

# Parallels between Mindfulness and First-person Research into Consciousness

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## Abstract

The article highlights some of the parallels encountered in the areas of mindfulness and first-person scientific approaches to research into consciousness. It thus considers the possibilities of using mindfulness as a scientific method in the area of cognitive science. We are well aware that both first-person research approaches in cognitive science and mindfulness as a type of Buddhist practice are intertwined with certain conceptual frameworks. This calls for a careful consideration of their individual characteristics, which may gain completely different meanings outside of their primary contexts. Since the concept of mindfulness has been a part of Western thinking for some time now, especially in the area of therapy, we believe it is necessary for a critical reflection on the possibilities of both of these areas to inspire each other. We touch upon some of the important epistemological and methodological questions, and point out some of the problems common to both empirical first-person research and Buddhist methods of contemplation of experience. More specifically, this work examines the problem of limited scope of insight, the subject-object split and excavation fallacy, the problem of researching everyday experience, and the issue of horizon. We also consider the question of research intention in both science and Buddhism. The conclusion gives some suggestions as to how these two areas might mutually benefit one another. We also point out the ethical aspects that Buddhism might contribute to scientific research, and the open-endedness that science could contribute to Buddhism and other spiritual practices.

**Keywords:** mindfulness, phenomenology, first-person research, ethics, cognitive science

## Izveček

Članek osvetljuje nekatere vzporednice, ki jih lahko najdemo med prakso čuječnosti in prvoosebni znanstvenimi pristopi k raziskovanju doživljanja. Gre za razmislek o možnosti uporabe čuječnosti kot raziskovalne metode na področju kognitivne znanosti. Upoštevano je, da so tako pristopi prvoosebnega raziskovanja v kognitivni znanosti, kot

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tudi čuječnost kot praksa v budizmu, vpeti v določen konceptualni in kulturni okvir. To nedvomno zahteva veliko previdnost pri obravnavi posameznih značilnosti, ki lahko zunaj svojega konteksta dobijo drug pomen. Uporaba čuječnosti je že nekaj časa tudi del zahodnih pristopov, predvsem v terapiji, zato je dobrodošel kritičen razmislek o možnosti medsebojnega oplajanja obeh področij. Prispevek se dotakne nekaterih pomembnih epistemoloških in metodoloških vprašanj in opozori na nekatere probleme, ki so skupni empiričnemu prvoosebni raziskovanju in budističnim metodam zrenja doživljanja: problem omejenega spoznavnega dosega, problem razcepa med objektom in subjektom v t. i. napaki izkopavanja, problem raziskovanja vsakdanjega doživljanja in vprašanje horizonta spoznanja. Obravnavano je še vprašanje namere raziskovanja v znanosti in v budizmu. Zaključek nakaže, na kakšen način bi ti dve področji lahko sodelovali drugo z drugim. Izpostavljeni so etični vidiki, ki jih lahko znanstvenemu raziskovanju prispeva budizem, in odprta naravnost, ki jo budizmu in duhovnim šolam lahko doprinese znanost.

**Ključne besede:** čuječnost, fenomenologija, prvoosebno raziskovanje, etika, kognitivna znanost

## Introduction

The article highlights some of the parallels encountered in the areas of mindfulness and first-person scientific approaches to research into consciousness. It considers the possibilities of using mindfulness as a scientific method in the area of cognitive science. We are well aware that both first-person research approaches in cognitive science and mindfulness as a type of Buddhist practice are intertwined with given conceptual frameworks. This calls for a very careful consideration of their individual characteristics which may gain completely different meanings outside of their primary contexts. Since the concept of mindfulness has been a part of Western thinking for some time now, especially in the area of therapy, we believe it is necessary for a critical reflection on the possibilities of both of these areas to inspire each other.

