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The Phenomenology of Meditation

by
Lindsey Nightingale, B.A.

A thesis submitted to the Faculty of
Graduate Studies in partial fulfilment
of the requirements for the degree of
Master of Arts

Department of Psychology
Carleton University
Ottawa, Ontario
May 4, 1994
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Abstract

Results of previous research focusing on physiological and therapeutic measurables of meditation have been inconclusive. Current research is moving towards cognitive and subjective aspects of meditation. However, studies that have focused on the subjective experience of meditators have suffered from methodological, conceptual and statistical deficiencies, and are further confounded by using subjects with very little experience in meditation. This study examined the subjective experience of meditators ranging from 3 weeks to 27 years of practice. Two scales, with items derived from a content analysis of meditators written experiences, were administered with the Tellegan Absorption Scale (TAS) and the Rosenberg Self Esteem (RSE) inventory. Results were consistent with scriptural descriptions. Factor analysis of items yielded reliable dimensions. Scores on the meditation experience scale and RSE increased significantly with years of meditation practice. Implications of using novice subjects in meditation research were pointed out, and directions for future research were discussed.

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Introduction

In the last thirty years meditation has moved away from being an esoteric technique practiced by a comparatively few ascetics and monks in spiritual traditions and has become a household word and a common psychotherapeutic treatment. The practice of meditation is currently growing rapidly in the West as thousands of people turn to it for personal benefit. Consequently meditation is attracting the attention of an increasing amount of research (Shapiro, 1980). More than 1,000 papers have been published in the last thirty years reporting on over 50 kinds of physiological, behavioral and experiential changes occurring in subjects practicing meditation (Murphy & Donovan, 1988).

Research to date has largely focused on two main areas:

- 1) The therapeutic results of meditation practice, both in clinical and social applications, including the comparison of meditation to other self regulation strategies.
- 2) The search for physiological correlates of meditation.

Therapeutic Research

Results of studies in clinical and social fields are neither as affirmative or consistent as once thought. In general, meditation produces positive results. Many studies, however, have a more specific focus in ascertaining how meditation compares to other self regulation strategies. It is in the latter regard that most of the controversy lies.

Much of the research supporting positive therapeutic outcomes of meditation has included scientists and subjects that practice Transcendental Meditation (TM), a meditation technique popularized by Maharishi Mahesh Yogi which involves the repetition of a word, or mantra. Regular practice of TM is claimed to give the practicant many beneficial effects, for example to reduce anxiety, depression, and neurotic levels (Ferguson & Gowan, 1976) and to increase self-acceptance and psychological stability (Brautigam, 1977).

TM has also claimed that the whole society benefits from people practicing meditation. Prisoners who practiced TM showed reduced anxiety and increased social stability (Ballou, 1977); Benson and Wallace (1972) showed there was a marked decrease in drug abuse by TM practitioners; Borland and Landrith (1977) suggested that the rate of crime decreased in cities where .97% of their populations had begun to practice the TM technique (i.e. had enroled in classes). It is not clear, however, why .97% was the critical number promoting change in crime rate rather than a correlational increase, nor was there any evidence supporting the extent of continuation of meditation practice after the initial classes.

TM also claims to be beneficial in helping to alleviate some health problems. Elevated systemic arterial blood pressure may be reduced by practicing TM (Benson & Wallace, 1977). Honsberger and Wilson (1973) found TM to be beneficial in the treatment of asthma.

Methodologically sounder research, however, that compares meditation with other self regulation techniques did not support the claim that TM meditation was more effective than other techniques. Bahrke (1979)

reported that exercise, meditation, Benson's Relaxation Response and a quiet rest session are equally effective in reducing anxiety. Busby et al (1980) suggested that there are no major differences between the effectiveness of Transcendental Meditation and relaxation techniques in producing psychological changes. Kansas and Horowitz (1977) compared meditators and non-meditators on cognitive and effective measures in order to assess the claim that TM reduces stress. Meditators were not found to show less stress than non-meditators. That meditation is found to be at least as effective as behavior therapy and other self-regulation techniques lends some support to its clinical usefulness. Results that show that meditation is no more efficacious than resting do, however, call into question its clinical use. Debate is still continuing concerning this point, although many of the issues under debate are not so much concerned with whether meditation is useful, as to whether meditation is more useful than other strategies.

