Experimental Phenomenology in Mindfulness Research

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Abstract

The present paper argues that experimental phenomenology has an important role to play in research on mindfulness. Experimental phenomenology is defined as a subcategory of phenomenology (defined as the science of our subjective experience of being in the world), which explores the effects of intentional variations of subjective experiencing (direction of attention and choice of attitude) on subsequent experience. To count as experimental phenomenology, both the independent and dependent variable have to be phenomenological. Because mindfulness involves paying attention to present experience with a specific attitude, it is well suited for experimental-phenomenological research. What makes experimental phenomenology into a scientific endeavor is the intersubjective nature of this kind of study: potential effects described by one person can be subjected to replication both by the same person, and by other persons. Also, conclusions drawn on the basis of this kind of study are hypothetical and provisional, and may be modified or specified on the basis of further study. In this paper, the principles of experimental phenomenology are illustrated by (a) variations of a given mindfulness practice (the body scan), and (b) the construction of a personalized mindfulness practice (mindful driving). Finally, three varieties of experimental phenomenology in research on mindfulness are discussed: (1) the use of qualitative methods to analyze mindfulness practices and their potential effects, (2) idiographic research with the use of single-subject designs and experience sampling, and (3) randomized controlled studies of the effects of mindfulness practices on present experience.

Keywords Mindfulness · Phenomenology · Subjectivity · Experimental phenomenology · Mindful driving

Empirical research on mindfulness has undergone a tremendous development during the last decades (e.g., Goleman and Davidson 2017). For example, controlled studies have documented the effects of mindfulness exercises on symptoms of anxiety and depression (e.g., Blanck et al. 2018), and statistical analyses of mediators indicate that changes in mindfulness contribute to the explanation of the effects of mindfulness-based interventions (e.g., Gu et al. 2015). Still, these findings have their limitations. For example, most of them refer to average effects in group comparisons, and linear correlations between variables, and take little account of what occurs in the form of experiences at the level of the individual. In this paper, it is argued that this variable-oriented research needs to be complemented by a more person-oriented, experience-near, phenomenological research

that can help to delineate concrete processes of change at the level of the individual. In particular, it is argued that the understanding of mindfulness processes may benefit from research referred to as *experimental phenomenology*.

The argument proceeds in three sections. The first section describes and discusses basic aspects of phenomenology, defined as the scientific study of subjectivity (our subjective experience of being in the world). Experimental phenomenology is differentiated from theoretical phenomenology, descriptive phenomenology, and interdisciplinary varieties such as neurophenomenology. In the second section, the concept of experimental phenomenology is elaborated. Some methodological principles are delineated, and illustrated with concrete examples. In the third and final section, three different varieties of experimental-phenomenological research are discussed in a broader methodological perspective: (1) the use of descriptive-phenomenological methods to document and explore phenomenological practices and their potential effects, (2) idiographic research with the use of single-subject designs and experience sampling, and (3) controlled effect studies on the group level.

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Phenomenology as the Science of Subjectivity

Phenomenology can be defined as the scientific analysis of our subjective experience of being in the world. According to Husserl (1938/1970), to use a phenomenological method means to turn our attention to conscious experience as such. As he formulates it, this represents a shift in perspective from our usual *natural attitude* with its focus on the world (and our practical engagement with things in the world) to a *phenomenological attitude* characterized by a focus on our experiences of being in the world. This kind of change of perspective is referred to by Husserl as an *epoché*.

Importantly, Husserl points out that this change of perspective leaves everything just as it is (i.e., the existence of an objective world is in no way questioned). The only change is of perspective: “through the epoché a new way of experiencing, of thinking, of theorizing, is opened to the philosopher; here, situated *above* his own natural being and *above* the natural world, he loses nothing of their being and their objective truths” (Husserl 1938/1970, p. 78). That is, instead of focusing on the objective world as it appears *from* our subjective perspective (i.e., our natural attitude), attention is turned *to* the subjective perspective as such (a phenomenological attitude).

What Husserl describes here can be compared with a number of concepts from modern psychology, such as “decentering,” “self-distant perspective,” “cognitive distancing,” “meta-cognitive awareness,” and “cognitive defusion.” Common to all of these concepts is that they refer to the “capacity to shift experiential perspective—from *within* one’s subjective experience *onto* that experience” (Bernstein et al. 2015, s. 599).

Deliberately engaging in such a shift of perspective is here referred to as engaging in a *phenomenological practice*. Phenomenological practices are based on taking what Husserl calls a phenomenological attitude to our experiencing of the world. In the present terminology, Husserl’s differentiation between the natural attitude and the phenomenological attitude corresponds to a differentiation between *behavioral* practices (focused on the interaction with the surrounding world) and *phenomenological* practices (focused on one’s lived experience of being in the world). Various forms of meditation and mindfulness exercises are examples of such phenomenological practices.

It is possible to differentiate between at least three different varieties of phenomenology: (1) theoretical phenomenology, which aims for an understanding of the nature of human subjectivity and tries to delineate basic dimensions of human subjectivity; (2) descriptive phenomenology, which uses methods for the description and analysis of people’s actual experiences; and (3) experimental phenomenology, which aims to study the experiential effects of various phenomenological practices, and to develop phenomenological practices

that can have a beneficial influence on people’s experienced life quality. In this section, theoretical and descriptive phenomenology are discussed briefly, for the purpose of clarifying how experimental phenomenology is related to, and different from, these varieties of phenomenology.

Theoretical Phenomenology

Husserl’s (1938/1970) main interest was in analyzing the nature of human subjectivity—that is, his interests were more theoretical than practical. He referred to this as transcendental phenomenology, but here, we use the term theoretical phenomenology. As defined here, theoretical phenomenology makes use of phenomenological observation and analysis to develop our theoretical understanding of the nature of human subjectivity. Husserl was a pioneer in this area, but it is important to remember that his analyses and conclusions represent fallible formulations that are open to revision on the basis of criticism and continued more penetrating analyses.

One of Husserl’s most basic conclusions was that all objective knowledge about the world by necessity involves a subjective perspective on these objective realities. There is no way to access any objective realities without going via our subjective perspective; yet, we seldom focus on this subjective perspective as such. This represents a radically different position than the rather common view of subjectivity as an opposite to objectivity—as if objectivity would require the absence of subjectivity. Basic to Husserl’s phenomenology is the assumption that we can never perceive or conceive anything without our subjectivity being involved. In other words, it is only through our subjectivity that we have access to the objective world. This goes clearly against all kinds of subject-object dualism. The relation between subject and object is seen as an “a priori correlation”—that is, subject and object are intrinsically related. Husserl (1938/1970) describes the subjective and objective as two correlated poles of our experiences.