Interest in the possible applications of Buddhist meditation in the areas of psychiatry and psychotherapy can be found as early as 1982, when Jon Kabat-Zinn first suggested using an adapted version of Buddhist mindfulness meditation (*sati*) for psychiatric purposes (Kabat-Zinn 1982). In recent years, this interest has witnessed a rise in intensity, as well as expansion to other areas (e.g. education). This has led to the various approaches to the application of mindfulness techniques in the context of therapy. Despite the relatively wide array of these, all such methods share a common assumption that mindfulness can be considered as a technique, i.e. a procedure that can be learned and can bring a person to a given beneficial

goal (which is not necessarily the *state* of mindfulness as described in Buddhist texts). There is also another, even more important assumption shared by Western versions of mindfulness—all of them seem to believe that this practice will be effective, even though it has been separated from the context of Buddhist practice and belief.

Parallel to this interest in the secular use of mindfulness as a therapeutic technique we can notice the voices from scientists who have been pointing out for decades that Buddhist meditation, and the insights gained from it, might be used in research into consciousness, or more widely—the psyche. Among the more famous supporters of such a merger of the two fields we can find Francisco Varela, Antoine Lutz, Natalie Depraz, Alan Wallace and Jonathan Shear. Moreover, and as seen from his recent publications, Kabat-Zinn himself has joined the ranks of such writers, talking about the “science of mindfulness” (Paulson et al. 2013). Similar to the use of mindfulness in therapy, its potential applications in scientific research also appear to be very diverse. Some researchers even suggest that it is necessary to study *abhidhamma* (the so-called Buddhist psychology) in order to gain new data for Western science. In neuroscience we can find proposals to use trained meditators as (better quality) subjects in neuropsychological research, as it is anticipated that they could use their skill in controlling their mental states to increase the credibility of neurological measurements (Barinaga 2003). A third group of suggestions (Varela, Rosch and Thompson 1992) sees meditation as a potential way of gathering phenomenological data, and it is this last possibility that the current study focuses on.

In the paper we touch upon some of the important epistemological and methodological obstacles and questions encountered in using mindfulness as a path to scientific insight into consciousness. We point out some of the problems common to both empirical first-person research and Buddhist methods of contemplation of experience. Among these the most pertinent are the problems of limited scope of insight, the subject-object split and excavation fallacy, the problem of researching everyday experience, and the question of horizon. The paper goes on to discuss the parallels and differences related to the more general question of research intentions in science and Buddhism. The conclusion gives some suggestions as to how these two areas might be able to benefit one another. We highlight the ethical aspects that Buddhism might contribute to scientific research, and the open-endedness that science could contribute to Buddhism and other spiritual practices.

## Empirical First-person Research and Some of the Problems Shared by Buddhist Techniques of Inquiry

The first part of this study, comparing the approaches of contemporary cognitive science to the framework of Buddhist ways of understanding consciousness, will be dedicated to a comparison of methodological problems encountered by Western techniques of gathering first-person data and those applied in the practice of mindfulness. The discussion will be grounded in the definition of mindfulness as (an attempt at) non-judgmental awareness of one's own experience in the present moment. This definition has been accepted by most Western researchers, despite the fact that Buddhist teachers often warn about the incompleteness of such understanding (the meanings of the Pāli notion of *sati* or the Sanskrit notion of *smṛti* are much more complex), and the unclear distinction between the phenomenon (is mindfulness a state?) and process (or is it a technique?).

If we follow the proposed general definition, mindfulness emerges as a promising tool in research into experience. Its advocates (e.g. Lutz, Varela, Depraz, Wallace and Shear) see it as a potential upgrade of the existing methods in the area of first-person research—an area in which any methodological reinforcement could come in very handy in its ongoing struggle for existence and recognition. We believe that these issues overlap to a great extent with the (relatively old) question about the relevance and scope of introspection in Western science. This is the reason we start off with a short overview of the attempts of inquiry into lived human experience and the problems which put the use of introspection as a scientific method into question.

