perspective discussed here, this development is questionable. One might liken it, somewhat facetiously, to the widespread prescription of anxiolytic medications for breakfast to remain always calm and relaxed, rather than for their use only in the presence of diagnosed clinical conditions (e.g., anxiety disorders) where research supports both their efficacy and cultural value/appropriateness.

My contention, which will no doubt stir academic controversy, is that the indiscriminate practice of mindfulness in psychotherapy, particularly if such practices are viewed as a panacea, may well unintentionally create an unhealthy detachment from the very feelings that make us human. There is little doubt (see Grossman et al. 2004) that mindfulness meditation (especially mindfulness-based multimodal treatments) is efficient in engendering emotion regulation, especially in down-regulating dysfunctional feelings; yet if mindfulness meditation is used unwisely or with little regard for the specific problem being treated (e.g., problems in emotion regulation), practitioners may become Vulcans (sic!). Vulcans, as many

readers know, are a fictional species that appeared in the television series *Star Trek* series that use mental control (i.e., meditation and strict adherence to logic) to be devoid of feelings to live an idealized “logical” existence. Spock was the most famous Vulcan character in the series, serving under the human and at times all-too-emotional captain Kirk.

To be clear, we are not arguing against the general practice of mindfulness, as this proscription would not take into account the available data. Rather, we question whether mindfulness should be used as a go-to primary line of intervention, possibly precluding the use of more effective first-line treatments for a particular condition, when mindfulness should be used primarily as a secondary treatment. Our concerns also extend to (a) our belief that the former use of mindfulness practice challenges our main paradigm of mental health by at least implicitly and theoretically arguing for encountering negative events by deactivating negative feelings, rather than by activating functional negative feelings and (b) promises and marketing of mindfulness, which is increasingly touted as a panacea in the psychological community and beyond.

The problematic implications that we signal herein are mainly (but not solely) related to using mindfulness meditation independently, as the first line intervention that focuses on engaging detachment with respect to treating non-chronic clinical conditions. When used in multimodal treatments, most of the criticisms have we voiced are often addressed. For example, mindfulness-based cognitive therapy mainly focuses on chronic clinical conditions (e.g., chronic recurrent depression). Similarly, mindfulness in dialectical behavior therapy (see Linehan 2000) is typically used to treat severe borderline personality disorder. In such cases, emotional deactivation/detachment, by using mindfulness techniques is often indicated, given maladaptive dysregulated and intense negative affect, and, importantly, is typically accompanied by behavioral activation supported by values clarification and rational positive thoughts abetted by classical cognitive restructuring. Thus, deactivation of dysfunctional emotions related to negative events, produced by mindfulness, is complemented by compensatory activation, and produced by cognitive-behavioral strategies embedded in the multimodal treatment. The compensatory activation strategies are, obviously, often not directed to targeted negative events that cannot be changed no matter what problem-solving or coping strategies are implemented, and that practitioners of mindfulness learn to accept non-evaluatively, but mainly to other life relevant activating events where activation is possible and values oriented. In the end, a mindfulness-acceptance-based strategy can have a positive impact in increasing quality of life and social functioning when the problems related to target events cannot be solved or ameliorated.

Conclusions: Toward a Potential Solution

From a Buddhist perspective, the goal of mindfulness meditation and detachment is to attain Nirvana. Yet positive psychological effects of meditation, more generally, have come to be appreciated in both secular society and the mental health field, as evidenced by the embrace of transcendental meditation by clinical practitioners with

the goal of generating a relaxation response to counter distress (see Benson and Klipper 2000). Interestingly, mindfulness and relaxation appear to have a similar effect on stress (see Chiesa and Serreti 2009) and by reducing motivational relevance, mindfulness meditation would be expected to reduce affect on a global level. Summarizing the empirical data, well-controlled studies show that mindfulness meditation alone has a more limited impact on mental health compared with mindfulness-based multimodal treatments. Moreover, it is questionable whether the positive impact of multimodal treatments is attributable mainly to mindfulness, rather than to other components of the treatment package. Indeed, whereas self-attributed mindfulness seems to mediate the effect of mindfulness meditation, it does have the same effect for mindfulness-based multimodal treatments (i.e., MBSR). Ebert and Sedlmeier (2012) noted that:

In studies on pure mindfulness meditation, the main effects were found with variables concerned with the concept of mindfulness, that is, self attributed mindfulness as operationalized in several mindfulness scales, attention, and anxiety. Far smaller effects were observed regarding negative emotions and wellbeing, which were very strong for MBSR. The large effects for MBSR on these variables could perhaps be attributed to other effective components of MBSR than mindfulness meditation (p. 186).

We argue that mindfulness practices be employed when classical cognitive–behavior therapy or other evidence-based psychotherapy do not succeed in transforming dysfunctional feelings into functional feelings in relation to a target event. In this instance, mindfulness may serve to reduce the motivational relevance of the target event (i.e., engaging detachment and dispassionate non-evaluative attitude). We further contend that mindfulness will likely have its greatest impact in multimodal treatments that generate compensatory activation for motivational relevance reduced by mindfulness, although the activation is often focused on other activities and events than those that mindfulness practices trains to accept dispassionately and non-evaluatively. Although this hypothesized treatment sequence appears to be sound on a theoretical and logical basis, it will, of course, be essential to evaluate on an empirical basis.

