

# Operational Definition: The “Achilles Heel” of Meditation

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## ABSTRACT

Meditation is a practice that can produce a quantic phenomenon, often allowing a change of consciousness not totally predictable. Coming from ancestral traditions, meditation is an increasingly accepted intervention in the academic community; however, studies still need an adequate operational description that will allow its complete reproducibility. This article presents this aspect that needs to be revisited: the basic methodological care that enables the study and the use of meditation in health.

**Key Words:** meditation, definition, operational definition, quantic leap, methodology

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## Introduction

In the academic community, meditation is an exercise of attention with a self-focus skill (“anchor”) to which you go back whenever the reveries and the intense stream of thoughts start, until you reach the so-called “logic relaxation.” In other scenarios, meditation can be frequently considered a technique or a state of consciousness. Figure 1 shows the basic operational loop of meditation (Cardoso *et al.*, 2004). However, we can also say meditation is a quantum manifestation – considering both academic definitions and the mystic-philosophical traditions (Cardoso *et al.*, 2007). In the ancient traditions (Buddhism, Hinduism,

Taoism), the meditative state is considered something transcendent that defies the limits of reason and takes us to a metaphysical scenario. According to academic research, the state induced by meditation involves what is called “logic relaxation” – in other words, something that goes beyond cognition to a very specific modified state of consciousness (Cardoso *et al.*, 2007).

However, there is a basic operational aspect for both scenarios. There are significant technical details used to obtain the so-called “meditative state.” These aspects involve the operational definition of meditation – which is primordial in its origins and at the same time undervalued in its potential applications. We have surprisingly noticed that this depreciation of the operational aspects happens in the mystical and in research environment as well – in other words, it happens from the monastic to the research environment. In the esoteric environment this depreciation is explained by the subjectivity and flexibility allowed by the environment itself. However, this is limited in the academic community, where methodological

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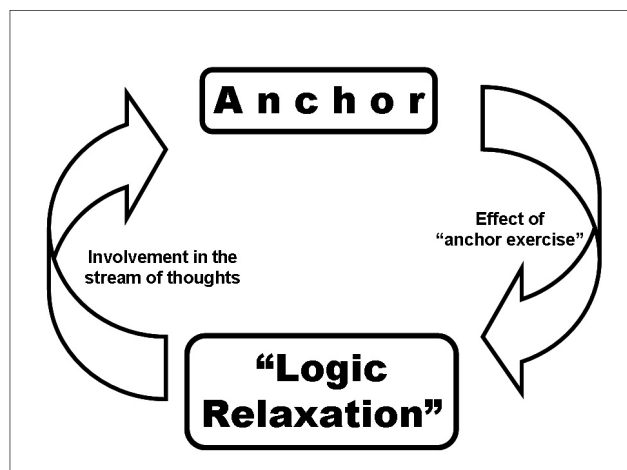
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descriptions are necessary to allow reproducibility (Cardoso *et al.*, 2004; Moonesinghe, 2007; Awasthi, 2013; Davenger, 2013). The term "meditation" can be understood as a state or as a technique. As a state, it is hard to describe with words because it is not in a logical sphere. As a technique, it can be described, explained, refined, and used in research protocols. For this reason our group uses the last definition (Cardoso *et al.*, 2008).



**Figure 1.** The basic operational principle of a meditative exercise. The individual will gradually exercise his capacity of being "focused in the anchor." At the very moment he/she perceives oneself involved in the stream of thoughts, he/she will immediately return to be "focused in the anchor." But if (despite one's "intention" to maintain the so-called "logic relaxation") perceives oneself involved in the stream of thoughts he/she will - again and again - "return to the anchor" (Cardoso *et al.*, 2007).

