

PURE CONSCIOUSNESS: DISTINCT PHENOMENOLOGICAL AND PHYSIOLOGICAL CORRELATES OF “CONSCIOUSNESS ITSELF”

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This paper explores subjective reports and physiological correlates of the experience of “consciousness itself” – self awareness isolated from the processes and objects of experience during Transcendental Meditation practice. Subjectively, this state is characterized by the absence of the very framework (time, space, and body sense) and content (qualities of inner and outer perception) that define waking experiences. Physiologically, this state is distinguished by the presence of apneustic breathing, autonomic orienting at the onset of breath changes, and increases in the frequency of peak EEG power. A model, called the junction point model, is presented that integrates pure consciousness with waking, dreaming, or sleeping. It could provide a structure to generate a coherent program of research to test the full range of consciousness and so enable us to understand what it means to be fully human.

Keywords: Consciousness; Transcendental Meditation; human potential; waking experiences

... our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence. . . . No account of the universe in its totality can be final that leaves these other forms of consciousness quite disregarded. (James, 1902/1961, p. 305).

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What is the nature of consciousness? This question was central to William James's thinking 100 years ago, and is still central to research today. Natsoulas (1997a, 1997b) explored the phenomenon of consciousness by analyzing the role of self-awareness in the six definitions of consciousness found in the Oxford English Dictionary. The first five definitions of consciousness seemed to fall under James's category of normal waking consciousness or rational consciousness: (1) interpersonal cognitive relations, (2) remembering on a first-hand basis one's past actions or experiences, (3) occurrent awareness of any object; (4) immediate awareness of one's mental-occurrence instances, and (5) the totality of mental-occurrence instances that constitute our conscious being. The sixth definition could be an instance of James's "potential forms of consciousness entirely different." Natsoulas defined this last kind of consciousness as the general mode of mental functioning that is distinct from the specific mental-occurrence instances which make up the stream of consciousness (1997b, p. 90).

Natsoulas (1997b, p. 90) cited the need to understand this sixth kind of consciousness to comprehend fully the mind's typical modes of functioning. William James (1902/1961) likewise, as expressed in the quote above, emphasized the need to understand other forms of consciousness to understand fully the "universe in its totality."

A number of authors have defined states that could fall into this 6th category of consciousness. Natsoulas (1997b, p. 90) posited that the stream of consciousness flows on through this level of consciousness. O'Shaughnessy (1986, p. 49) suggested that consciousness itself is "... distinct from particular consciousness or awareness." He proposed that this level of consciousness may be like an "empty canvas" that cannot be viewed representationally, but makes possible and is physically necessary to view a painted picture (O'Shaughnessy, 1986, p. 50). Woodruff-Smith (1986, p. 150) defined a level of consciousness that is "the inner awareness that makes an experience conscious. . . . a constituent and constitutive feature of the experience itself." Baar's theater metaphor includes an attention director or deep self whose function seems similar to these descriptions, namely providing a context (framework) to connect one conscious event with another (1997, p. 126).

The prevailing Western view is that an individual cannot be conscious without particular mental-instances in consciousness (Natsoulas, 1997b); and that no subjective state can be its own object of experience (James, 1890/1951, p. 190). In contrast, the subjective traditions of the East – the

Vedic tradition of India (Maharishi, 1969), and the Buddhist traditions of China (Chung-Yuan, 1969) and Japan (Reps, 1955) – include systematic meditation techniques predicted to lead to the state of “consciousness itself” without particular consciousness. For instance, the *Maitri Upanishad* (Maitri Upanishad 6:19, in Upanishads, 1953) states:

When a wise man has withdrawn his mind from all things without, and when his spirit of life has peacefully left inner sensations, let him rest in peace, free from the movements of will and desire. . . . Let the spirit of life surrender itself into what is called turya, the fourth condition of consciousness. For it has been said: There is something beyond our mind which abides in silence within our mind. It is the supreme mystery beyond thought. Let one’s mind. . . rest upon that and not rest on anything else.

