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A snapshot of the science of meditation and mindfulness

A Review of

Presence: How Mindfulness and Meditation Shape Your Brain, Mind and Life

By Paul Verhaeghen

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Reviewed by Peter Malinowski

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Did you read some of the headlines about the extraordinary effects of mindfulness on our brains? Have you met friends or colleagues who tried to convince you that mindfulness will make you happier, more focused or more at ease? Or are you curious what inspired the creation of the Mindfulness All-Party Parliamentary Group (2015) at Westminster, the British Houses of Parliament? Are you, thus, keen to find out what science really has to say about mindfulness and meditation?

With *Presence* Paul Verhaeghen rose to the formidable challenge of collecting the available evidence and presenting it in a systematic way. To readers interested in the scientific exploration of meditation and mindfulness the book offers a useful guide through the exponentially growing amount of studies, diversity of study designs, intricacies of neuroscientific methods, and complexities of meditation and mindfulness traditions and approaches. Although the author says that the book is primarily aimed at the curious meditator, I think a much wider audience will be interested in it.

I found this book extremely well written, in a straightforward, engaging and accessible way. The introduction of relevant statistical constructs and analytical approaches is brilliant, giving the non-scientific reader the required grounding for the subsequent discussions of evidence. The descriptions of the different neuroscientific methods are equally outstanding, focusing on what is needed to understand and interpret the results correctly – not more and not less.

Verhaeghen structures the book in a slightly idiosyncratic way, particularly emphasizing those aspects that are of specific interest to him. There are many ways to cut the cake, and this one works well. After an introduction of mindfulness, he considers what happens in body and brain while people meditate, then reviews the effects of mindfulness meditation on attention, body and the self. Next, the focus shifts to neuroplasticity, that is, how meditation exerts structural brain changes to gray and white matter. A whole chapter then emphasizes the role of attention.

It suits well that attention is given such a prominent place, because in their most simple and widely used forms mindfulness meditations rest on the cultivation of attention skills. For a cognitive neuroscientist who studies meditation, improvements in attentional functions are thus low-hanging fruits. Available evidence is, thus, comparably strong. However, I found it surprising that Michael Posner's leading model of attentional functions (Posner, 2012) is missing, although it is the most widely used model for conceptualizing and investigating the effects of meditation (e.g., Lutz et al. 2008, Malinowski, 2013; Tang, Hölzel, & Posner, 2015). Nevertheless, the message that attentional skills are intricately linked with meditation practice is conveyed clearly.

A further chapter reviews the positive association between mindfulness and wellbeing, followed by considerations of "Mindfulness as Medicine". I found it liberating that only one chapter was dedicated to this topic, counteracting an often lopsided presence within psychology and the public alike. Mindfulness as a treatment approach is only *one* way of using meditation (under well-defined conditions; see Malinowski, 2017), but it is not the primary purpose of meditation and has very little history and experience to build on.

Define and Distinguish

The book defines mindfulness as “paying attention in a particular way, on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994, p. 4), echoing the most widely used psychological definition of mindfulness. This is fine, but the reader would have benefitted from some pointers to the current discourse concerning conceptualizations of mindfulness. Given that these concepts and practices are derived from Buddhist psychology, a more detailed acknowledgement of this outstanding historical background would have enriched the presentation significantly.

The book aims to focus on the aggregated evidence provided by published meta-analyses and systematic reviews. Where considered meaningful, further analyses are conducted and selected studies are explained in more detail to exemplify methodological approaches and specific evidence. The extensive bibliography supports this approach, and its scope will delight even the seasoned meditation researcher.

Considering combined evidence is good practice. However, doing so across various meditation traditions and practices, intervention types and delivery approaches comes at a significant cost. Failing to make relevant distinctions is akin to considering all sports as if they were essentially the same (Lutz et al., 2008). Admittedly, in most cases the available evidence is still too thin for a more granular analysis, but these limitations should have been acknowledged and flagged up more fully, for a more accurate account of the state of the art.