Some of the most important of Husserl’s phenomenological analyses focus on what characterizes the subjective pole of our experience. One way of summarizing these (Lundh 2018) is in terms of four main characteristics of our subjective experience of being in the world: embodiment, temporality, intentionality, and intersubjectivity.

Embodiment

Embodiment, among other things, means that our subjectivity is firmly anchored in a living body which is spatially situated “here,” in contrast to “there,” and serves as a center for our experience of the world—in other words, the position of our body determines our perceptual perspective on the world. Another important aspect of embodiment is that the body can be made an object of attention “from within”; according

to Husserl, this may lay the foundation for a phenomenological somatology. Both of these aspects may serve as the basis for various phenomenological practices, such as mindful attention to how the world appears to us through our senses here and now, and the “body scan” as commonly used in various mindfulness-based programs (e.g., Kabat-Zinn 2013).

Yet, another essential aspect is that we have an experience of “holding sway” (Husserl 1938/1970, p. 217–218) over the body. That is, we can move our body, change position, actively explore the environment, and influence our surroundings in various ways, by an effort of will—which represents another kind of causality than the physical causality that the body is also subject to (e.g., as being affected by forces of gravitation). Among the phenomenological practices based on this aspect of embodiment are various yoga exercises, mindful walking, and generally any kind of activity that is carried out deliberately as an example of what is sometimes referred to as “acting with awareness” (e.g., Baer et al. 2006).

Temporality

Temporality means that our subjectivity is anchored in a continually changing present moment, a “now” as distinct from other temporal moments in the past or future. At the same time, phenomenological analysis shows that the temporal structure of our subjective experience cannot be reduced to a sequence of separate moments, but is “layered” in the sense that it essentially involves not only a *now moment*, but also *retention* (of previous moments) and *protention* (of anticipated moments). As emphasized by Husserl (1938/1970), this does not involve memory or expectations in the strict sense, but rather implies that perception occurs over time. Consider, for example, our experience of a melody; if our subjective experience was simply a series of separate moments, we might be able to experience one tone at a time, but we would not be able to experience any melody. What makes us able to experience the melody as a whole is that our consciousness is constructed in such a way that we naturally integrate temporal occurrences into larger unities.

This illustrates an important thing about theoretical phenomenology: to analyze subjective experience goes far deeper than merely describing conscious experience. It also involves analyzing the necessary conditions for the psychological phenomena involved. For example, such an analysis shows that without the ability to synthesize time (i.e., passively integrating the now moment with retention and protention), it would not be possible for us to perceive a melody, or to read and comprehend a complete sentence, or to follow an argument that proceeds over time—or to carry out mindfulness exercises.

Examples of phenomenological practices specifically based on temporality are exercises that involve a deliberate slowing down of our activities, while paying close attention

to details of how we experience things as they unfold over time (e.g., slow mindful eating). Empirical evidence also indicates that mindfulness meditation can alter time perception (Kramer et al. 2013).

Intentionality

Intentionality refers to the fact that our experiences are generally *about* some kind of object (a so-called intentional object), a “this” as distinct from other things. Further, we may intentionally shift our attention from one object to another. This is equally applicable both in the natural attitude (where we may shift our attention between different external objects, such as for example a hammer and a nail), and in the phenomenological attitude (where we may shift our attention between various bodily sensations, sense impressions, thoughts, or feelings).

Further, the shifting between a natural attitude and a phenomenological attitude illustrates that we have an ability also to shift attitude. According to Husserl (1938/1970), it is an essential aspect of our conscious subjectivity that we can freely adapt our attitude (defined as an all-encompassing stance towards things, which tends to color all motivation, willing, knowing and acting in a specific way). In his writings he tends to discuss such attitudes in terms of contrasting pairs, such as a natural versus a phenomenological attitude, a theoretical versus a practical attitude, an evaluative versus a disengaged attitude, and a naturalistic versus a personalistic attitude. This ability to intentionally shift attention and attitude is what makes an experimental phenomenology possible—that is, a study of the experiential effects of such intentional shifts of attention and attitude.

Intersubjectivity

Intersubjectivity refers to the fact that we perceive ourselves as one subject (“I”) among others—each with a separate body that defines a center of experience, with its subjective perspective on the world, and its specific intentionality. There are several aspects to this intersubjectivity. One aspect, as Husserl argues (1938/1970), is that we tend to understand the subjectivity of other individuals on analogy with our own. Just as our experience of the world takes its starting-point from the *here* (embodiment), the *now* (temporality), and a selective attention to *this* (intentionality), our understanding of others’ subjectivity takes its starting-point from the “I” (our own intentionality, as separate from the intentionalities of other subjects). One implication is that our empathic understanding of others is easier when their experiences are more similar to our own experiences than when they differ much from ours.

Another aspect of intersubjectivity is that, in our communication with others, we often tend to reconcile our subjective

perspective with theirs by means of a kind of “reciprocal correction” (Husserl 1938/1970, p. 163), so as to arrive at some kind of intersubjective consensus. Husserl concludes that *the world is intersubjectively constituted*, as the result of such syntheses of individual intentionalities (Husserl 1938/1970, p. 168). This intersubjective constitution of the world is important to the understanding of the scientific status of phenomenology as a method. A phenomenological analysis of how the world appears to us is an analysis of something that we all have access to, in our capacity as human beings. In other words, we are dealing with realities that are intersubjectively available. This makes it possible to conduct meaningful discussions of these analyses, where different arguments can be advanced, criticized, corrected and developed in various ways. Even if this is not an empirical method in the traditional sense, it is nevertheless the case that conclusions on the basis of these analyses are provisional and hypothetical, and possible to test by means of new arguments based on experiences which we all have potential access to. This is important in view of the requirement for intersubjectivity in science—in order for knowledge to qualify for a scientific status, it has to be the result of methods that make it possible for different researchers to replicate the same investigation and see if they get the same results.

In summary, what has been said above suggests that our subjective perspective can be characterized in terms of “here” (embodiment), “now” (temporality), “this” (intentionality), and “I” (intersubjectivity), or a fourfold structure of *here-now-this-I*. These terms have been referred to as *indexical* terms (Peirce 1932), because they do not point to specific physical places, moments, objects, and individuals, but to places, moments, objects, and individuals that vary depending on where, when and by whom the terms are used. In other words, these terms do not refer to objective physical or natural realities, but to a subjective *perspective* on these realities. The relevance of this theoretical-phenomenological analysis to mindfulness research, and the experimental study of phenomenological practices in general, is that it attempts to describe some essential dimensions of the experience of being-in-the-world that can be focused on in phenomenological practices (such as mindfulness meditation).