Physiological Research

The other main area of research on meditation is the measurement of physiological changes which may occur during meditation. In an attempt to validate and define meditation in objective, empirically measurable terms, a whole range of physiological studies have been published. Studies have shown that basal skin resistance increases during meditation (Elson, Hirai & Cunis 1977, Wallace, 1970, Schwartz 1973) while oxygen consumption decreases (Suzi and Akutsu, 1968, Chhina & Singh 1961a, Wallace 1970). A decrease in heart and respiration rates is also generally found (Cauthen & Prymak, 1977, Walrath & Hamilton, 1975).

When contrasted with ordinary relaxation, TM meditators are reported to show significant reductions in serum hormone, cortisol and triiodothyronine (Besnard, 1978). Besnard (1979) also found that experienced TM meditators showed a significant reduction in growth hormone during practice.

Many studies have researched electroencephalographic (EEG) readings during meditation in an attempt to find a EEG profile unique to meditation. Studies typically showed an increase in high voltage slow wave alpha EEG during meditation (Wallace, 1970; Hirai, 1960; Schwartz, 1973). Winkelman (1986) further described this EEG activity as arising in the hippocampal-septal area and imposing a synchronous slow wave pattern on the frontal lobes. Benson et al (1990) found marked asymmetry in alpha and beta activity between hemispheres in three Tibetan Buddhist monks. Delmonte (1984) and Winkelman (1986) have reported an increasing shift towards parasympathetic dominance during meditation practice.

The initial research from the sixties and seventies created a great deal of interest and enthusiasm. The work of Hirai (1960) and Anand, Chhina & Singh (1969) was of particular interest since both studies appeared to show physiological profiles unique to meditation. A flurry of physiological studies ensued most of which supported meditation as imparting unique physiological properties. The research that followed, however, began to report that these physiological response patterns are not unique to meditation (Benson, 1974). They are common to all passive relaxation procedures. The heart rate decrease, galvanic skin response increase, and respiration decrease found by Wallace in TM meditators are not

significantly different from the physiological changes that occur in groups practicing deep muscle relaxation (Curtis & Wessberg 1976).

The uniqueness of the alpha EEG patterns associated with meditation has also been called into question since similar patterns of EEG activity are found in self hypnosis studies (Morse, Furst & Dubin, 1977) and in relaxation studies (Travis, Kund and Knott, 1977). To date there is little evidence to support a physiological pattern unique to meditation. Studies have also failed to find significant correlations between EEG alpha and reports of subjective experience (Plotkin 1976).

Mulholland and Peper (1971) further demonstrated that increase in alpha is due to absence of cortical oculomotor processing, an activity occurring when a person is awake and "not looking." Occipital alpha rhythm is markedly reduced during ocular fixation and pursuit tracking. Alpha recorded with open eyes appears when there is no pursuit tracking and the target appears to be blurred and non-distinct following instructions to relax. EEG changes seem, then, to correlate more strongly with ocular activity than with subjective changes in consciousness.

Holmes (1983) has forced some of these issues to be scrutinized more closely. Holmes reported (1983) that there was no difference in physiological arousal, measured by heart rate and breathing, and subjective relaxation reports between a group of seven year Transcendental Meditation (TM) meditators and a group that was simply resting. In a further controversial paper Holmes (1984) summarized research in which the somatic arousal of meditating subjects was compared to the somatic arousal of resting subjects on measures of heart rate, respiration, systolic blood pressure, diastolic blood pressure, skin temperature, EMG activity, blood flow and

biochemical factors. Results did not reveal any consistent differences between meditating and resting subjects. Further, a review of the research on the effect of meditation on controlling arousal in threatening situations showed no consistent differences between meditating and resting subjects. Holmes (1984) reported, "This is not to say that the practice of meditation may not have other effects, but any such effects could not be due to the usually assumed effect of meditation on somatic arousal." (p.8)

Holmes drew attention to the need to pay careful attention to methodological issues. The original conclusion that meditation resulted in a unique reduction of somatic arousal was based on the uncritical acceptance of conclusions drawn from own-control comparisons rather than from experimental tests involving appropriate control conditions. Holmes rejected the own-control design (in which pre and post meditation periods are used as control periods) since such designs do not reveal whether meditation is more effective than simply resting.