Western science has mainly focused on what Locke and Galileo called primary qualities—parts of the world which are “solid”, observer-independent and quantitatively describable. Nevertheless, one can detect periods of increased interest in subjective phenomena that seem to enter the domain of Western science in waves. The transition from the nineteenth to the twentieth centuries led not only to extraordinary progress in physics and chemistry, but also to one of the strongest and most varied attempts at the scientific understanding of lived experience. The potential of introspective research was considered by the philosopher William James and the Kyoto School of philosophy, founded in the tradition of Zen Buddhism. Sigmund Freud carried out research into the mind through the analysis of mental disorders, but it was probably the German Introspectionists who most faithfully followed the model and assumptions of natural science in their efforts. Wilhelm Wundt aimed to prepare in his Leipzig Experimental Laboratory a research program that would allow for as precise a definition of experiential variables as possible, and also enable later replicability. In selecting the techniques used for his

research into the psyche, Wundt followed in the shoes of the physiologist Gustav Fechner, but focused on a type of introspection (albeit in a very tentative and controlled manner). Wundt's protégée, Edward Titchener, introduced the idea of this kind of psychological research to the United States, even though he did not follow his master's ideas to the letter. Indeed, important differences between the two soon became apparent in their views on the scope of introspection as a research technique, and also on the generalisability of data gained by it (Schwitzgebel 2014).

This dissent among introspectionists merely emphasized the problems already encountered by established scientific methodology when trying to deal with introspection. As such, the list of problems which had been addressed by philosophers since the beginning of such investigation was extended by new ones, related to the attempts at empirically researching lived experience (cf. Dunlap's criticism in his article; Dunlap 1912). Even though such criticism and the marked success of behaviourism served to reduce the level of trust in introspective data for many years, we now are witnessing a comeback of introspection into science. In recent decades there has been a new wave of interest in first-person research, mostly parallel to the development of cognitive science. Several new research approaches based on introspection have thus been developed that use introspection as a principal source of gaining data about the mind and consciousness (Overgaard, Gallagher and Ramsøy 2011). But despite this return (Barinaga 2003), the status of introspection in science is still far from clear, and to a great extent it remains controversial (Schooler and Schreiber 2004).

This renewal of interest in first-person data is mostly due to necessity—the mind can only be explored “from the outside” to a certain extent, beyond which first-person data becomes indispensable. Expanding the scope of first-person research has therefore re-opened questions related to such approaches. Very good overviews of the problems of introspective methods can be found in papers by Bitbol and Petitmengin (2013), Chalmers (2004), as well as Wooffitt and Holt (2011). In the follow section we will focus on some of the questions applicable to first-person techniques or mindfulness as a way of gaining insights into consciousness.

## The Limited Scope of Insight

The most well-known (and most often quoted) criticism of introspection is that given in Nisbett and Wilson (1977), with this research report claiming that our insights into our own mental processes are extremely limited, and our reports thus tend to be based principally on (mostly false) beliefs about motives of our actions.

More recent research warns us about overestimating the value of introspection in everyday judgements (Pronin 2006), and in describing the reasons for our decisions (Johansson et al. 2006).

Bitbol and Petitmengin (2013) conclude that many of these problems spring from unclarified definitions and the application of inappropriate epistemological grounds. The above-mentioned studies, for example, do not explore introspection at all but rather the interpretations that people give to their experience. This shows that all of these researchers share common (unreflected) epistemological assumptions: they have no doubt that any kind of experience is always an *experience of something*. By accepting such an assumption it is possible to attempt to measure the correctness and validity of experience, and thus assess its scope and precision, by comparing it to *that* which is being experienced as measured in an intersubjectively verifiable way. It was (among others) Edmund Husserl who recognised and articulated our everyday assumption that experience reflects reality, independent of observation. He named it the *natural* (or everyday) *attitude*. His own method of research into experience was based on actively bracketing such an attitude. The act of phenomenological reduction is the act of bracketing all meanings, interpretations and explanations, and as such the act of allowing (accepting) experience such as it shows itself to us regardless what *it is the experience of*.

Husserl thought contemplation of experience to be a special experiential capacity. He opposed the term introspection, which was in his time used by the above-mentioned school of experimental psychologists, and dubbed the phenomenological way of contemplating experience as phenomenological reduction. Despite the fact that Husserl's phenomenological project remained limited to philosophy instead of growing into a transcendental science that would represent the foundation of all natural science (as he envisioned it), his methodological guidelines are today widely accepted in modern techniques of first-person research (Varela and Shear 1999). Moreover, in spite of Husserl's (well-founded) reluctance, the term introspection is today often used in the sense of phenomenological reduction (Bitbol and Petitmengin 2013), although Depraz, Varela and Vermersch (2003) suggest the term *gesture of becoming aware* to designate the same process.