To conclude, we say that if we were a Vulcan species (sic!), yes, flat affect would be a valued and primary target and mindfulness meditation would, accordingly, be a viable and primary strategy to accomplish this goal. However, we are *Homo sapiens*. So we contend it is best to use mindfulness on a judicious basis when we wish to reduce affect related to an external (e.g., life situation) and/or internal (e.g., thought, feeling) event. This approach is important when we cannot first transform a dysfunctional feeling related to the event into a more functional one and/or when residual symptoms persist, which is often the case with chronic and very severe clinical conditions. However, even as a secondary line of intervention, we contend that the best use of mindfulness is in a multimodal treatment (e.g., Acceptance and Commitment Therapy, Mindfulness-Based Cognitive Therapy, Dialectic Behavioral Therapy) that planfully generates compensatory activation by means of behavioral activation, values clarification, and classical cognitive restructuring, for example. If the primary line of intervention is successful, the clinical implications will be more in

accord with the contemporary concept of mental health: feeling, getting, and staying better by reducing suffering, increasing functional feelings in relation to the target event (stimulating problem solving strategies) and thus enhancing quality of life and social functioning both in general and in relation to the target event.

One may note that whereas classical cognitive restructuring typically is geared to make values more flexible, rather than changing them, mindfulness accompanied by compensatory activation strategies may ask us, at least implicitly, to change our values. Indeed, accepting the target situation as it is (e.g., a divorce) and focusing our activation on other situations (e.g., that provide relational meaning), may ask us to change our values (e.g., divorce-related values). Practitioners of classical cognitive restructuring may focus on the same target situation (e.g., divorce), relevant to our values, but the goal is to make thinking more flexible and rational to reduce suffering, experience functional negative feelings that reinforce core values, and then develop problem solving strategies. These differences between mindfulness and classical cognitive restructuring are not necessarily good or bad, but we should, nevertheless, be aware of them in appreciating and understanding if, when, and how to integrate them. However, both strategies would involve at the inception value clarification to understand what and how to change in classical cognitive restructuring and/or what and how to accept and then to compensate/activate in mindfulness-based treatments.

The general strategy I propose here is even in line with the serenity prayer of Reinhold Niebuhr:

God, grant me the serenity to accept the things I cannot change,
The courage to change the things I can,
And wisdom to know the difference.

Indeed, if we read it carefully, the prayer, which is often invoked by mindfulness practitioners, also argues that acceptance—and by extension mindfulness that is associated to acceptance—should be a secondary line of intervention when the primary approach of problem solving is not possible.

That said, a number of counterpoints and qualifications to my argument are worthy of consideration. Still, in the end, neither logical/theoretical nor metaphorical arguments are a definitive test for the treatment sequence. A case could be made that mindfulness and acceptance based practices should routinely be first in line in a sequence of interventions, as they are portable and can be largely self-taught. Moreover, research has yet to examine whether there are certain disorders (e.g., chronic, severe) for which mindfulness is clearly indicated as a first-line approach, compared with other empirically supported approaches. Additionally, to further assess the model we proposed, measures of affect, arousal, motivational relevance/incongruence, and dysfunctional/irrational thoughts should be examined over the course of both mindfulness and cognitive-behavioral methodologies (CBT) interventions and related to treatment outcomes in randomized controlled trials. Indeed, our model rests on the thesis that mindfulness promotes detachment (i.e., dispassionate non-evaluative attitude) as a primary component and thus, to be theoretical consistent, a relatively flat affect; yet this might not be always the case (but see Goyal et al. 2014) and may vary across individuals based on the other

components of mindfulness (e.g., the experiential component). Moreover, in mindfulness-based multimodal treatments the affect activation could be generated by other components than mindfulness (e.g., commitment to value-based action); however, if the activation is related directly to mindfulness meditation, then we need a construct/content validation to avoid construct inconsistency (e.g., like “squared circle”). However, in these studies, we should pay attention to not confuse mindfulness with various experiential stances; indeed, they have common factors (e.g., moment-by-moment awareness of experience) and thus, if we loose the meta-cognitive component of mindfulness (e.g., dispassionate non-evaluative/non-judgmental), contamination processes could alter our results. Indeed mindfulness itself is a multi-componential construct. If included in multimodal treatments, the picture is even more complex. Therefore, future studies investigating mindfulness—its effects and mechanisms of change—should be aware of this complexity and therefore should employ multi-componential designs and analyses.

