

**PHENOMENOLOGICAL DIFFERENCES
AMONG SELF HYPNOSIS, MINDFULNESS
MEDITATION, AND IMAGING***

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ABSTRACT

A survey of 122 subjects was conducted to investigate the differences in the phenomenological quality of the experiences engendered by three types of awareness discipline: self-hypnosis (21 subjects), waking dreaming (49 subjects) and mindfulness meditation (25 subjects from a 2-week retreat, and another group of twenty-seven subjects from a 2-day weekend retreat). A questionnaire, the Profile of Trance, Imaging, and Meditation Experience (TIME) was used in the survey. Discriminant analyses were used to construct models of the differences in the phenomenological quality of the experiences among the three groups. A number of phenomenological dimensions, in the major areas of attention, thinking, memory, imagery, body sensations, emotions, time sense, reality sense, and sense of self, were found which could accurately distinguish among the experiences of practitioners of the three types of awareness training. Results show that while self hypnosis involves

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self-referential thinking, memory changes, and intense emotions, waking dreaming emphasizes the immediate impact of emerging images, which unfold in a thematic manner and have a sense of their own reality. Mindfulness meditators have difficulty managing distractions, but with experience learn greater awareness of bodily processes, and experience changes in the perception of time and self; mental processes seem to slow down, and awareness assumes an impersonal quality. No attributions as to the causes or sources of these phenomenological differences are made, as the survey was not large enough to provide comparison groups, subject matching, or other statistical controls necessary for causal analyses.

Several converging lines of research have suggested that hypnosis, meditation and relaxed imaging are closely related if not identical mental states. The capacity to attend in a non-distracted manner is related both to meditation skill and hypnotic susceptibility. On a push button task, a significant negative correlation was found between intrusion rate and hypnotic susceptibility [1-3]. Questionnaires have likewise shown the ability to attend without distraction is important in hypnosis [4] and in hypnosis and meditation [5]. A similar relationship between receptive attention and imaging has been reported [6-7], although no studies comparing attention across hypnosis, meditation and imaging exist to date. The capacity for absorptive experience has been shown to be correlated with hypnotic susceptibility [8]. Absorptive capacity also increases with meditation practice.¹ Imaginative involvement is correlated with hypnotic susceptibility [9], with meditation gain [10] and with imaging [6].

Because hypnosis, meditation, and imaging involve a similar capacity for nondistracted attention and absorbed imaginative involvement, it is easy to overlook the equally important differences among states.

Experiential differences are likely to appear through phenomenological investigation. Independent phenomenological studies of hypnosis, meditation, or imaging states are well documented. The phenomenology of hypnosis has been investigated [4, 11-14], but phenomenological comparisons to meditation and imaging are yet to be established. Subjective reports of different types of meditation have been documented, though not carefully measured [5, 15]. Differences among types of imaging have also been studied [16-17].

The kind of comparative phenomenological studies necessary to distinguish hypnosis, meditation, and imaging states are just beginning to appear. Fromm, et al. have reported significant phenomenological differences between self hypnosis and heterohypnosis [7]. Another study sought to investigate phenomenological and physiological aspects of transcendental meditation (TM) and hypnosis [18]. Although no physiological changes were found, both hypnosis and TM were phenomenologically different from the waking state. Differences between hypnosis and TM were not remarkable. The authors

¹ Pilot data, using the absorption scale [8], were collected at the Insight Meditation Society, Barre, Massachusetts. Pre-post means of the sample of forty-seven subjects were significantly different at the .01 level.

concluded that hypnosis and TM, for the most part, resembled each other in that both produced changes in the distribution of attention and in the perception of body image. The type of changes in attention deployment and in body image were, however, different in each case. For example, more concentration and imagery were found in hypnosis, while more profound body image changes occurred in TM. Unfortunately, the design and methods used, particularly the self-report scale used for the phenomenological part of the study, somewhat limited the value of the TM-hypnosis comparisons.