Descriptive Phenomenology

The ability to take a phenomenological attitude to experience lies at the basis of our capacity to give self-reports about our experience, and is used in different varieties of psychological research under the name of “phenomenological data.” In traditional empirical research, however, this is usually done in a rather informal way, without the use of any phenomenological method to arrive at more precise descriptions of experience. For the purpose of constructing more precise descriptions of

experiences, a number of different approaches to a descriptive phenomenology have been developed.

Although Husserl’s primary interest lay in outlining the essential characteristics of human subjectivity by means of theoretical analyses (“transcendental phenomenology”), he also described the possibility of an empirical form of “descriptive phenomenological psychology.” Although both varieties of phenomenology focus on subjective experience, the empirical variety “has a different attitude and is under the guidance of another task” (Husserl 1938/1970, p. 208). Whereas the former aims to delineate *general* structures in human subjectivity and intentionality, the latter aims at a description of individual persons’ *specific* intentionalities. This descriptive empirical phenomenology, according to Husserl, requires empathic immersion into the other person’s experiences and an attitude which means to “take and have no position” (p. 240) in relation to what is experienced as valid by that person.

Along somewhat similar lines, Giorgi (2009) has outlined a descriptive-phenomenological method in psychology, focused on what characterizes different types of human experiences. What is aimed for here is an analysis of retrospective descriptions of experiences, in order to identify what is essential about these experiences. Another example is Smith and Osborn’s (2003) Interpretative Phenomenological Analysis (IPA). Although these varieties of empirical phenomenology focus on people’s subjective experiences, they do not contain any experimental element. Moreover, they have a retrospective rather than an introspective character, focusing on previous experiences, in a way that makes them less immediately relevant to the study of phenomenological practices.

Two approaches to descriptive phenomenology that are more relevant here are descriptive experiential sampling (Hurlburt and Heavey 2006) and micro-phenomenology (Petitmengin et al. 2017). In descriptive experiential sampling, the subjects are instructed to write down brief notes of lived experience in their everyday life whenever a beeper sounds; they are then interviewed about these experiences within 24 h on the basis of these notes. During this interview the participant and the investigator collaborate in developing high fidelity accounts of each sampled moment of experience; the basic idea is that the verbal notes should work as retrieval cues for the reconstruction of the experience.

Micro-phenomenology also makes use of interviews to develop a detailed analysis of small segments of experiences, but differs from descriptive experiential sampling by focusing on the experiential process rather than its contents. Another difference is that it does not rely on the sampling of experiences in natural environments; in some of its applications, however, it may help the subject to re-enact or “evoke” the experience in direct connection with the interview. In a pilot study of practitioners of Buddhist meditation, for example, Petitmengin et al. (2017) instructed the subjects to engage in a breathing meditation for 20 min, and then carried out a micro-phenomenological

interview for 60–90 min focused on mind-wandering episodes that had occurred during the meditation, and the process of regaining and maintaining contact with present experience. This enabled them to collect “fine-grained descriptions of the dynamics of the mind wandering process” (p. 187), and led them to develop “a sketch of the dynamic structure of these experiences... as hypotheses that may be confirmed, refined or invalidated by new interviews and analyses in the context of similar or new experiential protocols” (p. 187).

Both micro-phenomenology and descriptive experiential sampling are based on a “microscopic” observation and description of brief samples of experience. This makes them especially relevant to neurophenomenology with its aim to understand the relation between subjective experience and brain processes (e.g., Varela 1996). An advanced understanding of the brain processes that are involved in our subjective experiences requires not only an adequate conceptualization of human subjectivity but also a fine-grained description of our subjective experiences as they unfold in time. Whereas it is the task of theoretical phenomenology to provide an adequate conceptualization of our subjectivity, it is the task of descriptive phenomenology (e.g., micro-phenomenology) to provide a fine-grained description of subjective experiences as they unfold in time.

The capacity for introspection that is used in these varieties of descriptive phenomenology is also essential to the ability to *follow instructions* that is involved in all phenomenological practices. As argued by Lundh (1979), an elementary form of introspection is involved whenever we attend to our perceptions, sensations, feelings or thoughts as part of everyday human “information processing”. This capacity for introspective attention is what makes various forms of *controlled* information processing possible – including intentionally modifying one’s attentional focus, deliberate reflection, and methodological uses of introspection. In general, “if a control process is available to introspection, then it will also be possible to modify it through instruction” (Lundh 1979, p. 234). In other words, experimental phenomenology rests on the same basic capacity for introspective attention that also lies at the basis of descriptive-phenomenological methods. In addition, as described in more detail below, methods of descriptive phenomenology may play an important role in the development of more sophisticated forms of experimental phenomenology.

Experimental Phenomenology

Experimental phenomenology, as defined here, is the investigation of phenomenological practices and their effects on subsequent experience. Importantly, this means that experimental phenomenology stays entirely at the level of experiences. In terms of traditional experimental language, it requires that both the independent and dependent variables are

phenomenological. The independent variable is a phenomenological practice, and the dependent variables are potential effects of this practice on subsequent experiences. The aim of this section is to clarify these notions in more detail. First, the nature of phenomenological practices is discussed, and differentiated from other kinds of practices. Second, the discussion turns to the potential experiential effects of these practices that are of interest, and how they may be described, explored and measured. Some basic aspects of experimental research are discussed with regard to their application in this case: active intervention, systematic variation of the intervention, and replication of effects. Finally, the importance of developing personalized phenomenological practices is discussed, as well as the striving for generalization.

The Nature of Phenomenological Practices

To engage in a phenomenological practice is to focus attention on one’s experiences rather than on the world (i.e., to shift from a natural to a phenomenological attitude, in Husserl’s terms) according to some set of instructions. Importantly, although this involves a shift of attention and attitude, it need not involve any modification of overt behavior. Basic to experimental phenomenology, however, is the notion of *instructions* and *self-instructions*, because these are what define the nature of a particular phenomenological practice.

Mindfulness meditation represents one kind of phenomenological practice. There are a number of definitions of mindfulness in the literature, and although they differ somewhat most of them mention at least two basic instructions: (1) to deliberately focus attention on some aspect of present experience; and (2) to do this with a particular kind of attitude, variously characterized in terms such as being accepting and non-judging; kind, friendly and caring; and showing openness, curiosity, and non-reactivity to experience (e.g., Kabat-Zinn 2013; Shapiro and Carlson 2017). An important aspect of this is to gently bring attention back to the present moment when getting distracted by thoughts. All these instructions are about regulating our inner experiencing, and do not *have to* involve any publicly observable behavior.