### Why Meditation has to be Properly Implemented

As suggested above, when talking about meditation the biggest confusion is between technique and effect. Individuals meditate, experience pleasant effects, and say that meditation induced these effects. Meditators, for instance, frequently affirm that meditation is to be "in the emptiness," or that meditation is to "feel in harmony with all the creation," or that meditation is to "fulfill their hearts with the Universe." However, what is overlooked is that: 1) Such effect was achieved through the use of a technique; and describing the effect does not teach how to achieve it; 2) The subjective effect of the reader can be very different from that of the individual describing it, and; 3) Even if the reader achieves the same effect, the description made by the one who writes about it will most likely not

correspond to the definition the reader would have for the same state (Cardoso *et al.*, 2008). Therefore, in my experience it is common to witness individuals reading descriptions of meditation's effects and trying to meditate by simply imagining these effects while trying to reproduce the effect they heard about - which is an intense mental exercise of logic, and a complete contradiction.

The major difficulty is that the meditative act is, itself, a contradiction. How can we learn - through the mind - a technique that would silence the mind? It would be like asking "the noise to help silence the noise" or, like a Hindu master, Ramana Maharshi, (2004) said, it would be like "requesting a thief for help to catch this same thief." Let's imagine the scene: the individual says: "You, who are a thief, could you please help me catch the thief?" However, the individual you are talking is already the thief. He, then, answers: "Of course I can. Let's go!" Thereafter, both start running together, trying to reach the thief. Does it sound strange? This is exactly what many people do when trying to meditate. They use their minds to conceptualize a state, to define a sensation, and keep "feeling that state," keep "imagining the transcendence" that themselves, or their minds, programmed. And they believe they are in an activity which is beyond the mind. But this is not possible, because the mind itself has already limited how it would be, or how it should be, in this state -- even before the practice has started. This central contradiction has impeded understanding of the practice of meditation, leading to widespread misconceptions.

Therefore, it is not possible to ask the thief for help to catch him; in other words, it is not possible to ask the mind for help to silence the mind, under penalty of falling into a trap set up by the meditator to himself/herself. But then, the question arises: how is it possible to meditate? After all, even if the individual tries not to imagine a sensation, they will need to use their mind even to understand the technique. So, how is this possible? This "dead end" was the big challenge for the first meditators; they needed to use a technique, initially created by the mind, to silence that very mind. But during the use of the technique, they could not let the logical mind prevail. This impossibility existed until someone had the idea to create the "impossible mission" task. A task (anchor maintenance) that required a herculean and superhuman effort of the

meditator's mind in order to reach an objective (to obtain logic's relaxation) was proposed (Cardoso *et al.*, 2007). For instance, it is not possible to place an elephant over a pin tip, nor to put all your clothes inside a matchbox, and not even to hold hands with one million people simultaneously. Likewise, it is not possible to place all our logical activity, all of our mind's activity in a unique task (to keep the anchor). Our mind is a "super station for thought creation," and we try to direct this huge stream of thoughts to one single target which is proportionally tiny: the anchor. In meditation, the stream of thoughts that appear are repeatedly "left behind" and we always go back to the anchor. The "superpower" human brain tries to restrict its activity to a single spot, and this is certainly an impossible mission (Cardoso *et al.*, 2007).

Following that, something "magical" happens: an authentic quantum leap. The mind alters itself, or perhaps consciousness alters itself, and we start entering a meditative state. The meditators' EEG brain mappings show that the first perceptible alteration in meditation is the activation of the pre-frontal lobe (Lazar *et al.*, 2000). This brain area is responsible for logical planning and task execution, among other functions. We believe pre-frontal activation is a result of the anchor exercise (which is merely a task execution). However, after a certain period of time, other modifications take place and the activity in the pre-frontal lobe becomes different from what it was in the beginning of the technique. Our effort in keeping the anchor activates the pre-frontal lobe, but then ends up altering its function. Arne Dietrich (2002) described this very well in what he calls "transient hypofrontality." In other words, we can say that the pre-frontal lobe - when challenged by this "impossible mission" of meditating - strives so much that it ends up "unregulated," loses function (even though may not lose "activity"), and allows logic relaxation (Dietrich, 2002; Cardoso *et al.*, 2007).