Importantly, mindfulness can be considered part of the increasingly large family of (CBT). For example, David and Hofmann (2013) argued that mindfulness/acceptance techniques are a form of cognitive restructuring, as they modify primary appraisal (e.g., motivational relevance) (see Brown et al. 2013). Relatedly, cognitive defusion, or detachment from thoughts or feelings as “true” indicators of the self (i.e., a “thought is just a thought”), which mindfulness likely promotes can also be conceptualized as cognitive restructuring. Indeed, in CBT, cognitive restructuring can be accomplished with the use of a plethora of techniques (e.g., logical, empirical, pragmatical, metaphorical, spiritual), and, mindfulness/acceptance can be seen as the most recent addition to the panoply of CBT techniques. Mindfulness-based cognitive therapy (Segal et al. 2012), which incorporated strategies and interventions from a variety of CBT traditions, including mindfulness, is a particularly apt example of this point. Moreover, individual differences could be identified that make certain individuals candidates for one CBT strategy versus another and/or a combination of interventions in sequential multimodal CBT treatment. Ultimately, the most convincing test of the thesis presented here will be empirical studies, as the available data that we have reviewed herein provide only indirect and/or preliminary support for the heuristic sequential model we have proposed.

References

- Benson, H., & Klipper, M. Z. (2000). *The relaxation response*. New York: HarperTorch.
- Bohlmeijer, E., Prenger, R., Taal, E., & Cuijpers, P. (2010). The effects of mindfulness-based stress reduction therapy on mental health of adults with chronic medical disease: A meta-analysis. *Journal of Psychosomatic Research*, 68, 539–544.
- Brown, K. W., Goodman, R. J., & Inzlicht, M. (2013). Dispositional mindfulness and the attenuation of neural responses to emotional stimuli. *Scan*, 8, 93–99.
- Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *The Journal of Alternative and Complementary Medicine*, 5, 593–600.
- Chiesa, A., & Serretti, A. (2011). Mindfulness based cognitive therapy for psychiatric disorders. A systematic review and meta-analysis. *Psychiatry Research*, 187, 441–453.

- Costa, P. T., Jr, & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources.
- David, D., & Hofmann, S. G. (2013). Another error of Descartes? Implications for the “third-wave” cognitive-behavioral therapy. *Journal of Cognitive and Behavioral Psychotherapies*, *13*, 115–124.
- David, D., Lynn, S. J., & Das, S. L. (2013). Self-acceptance in Buddhism and rational-emotive and cognitive-behavior therapy. In M. Bernad (Ed.), *The strength of self-acceptance. Theory, practice and research*. New York: Springer.
- David, D., Lynn, A., & Ellis, A. (Eds.). (2010). *Rational and irrational beliefs in human functioning and disturbances; Implication for research, theory, and practice*. New York: Oxford University Press.
- Davidson, R. J. (1994). Asymmetric brain function, affective style, and psychopathology: The role of early experience and plasticity. *Development and Psychopathology*, *6*, 741–758.
- Ebert, J., & Sedlmeier, P. (2012). The effects of mindfulness meditation: A meta-analysis. *Mindfulness*, *3*, 174–189.
- Ellis, A. (1994). *Reason and emotion in psychotherapy: Comprehensive method of treating human disturbances: Revised and updated*. New York, NY: Citadel Press.
- Giluk, T. (2009). Mindfulness, big five personality, and affect: A meta-analysis. *Personality and Individual Differences*, *47*, 805–811.
- Goyal, M. G., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., et al. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine*, *174*(3), 357–368. doi:10.1001/jamainternmed.2013.13018.
- Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. A meta-analysis. *Journal of Psychosomatic Research*, *57*, 35–43.
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *78*(2), 169–183. doi:10.1037/a0018555.
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, *4*, 33–47.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Linehan, M. M. (2000). Commentary on innovations in dialectical behavior therapy. *Cognitive and Behavioral Therapy*, *7*, 478–481.
- Mental Health. A Report of the Surgeon General. (1999). <http://profiles.nlm.nih.gov/ps/retrieve/ResourceMetadata/NNBBHS>. Accessed 15 August 2013 (Department of Health and Human Services, U.S. Public Health Service)
- Nyklicek, I., & Kuijpers, K. F. (2008). Effects of mindfulness-based stress reduction intervention on psychological well-being and quality of life: Is increased mindfulness indeed the mechanism? *Annals of Behavioral Medicine*, *35*, 331–340.
- Piet, J., & Hougaard, E. (2011). The effect of mindfulness-based cognitive therapy for prevention of relapse in recurrent major depressive disorder: A systematic review and meta-analysis. *Clinical Psychology Review*, *31*, 1032–1040.
- Russell, J. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*, 1161–1178.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2012). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford.
- Tiba, A., & Szentagotai, A. (2005). Positive emotions and irrational beliefs. Dysfunctional positive emotions in healthy individuals. *Journal of Cognitive and Behavioral Psychotherapies*, *5*, 53–72.
- Toneatto, T., & Nguyen, L. (2007). Does mindfulness meditation improve anxiety and mood symptoms? A review of the controlled research. *The Canadian Journal of Psychiatry*, *52*, 260–266.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology*, *18*, 459–482.