Holmes' paper inspired a flurry of criticism. West agreed with the validity of Holmes' criticism of the within subject design in itself, but questioned whether the experimental control group is the most effective approach to studying meditation since previous research (Fehr, 1977; Rogers and Livingston, 1972; West, 1983) had shown that those who decide to take up meditation practice are, on average, significantly more neurotic and anxious than the general population; therefore a comparison of meditators with other groups on measures of somatic arousal is likely to be complicated by critical differences between the groups.

Benson (1985) responded to Holmes' paper by pointing out that Holmes had ignored the concept of the relaxation response, thereby creating an

artificial distinction between the physiological changes occurring during meditation and those occurring during other relaxation techniques, a distinction that has been generally dropped. Holmes had compared physiological changes of meditation, usually TM, with those of several other techniques that also elicit the relaxation response i.e. he was comparing apples with apples. Further, Benson criticised Holmes in that most of the comparisons he cited compared meditation with relaxation not rest. Benson also commented on a paper cited in Holmes' article (Travis, Kondo & Knott, 1976) in which reliably higher arousal was observed in meditating subjects than in resting subjects. Benson pointed out that this should not be surprising since the authors of the paper judged 13 of the 16 resting subjects to be asleep!

Holmes' (1985) responded to Benson (1985) stating that although there are a few findings supporting the value of meditation over rest, the results are inconsistent from experiment to experiment and are usually very small, so it is doubtful that they would be of any practical importance even if they were statistically significant.

Controversy continues. Research suggests, however, that whether meditating, consciously relaxing or simply resting, similar physiological responses are occurring in the body. This is actually not very surprising. A resting body is a resting body. This would be a matter of little controversy if it were not for the fact that this position is totally contrary to the TM group's claims in general, and specifically to their claim that "The TM technique produces a much more profound rest than resting with the eyes closed" (Denniston, 1975, p.55).

In order to get a clearer picture of the controversy it is worthwhile to step back a little in order to get an overview of the field of meditation research in general.

TM is a technique of mantra meditation that is based on traditional principles of meditation in India. However, the technique has been presented in a scientific, non-religious way, popularized and marketed by extensive advertising advocating its efficacy in every day life.

Today an 'initiation' into the TM technique costs about \$400. In order to appeal to the western market, TM has made a wide range of claims in an attempt to scientifically 'prove' the efficacy of meditation on a number of physiological, biochemical, stress and life management criteria (Orme-Johnson & Farrow, 1977). Claims include: TM practice will increase orderly thinking, improve academic performance, increase productivity, create job satisfaction, increase adaptability and stability, reaction time, perception, self actualization, enhance creativity, increase resistance to disease, improve marital relations, and provide relief from insomnia, asthma, high blood pressure, stress and anxiety.

These claims are backed by volumes of research published by the Maharishi European Research University Press. Among the 500 studies published to date, *not one study* states anything negative about meditation. In fact, there is hardly anything even inconclusive reported about meditation's efficacy. These papers make up approximately one half of all the research in the field of meditation.

In addition to the 500 studies reported by the TM group, a number of further studies have been pre-occupied with the validation or refutation of

the TM research. For example, TM proponents claimed that TM meditation was non religious and that it should be introduced in schools because it had been demonstrated to increase learning ability (Dillbeck, Orme-Johnson & Wallace, 1981). Other papers have questioned both the empirical findings and the claims of secularity. For example, Carsello & Creaser (1978) demonstrated that TM had no effect upon grades and Dreher (1978) concluded that a Catholic cannot reconcile his faith with TM. The research focussed on TM claims altogether amounts to some 60% of the total research in this field.