In summary, the strict accomplishment of an adequate operational definition is the way to reach the meditative state - which is rarely comprehended in most academic publications. In a review over this topic, Awasthi (2013) indicates that "many researchers also seem to confuse the technique of meditation with the state of meditation. Some authors even defend the idea that it is difficult to separate the meditation state from the technique, such as discussed in Tang *et*

*al.* (2012, p. 4): "...unlike the alert and wakeful state, meditation requires specific training. It is, therefore, difficult to separate the meditation state from the training that produces it..."

### The Multiple Definitions of Meditation in Academic Literature

There is a wide variety of definitions for meditation in the academic literature - from definitions of a relaxation state to definitions of attention state, and even the rare attempts of operational definitions. Despite all efforts, there is no consensus (Walsh, 1983; Perez-de-Albeniz and Holmes, 2000; Kabat-Zinn, 2003; Cardoso *et al.*, 2004; Ospina *et al.*, 2007, 2008; Bond *et al.*, 2009; Mikulas, 2011; Awasthi, 2013). Wallace *et al.* (1971) initially coined the term "A Wakeful Hypometabolic Physiologic State" when referring to meditation; however, this term only describes some physiological components of the meditative practice and does not mention the operational method. This same group (Benson, Beary and Carol, 1974), mentioned in another publication the term "relaxation response," but still referring to physiological aspects - and not the technical ones. Benson and colleagues (1974) refer to a state of psychophysical relaxation which can indeed be obtained from different interventions, and not only from meditation.

West (1979) defined meditation as an exercise, which usually involves training the individual to focus attention or consciousness on a single object, sound, concept or experience; however, this definition does not consider active techniques. Considering the passive techniques, the definition is limited to the concentrative passive techniques (like "transcendental meditation") involving an objective focus of attention, while excluding the perceptive modalities - like "mindfulness" or "witnessing" (Cardoso *et al.*, 2008). In 1976, Goleman had already conceptualized meditation as a consistent attempt to reach a specific attention position. Such a definition, even though it includes perceptive varieties, does not give the necessary emphasis to the need of auto-induction. In 1989 Craven tried to describe meditation using five components which consisted of relaxation, concentration, altered states of consciousness, 'logic relaxation,' and self-observation attitudes. Despite being extensive, this definition does not include the perceptive techniques, does not reinforce the need for auto-induction, and does



not emphasize the importance of focus (i.e., self-focus skill).

Manocha (2000, p. 1136) described meditation as "...a discrete and well-defined experience of a state of 'thoughtless awareness' or mental silence, in which the activity of the mind is minimized without reducing the level of alertness." This concept privileges the meditative state in detriment of operational steps (i.e., the technique). The same dilemma occurred when Kokoszka (1990) defined meditation as a self-experience and self-realization exercise, and Rukmani (2001) described the method of meditation as the elimination of thought activity.

Following this, the NCCAM's Backgrounder (2006) presented a meditation definition with four basic components that consisted of a quiet place, a specific comfortable posture, a focus of attention, and an open attitude. However, meditation is not presented as a self-induced state and also represents the "logic relaxation" as an "open attitude" - which could be misunderstood and even reinforce logical activity, which is counterproductive to meditation. Travis and Shear (2010) defined meditation as "self-transcending." Rao and Paranjpe (2008, p. 188) tried to coin the expression "passive diffused attention or inattention" when referring to meditation. Baerentsen *et al.* (2010) refer to meditation as the control of fluctuations of the mind that aim to still the fluctuations (patterning) of the mind. These authors are naturally referring to the effects and not to the technique, and offer a confusing understanding to its readers.

Cardoso and colleagues (2004) presented an operational definition which described meditation as the procedure which must contain the following operational parameters. Meditation utilizes (1) a specific technique (clearly defined), (2) it involves muscle relaxation somewhere during the process and, (3) "logic relaxation;" (4) is a self-induced state, and (5) utilizes self-focus skill (coined "anchor").