The gesture of becoming aware is supposed to be a gesture of turning our attention away from interpreting experience (i.e. *what* are we experiencing?) to the contemplation of present experience as an assemblage of experiential nuances such as they show themselves to us. The gesture of becoming aware is an act directly opposed to our everyday attitude—the attitude which is all the time directing our attention towards the world, its content and meanings. For example, when I am thinking intensively about my meeting tomorrow, the everyday attitude focuses



the attention towards the content—what will I say, what is important, and so on. The act of phenomenological reduction consists of diverting our attention towards the *how?*—it represents an insight into the manner in which thoughts and the feelings related to them emerge. Depraz, Varela and Vermersch (2003) believe that, if understood this way, there is no essential difference between the gesture of becoming aware and mindfulness. Thus they include *vipassana* meditation among the techniques of carrying out the gesture of becoming aware. If such a view is accepted, it follows that the questions related to introspection (in the wider sense of the term) as a scientific tool also apply to the potential use of mindfulness in the context of scientific research.

From the position of research based on phenomenological reduction (i.e. bracketing our beliefs about reality) it is possible to do away with some of the problems set out above, noted by Nisbett and Wilson (1977). If we give up interpreting experience and comparing it to third-person data, then these problems become irrelevant. In the same vein we can also deal with any questions that arise about the limited scope of introspective methods, as it is fairly obvious that all of these are in fact questions about the compatibility of such methods with third-person behavioural-physiological theories of the mind (see also Strle 2013). But if we attempt to view the experiential landscape as primary, as suggested by Husserl, then the “outside” objective world can no longer be the frame of reference for the validity of experiential data. However, this does not mean that both of these perspectives might not effectively collaborate (on equal grounds), as proposed by Varela in his neurophenomenological project (1996).

## The Subject-Object Split and Excavation Fallacy

It would appear that most descriptions of introspection encompass two levels: somebody who is observing and that which is being observed. At the second, meta level there is a subject who is following a first-level mental process (which is supposed to be independent of the act of introspection). Such a view necessarily begs the question well known to any practitioners of Zen meditation: who (or rather—where) is the observer and what (where) is the observed?

Bitbol and Petitmengin (2013) warn us that such a notion of introspection is grounded in the dualistic division of the world into “the outside” and “the inside”, according to which introspection observes the inner goings-on in the same way as natural science observes the outside. But in a different epistemological framework, the one that does not accept dualistic and representational assumptions about introspection, the problems of division into subject and object and the problem

of deformation of experience due to observation (the so-called *excavation fallacy*; Depraz et al. 2003) are seen in a different light. Related to this, Bitbol and Petitmengin (2013) propose an alternative understanding of the gesture of becoming aware (i.e. introspection in the wider sense of the term, which also includes mindfulness): not as a dual split into meta-awareness and the observed phenomenological phenomenon, but as a new, independent and wholesome experience. The mindful reflection of any experience is thus an active process which creates a new experience.

The interdependence of experiential data and the process by which they are gained is analogous to the well-known situation in quantum mechanics where a measured quantity does not exist independently of the process of measurement. Bitbol and Petitmengin (2013) quote a proposal made by Niels Bohr that the idea of quantum mechanical measurement disturbing the measured phenomenon would be more appropriate if redefined as a co-definition of the phenomenon by the conditions of measurement: measuring thus does not deform the phenomenon but rather co-determines it. In our definition of introspection we also refute the notion of experiential data as something that exists in itself and can be corrupted in the act of introspection. On the contrary, the state of such data is determined in the process of introspection itself. Any objection that introspection deforms experiential data thus loses force, as introspection actually co-determines experience.

By analogy, mindfulness is itself a new type of experience. As such it has special status, albeit not in the sense that Dunlap thought it to have. Its particularity lies not in achieving some special detachment between the observed experience and the observer, nor in a special epistemic position that would allow mindfulness more cognitive access compared to other types of experience. What makes it particular is its intent: everyday, unreflected experience focuses on the content which is being brought forth, thus ignoring the manner of its emergence. The gesture of becoming aware brackets all content and interpretations, while replacing belief into what is being perceived, observed, considered or felt by an interest in the manner of the emergence of such content. Bitbol and Petitmengin (2013) believe that the process of phenomenological reduction actually implies an expansion of the scope of experience. Accordingly, it can be expected that training in mindfulness would further “expand” the array of potential experience.