Some phenomenological practices, however, do involve observable behavior. This may be illustrated by comparing various breathing exercises. A breathing meditation that simply involves attending to one’s breathing just as it is, with no instruction to change it in any way, is a pure phenomenological practice. A breathing exercise where the individual is instructed to breathe in a particular way (for example, slowly or deeply), while at the same time paying close attention to the breathing, is not a *pure* phenomenological exercise because it also involves a change in overt behavior. It is still a phenomenological practice, however, because it essentially involves instructions about the direction of attention. On the other hand, if the instructions are *only* about breathing in a particular

way, and do not say anything about attention or attitudes, it is not a phenomenological practice but a pure behavioral practice.

The first explicit formulation of an experimental phenomenology can be seen in the works of Don Ihde (2012), although in a completely different context than the present one—the study of perceptual illusions (e.g., the Necker cube) and how intentional variations of subjective experiencing can affect our experience of these illusions. The kind of investigation that characterizes experimental phenomenology, however, has much older roots. Work along similar lines can be found in old Hindu and Buddhist traditions as well as among antique philosophers in ancient Greece and Rome. For example, in traditional Buddhism various meditation techniques were developed to achieve sustained attention, a stilling of the mind, and “joy, luminosity, and nonconceptuality” (Wallace 2011, p.110). Similarly, the work of antique philosophers such as Epicurus and the stoics has been described to involve the development of techniques for self-care and self-improvement (Foucault 1988), and the achievement of happiness by transforming the individual’s mode of perceiving and being in the world (Hadot 2004). More generally, it can be assumed that formal or informal varieties of experimental phenomenology play a role in all kinds of therapeutic traditions.

Studying Potential Effects of Phenomenological Practices

What is required to make the study of phenomenological practices into an *experimental* phenomenology is that it does not rest only on the observation of what happens after engaging in a phenomenological practice, but involves an active intervention in the form of an intentional variation of such phenomenological practices. What is required to make it into an experimental *phenomenology* is that both the independent and dependent variables are phenomenological. If only the independent variable (i.e., the practice engaged in) is phenomenological, whereas the dependent variable is behavioral, physiological, or takes the form of self-assessment of traits (e.g., trait anxiety, or mindfulness traits/skills) on a questionnaire, this does not count as experimental phenomenology. The reason that self-assessment of traits does not generally count as phenomenological is that it does not represent phenomenological observations of present experience. Self-assessment of traits is based on the participants’ recall of, or beliefs about, how they usually function—that is, information retrieved from episodic and/or semantic memory (Klein et al. 1996). Experimental phenomenology may vary in methodological rigor and theoretical depth, depending on the extent to which it fulfills typical characteristics of experimental designs, such as variation of an independent variable, experimental control over different variables, and replication of effects.

Active Intervention Rather than Passive Observation

The experimental phenomenology of mindfulness practices has its starting-point in observations that a specific form of mindfulness practice (e.g., focusing on the breathing with an accepting non-judgmental attitude) seems to be followed by certain kinds of consequences (e.g., an increased relaxation and clarity of awareness). Importantly, a single observation of this kind is (1) about a temporal sequence, and not about a causal relationship, and (2) subjective in the sense that it is about an apparent temporal sequence (as specified in the words “seems to” in the formulation above). By repeating this practice to see if the observations are replicated, either with the same individual or with other individuals, however, it may be possible to search for evidence of a causal relationship. Also, by replicating this kind of study with several individuals, it may be possible to turn the first subjective observation into a set of intersubjective observations.

In this process, it is not likely that a given practice will always be followed by the same type of consequences. An important research question is *under which conditions* the obtained type of effect appears, and under which conditions it does not. This is in accordance with the argument put forward by authors such as McGuire (2004) and Langer (2014) that hypotheses are true under certain circumstances and that the purpose of research should therefore not be just to *test* hypotheses, but to study *under which circumstances* a hypothesis is true, and under which circumstances it is not. One important aspect of this question when it comes to experimental phenomenology is *personalization*: what works for one specific person need not work equally well for another.

Systematic Variation of Phenomenological Practices

An important research question is what happens if various aspects of a given practice are modified. Will the effects still be the same, or will they change? By means of experimental variation of a mindfulness practice that is under study, it may be possible to draw conclusions about what is important (or essential) about a certain type of practice (without which the effects are not likely to appear), and what is less important about it (i.e., may be removed or modified with little loss of effect). This kind of research may also inform us about differences and similarities in effects between different variations of a given practice, under different conditions, and between different persons.

One reason for engaging in experimental phenomenology is that what works for one person need not work equally well for another. We are all different in various ways, and it would probably be best if practices could be personalized. This says something important about experimental phenomenology as such—one of its primary purposes is to establish what works for each person. By communicating about what works for *one*

of us, however, we may also possibly be able to find convergences and consensus on what works for *many* of us—and perhaps even be able to identify some general principles for what works for *all* of us. That is, experimental phenomenology in mindfulness research has both idiographic ambitions (i.e., to find out what works for each individual) and nomothetic ambitions (i.e., to describe general principles for mindfulness practice).

Exploring Variations of an Existing Mindfulness Practice: the Body Scan

As an illustration, consider the so-called body scan. The body scan is part of many mindfulness programs (e.g., Kabat-Zinn 2013; Shapiro and Carlson 2017). There are many different versions of it in books and on the Internet, but the instructions tend to have some basic elements in common. First, it involves having one's attention moving systematically through the regions of the body, often by starting from the toes and moving all the way up to the head, "paying close attention to any sensations (or lack of sensations) in this area of your body" (Shapiro and Carlson 2017, p. 158). A second element is to use the breath systematically, by "breathing into" each body area in connection with attending to it. Third, if the attention wanders off the instruction is to "bring your mind back to the breath and to the region you are focusing on each time you notice that your attention has wandered off" (Kabat-Zinn 2013, p. 96). Fourth, this way of scanning all regions of the body while focusing attention on the sensations is to be done with a certain attitude that does not only involve an active interest and a gentle curiosity towards these sensations but also a friendly, caring attitude.