In our definition, the two most important aspects by far are "anchor" and "logic relaxation." As in our original article (Cardoso *et al.*, 2004), "A concentration ("positive anchor") or a turning off ("negative anchor") focus is used, in order to avoid sequels of undesirable thinking, sleep, state of trance, etc. Positive anchors may focus on one point of the body, a physical point on the wall, a sound, or any other number of objects. Negative

anchors are used in the perceptive-like techniques, referred to as "anchor or anchor absence" (Cardoso *et al.*, 2004, p. 60). According to our view, logic relaxation involves: (a) Not 'to intend' to analyze the possible psychophysical effects; (b) Not 'to intend' to judge (good, bad, right, wrong) the possible psychophysical effects; (c) Not 'to intend' to create any type of expectation regarding the process" (Cardoso *et al.*, 2004, p. 59). This would allow the so-called non-involvement in streams of thought (Cardoso *et al.*, 2004).

From the perspective of Cardoso and associates (2008), meditation is a simple exercise that involves "anchor" (self-focus skill) and "logic relaxation." The individual slowly exercises the ability to maintain himself/herself while "focused on the anchor." In the moment, the individual experiences being involved in any kind of thought, they immediately return to "focus on the anchor." But, if at any moment (despite one's intention' to maintain the so-called "logic relaxation"), the individual realizes one is thinking about something, she/he will "return to the anchor" over and over, as many times as necessary.

In 2007 Ospina *et al.* published an important and extensive review about meditation, including its operational aspects. These authors reaffirm the operational definition of Cardoso *et al.* (2004) and consider the possibility of adding a spiritual aspect similar to the meditative experience.

### **The Need for a Methodological Guide of How to Meditate**

Academic challenges are not related only to the diversity and lack of consensus in terms of definitions regarding meditation. In 2013 Davenger reviewed 10 meditation studies highly cited in the ISI (Institute of Scientific Information) publications and surprisingly realized that:

- Only two of them specifically mentioned the connection between technique and possible neurobiological effects
- The most mentioned of all articles did not provide any description about how the technique was cognitively explained to the volunteers in the study



- Seven of them briefly referred to the technical explanation (5 lines maximum)
- Three of them did not mention references about the technique used
- Seven of them did not offer any explanation about how the technique was explained to the volunteers

Davenger's (2013) review showed how meditative technique descriptions is neglected in many research articles, thus preventing its reproducibility. As a result, methods utilized in various studies have been criticized since it made it difficult to reach a consensus on the psychophysical effects of meditation. In another review, Awasthi (2013) affirmed that a lack of an adequate and consensual definition poses challenges to research in this field, affecting the reproducibility of projects and hampering the assessment of the real effect of meditation on neural, cognitive, and behavioral aspects.

### Future Perspectives

Considering that meditation paradoxically takes us to a state out of cognitive thought, through an exercise which is mentally learned, planned, and practiced, we suggest meditation can be viewed

as a quantic leap. The "change of state" is not temporarily predictable, as well as in a quantic leap. The practitioner does not monitor the installment of the modified state of consciousness, just like in the quantic leap; she/he already realizes they are in that state. Similar to quantic leap, there is no relation between a specific need of the practitioner and entering the so-called supra-mental sphere; it simply happens with no effort. Just like in a quantic leap, the link between the mind exercise and the "temporary disconnection" of the mind itself is not quite understood. However, even when there is the expectation of a transcendent experience (in the mystical environment) or of a modified state of consciousness (in the academic environment), the technique operationalization is fundamental to the effect. Such need must be known – and recognized by everybody, and clearly demanded for in the academic environment – either by researchers or by practitioners. Only this consensus will be able to provide the credibility that meditation can reach. Until this happens, meditation will continue suffering this glaring Achilles heel: the methodological deficiency of a clear and reproducible operational description.

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