Through clinical interviews we found that persons susceptible to and experienced in hypnosis and skilled in meditation see hypnosis and meditation as very different states. Persons experienced in imaging and meditation also report differences between the two states. It may be that such important differences have been overlooked due to the assumption of similarity which has guided previous research. It may also be that inexperienced persons are unable to articulate the differences between their experiences [7]. What little comparative phenomenological data that do exist are promising and suggestive. Various types of hypnosis, meditation, and imaging may differ in many important respects, albeit similar in others.

The current study was designed to survey such differences. As an exploratory survey the purpose was to see if differences indeed existed, thereby questioning the presumed similarities among hypnosis, meditation, and imaging. If so, it could lead to further studies that might shed light on factors that contribute to such differences, e.g., selection, expectation effects, and differences in experience across these states.

METHOD

The Questionnaire

In order to investigate similarities and differences among hypnosis, types of meditation, and imaging a questionnaire was designed, the Profile of Trance, Imaging and Meditation Experience (TIME). The instrument was designed to measure a wide range of subjective experiences reported in clinical interviews with persons experienced in hypnosis, meditation and imaging. The TIME is composed of items selected and modified from two other sets of questionnaires: 1) the comparative and longitudinal questionnaires on self hypnosis and heterohypnosis developed from Fromm, et al. [7]² and 2) the Profile of Meditation Experience (POME) developed by Brown, et al. [19]. The latter questionnaire is composed of items from classical meditation texts and current

² The items on the hypnosis questionnaires were composed by a group of researchers under the direction of Erika Fromm, Ph.D., The University of Chicago, Chicago, Illinois. These include: Erika Fromm, Daniel P. Brown, Joab Oberlander, Stephen Hurt, Stephen Coyne, and John Engler.

clinical interviews with advanced meditators in this country and South Asia.³ A 70 percent cut-off point was used as a selection criterion for the items included in the TIME: items on the two hypnosis questionnaires that were endorsed as "often," "usually," or "always" a feature of their experiences by 70 percent of the subjects in the original Fromm et al., study were included in the TIME [7]; items on the POME that 70 percent of a pilot group of ten other meditators endorsed as "often," "usually," or "always" a feature of their experiences were also included in the TIME. In short, the TIME is composed of items which were carefully selected as best describing the characteristics of hypnosis and meditation experiences. Some additional items were added concerning imagery experience.

The current version of the TIME consists of 150 items, ten of which are repeated for test-retest reliability measurement. The items are arranged in eleven a priori categories following a similar format to the Fromm et al., hypnosis questionnaires [7]: 1) Attention (27 items); 2) Thinking (15 items); 3) Memory (6 items); 4) Imagery (10 items); 5) Body Sensations (19 items); 6) Emotions (7 items); 7) Time Sense (7 items); 8) Reality Sense (5 items); 9) Sense of Self (11 items); 10) Perception (30 items); 11) Interpersonal Context (23 items). The items in the Perception section contain three sets of ten items. Each set contains ten items, with similar wording, for each of three different sense modalities: visual perception; auditory perception; and perception of the breath. This was done because meditation groups use different sense objects as objects of meditation; external objects and internal visual images, or external and internal sounds (mantras) and the breath.

For each item of the TIME, subjects responded as to whether the experiential characteristic indicated by the item was "not applicable" to their own practice, or if applicable, whether the characteristic was "never," "rarely," "sometimes," "often," "usually," or "always" a feature of their own experience during the practice. For analysis purposes, these response categories were scaled 0 = not applicable, 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = usually, and 6 = always.

The test-retest reliability of the items ranged from 0.50 to 0.93, for individual items, using the Pearson r ; these reliabilities are adequate for evaluation of such data. "Not applicable" responses were excluded from the correlation calculations and all other statistical analyses. Validation studies using the TIME are currently in progress; at the time of this report the individual items can only be said to have face validity.

³ The original version of the POME was composed by Daniel P. Brown and Stuart Twemlow as part of research conducted at the Research Division, Topeka Veteran's Administration Hospital, Topeka, Kansas. A major revision of the POME was done with the assistance of John Engler and Jellimieke Stauthamer, based on their knowledge of meditation and field work in South Asia with a Hindi version of the POME. Michael Maliszewski contributed much to the methodological soundness of this later version of the POME through helpful editing, formatting, and data analysis suggestions.

