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# Applications of Mindfulness Meditation in the Study of Human Consciousness

Abstract from Shinzen Young's Presentation

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In science one frequently depends on awareness extending tools/instruments that magnify faint signal and resolve details of structure. The cell theory of life and the germ theory of disease could hardly have arisen without the magnifying and resolving power of the compound optical microscope. In the Buddhist tradition of Vipassana meditation one develops the ability to focus attention with great stability and laser-like specificity. This enhanced ability to detect and resolve events in consciousness is known as mindfulness power (*satibala* in Pali). Mindfulness allows one to track the flow of ordinary sense experience, resolving it into components and sub-components. In the Buddhist theory of consciousness, the basic components of sensory experience are taken to be hearing, seeing, smelling, tasting, body sensation and thinking. Thinking can be further resolved into verbal and image components. Body sensation can be analyzed in terms of quality, spatial dimension and intensity level. All of these resolutions are made very rapidly in real time as events arise. This eventually becomes habitual and effortless continuing on 'auto-pilot' even during complex daily activities. Once you can tease out the basic components of sense experience, you can investigate relationships between them. This leads to a constellation of insights that are deep, general, and of great practical value. At the heart of it is the understanding of how mental images, internal conversation and body feelings interact to produce the sense of a percipient self. Even if you have never meditated, you may be able to get a taste of this by trying the following experiment.

## **I. Preliminary Steps (detecting components)**

1. Go to a place where there are lots of sounds. Sit still and listen to the sounds.
2. Each time you hear a sound, monitor whether that sound does or does not trigger any mental image activity, however subtle.
3. Next, each time you hear a sound, monitor whether that sound does or not trigger any verbal mental activity, however subtle.
4. Finally, monitor whether each sound does or does not trigger any body feeling (smile when you hear a bird chirp, cringe when you hear a car backfire, etc.) Note: The phrase 'however subtle' is of pivotal importance in this exercise. A paradigm shift will occur only when the normally subliminal, wispy levels of image, talk and feel can be detected.

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## II. Main Procedure

**Step 1:** Focus exclusively on sound and your reactions to it, ignoring everything else. Each time you hear a sound, determine which of the following logical possibilities occur.

- The sound triggers a mental image.
- The sound triggers internal talk.
- The sound triggers body feeling
- The sound triggers image and feeling.
- The sound triggers talk and feeling
- The sound triggers talk and image.
- The sound triggers talk, image, and body feeling.
- The sound triggers no image, talk, or body feeling.

(The above categorization is exhaustive and exclusive. Three independent binary variables with  $2^3 = 8$  possible reactive states specified by merely three bits of information)

**Step 2:** Develop a sensitivity to the perception of a ‘listener’ associated with each of these possible reactive states. You will find that it varies, being most pronounced in case 7 and utterly absent in case 8! Indeed, if case 8 were to persist for a while, the perception ‘I am the sound’ would arise.

Skilled mindfulness meditators can be of great value in consciousness research. They can clue researchers as to what to look for in their investigations. They can serve as sensitive and eloquent subjects in experiments linking first person reports with third person data. But the most intriguing possibility relates to the perennial *bête noire* of functional imaging research—undesirable signal/noise ratios. Skilled mindfulness meditators habitually attend to what is relevant and ignore what is irrelevant. Therefore, it is possible that for many types of experiences, their brains generate a physiological signature, which is significantly more well defined than that of other humans. Of course, collaboration between the mindfulness tradition and cognitive sciences can be a two-way street. By knowing how the nervous system works, meditation teachers may be able to formulate categories and create techniques that are deeper and more natural than those now used.

But the two-way collaboration that I’m suggesting could go far beyond the above considerations. The history of mathematics offers a possible analogy. Prior to the 17th century, mathematics had evolved along two branches: arithmetic (the study of numbers) and geometry (the study of space). Then Descartes and Fermat discovered a previously unrecognized link between them, coordinate geometry. Suddenly, algebra could be used to clarify geometry and vice versa. This paved the way for the development of an entirely new branch of mathematics, analysis (calculus and its refinements and generalizations). The bringing together of the most powerful achievements of Eastern and Western civilization could give birth to a completely new direction in human knowing, a direction difficult to even imagine at this time.