Maharishi Mahesh Yogi (1986), responsible for bringing the Transcendental Meditation technique to the West from the Vedic tradition of India, explains:

When consciousness is flowing out into the field of thoughts and activity it identifies itself with many things, and this is how experience takes place. Consciousness coming back onto itself gains an integrated state This is pure consciousness. (p. 25).

Pure consciousness is “pure” in the sense that it is free from the processes and contents of knowing. It is a state of “consciousness” in that the knower is conscious through the experience, and can, afterwards, describe it. The “content” of pure consciousness is self-awareness. In contrast, the contents of normal waking experiences are outer objects or inner thoughts and feelings.

Pure consciousness is a direct experience of the natural structure of human experience during systematic meditation practice. Examining this direct experience of pure consciousness could deepen our understanding of the phenomenon of consciousness.

This study explored the phenomenological and physiological correlates of pure consciousness during Transcendental Meditation practice. In light of these subjective and objective markers, a model is presented that integrates pure consciousness with normal waking experience.

Phenomenological and Physiological Correlates of Pure Consciousness.

Phenomenological Analysis of Pure Consciousness Experiences

METHOD

Subjects

Fifty-two University students, twenty-six males and twenty-six females, were asked to participate in the study. They were an average age of 22.5 yrs. (*SD* 6.9). They had been practicing the Transcendental Meditation[®] technique¹ for an average of 5.4 yrs. (*SD* 5.0).

TM subjects were measured because there are a large number of individuals practicing this technique (over 1,500) living within an hour of the University. They range in age from 10 years to over 80 years of age with a few months to over three decades of TM experience. Focusing research on one group, controls for different meditation experiences, and allows well-defined research into the nature of inner experiences. This study does not attempt to compare the frequency of this experience across subject populations. It focuses on TM subjects as an example of how meditation techniques may provide access to the inner structure of subjective experience.

Procedure

The subjects were tested in a group. They were asked: "Please describe the fine details of your deepest experiences during practice of the Transcendental Meditation technique. Please describe them in your own words, just as if you were describing the experience of eating a strawberry – its sweetness, juiciness, *etc.*," We emphasized that we were interested in what *they* experienced; in how it felt to *them*, and that we were not interested in other people's descriptions of these experience. (We did not ask for descriptions of pure consciousness. That would have elicited biased responses reflecting more what they knew about pure consciousness, rather than their direct experience of this state.) They were allowed to write as much and for as long as they wished.

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Data Analyses

The descriptions were analyzed using the guidelines for systematizing phenomenological analysis proposed by Hycner (1985). This procedure begins with reading the passage (all 52 descriptions) many times to get “a sense of the whole.” Next, Hycner recommends reading through and bracketing out “units of meaning” – words or phrases which express a unique and coherent idea. Once the units of meaning had been identified, then, as Hycner recommends, units that were clearly redundant were eliminated. Next, the units were clustered by “shared meanings.” This was done by explicit and implicit meaning. From these clusters of shared meaning, general themes were identified. The final step was to reread the descriptions and tally the occurrence of the themes. This yielded the number of subjects who included that theme in their descriptions, expressed as a percentage of total subjects.

RESULTS

Three major themes emerged from this analysis. Table I presents these three themes (left column), and the percentage of subjects who used each theme to describe their experiences (right column). As seen in this table, 68% of the subjects explicitly characterized deep experiences during practice of the Transcendental Meditation technique by the absence of space, time, or body-sense. The other two themes – peaceful and unboundedness – implicitly include the lack of boundaries of space, time and body-sense, but further describe the experience when these boundaries were absent. For instance, one subject described the experience of pure consciousness as:

... a couple of times per week I experience deep, unbounded silence, during which I am completely aware and awake, but no thoughts are present. There is no awareness of where I am, or the passage of time. I feel completely whole and at peace.

TABLE I Results of the content analysis: The major themes and the percent of subjects using those themes to describe pure consciousness experiences

| <i>Major themes in the descriptions</i> | <i>Percentage</i> |
|---|-------------------|
| Absence of Space, Time, or Body Sense | 68% |
| Peaceful | 32% |
| Unbounded | 20% |

Chi square goodness of fit was used to test the null hypothesis – that these three themes were randomly selected by the subjects, and did not represent specific dimensions of their experience of pure consciousness. For this analysis, the expected occurrence of each theme was 33% – equal probability of the three dimensions. The chi square was highly significant ($X^2 = 48.2$, $p < .001$), suggesting that the pattern of responses in the content analysis was not due to chance.