The body scan can be varied in a large number of ways, of which some minor variations (e.g., the order of body parts) are probably rather unimportant to its effects. Other variations, however, may perhaps have more importance for its effects. This is a matter that may be explored both by means of an informal variety of experimental phenomenology that can be carried out as part of clinical practice, and by means of a more rigorous form of experimental phenomenology that makes use of methods of descriptive phenomenology. As illustrations of the more informal variety, consider first the following three variations of the body scan:

A Tension/Relaxation Version When person A tests the body scan, she feels uneasy and anxious and unable to relax. She responds much more positively, however, to a mindful tension and relaxation exercise, based on Jacobson's (1938) progressive relaxation, where she is instructed to scan the body while tensing the muscles in each area of the body in turn before relaxing them, and by mindfully noticing the difference between tension and relaxation throughout the exercise.

An Open Monitoring Version Person B finds it boring to practice the body scan in the regular fashion by systematically going through the body in a certain order. By experimenting on his own, however, he discovers that it works much better for him to proceed in a more spontaneous or impressionistic way, by focusing on the body sensations that stand out most clearly at each present moment. This may be called an open monitoring version of the body scan, because it is guided by an open monitoring (Lutz et al. 2008) of the bodily sensations that turn up spontaneously and thereby form a natural focus of attention.

A Verbal Affirmation Version Person C has difficulties with his concentration while practicing the body scan on his own, in such a way that he tends to give up. When he is encouraged to scan the body by using verbal self-instructions of the form, "May I explore the feelings in my x (eyes, jaws, lips, neck, feet, etc.) by breathing into that part of my body", however, he is able to keep his attention much better. One possible explanation is that when using this verbal self-instruction the person's verbal working memory (the "phonological loop"; Baddeley 2007) is filled with information that makes it more difficult for distracting thoughts to get a hold. The words fill up working memory in a way that decreases the probability of being distracted. On the other hand, when Person D tests this version of the body scan she reports a feeling that this makes the exercise "too verbal" so that essential aspects of experiencing tend to get lost.

These examples illustrate the general principle that, even in the absence of more controlled experimental research and any more sophisticated methods for phenomenological description of these different variations of mindfulness practice, it may be valuable to have some sort of "catalog" of these, together with descriptions of different individuals' experiences, including contradictory responses to one and the same type of practice (as in the last example). The building of such a "catalog" may proceed in two stages, first by means of clinical and other informal observations, and then by means of more rigorous descriptive-phenomenological methods. Experimental phenomenology has to take its starting-point in informal observations of existing varieties of phenomenological practices, as defined by their specific sets of instructions. Just like any science, it starts from observations made in the everyday life world. To proceed, however, it has to engage in a careful exploration of the lived practices elicited by these instructions (e.g., by the use of micro-phenomenological methods) and their effects (e.g., by the use of experiential sampling).

One thing that makes experimental phenomenology into a scientific endeavor is the intersubjective nature of this kind of study. That is, potential effects described by one person can be subjected to replication both by the same person, and by other persons. Also, any kind of conclusions that are drawn on the basis of this kind of study are hypothetical and provisional,

and may have to be modified or specified on the basis of further study. This may also take the form of the construction and testing of new phenomenological practices, and the personalization of these. To illustrate this, the following example shows how a new mindfulness practice can be developed by means of experimental phenomenology: a personalized exercise in mindful driving.

Creating Personalized Mindfulness Practices

The construction of new mindfulness practices must be constrained by a definition of mindfulness, so that there can be a clear consensus that the practice in question counts as a *mindfulness* practice, and not some other kind of phenomenological practice. In addition to the definition in terms of attention and attitude (Kabat-Zinn 2013; Shapiro and Carlson 2017), it may be argued that a mindfulness practice must also contain an instruction that, if attention wanders off from the here-and-now, the participant should notice this without judgment and bring back attention to the here-and-now. To this may also be added that the attention should not be controlled in detail according to some highly specified procedure, of the kind that would be considered “mindless” by Langer (2014), but should be relatively freely deployed within the here-and-now. The latter is one reason why it may be ill-advised to refer to these practices as mindfulness *procedures*, as this would imply that what is at stake is some rather rigid routine—hence, the term used is mindfulness *practices*, not procedures.

Illustration: Mindful Driving

The mindful driving practice that is described below was constructed specifically for Andrew, a man in the upper middle ages, who had experienced quite severe problems with driving long distances, because he used to become quite sleepy along the way. For several years, he had used to cope with these problems by taking regular pauses now and then, and driving no longer than approximately 100 km without taking a pause. During these pauses, he would drink coffee, take a walk, or lie down to rest or sleep for a while. The problems became more acute after he had an incident of falling asleep for a few seconds during driving and waking up just in time to avoid a collision with a meeting car. As he had some previous experience with yoga and meditation, he was ready to engage in a mindfulness-based treatment specifically focused on driving. Using principles of experimental phenomenology, specific personalized instructions for mindful attention were developed successively over a number of weeks, and tested during driving shorter distances. Importantly, Andrew participated actively in shaping the details of the mindful driving instructions, so that they would suit his needs and preferences. Although this was not done as part of any research project and did not make use of any descriptive-phenomenological

methodology, the rather long driving episodes made it possible for Andrew to make repeated self-observations during driving that could be put down in the form of notes afterwards, and could serve as the basis for successive modification of the practice.

In the following, the rationale and the instructions are summarized:

The rationale for the treatment. Driving a car can be done almost mindlessly, while thinking about other things or talking with passengers, with just a minimum of attention on the road and on the meeting traffic. It is sometimes described as being on “autopilot”. But driving, like everything else, also affords a valuable and exciting opportunity for mindful experiencing. The key is to focus on our being here and now, and there are surprisingly many aspects of such a focus when driving. In this specific program for mindful driving we differentiate between four different phases to shift between, each with a distinctly separate focus: the road, the traffic flow, the landscape, and the sitting.

Phase 1. The road. A first phase is to focus your attention on the roadway in front of the car, and on the experience of being in control of the car. As you attend to the road, notice its color, texture, and other visual aspects, including light and shadows, as they change continuously during your driving. Notice the contrast between the surface of the road and its surroundings, and how the road unfolds its way through the surroundings. Notice also how the road appears to you via your other senses. Notice the “feel of the road,” as you can feel the contact between the wheels and the road in the form of small vibrations in your body. Notice also the sound of the car as it is rolling on the road. You may also notice the feeling tone (pleasant, unpleasant, or neutral) involved in experiencing the road, and the details of your experiences driving on this particular road. Notice how each moment brings something new.