At this point TM has become so well known and established in the scientific field that meditation and TM have become almost synonymous. In other words, for many people and for many researchers, meditation means meditation as portrayed and practiced by the TM organization. This should not go unnoticed. The traditional basis and view of meditation as portrayed by scriptures and the classical teaching in the East contrasts quite sharply with the TM 'panacea' approach. Traditionally meditation has been a technique used in an attempt to access deeper states of consciousness, wisdom and universal states of oneness. It was practised by hermits and monks who had little interest in becoming better oriented social/business people in the world. The idea of meditation for them was to abandon or dissolve their sense of ego and individual will in order to become more divine, more open to the will of God or more transcended. The contemporary popular view of meditation has currently moved quite a way from its original purpose and its original context in the spiritual disciplines.

So much time and attention has been absorbed by attempts to support or refute the TM claims that major issues such as the definition of the meditation process itself, have still hardly been addressed. Experiments continue to compare and contrast meditators with non-meditator controls (Holmes, 1984), or to compare meditators with hypnosis or relaxation groups (Morse et al, 1977) without stating what level of proficiency is required for a subject to be considered 'a meditator' and therefore able to be meaningfully contrasted with a 'non-meditator' or a 'relaxer.' It is also not stated whether this proficiency would be defined in terms of absorption, freedom from intruding thoughts or some other criteria.

A number of studies have reported differences between advanced and novice meditators (Jevning et al, 1977; Lang et al, 1979). Subjects with limited training or skill in meditation serving in experiments will almost certainly result in findings that show a lack of difference between meditation and control groups. In some experiments subjects had only two or three weeks meditation experience (Boswell & Murray, 1979; Parker, Gilbert & Thorenson, 1978). One study showed that a learning period of one year of practice of Zen meditation was needed before the results of the practice were experienced (Compton & Becker, 1983). These results call into question the findings of a large number of studies that have assessed only short term meditators.

Another ill considered factor is that the reasons people take up the many forms of meditation vary widely. Some learn meditation in the hope of reducing stress levels, some for medical and psychological therapy, and some for personal development - to obtain a deeper understanding or

experience of life. Subjects having all these distinct orientations are lumped together as 'meditators' regardless of the reason and motive for practicing meditation.

Only a few papers have attempted to address fundamental issues such as attempting to understand the process of meditation itself from cognitive or psychological perspectives (Welwood, 1975, Boals, 1973, Tart, 1972). We have, as yet, no clear universal definition of meditation. Meditation techniques vary from hours of profound stillness with no object of concentration to a few minutes of mantra repetition. Vipassana meditators practice walking meditation; Indians chant. Some people focus on specific words or phrases during meditation whereas others practice an approach of open awareness (Naranjo, 1973). What is common to all these practices that defines them as meditation? Is there, in fact, a common basis?

Walsh and Shapiro have both offered quite similar definitions of meditation. Walsh defines meditation as a "family of practices that train attention in order to heighten awareness and bring mental processes under greater voluntary control" (Walsh, 1983, p.19). Shapiro defines meditation as a "family of techniques which have in common a conscious attempt to focus attention in a non-analytic way and an attempt not to dwell on discursive, ruminating thought" (Shapiro, 1982, p.268). In neither definition is meditation described simply as a relaxation technique. However, in neither is the profundity of inner experience that traditional scriptures refer to addressed. According to traditional sources, there is more to meditation than simply a cognitive exercise.

A few extracts from scriptures of different traditions can exemplify this difference. Two scriptures offering a stage by stage description are first given in order to convey the range of phenomena present in meditation experience.

Traditional Descriptions of Meditation

In the Vishuddhimagga, from the Theravadin Buddhist Vipassana tradition, five major stages of meditators are described: 1) beginners 2) samaadhi 3) insight 4) advanced insight 5) masters who have attained enlightenment.