Subjects

A total of 122 subjects participated in the survey. One group of twenty-seven subjects attended a two-day weekend retreat in mindfulness meditation. A second group of subjects attended a two-week retreat of the same mindfulness meditation practice. A third group of twenty-one subjects were given standardized hypnotic experiences by one of the authors (P.R.), followed by a two-week period during which they practiced self hypnosis daily. A fourth group of forty-nine subjects were part of an ongoing waking dream therapy program conducted by another investigator (G.E.). Subjects were unpaid volunteers in the first three groups, and were either paying therapy patients, or therapists, in the fourth group. Subjects ranged in age from nineteen to sixty-eight years old. There were forty-five males and seventy-three females in the total sample. Most of the subjects were well educated; over 100 of them had attained advanced degrees in the arts, law, health, and mental health. The four groups of subjects were fairly similar in composition to the total sample. The exceptions were that the self hypnosis group was predominantly female (5 males, 13 females), while the waking dream group was somewhat better educated, no doubt due to the number of doctors and therapists who participated as subjects.

All of the subjects in the self hypnosis group were naive relative to hypnosis prior to their participation in this study. Three of the subjects in the self hypnosis group failed to complete the questionnaires after their two weeks of self hypnosis practice.

Most of the meditators on the weekend (2 day) retreat had little or no prior experience with meditation. In contrast, most of the subjects in the two-week meditation retreat had some prior experience with meditation, which ranged from one month to more than six years. Mindfulness, Zen, and mantra were the most common types of prior meditation experience. All of the mindfulness meditators in both groups completed the questionnaire.

The waking dream group was more heterogeneous in that it included many subjects who had prior experience with meditation and/or hypnosis. Ten of the subjects in the waking dream group were excluded from the data analyses because of active involvement in various meditation and self hypnotic practices concurrent to their waking dream practice. After exclusions, a total of 109 subjects were included in the final analysis.

As this study was an initial survey of the phenomenological reports of persons involved in three different types of awareness practices, and not an experimental comparison of the effects of the practices, no attempt was made to match subjects in accordance to length of practice nor demographic characteristics. The groups are comprised of persons as they were found in the population at large, and subjects had to satisfy only two criteria: homogeneity of practice and minimal proficiency with their practice.

The two meditation groups and the self hypnosis group were very homogeneous in terms of their practices. Less than one-third of the subjects in each of the two meditation groups had any previous experience with hypnosis, and none had been hypnotized more than four times. Even fewer of the meditation subjects had any previous imagery experience. In the self hypnosis group, only three subjects had practiced any form of meditation, and none had practiced mindfulness meditation.

Subjects of the self hypnosis group had also had minimal experience with imaging. The waking dream group was less homogeneous in terms of practice than the other three groups. Two-thirds had some previous meditation experience, but only one had practiced mindfulness meditation. Forty percent of the waking dream group had been hypnotized: all but one had been hypnotized less than six times. While the waking dream group was not as homogeneous as we would like, the amount of experimental overlap with the other three groups was actually minimal.

Subjects were assumed to have achieved a sufficient, albeit minimal, amount of experience in their particular practice. The minimal amount of experience varied per group, the minimal being defined by instruction. Fromm, et al., found that a minimum of several weeks of daily practice with self hypnosis was necessary for subjects to be able to fully discriminate and articulate the subtle phenomenon involved [7]. According to meditation teachers, a full two weeks intensive retreat is considered a minimum amount of time to learn mindfulness, although teachers are currently experimenting with a shorter weekend form of the practice. Subjects were selected by the waking dream facilitator only after having minimal proficiency in the practice, although the number of sessions required to attain proficiency varied with the subject. With the exception of the two-day mindfulness group the rest of the groups can be considered as experienced and proficient with their respective practices. The two-day meditators are really novices. Ideally one would prefer that subjects were of equivalent experience and proficiency, but with a survey one must take respondents as they are available.