## Impossibility of Research into Everyday Experience

Perhaps rather than talking about “expanding” the array of experience, it is more appropriate to talk about a *change* in the experiential landscape or even about



“becoming conscious differently” (Petranker 2003). Such a change (from the everyday state to an “altered” state of consciousness) is the trademark of most spiritual practices. If the basic characteristic of inquiry into experience lies in reaching new experiential states, this raises the question if it is at all possible to explore everyday experiential states by using this type of observation.

Interestingly enough, phenomenological research is in a very similar position to mindfulness practice in relation to this issue. Husserl’s method directs the researcher to bracket her everyday beliefs about the nature of the world (by performing phenomenological reduction). The resulting experience differs from everyday, non-reflected experience.

It seems that Husserl himself was well aware of this problem. Beyer describes this as the following “two-horned” dilemma:

If, on the one hand, the phenomenologist leaves the “natural attitude” and brackets his corresponding existence-belief, he cannot at the same time perform the perceptual experience he wishes to investigate. (This is the first horn of the dilemma.) [...] If, on the other hand, our phenomenologist makes use of that belief, then he is bound to violate the constraints put upon him by the local epoché: he cannot but fail to assume the phenomenological attitude. (This is the second horn.) (Beyer 2013)

The application of reduction essentially changes the experiential landscape. Thus it is hard to imagine either mindfulness or phenomenological reduction to be a “measurement tool” for observing everyday (non-reflected) experience.

It would appear that the answer we might give to this “problem” of phenomenological observation is similar to that given by Buddhists: it is not important to observe superficial experiential phenomena as they appear to non-reflective observers, as real research into experience must be directed towards inter- and intra-subjective asymptotes. While deeper reflection does indeed change superficial layers of experience, it might nevertheless preserve (and even emphasise) the invariants, which are essential for understanding consciousness. But there is also one other possibility: research that is carried out using the tool of mindfulness research might (beside invariants) also bring us to understand experiential possibilities which Western science is not even aware of (or has only a very unclear notion of under the broad term “mystical experiences”).

## Horizon

Husserl (in Bitbol and Petitmengin 2013) believed the perception of any object in the world to be incompletely given and always marked by the so-called *horizon*—the observer’s array of expectations about important aspects of the observed phenomenon. Along the lines of interpretation set out by Bitbol and Petitmengin (2013), we consider that the reflection of experience, just as with any case of looking to “the outside”, demands the adoption of a horizon. The horizons of introspection are conglomerates of factors (such as the related conceptual framework and communication situation) which co-form sequences of experiential steps leading to the formation of beliefs about an experience.<sup>1</sup>

To what extent does the Buddhists’ conceptual framework define their beliefs about the experience of meditators? And by analogy—to what extent does the conceptual framework of a phenomenologist define her research results? It has to be emphasized that horizon is not considered to be unfortunate distortions of experience, but are rather accepted as the intrinsic characteristic of any newly formed experience. To recall the above-mentioned analogy from quantum physics: horizons of introspection are perceived as a characteristic of both the measurement instrument and the act of measuring itself, indistinguishable from the measured phenomenon which they thus do not contaminate but rather co-determine.

By taking this into account, the question arises as to whether a Buddhist and a phenomenologist are making the same kind of measurement (or at least comparable ones)? Is it possible that persistent long-term research might bring both of them to discover the same invariants, or are they staring into completely different horizons?

These views and reflections relate to research into experience itself and the ways of “measuring” it. In the following section we touch upon the parallels and differences relating to the more general issues of research intentions in Buddhism and science.