Phase 2. The traffic flow. A second phase that you may enter especially when there is more intense traffic is to focus on the traffic flow that you are part of, and the relation of your car to the other cars on the road. Notice the cars in front of you, and the cars behind you. Notice the distance to the other cars, and changes of this distance. Notice the speed of your car, and the speed of the other cars. Notice the meeting cars, and note how it feels to meet them. Now and then, this may involve a kind of “widescreen mindfulness” of the traffic situation—having a holistic picture of the traffic situation, including the cars in front of you, the meeting traffic, and the traffic behind. Notice how it feels to be embedded in the traffic flow, with a pleasant distance to the other cars in your field of awareness.

Phase 3. The landscape. As a third phase, which you may enter especially when the traffic situation is calm, notice the surroundings, such as aspects of the ever changing landscape that you pass through. This may also involve a conscious focus on the experience of motion, noticing how it feels to move through the landscape at a certain speed. Notice how new details appear in your experience during each moment of driving. Also, be open to possible experiences of mindful pleasure related to the beauty of the surroundings and the ever shifting landscape.

Phase 4. Sitting. A fourth phase, which you may shift to now and then, involves the experience of doing all the above-mentioned things while sitting in a comfortable seat with the front window and dashboard in view. Shifting the attention to this experience of sitting in a comfortable seat inside a moving vehicle that you are in control of may sometimes be associated with an experience of surprise—as if this aspect of the driving process is often totally forgotten. Here, you may also use some elements from sitting meditation, such as feeling the neck and back of the body rising up into a more straight position.

Shifting between the phases. You may shift freely between these phases, in accordance with the changing traffic conditions. For example, although it is often natural to start in the road phase, the focus may be shifted to the traffic flow when the traffic becomes more intense, and to the landscape and the sitting when the traffic situation gets calmer. If your attention is drawn to other things, remember to gently bring attention back to the experience of driving.

The capacity to regulate attention and to shift in a smooth way between the above-mentioned phases of mindful driving may referred to as “meta-mindfulness attention,” or in Langer’s (2014) terms “second-order mindfulness,” defined as “choosing what to be mindful about” (p. 197).

After practicing mindful driving, alternating between the above-mentioned four phases, Andrew reported that he could now drive day-long distances (600–700 km) without becoming sleepy, and with much less need to stop and take pauses except for nutritional or other natural purposes. In terms of quantitative measures, this could be seen both in subjective ratings of alertness and tiredness, and in the number of stops during Andrew’s long-distance driving. In other words, there was a clear shift of functioning from before to after the training in mindful driving, both in the degree of subjectively experienced wakefulness and the behavior of stopping and taking breaks along the way. (Importantly, Andrew was still careful to get a good night’s sleep before engaging in long-distance driving, just as he had been before, and to take pauses when needed—mindful driving was not presented as a substitute for a good night’s sleep, or for taking pauses while driving.) Andrew also reported that he could now *enjoy* driving in a

new way, as it afforded him new visual and other sensory impressions of the road, the surrounding landscape, and the traffic flow, while sitting comfortably with a straight back behind the wheel and feeling in control of the car’s movement through the surroundings.

The mindful driving practice described above, with its rationale, was specifically designed for Andrew, and what suited him need not suit another person with similar problems. The ideal would probably be that mindfulness programs such as this are *tried out in collaboration with each specific person*. By involving the participant in the construction of the specific details of this kind of program, that person may also learn something about exploring new variations of mindfulness practice on his or her own. In the present case, specific details were successively added to the mindfulness driving practice, and whereas some of these were dropped along the way those who remain in the description above were those that were subjectively experienced to have beneficial effects by Andrew.

Some General Principles

The example of mindful driving illustrates several more general principles. First, it illustrates that there is an immense wealth of potential experiences to be mindful about in each present moment. Second, although mindful attention is by definition directed to the present moment, this means that mindful attention is always selective. And third, this selection may be done in different ways. For example, it can be done either directly (i.e., intentionally directing attention to some aspects of experience) or non-directly (i.e., allowing attention to unfold spontaneously to different aspects of experience) or in terms of some combination of these. This may be seen as analogous to the distinction between directive and non-directive techniques in psychotherapy (Lundh 2012).

The latter is also reminiscent of the distinction between focused attention meditation (FAM) and open monitoring meditation (OMM) (Lutz et al. 2008). Whereas in FAM practitioners are instructed to focus their attention on a specific object or event, in OMM, the practitioner is instructed to remain attentive to any experience that might arise, without intentionally selecting any particular object. Although there is selection occurring also in the OMM type of meditation, it is not intentionally regulated in the same way. FAM and OMM may be said to represent two varieties of meta-mindfulness regulation. In the present example of mindful driving, both varieties of meta-mindfulness regulation are combined. Directive influences of intentionally focused attention are seen in the fact that attention should stay within a frame of experience defined by *driving*; when attention drifts away from driving (e.g., into various kinds of thoughts on other things) it is gently brought back unto the driving experience. Within this frame, however, attention may be allowed to shift rather spontaneously between aspects of the four different phases described above (i.e., the road, the traffic, the landscape, and the

sitting experience). Within this experiential frame of driving, attention may also now and then be intentionally directed to one phase rather than another (e.g., to the traffic situation when this becomes more intense). Experiences of sleepiness are noted and taken as signals to stay and take a pause. Altogether, this kind of mindful driving represents not a technical procedure but *a skilled practice that can be trained*—and it is this skilled practice, and its variations, that may be subject to experimental-phenomenological research.

To summarize, experimental phenomenology in the case of mindful driving entails (1) the construction of new variations of mindful driving, idiographically adapted to the individual, either on the basis of informal (e.g., clinically derived) phenomenological reports or based on more rigorous descriptive-phenomenological methods; (2) qualitative observations and quantitative ratings of experiential effects of such practices; (3) systematic variation of a given practice to establish the experiential effects under certain conditions and for a specific person; and (4) an attempt to formulate general principles for what counts as a practice of mindful driving.

Varieties of Experimental-Phenomenological Research

Clinical practitioners, mindfulness practitioners, and other practitioners of self-techniques may use more or less of experimental-phenomenological principles. Some may just use established instructions, without any exploration, systematic observation, or testing of new variations of practices—in that case, there is no experimental phenomenology involved. Others may engage to a larger or smaller extent in exploring different variations of their practices and in making systematic observations of these—this means that they are practicing at least at an intuitive or informal variety of experimental phenomenology. Often, however, this work stays at a pre-scientific level. The examples given above (e.g., of the development of a mindful driving practice) belong to this category.