Practice Instructions

Self Hypnosis—The instruction for self hypnosis was similar to those used by the Fromm research group [7]. Potential subjects were screened using the Harvard Group Scale of Hypnotic Susceptibility, Form A [20]. Unlike the Fromm group, which used only highly hypnotizable subjects, (total score—10 on the HGSHS), moderately hypnotizable as well as highly hypnotizable subjects were included in the current study (total score—4 on the HGSHS). All acceptable subjects were given the Stanford Scale of Hypnotic Susceptibility (SSHS) Form C [21], and the Inventory of Self Hypnosis (ISH) [22]. Subjects

were then required to practice self hypnosis one hour daily for two full weeks in a standardized environment. The self hypnosis instructions were identical to those used in the Fromm study. Subjects were reminded that they could use their experiences on the HGSGS, SSHS C: and ISH as "guidelines" for what to do during self hypnotic practice, but by no means should limit themselves to only these task-oriented instructions. They were told they might also invent their own self hypnotic tasks as well as to use the self hypnotic state to become more receptive to whatever experiences come into their awareness. There was no further contact with the hypnotist during that two-week interval, although subjects recorded their self hypnotic experiences in a daily journal. At the end of the two-week period, the TIME was administered.

Mindfulness Meditation—Mindfulness meditators practiced in a traditional retreat format of which the routine involved a continuous alternation between hourly periods of sitting and walking meditation over a span of 16 hours daily for the length of the retreat, either two days or two weeks. They adopted traditional Buddhist precepts such as silence and abstinence from sex or substance use and they did not interact with other meditators. During this time practitioners had the opportunity to work uninterruptedly toward the acquisition of meditative skills. The instructions for formal periods of sitting and walking meditation followed the traditional mindfulness instructions of one of the major Burmese teaching lineages, that of the Mahasi Sayadaw [23, 24]. The practice began with a preliminary concentration exercise in which attention was focused on the in/out movement of the breath at the tip of the nostrils or the rise and fall of the abdomen while sitting and on the sensations in the feet while walking. After some degree of concentration had developed, new classes of objects were added in a series: bodily sensations, emotions, thoughts, images, memories, perceptions, and the pleasant, unpleasant or neutral quality of each moment of experience. The meditator was instructed to become aware of each type of object at the exact moment it occurred, for as long as it occurred in the stream of consciousness. When no other object presented itself attention was returned to the basic meditation object, the breath. This extension of the range of awareness to a variety of objects in their momentary arising and passing away constituted mindfulness practice. The specific object arising in consciousness was not nearly as important as this quality of detached, non-interpretive, nonjudgmental observation with which it is registered in awareness. Emphasis was on the *process* by which particular events occur moment-by-moment, not on the individual *content* itself. Equally important, the student was instructed to remain mindful of each and every activity throughout the day. Ideally it was carried on without a break from rising to sleeping.

The instructions were identical for both the two-day and two-week retreat with about the first third devoted to the preliminary concentration exercise and

the remainder to the mindfulness training. The TIME was administered at the close of each retreat.

Waking dream—The instructions for the waking dream group followed the method devised by Dr. Gerald Epstein in his book, *Waking Dream Therapy* [25]. The waking dream exercises were designed to allow therapy patients to gain access to the world of spontaneously occurring dreams in an alert and intentional manner. Patients were required to record their night dreams for use in the waking dream sessions. All waking dream sessions were conducted in a constant environment by a single dream facilitator who was present the entire session. At the beginning of each session, each patient formulated a question as to what she/he wished to work on. Next, the facilitator induced a relaxed state. The patient sat with erect posture, eyes closed, on a chair, and visualized the in/out movement of the breath, for 20 minutes. The patient was specifically instructed not to think, intellectualize, or engage in habitual fantasy and daydreams. If necessary, some preparatory exercises were given to the patient to teach the difference between true dreams and other forms of mentation such as thinking, daydreaming, and fantasy. After becoming relaxed, the patient chose a significant or highly emotionally charged element from a recent night dream. For the next 30 minutes, the patient tried to re-enter the reality of this dream. During the re-dream period, the facilitator occasionally asked the patient to describe the dream in the present tense as if the patient were immediately experiencing the dream. The instructions encouraged the patient to enter the dream scene in order to feel more a part of the scene and to become aware of the subtle details of the dream environment. Other than such encouragement, the facilitator was not directive nor otherwise suggestive. The primary emphasis of the waking dream instruction was to teach the patient to enter another realm of existence, the dream reality, which was discovered in its own right.