## The Path to Salvation and/or Curiosity

The mindfulness meditation that Buddhism has been fostering for over two thousand years offers us a first-person approach, which has been missing from science which handles research from a third-person point of view. We have already

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1 A more detailed analysis of the factors contributing to the horizon of introspection can be found in Kordeš and Demšar (2016).

mentioned that Depraz, Varela and Vermersch (2003) listed *vipassana* meditation among the techniques of gesture of becoming aware. But since it is a technique which appeared in a very different context, this brings up new questions connected to the relationship between science and religious/spiritual practice (see Vörös 2016 for a discussion of similar questions).

In recent years the fourteenth Dalai Lama has been very active in representing Buddhism and its role in society. By encouraging dialogue between scientists and Buddhist monks (cf. *Mind and Life Dialogues*) he is trying to promote an optimistic attitude in which Buddhism and science could be compatible and might even attain a kind of synthesis. In the introduction to his book *The Universe in a Single Atom: The Convergence of Science and Spirituality*, he writes:

My confidence in venturing into science lies in my basic belief that as in science so in Buddhism, understanding the nature of reality is pursued by means of critical investigation: if scientific analysis were conclusively to demonstrate certain claims in Buddhism to be false, then we must accept the findings of science and abandon those claims. (Dalai Lama 2005, 2–3)

But, as mentioned by Flanagan, we must not overlook the reminder the Dalai Lama added to this. Referring to Tsonghap (1357–1419), he quotes Thupten Jinpa's observation that it is necessary to distinguish between "what is negated through scientific method and what has not been observed through such a method", or put in other words, we must not conflate the processes of "not finding something" and "finding its nonexistence" (Flanagan 2011, 62–63). This way Buddhists can, for example, continue to believe in reincarnation, since science has not yet definitely proved that it does not exist. We might even argue that such definite proof could not be given, since irrefutable proof is hard to come by outside formal logic and mathematics. But this does not imply that everything is allowed, since empirical sciences also take into account inductive reasoning, generalization, probability and statistical explanations.

Even though both Buddhism and science underline the need for research, proceeding from our understanding of these two areas it could be said that one of the most important differences between them lies in the fact that Buddhists accept that Buddha in his enlightenment completely understood the nature of reality. How could science possibly have anything to add to that? It thus might make more sense to say that Buddhism and science represent two different areas: Buddha dealt with the ultimate truth—how to liberate yourself from the cycle of rebirth and attain complete freedom (*nibbāna*), while science deals with

conventional truth and the everyday world, allowing for deeper insight into its functioning. But as Lopez (2008) suggested in his analysis of the relationship between Buddhism and science, this division is not as simple as it might seem, since both of these traditions have contributed much to both of these areas. How should we understand mindfulness in light of this?

Buddha described his quest for the path to spiritual freedom in the Four Noble Truths. While the first three truths represent theory, the fourth one is a method of practice leading to deep practical experience of the first three truths. This combination of theoretical knowledge and practical experience should bring us to experiential wisdom allowing for “a direct, deep and intuitive level of perception that lies beyond any thought, concept or idea” (Pečenko 2014, 38) and bringing us towards enlightenment. Mindfulness can thus be regarded as being a kind of research on mental states, and in fact an important compendium of texts entitled *Abhidhamma-pitaka* was written dedicated to insights about the mind, a kind of phenomenological overview of mental states and processes (Bohdi and Bomhard 2007). Nevertheless the main motivation for pursuing mindfulness does not spring from theoretical curiosity, but rather the practical purpose of Buddha’s teaching—liberation from suffering. This is why in our opinion one of the main differences between Buddhism and science lies in the goal when using meditation. Unlike scientists, Buddhists do not practice mindfulness out of pure curiosity, it has a soteriological character. Getting to know deeper and deeper layers of the mind serves the purpose of facing constant suffering (*dukkha*) and learning about its origins, which leads to the ultimate liberation.

We could agree that the motivation of many scientists considering fundamental questions in the area of natural science, as well as in that of the human mind, is mostly a desire to discover the unknown and get to know the truth, or at least come closer to it. But it is also possible to argue against such an idealized vision of science, in which the fundamental motivation springs from pure curiosity. Let us point out two aspects relevant for this discussion. The first is striving for the applicability of knowledge, while the second is related to the existential commitments of the researchers themselves.