Experimental-phenomenological *research*, however, requires the systematic application of research methods in the study of phenomenological practices and their effects on subsequent experiences. Common to them all is a focus on experiences, both as the independent and dependent variable. Within this experiential frame, however, there are many different possible forms of experimental-phenomenological research, from (1) the application of sophisticated forms of descriptive phenomenology to study variations of phenomenological practices and their effects, over (2) the use of single-subjects designs to test what works best under various conditions, to (3) controlled studies that may provide group-level evidence of the effects of phenomenological practices. This final section of the paper contains a brief discussion of these different varieties of research.

Descriptive Phenomenology to Analyze Practices and their Effects

Descriptive-phenomenological methods may serve an essential role in the analysis of both the phenomenological practice and its subjectively experienced effects. As to the description of phenomenological practices, micro-phenomenological methods (e.g., Petitmengin et al. 2017) may be used to provide detailed analyses of these practices, for the purpose of finding out what characterizes these phenomenological practices when they are successful and when they are less successful. Such analyses may then form the basis for hypotheses that may be tested in new experimental studies.

Although phenomenological practices are defined in terms of specific sets of instructions, experimental phenomenology needs to go deeper than merely relying on these instructions as defining the experimental intervention. Even if a certain phenomenological practice is found to have particular effects on a regular basis, it remains to show that these effects are due to the intentional variations of experiencing that are specified in the instructions. Importantly, what must be assumed to be causally effective are not the instructions as such, but the actual phenomenological practice that the participants engage in. For example, it remains a distinct possibility that what accounts for the effects are other aspects of the phenomenological practice than those emphasized in the instructions. To test such alternative hypotheses, descriptive-phenomenological methods, such as micro-phenomenological interviews, may be used to obtain fine-grained descriptions from the participants of how they actually engage in the practice in question.

Undergoing a micro-phenomenological interview is in itself to engage in a phenomenological practice that can be studied for its subsequent effects. For example, in their pilot study with experienced practitioners of Buddhist meditation, Petitmengin et al. (2017) carried out a post-interview, where the participants were asked whether the micro-phenomenological interview had helped them to become aware of anything new. The results showed that even advanced meditators recognized that the interview helped them to become aware of unnoticed elements, and the authors concluded that the interview “has a learning effect: the increased awareness provided by the interview brings more clarity and precision in subsequent meditations and even outside of meditation sessions” (p. 193).

In other words, clinical and other informal observations of this kind may serve as a starting-point for more rigorous experimental-phenomenological research, which makes use of both micro-phenomenological interviews to arrive at a more fine-grained analysis of the actual practice as engaged in, and a more systematic comparison between different practices. For example, micro-phenomenological methods can be used to study what the practitioner actually does in successful cases, to see if this diverges from the instructions in a way that

may suggest some kind of improvement of these instructions. Systematic experimental variation may then be used to explore if the effects can be improved by modifying the instructions on the basis of these observations, and if so under which conditions this applies.

Describing a phenomenological practice in terms of verbal instructions gives it the status of a technique, and thereby makes it available as part of the sociocultural world for others to test. It is important to remember, however, that such technical procedures exist ontologically at “an impersonal sociocultural level (as exemplified by books and manuals)” (Lundh 2017, p. 63), and are inert in themselves—what may have an effect is always a *practice* carried out at a *personal* psychological level, with a certain degree of personal *skill*. What should be tested in experimental-phenomenological research are such practices, and this necessitates the use of descriptive-phenomenological methods to study the relevant types of skills in action.

Phenomenological description of the experienced effects of phenomenological practices is also highly important, as it may capture new aspects of the individual’s subjective experiences in a way that cannot be achieved by means of standardized questionnaires with predefined response alternatives. For example, in the case of mindful driving described above, Andrew reported that he could now enjoy driving in a new way, as it afforded him new visual and other sensory impressions of the road, the surrounding landscape, and the traffic flow, and as sitting behind the wheel and being in control of the car’s movement through the environment. This potential effect might have been missed if only standardized quantitative measures had been used. Qualitative descriptions of this kind may in turn motivate the development of psychometric instruments to measure these effects (e.g., a measure of enjoying driving).

It is important to see how qualitative descriptions of this kind differ from anecdotal evidence, defined as evidence relying on personal testimony collected in a casual or informal manner. To qualify as scientifically relevant data, the qualitative descriptions used in experimental phenomenology should be based on observational data collected in a systematic and methodical manner, and be subjected to critical analysis including planned replication. Descriptive experiential sampling (Hurlburt and Heavey 2006) may be useful here to collect data on effects in the participants’ everyday life.

Single-Subjects Designs

If informal experimental-phenomenological observations suggest that a certain phenomenological practice is effective, a next question is to ask what makes it effective, and under which conditions it is effective. Here, single-subjects designs (e.g., Kazdin 2011) may be of use to study variations of this practice both within the same person and between different

persons. For example, a mindful driving practice might be studied in an ABAB design by having a participant shift between “driving as usual” and mindful driving, several times back and forth, and use subjective ratings of important experiential dimensions to see if the results vary systematically as a function of the type of driving engaged in.

Effects may also be measured by using quantitative forms of experience sampling (Conner et al. 2009) to collect data on an individual’s experiences in *natural settings*, close to the time when the person had these experiences, and on *repeated* occasions. In this way, multiple snapshots are obtained of people’s daily experiences, which make it possible to identify patterns of experiences within the individual, and to test hypotheses about a single person. Experience sampling may use various time spans, from a few days to several months, and can employ a range of designs (e.g., event-based designs, fixed time-based designs, and variable time-based designs) and technologies (including paper-and-pencil questionnaires, computerized personal digital assistants, electronic diaries, and mobile phones). In experimental phenomenology, experience sampling may be used both to study naturally occurring phenomenological practices (e.g., by having an individual report on the use of a certain kind of mindfulness practice during one week) and potential effects on subsequent experiences.

To go from qualitative observations of temporal sequences to experimental phenomenology, systematic variation of phenomenological practices has to be introduced. This may take place either by varying the *contents and structure* of a certain practice, or by varying the *context* where a certain practice takes place. Suppose for example that it is established by several replications that the mindful driving practice has beneficial effects during driving long distances in rural areas—it may then be of interest to test if it has similar effects during driving in an urban environment, or if this requires some kind of modified procedure. Similarly, it is an open question for which persons it may have an effect—what kind of skills, for example, are needed for a person to be able to benefit from the practice? And how can the practice be modified to make it beneficial, for example, for persons with various degrees of previous meditation experience?