The TIME was administered after patients were thought to have successfully attained the waking dream experience, although the total number of necessary sessions varied among patients.

RESULTS

In order to construct a model for describing the ways in which the self-hypnosis, mindfulness, and imaging experiences differ, a discriminant analysis was conducted for each of the sections of the TIME questionnaire. The direct inclusion method was used, in which all items for a given section were entered at once into the analysis [26].

The discriminant functions constructed for each questionnaire section (i.e., attention, thinking, etc.), their conceptual names, the percent of inter-group variance explained by each, the canonical correlations, and the percent of cases

correctly classified by the *entire set* of functions is displayed in Table 1. In the analyses three functions at most were derived for each section although in most cases only those functions accounting for 20 percent or more of the variance among groups are included in the table.

One way to assess the importance of a discriminant function is to examine its canonical correlation coefficient, which is the degree to which the function is correlated with the groups. Each section of Table 1 also gives the percent of subjects correctly classified as to practice by the *entire three-function discriminant model*. In the analyses where there were sufficient subjects for an analysis, the models correctly classified from 39 percent to 91 percent of the subjects. Since the a priori probability of correctly classifying a subject into one of the four groups is 25 percent, we were quite surprised by the effectiveness of the models constructed.

Table 2 condenses much of the information contained in the discriminant analyses. The cell entries are the conceptual names of the discriminant functions, followed by an indicator (+) or (-) of whether the group tends to load highest positively or highest negatively on the function. For example, in the attention section the immediacy function is listed as highest negative under the 2-week mindfulness group, and highest positive under the waking dream group. This indicates that the immediacy function tends to differentiate between the experiences of these two groups, and that the experiences of the 2-week mindfulness group tend to have much less immediacy than those of the waking dream group. Other groups have intermediate loadings for the immediacy function, which indicates that the quality of immediacy does not so effectively differentiate between them. It is not necessary that any given function differentiate only two groups; it may separate one group from all others. Each discriminant function may be described as a phenomenological dimension along which experiences differ.

The conceptual names given to the discriminant functions were derived from examination of the set of individual questionnaire items which contributed most to each function. Under the attention section, the *immediacy* factor related to seven items which refer to the ability to detect content which enters the mind immediately or very soon after it makes its appearance. This is a mental content oriented dimension. The *managing distractions* dimension is based on four items which refer to the strategy and tactics taken in relation to distractions which enter the mind. Some of its components include 1) noticing that the ability to attend may vary from day to day, 2) taking an active rather than passive attitude towards handling distractions and excluding the distraction from the mind. The *mental control* dimension was included, even though it accounts for only 11 percent of the variance among groups, because it is theoretically an important concept. *Mental control* is composed of seven items which refer to a nonagitated, calm state of mind and isolating the object of attention from extraneous content by attending to the process of how the mind

Table 1. Discriminant Analyses Results

<i>Function Name</i>	<i>Percent Variance</i>	<i>Canonical Correlation</i>
Section: Attention		
Immediacy	62.0	.886
Managing Distraction	26.5	.781
Mental Control	11.5	.635
Total <i>N</i> = 60		
Percent of cases correctly classified = 90.7		
Section: Thinking		
Self-Referential	48.9	.772
Non-Directed	34.3	.713
Total <i>N</i> = 62		
Percent of cases correctly classified = 72.0		
Section: Memory		
Hypernesia	50.2	.540
Spontaneous Age Regression	31.7	.454
Total <i>N</i> = 100		
Percent of cases correctly classified = 51.6		
Section: Imagery		
Created, Thematic Imagery	74.6	.7444
Total <i>N</i> = 85		
Percent of cases correctly classified = 55.7		
Section: Body Sensations		
Body Awareness	63.3	.765
Body Non-Existent	24.5	.595
Total <i>N</i> = 87		
Percent of cases correctly classified = 73.1		

Table 1. (Cont'd.)