DISCUSSION

The content analysis of deep experiences during practice of the TM technique suggests that pure consciousness, “consciousness itself”, is distinct from normal waking experiences. “Time, space, and body sense” are the framework for understanding waking experience. Specific qualities (color, shape, size, movement, *etc.*) are the content of waking experiences. During pure consciousness experiences, both the fundamental framework and the content of waking experience were reported to be absent. This suggests that pure consciousness may not be an “altered” state of waking. It is not described as a distorted waking experience. Rather, pure consciousness is described by the absence of the customary qualities and characteristics of waking experience. The subjective descriptions of pure consciousness portray a state of *self-awareness* (the subjects are awake during this state and they can describe the nature of the experience afterwards) *without waking processing and contents*. Pure consciousness appear to be self-awareness isolated from the processes and objects of experience.

If pure consciousness is an aspect of normal human consciousness, then it should have been reported across cultures and throughout time, even in the absence of systematic meditation techniques. We explored this possibility by examining historic records.

In the so-called Hermetic Writings (1924, Vol. 1, p. 191), set down by various Egyptian authors in the second and third centuries A.D., we find descriptions of experiences of what is termed ‘the Good’:

Then only will you see it [the Good], when you cannot speak of it; for the knowledge of it is deep silence, and suppression of all the senses. He who has apprehended the beauty of the Good can apprehend nothing else; he who has seen it can see nothing else; he cannot hear speech about aught else; he cannot move his body at all; he forgets all bodily sensations and all bodily movements, and is still [*Hermetica, Libellus X*].

The experience of the Good, according to this author, is unlike ordinary waking state experience. One experiences the Good in ‘deep silence,’ when the mind transcends ordinary sensory perception and body sense and ‘is still.’

Louis Blossius (1925, p. 123), the 16th-century French Benedictine monk, described, at length and with insight, experiences suggestive of pure consciousness experiences.

At last, when its higher powers have been raised up, enlightened and adorned by divine grace, the spirit will attain to a simple unity, and will arrive at pure love without images in the imagination, and at a simple knowledge of the mind without reflections. . . . The simple eye of the soul itself remains open This eye is a pure, simple, uniform *thought*, raised above all *reflections* of the intellect. . . . The soul sees nothing in time, but raised above time and place, takes to itself, as it were, a certain characteristic of eternity. . . . It loses itself in the infinite solitude but so to lose itself is rather to find itself.

Blossius describes a state in which the mind reaches a ‘simple unity,’ without ‘images’ or ‘reflections,’ beyond time and space. ‘The simple eye of the soul itself remains open . . . above all reflections of the intellect.’

Hakuin Zenji (1963, p. 117–118), the Japanese Zen Buddhist saint, emphasizes that this experience takes place when mental activity settles and the mind becomes peaceful—and this experience, furthermore, is quite distinct from ‘everyday consciousness’:

Before long you will find that the mind-nature has become settled in you – like a great rock, immovable and peaceful But do not then leave off Then what one often hears about will take place All your usual, everyday consciousness will cease . . . [Then] the one, pure, unconfused truth, all, as it were, in one whole, will rise up before your very eyes

Perhaps the classic description of this state in the West is found in William Wordsworth’s (1979, p. 156) ‘Lines Composed a Few Miles Above Tintern Abbey.’

... that blessed mood,
 In which the burthen of the mystery,
 In which the heavy and the weary weight
 Of all this unintelligible world,
 Is lightened: – that serene and blessed mood,
 In which the affections gently lead us on –

Until, the breath of this corporeal frame
And even the motion of our human blood
Almost suspended, we are laid asleep
In body, and become a living soul;
While with an eye made quiet by the power
Of harmony, and the deep power of joy,
We see into the life of things.

Wordsworth's description is notable for its exactness. He feels calm, 'serene.' During this state, Wordsworth feels he has 'become a living soul,' able to 'see into the life of things.' Clearly this was more than just a moment of relaxation – it is a qualitatively unique state.