Experimental phenomenology can be used for *theory-building* purposes in the manner outlined by Stiles (2007). For example, by varying existing mindfulness practices and developing new practices and by observing their effects, data are obtained which not only makes it possible to test an existing theory but also to refine an existing theoretical framework so that it can accommodate the new data. In this way, a theoretical formulation may become gradually more “saturated” with supporting observations on a case-by-case basis, and more differentiated as concepts become more precisely defined or new concepts are added.

Controlled Effect Studies on the Group Level

All of the examples of experimental phenomenology that have been given so far represent forms of idiographic, person-oriented research (Lundh 2015), focusing on individual persons, as distinct from studies based on statistical analyses at a group level. This does not mean, however, that experimental phenomenology cannot make use of controlled studies at the group level. However, randomized controlled trials (RCT) as commonly used in treatment research do not qualify as experimental phenomenology.

Typical RCTs of mindfulness-based forms of treatment do not count as experimental phenomenology for two reasons: First, the independent variable is not phenomenological, that is, it is not a clearly described intentional variation of experiencing, but usually the application by a number of therapists of a complex treatment package. Second, there is very little experimental control of the independent variable in these RCTs. The treatment typically consists of a large number of exercises and interactions taking place over a relatively long period of time (typically 8 weeks or more), and the only control in RCT studies generally is of an indirect kind: the therapists' behavior is (a) prospectively controlled to a certain degree by adherence to a manual; and (b) retrospectively controlled by having trained observers watch video-recorded sessions and rate the therapists' adherence and competence in carrying out the treatment (Perepletchikova et al. 2007). Third, the dependent variable is seldom phenomenological (i.e., it does not describe actual experiences in the here and now); when it is not behavioral or physiological, it usually consists in self-assessment of traits (e.g., trait anxiety, or mindfulness traits/skills). The fact that the dependent variable is measured at the group level, rather than at the level of the individual, however, does not exclude the possibility that it may be phenomenological.

One illustrative example is Langer, Russell, and Eisenkraft's (2009) study of orchestral musicians. Musicians are often asked to perform the same musical pieces many times. Although this gives them many opportunities to practice and refine their skills, there is also a considerable risk that this constant repetition may lead to "mindless" renditions if they simply try to replicate previous past performances. Langer et al. (2009) therefore set out to investigate if asking one group of musicians (the experimental group) to stay mindfully engaged could improve their subjective enjoyment and the quality of their performance. As the independent variable, the musicians in the experimental group were asked to actively notice new things about the music they played, to create new distinctions, and to offer new subtle nuances while playing. The results showed that the musicians who engaged mindfully in their performance enjoyed their performance more, and also rated it as better. Although the dependent variable here was measured at a group level, it still remains

clearly phenomenological, as it asks the participants about their actual experience when playing the music.

Interestingly, the results from Langer et al.'s (2009) study also showed that the audience preferred the music that was created in a mindful state over music that was created by musicians who were merely trying to recreate a past performance. This illustrates how experimental phenomenology may also be developed along interpersonal lines. That is, the intentional variations of *one* person's experiencing may also be studied for their effects on *another* person's experiences. (In Langer et al.'s (2009) study, these effects were mediated by the qualities of the musical performance, but this does in no way detract from its being an example of experimental phenomenology.)

Another study by Langer et al. (2012) illustrates the same thing: experimental phenomenology may be used to study interpersonal interaction. Here, a comparison was made between two groups of adults who were to interview 9 to 12-year-old children. One group of adults were instructed to interview the children in a mindful way; their instruction was to *notice* what the child's voice and body language could say about the child's feelings, and to see if these things varied or remained the same during the interview. Another group of participants received the "mindless" instruction to pretend to be interested in what the child said during the interview and to be *positive* in everything they said to the child. The results showed that the children preferred to interact with the mindful adults, and that they tended to devalue themselves following the mindless interaction, despite the fact that only positive content was discussed. What makes this into a study of experimental phenomenology is (1) that the independent variable was an experimental variation in how the adults were instructed to experience the interaction with the child, and (2) that the dependent variable was how the child felt and thought immediately after the interview.

In terms of the distinction between self-techniques and relational techniques (Lundh 2017), this illustrates how mindfulness instructions may represent relational techniques (i.e., techniques used in the interaction with others) as well as self-techniques (i.e., techniques applied to oneself). Again, however, what is studied in experimental phenomenology are not these techniques as such, but the phenomenological practices that result when practitioners of mindfulness engage in these techniques with a certain degree of personal skill.

Although the RCT design is traditionally seen as the best design for the study of causality, it has some rather severe limitations when applied to psychological interventions. For example, it generally allows only a comparison between a few experimental conditions (one or more experimental groups and a control group), which in

psychotherapy research take the form of large treatment packages, and can seldom identify what is effective in such a treatment package. It also requires relatively large samples to have sufficient statistical power to show significant effects at a group level—effects in terms of group averages, thereby ignoring the individual variation in how different persons respond to the same intervention. Although RCTs have an important role to in showing *that* a certain kind of treatment package is effective, they are limited in their ability to produce useful knowledge about *what* is effective about a certain intervention and *how* the effect occurs, as well as for *whom* it is effective; for a more detailed critique, see Lundh et al. (2016) and Lundh and Falkenström (2019).

Conclusion

To summarize, experimental phenomenology in research on mindfulness can take a number of different forms, from (1) the detailed exploration and description of potentially effective mindfulness practices and their potential effects, over (2) sophisticated forms of case studies that use experimental single-case designs, possibly in combination with descriptive-phenomenological methods to test the effects of intentional variations in experiencing, to (3) controlled studies at the group level where different groups of participants are administered varying verbal instructions to induce different forms of experiencing, and where the outcome is compared in terms of phenomenological effects in the present.

Whereas the two latter forms of experimental phenomenology are recognized as variants of scientific research, the first form of experimental phenomenology is generally not. Still, this variety of experimental phenomenology is probably much practiced, but in an informal, more or less unsystematic way by practitioners in fields such as meditation, yoga, psychotherapy, and other forms of treatment. Moreover, this variety of experimental phenomenology requires relatively more elaborate use of the subjective first-person perspective than the two other varieties (where first-person reports have a less elaborated form). Turning this variety of experimental phenomenology into an articulated methodology based on explicit scientific principles may probably lead to a more efficient use of it, and thereby help to accelerate the development of both theoretical and practical knowledge in this field.

Finally, it is important to note that the present paper represents a first attempt to formulate principles for an experimental phenomenology as applied to research on mindfulness. As such a first attempt, it most certainly contains a number of formulations that need more elaboration, and revision. Still, the present paper will fill its purpose to the extent that it contributes to a dialog and discussion of the potentials of an experimental phenomenology as outlined here.

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