An overview of scientific practice shows us that throughout history scientific research has often been guided by functional goals—for example, finding a cure for Alzheimer’s disease. In order to reach this goal it is necessary to explore the inner workings of the brain, since (beside other knowledge) understanding the functioning of our nervous system leads us towards the desired goal. Psychotherapy might also be considered in a similar way, as most therapists claim their work to be helping their patients towards a deeper understanding of themselves. Does this

imply that the exploration of the mind is just a by-product of loosening its inner knots? Here we might find parallels to Buddhism. But regardless of the fact that scientific research is often directed towards a given (functional) goal, it would appear that the essential characteristic of science is its open-endedness, as it is driven by curiosity rather than distress.

Even if we disregard the intention of applicability, is it really “pure” curiosity that drives us to explore? While this might appear to be so for much of science, it is nevertheless less certain if this holds true in the case of research into consciousness. Assuming that first-person science is based on the researcher herself, she being the one who is experiencing it, then both the gathering of data and self-exploration imply an existential commitment is being made. It is thus not merely curious research into something external, as by entering the process of self-exploration we accept the fact that this practice might change us. In our opinion this is similar to the situation in mindfulness, and it is this very element of existential commitment that is crucial for the question of ethics in research.

Although we have been critical about not differentiating the role of mindfulness in Buddhism and science, this does not imply that important insights cannot be obtained. On the contrary, it might be the case that mindfulness being part of the Eight-Fold Path could bring us to new insights into the issue of ethics in research. As a new apprentice takes to the path of meditative practice, she must first learn about right understanding and right thinking (wisdom), and develop the related skills—right speaking, right acting and right lifestyle. These are practical manifestations of wisdom in everyday life. Understanding the law of *karma* leads her towards a life in which she will strive to avoid any unpleasant consequence of her actions. She thus avoids such murder, theft, violence and greed, and rather develops unselfish love and benevolence. These virtues are being manifested by a right lifestyle that leads to inner peace, rather than by actions exploiting other people and the environment. As she continues to develop concentration and observation of her mind, she deepens her wisdom. Such a path is based upon virtues, upon acting correctly in everyday life, and represents a basis for inner development and wisdom (Pečenko 2014). We can thus see that in Buddhism it is impossible to separate ethics from research, as mindfulness cannot be used merely as a tool for exploring consciousness without at the same time developing skills and sympathy. It would also be good for science to accept this insight about binding research to ethics at its very starting point.

## Final Thoughts

Mindfulness is becoming more and more integrated into Western approaches, especially in various types of psychotherapy. In this article we focused on some of the parallels and differences between mindfulness and first-person approaches to research into consciousness in cognitive science. We have mostly considered the ways in which mindfulness might contribute to first-person research, but let us now conclude with a suggestion about how scientific approaches might enrich spiritual schools. The idea is that science can challenge these schools by questioning their practices using critical analysis. Open-endedness is the foundation of science, and this makes it ready for ever new verifications, dialogues and new horizons of research. We thus suggest that this attitude might enrich spiritual practices. In the words of the fourteenth Dalai Lama, what impressed him most in science is its international character, “their amazing willingness to share knowledge with each other without regard for national boundaries” (Dalai Lama 2005, 3). Throughout history, spiritual schools have also been inspiring each other, regardless of their national or regional contents. Many doubt such mutual enrichment can be obtained between science and spiritual practices, seeing both as belonging to separate spheres. In the words of Stephen Jay Gould, “each subject has a legitimate magisterium, or domain of teaching authority—and these magisteria do not overlap—‘nonoverlapping magisteria’” (ibid. 1997). While such a view might diminish the possibility of conflict, it also diminishes the potential for collaboration. If one accepts, as we do, that consciousness and mental processes can also be the subject of scientific research, then the distinction between science investigating “the empirical constitution of the universe, and religion in the search for proper ethical values and the spiritual meaning of our lives” (Gould, 1997), becomes questionable. As we have suggested, Buddhism warns us that science should accept the insight about binding research to ethics at its very starting point. However, we would also like to point out that scientific open-endedness poses a challenge to Buddhism and other spiritual schools.<sup>2</sup>

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2 This article is partially based on our recent discussion concerning the problems of mindfulness-based research in cognitive science (Kordeš and Markič 2015).



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