Many more examples could be cited, all with the same distinctive features. Of course we cannot know precisely what these authors were experiencing. These descriptions do, however, reflect the major themes seen in the content analysis of meditation experiences, namely a state beyond space, time, and body-sense, characterized as unbounded and peaceful. These reports suggest that pure consciousness is a naturally occurring state not tied to a specific culture or world view.

To have any experience, the nervous system functions in a specific manner. For instance, cognitive processing (Posner and Raichle, 1994) and states of consciousness (Rechtschaffen and Kales, 1968) are delineated by activity in different areas of the brain and nervous system. Likewise, the experience of pure consciousness should be characterized by a specific pattern of physiological functioning. Empirical markers of this state would afford an objective gauge to compare pure consciousness (consciousness itself) to waking experiences.

Physiological Correlates of Pure Consciousness Experiences

Changes in EEG, breath rate, skin conductance, and heart rate have been used as physiological "windows" to understand the state of pure consciousness. Refined breathing was the first published marker of this experience. Farrow and Hebert (1982) and later Badawi and colleagues (1984) observed suspension of normal respiration from 10 to 40 seconds during pure consciousness experiences. This type of breathing, while initially termed "respiratory suspension," is actually an example of apneustic breathing—slow, prolonged inspiration (Kesterson and Clinch, 1989). Apneustic breathing is supported by different respiratory drive centers in the brain stem (Plum and Posner, 1980; Travis and Wallace, 1997) than those that drive breathing during waking.

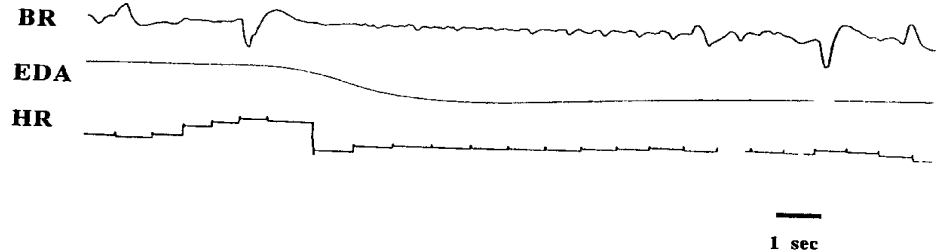


FIGURE 1 Physiological tracing during pure consciousness. This figure presents an example of apneustic breathing (BR: exhale is down) with autonomic orienting at the onset of breath changes (EDA: increasing skin conductance is down; HR: increasing heart rate is up). Note the skin conductance response and the heart response following the onset of the apneustic breathing.

A second reliable marker of this state is skin conductance responses at the onset of breath changes (Travis and Wallace, 1997). These autonomic responses are similar to those seen during orienting – attention switching to environmental stimuli that are novel (Sokolov, 1963; O’Gorman, 1979) or significant (Maltzman, 1977; Spinks *et al.*, 1985). They could mark the transition of awareness from active thinking processes to the wakeful mental quiescence of pure consciousness.

Figure 1 presents an example of apneustic breathing with autonomic orienting at the onset of breath changes. In this figure, breath rate (BR: exhale is down) is the top tracing, electrodermal activity (EDA: increasing skin conductance is down) is the middle one, and heart rate variability (HR: increasing heart rate is up). Note the skin conductance response and the heart response following the onset of the 16-s long apneustic breathing.

A third marker, which is less obvious but has been reported in most studies, is a trend for increasing frequency of the peak power in the EEG. Compared to the period prior to the respiration suspension, the frequency of peak power of the EEG increases from 0.5 to 1.5 Hz. Fluctuations in frequency of peak power follow fluctuations in alertness. For instance, during sleep 1 Hz EEG is seen, while during very focused tasks 40 Hz EEG activity is reported. The observed increase in frequency of peak power during respiration suspensions could be an indication of increased alertness during this experience.