<i>Function Name</i>	<i>Percent Variance</i>	<i>Canonical Correlation</i>
Section: Emotions		
Self-Criticism	62.0	.469
Intensity	27.9	.335
Total <i>N</i> = 104 Percent of cases correctly classified = 43.2		
Section: Time Sense		
Distortion (slow, fast)	54.1	.437
Non-Distortion (as usual)	27.4	.327
Total <i>N</i> = 90 Percent of cases correctly classified = 39.0		
Section: Reality Sense		
Inner Reality	79.6	.536
Total <i>N</i> = 99 Percent of cases correctly classified = 41.1		
Section: Self Sense		
Impersonality	61.3	.574
Un-Selfconsciousness	27.3	.423
Total <i>N</i> = 70 Percent of cases correctly classified = 49.2		

NOTE: Extensive missing data for Perception and Interpersonal Context sections—no analyses possible.

works rather than to its content. These three functions derived for the attention section appear to be especially important in distinguishing among types of experiences, since the model can correctly classify 90 percent of cases.

The thinking dimensions are straightforward in their names. *Self-referential* thinking is derived from four items referring to exploration of personal themes, regardless of whether they are negative or positive. *Non-directed* thinking is similar to following a stream of consciousness; it consists of two items which refer to following spontaneous trains of thought, associations, or other inter-related thought patterns, and not inventing or actively creating new thought patterns.

The memory dimension of *hypernesia* (1 item) refers to actively exploring personal memories and past events from one's life. *Spontaneous age regression* (1 item) is the spontaneous re-experiencing of forgotten events from childhood or earlier in life.

One only dimension, *created thematic imagery* was found for the imagery section. The imagery dimension, consists of two items referring to the experience of vivid imagery, which has some thematic storyline or other interconnection between scenes, and which is actively discovered by the practitioner as it spontaneously unfolds.

Body awareness, derived from five items, refers to the tendency to frequently perceive various bodily sensations; pain and muscle movements being the most important types of sensations. *Body non-existence*, derived from four items, is the experience of the body being "not there." It does not mean a feeling of numbness or other similar qualities one may experience if a limb has gone to sleep. It is as if the body has disappeared, in terms of the various body senses.

The emotional dimension of *self-criticism* (1 item) is related mainly to self-criticism for negative thoughts, feelings, ideas, etc. Emotional *intensity*, derived from two items, concerns memories which are accompanied by very intense feelings.

The function named *time distortion*, derived from two items, is the experiential quality of feeling that time is passing slower or faster than usual; it involves some type of change in the subjective sense of time passage. *Time non-distortion*, also derived from two items, involves that quality of feeling that time is passing as it usually does. Logically it would appear that the two qualities are opposites, but apparently they can be two independent qualities. (The discriminant analysis constructs a set of orthogonal or independent functions from the data). More will have to be done to determine the relationship between the two mathematically independently qualities, and their logical complementarity.

The *inner reality* dimension (1 item) is simply the experience of images, thoughts, memories, sensations and other internal stimuli as being as real as the stimuli encountered during waking.

The self dimension of *impersonality*, derived from two items, is the

Table 2. Conceptual Discriminant Functions and Extreme Groups

Section	2-Day Mindfulness		Self Hypnosis		Waking Dream	
Attention		Immediacy (-)		Immediacy (+)		
	Managing Distractions (+)	Managing Distractions (+)	Managing Distractions (-)			
Thinking	Mental Control (+)		Mental Control (+)		Mental Control (-)	
	Self-Referent (-)		Self-Referent (+)		Self-Referent (-)	
	Non-Directed (+)				Non-Directed (-)	
Memory	Hypermnnesia (-)		Hypermnnesia (+)			
			Spontaneous Age Regression (+)			
Imagery	Created Thematic (-)				Created Thematic (+)	
	Awareness (+)		Awareness (-)		Awareness (-)	
Body Sensations						
			Non-Existent (+)			
Reality Sense	Inner Reality (-)				Inner-Reality (+)	
	Self-Criticism (+)				Self-Criticism (-)	
Time Sense			Distortion (+)		Distortion (-)	
					Non-Distortion (-)	
Self Sense		Impersonality (+)			Un-Self-Consciousness (+)	