Also, more consistency in this respect would have helped. For example, while in the earlier chapters all types of meditation are lumped together, in later chapters transcendental meditation (not a mindfulness practice!) is explicitly excluded from consideration. It remains unclear on what grounds meditation types are distinguished or combined, casting shadows over the presented interpretations. In defense, the whole field has not yet agreed on a unified way of classifying meditation types. My reading of the evidence so far, however, is that drawing conclusions across all types of meditation and intervention approaches neglects important differences.

Attributing Causality

Due to the relative paucity of research, we often have to clutch straws in an attempt to make sense of the evidence. In Chapter 4, Verhaeghen acknowledges this, and discusses the limitations of cross-sectional studies and their interpretation, saying that they offer “only weak evidence for

the hypothesis that meditation is the cause of the difference” (p. 77). Unfortunately, and this is a key weakness of the book, the majority of the studies reviewed *before* this statement are also cross-sectional, but are generally interpreted in causal terms. The reader needs to be very attentive to detect qualifying terms (e.g., that data *suggest* certain causal pathways) and caveats.

Further Limitations and Inconsistencies

Is meditation a stress buster? As a meditation teacher I concur with the general position of the book, namely that approaching mindfulness and meditation as a stress management tool doesn't do justice to the depth and potential of these practices. This view is, however, contradicted by a statement in the preface, which portrays mindfulness as “another way to destress” (p. xiv), while at another point the reduction of “self-perceived stress” was discussed as a positive side effect of meditation (p. 90f). Is this so? Can we really assume that a program called “mindfulness-based stress reduction” (my emphasis) would not directly aim at reducing stress and only produce it as a side effect?

I was struck by one statement, potentially irrelevant for some readers, but important to me, when considering the implications. In the Preface we can read “Many meditators, Buddhist meditators included, are, or behave like, substance dualists” (p. xiii). That's a sweeping, unsubstantiated claim. As scientist, I would like to see empirical evidence that *many* Buddhists hold such a philosophical view. Have Buddhists been surveyed to this effect? It seems even more pertinent to approach this from a philosophical perspective. Studying core aspects of Buddhist philosophical views makes it quite clear that “substance dualism” is not the prevailing Buddhist philosophical view. It is beyond this review to discuss Buddhist philosophy and a meaningful understanding of Buddhist non-duality. The interested reader is referred Gyamtso's (2016) very accessible introduction to Buddhist philosophical views, in particular the variations of the views of the “Great Middle Way” (Sanskrit: *Madhyamaka*).

Closing Comments

This book does not intend to tell *how* to meditate. It also does not introduce a full arsenal of reasons *why* to meditate. It does, however, provide a comprehensive account of current evidence regarding mindfulness meditation. This evidence is growing rapidly. Many of the findings included in the book have to be considered preliminary, awaiting replication and further confirmation. The quality of research designs is improving and more and more evidence is seeing the light of day.

With other words, in the moment this book went to print, it was not quite up-to-date anymore. This is slightly frustrating – probably much more so for the author. Assembling all the evidence into a coherent, accessible book is a huge endeavor. As far as I am aware no other book has attempted to achieve this. Kudos!

Reading the book, I encountered various inconsistencies, some of them reviewed here. To a certain extent this may reflect that the field is still in its infancy and spans a broad variety of perspectives. The high degree of integration provided in the book sacrifices specificities. It makes for an easier read and for stronger take-home messages. However, if we want the science of mindfulness and meditation to reach a higher degree of maturity, it will be important to raise the bar and to consider more closely what we really know and identify underlying assumptions more fully. For this, the diversity of approaches will need to be considered more thoroughly. We owe this to the venerable meditation traditions.

Despite its limitations you will currently find no better comprehensive account of the scientific investigation of meditation. I would recommend reading it with an open, critical mind, being aware of the limitations and caveats, and see it as what it is, a snapshot of a field that can – and will – change.

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