DISCUSSION OF PHYSIOLOGICAL PATTERNS DURING PURE CONSCIOUSNESS

Physiologically, pure consciousness was characterized by apneustic breathing, skin conductance orienting at the onset of breath changes, and increase

in frequency of the peak power of the EEG. Apneustic breathing is not reported in normal populations (outside of Transcendental Meditation practice), and has never been reported in the literature with durations longer than 4–6 s. The respiratory drive centers responsible for apneustic breathing (the parabrachialis medialis nuclei) are quiet during waking, dreaming and sleeping, but become active during pure consciousness periods. This change in respiration occurs on the background of changing functioning of the autonomic nervous system. Prior to pure consciousness periods, sympathetic activity is low (low skin conductance levels) and parasympathetic activity is high (high respiratory sinus arrhythmia levels (see Porges, 1995)). Onset of pure consciousness periods was marked by bursts of activity in both the sympathetic and parasympathetic nervous systems (skin conductance and heart rate responses) followed by autonomic quiescence during the period. It is noteworthy that an experience subjectively described as ‘unbounded’ and ‘peaceful’ was objectively marked by the virtual absence of breath and autonomic activity, along with heightened alertness (increased frequency of peak power of the EEG). This unique constellation of physiological patterns is unlike any seen in normal waking, sleeping, or dreaming.

Pure consciousness is experiential and physiologically distinct from experiences during waking, sleeping, and dreaming. However, being a state of consciousness it should be integrated with normal waking conscious. This paper concludes with a model that attempts to integrate this broader range of consciousness.

An Integrated Model of Consciousness

Current models of consciousness primarily focus on explaining normal waking experiences – the first five kinds of consciousness defined at the beginning of this paper. For example, Baars (1997) developed a “theater metaphor” with a “spot light of attention,” an “attention director,” “contextual operators,” and the “unconscious audience” of automatic processes. This metaphor elegantly explains normal waking experiences, including perception, selective attention, controlled and automatic processing, priming, volition, and context effects. However, it was not intended to explain content-free experiences, or pure consciousness experiences.

What would be the structure of a model that integrated this fundamental level of consciousness with the flow of mental-occurrences that characterize waking? The descriptions of the sixth kind of consciousness presented earlier suggest two possible elements for an integrated model of consciousness: (1) this level of consciousness *underlies* particular awarenesses

(Natsoulas, O'Shaughnessy and Woodruff-Smith), and (2) it *functions in the gaps* between experiences, connecting individual perceptions into a continuous stream (Baars).

A model has been proposed, an “ocean metaphor,” which conceptualizes pure consciousness as a fundamental state (an ocean), which sometimes appears as (a wave of) waking consciousness, sometimes as dreaming consciousness, and sometimes as deep sleep consciousness (Maharishi, 1972, 1986b). In this model, pure consciousness underlies the activity of waking, dreaming and sleeping, and can be objectively identified and subjectively experienced at the junction point between each state, *i.e.*, where waking has ceased and sleep has not yet begun (Travis, 1994). According to this model, which Travis (1994) called the ‘junction point model,’ the activities of waking, sleeping, and dreaming are the “filmiest screens,” which James spoke of, hiding the silent nature of pure consciousness – the surface waves covering up the silent depths of the ocean of consciousness.

Preliminary data support two unique predictions of this model: (1) pure consciousness is an underlying continuum that can be identified in the junction points between waking, dreaming and sleeping (suggested by similar EEG patterns in the junction points between waking and sleeping, and sleeping and dreaming (Travis, 1994); and (2) pure consciousness can be integrated with waking, dreaming and sleeping (suggested by increased EEG alpha power and coherence during eyes-open rest periods (Travis, 1991), and during deep sleep (Mason *et al.*, 1997) in subjects reporting this integrated experience).

CONCLUSION

These phenomenological and physiological data suggest that pure consciousness has a completely different status than waking experiences. Waking experiences (the other five definitions of consciousness) include particular instances. Pure consciousness is the ground upon which these particular instances are appreciated and connected. In terms of the junction point model, pure consciousness is the underlying “ocean,” and particular conscious experiences are the changing waves. These waves exist and change through time based on the underlying level of pure consciousness. Further testing of this model and of the nature of pure consciousness, may, as James asserted, provide a basis for fully understanding who we are, and what it means to be fully human.

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