experiential quality by which thoughts, feelings, sensations, and other events seem to be impersonal processes which occur under certain conditions, but which have no reference to a self or persons apart from them. It is not depersonalization, but impersonalization. *Un-self-consciousness*, derived from two other items, is another form of losing awareness of the self, this time by becoming so absorbed in the experience that the awareness of the self, as such, as being involved in the experience is pushed back into the background or is forgotten.

The models constructed using the discriminant analysis technique seem to provide a fairly powerful method of distinguishing among the experiences of the four groups studied. The discriminant functions generated should be viewed as the phenomenological dimensions on which the four groups here differ since isolating reported differences was the main concern of this phase of analysis.

DISCUSSION

Referring to Tables 1 and 2 it is possible to describe the ways these groups differ in their reports for each of the awareness disciplines. Relative to meditation and waking dreaming, self hypnosis practitioners are more likely to emphasize the mental process of suggestion, which is the means to the experience. The content of the experience is more a form of self-referential thinking, which is also part of the technique for inducing the exploration of vivid personal memories, and intense emotions, as well as spontaneous re-experiences of events from early in the practitioner's life. During the trance state the practitioner is less concerned with the need to manage distractions than is the case in meditation, although a certain degree of mental control is required. Awareness of the body is also lower than in meditation.

Our subjects' reports on self-hypnosis are in part consistent with reports given by subjects in another study on self hypnosis [7]. In that study self hypnosis was characterized by changes in attention, content (increase in idiosyncratic imagery, hypermnesias and spontaneous age regressions), and context (increase transference). The overall impression given by subjects in both studies is that self hypnosis is reported to be a cognitive state which utilizes certain thinking processes in the service of self suggestion and to gain access to the content of the stream of consciousness.

The two mindfulness groups show a number of similarities in their reports. The instructions require subjects to follow the breath. In doing so, subjects reported a higher degree of awareness of the body than in self hypnosis and waking dream. Beginning meditators nevertheless report spontaneous trains of thought or other patterns of association, but are more likely to criticize themselves for this.

Several interesting phenomena occur as the practitioner becomes more experienced with meditation. First of all, the practitioner is more likely to

report noticing thoughts and other mental content at the moment they enter the mind. There is always some lag between the time the content enters and the time it is fully noticed, and this lag becomes more apparent the more proficient the practitioner becomes in observing the operations of the mind. A second phenomena is time distortion; as the practitioner focuses more on the process by which events arise and pass in awareness time seems to slow down. More experience seems to be packed into shorter time intervals. A third phenomena reported is an alteration in the sense of self. By paying attention to the process by which experience unfolds the practitioner is more likely to report that there is really no personal self in witness of these events; events simply happen of their own accord, more as an impersonal process. Finally, the physical body seems to vanish from awareness more often for experienced meditators than for beginners or for practitioners of other awareness disciplines. The phenomena associated with the body are more likely to lose their "weightiness," which gives it the feeling of material solidity. Without this feeling of solidity, the body is likewise reported as an impersonal process and is likely to feel as if it is "not there."

Our subjects' reports of meditation is consistent with reports given by subjects in other studies. Van Nuys recognized beginning meditator's difficulty managing distractions and set up a task which defined meditation gain in terms of ease of shutting out intrusions while attending [1]. Bärmarck and Gauntz's claim that transcendental meditators show increased sensitivity to bodily sensations and experience body image changes is consistent with our meditation subjects' greater awareness of bodily sensations [18]. In a Rorschach study of intensive mindfulness meditation, Brown and Engler found extensive reductions in thinking productivity consistent with our meditation subjects' less concern with thematic content, self-referential thinking, and memory content relative to other awareness disciplines [21]. Our subjects' greater tendency also to disidentify with the content of their own mental and bodily processes is similar to the themes of selflessness and non-reactivity so central to Buddhist meditation [28]. A recent empirical study of changes in self concept resulting from mindfulness meditation likewise found that meditators did become more disidentified with and less reactive to their mental and bodily processes [29].

Relative to self hypnosis and meditation, the waking dream is reported to be more of a vivid inner reality consisting of a series of images intentionally discovered by the practitioner, and having a definite theme or storyline. The practitioner reports more sensitivity to the immediate impact of spontaneously emerging images, and is more likely than in hypnosis and meditation to lose the sense that she/he is actually creating the experience. Waking dreamers are more likely to discover a compelling dream reality with hallucinatory intensity, and in contrast to meditators, are less aware of their body. The waking dream is less an established train of images or a kind of rational thinking as is self hypnosis. Nor does the dream necessarily involve emotionally intense memories as in

self hypnosis. Unlike meditation, the emphasis is more on the dream content, and less on the mental processes by which the content is generated. The waking dreamer also becomes less involved in self criticism of negative content, which is more true of beginning meditators.

Our subjects' report of waking dreaming—as awareness of and voluntary control over dreams that seem to have a reality of their own—is consistent with that of other studies. The Imaginal Process Inventory has been used in a factor-analytic study of daydreams from over 1300 subjects [17]. One of these factors (vividness/hallucinatory quality), suggests that at least some individuals spontaneously experience their daydreams as being true to life or as real as waking experiences. Apart from these exceptional individuals, it remains a question how most of a group of ordinary subjects can be taught to experience their dream constructions as real. However, the possibility of voluntary control over dreaming (lucid dreaming) has been raised in another study [30, 31].

A few cautions are in order for the interpretation of these results. First of all, this study is limited by being a survey of various types of experiences. Being a survey, it was necessary to accept respondents as they became available; there was absolutely no question of assigning them to a condition, nor of manipulating elements of their practices. Therefore, no attributions as to the sources or causes of reported differences can be made. The phenomenological differences are simply there. Subject matching was not a feasible procedure either, since it would have reduced the subject pool below the numbers necessary for any analyses. Therefore, no indirect attributions concerning the sources or reported differences may be made either.

Because the subjects were volunteers, who probably favored particular types of practices, the reported differences could be attributed partly to selection. In other pilot research we have conducted on meditators, selection factors were sometimes very important, as compared to changes attributed to expectation effects. The importance of demand characteristics and expectation effects cannot be underestimated in states of consciousness research [10, 32]. In this regard, most of the subjects in each of our groups reported carefully following the instructions for the respective awareness discipline. The differences could also be due to differences in the amount of practice, since subjects in each group were not matched for amount of time practicing. Lastly, the differences could be due to different experiences inherent in each of these states. Tart has coined the term, "state-specificity" to refer to the unique experiences, organization of psychological structure, and psychophysiology of a given state of consciousness [33]. Further research is needed in order to find out what portion of the variance in reported quality is contributed by selection, expectation, amount of practice, and experiential state-specificity.

While subsequent analysis of the extent to which selection, expectation, amount of practice, and state-specificity each contributes to these differences is important, a further word of caution is needed. Schlesinger has criticized states

of consciousness research for its attempt to dissociate selection and expectation effects from state-specific effects as if selection and expectation were contaminants.⁴ Such efforts, while standard practice in research, too readily become divisive of a naturally occurring unity, in which selection, expectation and state-specificity all contribute to the total effect of a given practice. Schlesinger's position, while empirically "softer," is a much more realistic approach to studying the phenomenology of experience, especially in naturalistic settings. The preliminary survey with the TIME raises a lot of questions for further investigation. While self hypnosis, mindfulness and waking dreaming may be "related states," they appear to be distinctly different along a number of phenomenological dimensions.

It is hoped that the differences outlined here will stimulate further research into specificity of these relaxed, alert states of consciousness.

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