1. Beginners generally experience difficulty in concentration. Subjective reports of an increased awareness of daydreaming, fantasy and incessant thinking are common. In the strict sense, beginners are not necessarily "meditating" even when they appear to be sitting still in a meditation posture for some time. They spend considerable amounts of time engaged in thought and imagery.
2. In the samaadhi¹ stage the meditator has learned to quiet the mind so that thoughts and external perceptions no longer distract him/her. This stage is characterized by distinct lack of thinking and recognizable perceptions. The meditator rests his/her attention at the more subtle level of the actual moment of occurrence or immediate impact of a thought or of a sensory stimulus.

¹ Samaadhi – Sanskrit for a state of openness and unity with the universal

3. In the insight stage thousands of discrete moments of awareness are experienced (rather than a continuity of time) through refinement of attention leading to a profound experience of the impermanence of events.
4. In the advanced insight stage, awareness previously tied to succession of momentary events passes beyond into a still vast expanse that has no disturbance.
5. The master stage is the perfect mind which is free from all conflict or suffering. It is distinguished by establishing awareness in an undisturbed pure state.

A description from East Indian yoga tradition is as follows: At first ones attention is filled with thoughts about the world. An inquiry into these thoughts reveals a more subtle level of intelligence that is the impartial observer of these thoughts. The first stage in meditation requires becoming aware of this watcher or knower. In the second stage the meditator becomes aware of his/her awareness as it exists prior to thought or as the background to thought. A natural, lucid concentration arises when the attention becomes absorbed in this awareness. In the third stage the meditator experiences blissfulness, joy or ecstasy. There is no thought in this stage; there is only the experience of bliss and the self as the experiencer of the bliss. In the fourth stage blissfulness itself is transcended. Only the sense of "I am" or "I exist" or just "I" is experienced. This stage is characterized by the intrinsic, not yet transcended, sense of separation from the universal whole or pure consciousness itself. In the fifth stage the individual merges with the universal having the profound

experience of there being one conscious existence alone and identifying with that consciousness as one's own true nature.

From these scriptural descriptions it becomes apparent that the vast majority of subjects used in meditation studies are barely at the first stage of achievement.

The delineation of stages in these texts is intended as a text-book approach for students of meditation in order to evaluate their progress and to inspire them towards deeper states of meditation. Most scriptures do not describe meditation in such a step-wise fashion, preferring to describe the end state, often called peak experiences.

The *Bhagavad Gita* is perhaps the best read scripture in India. The following quote describes the typical experience of one who has reached the final stage and thus is considered enlightened:

With his vision transformed into Unity, he who has become identified with infinite Consciousness, the field of all-pervading Pure Existence, now sees his own Self in identity with the Whole and permeating all beings. He watches all beings as manifest happenings in the one Self, and remains aware that the force of Consciousness by which he knows all beings everywhere as the one Self is also a manifestation of that same Self.

Bhagavad Gita, chapter 6, Verse 29 (Shyam, 1985)

A similar quality of experience is described in Christian terms by Saint Theresa of Avila.

In the orison of union, the soul is fully awake as regards God, but wholly asleep as regards things of this world and in respect of herself. During the short time the union lasts, she is as it were

deprived of every feeling, and even if she would, she could not think of any single thing. Thus she needs to employ no artifice in order to arrest the use of her understanding...

Thus does God, when he raises a soul to union with himself, suspend the natural action of all her faculties. She neither sees, hears nor understands so long as she is united with God. But this time is always short, and it seems even shorter than it is. God establishes himself in the interior of this soul in such a way that when she returns to herself it is wholly impossible for her to doubt that she has been in God, and God in her. (James, 1961, p.321)

People all over the world throughout time have devoted their whole lives in spiritual practice in the hope of achieving experiences such as those described above. Meditation (or prayer in the Christian tradition) is generally considered the means to achieve such experiences.

Returning now to the current picture of meditation as portrayed by TM we see quite a radical contrast in motivation to meditate and the supposed outcome of such practice. An example is an excerpt from an advertisement for Transcendental Meditation that appeared in Ottawa's *Tone* magazine, August 1992:

Over 500 scientific studies show that the TM program nourishes all aspects of life simultaneously – mind, body, behaviour and environment – creating a life free from mistakes and suffering, and an ideal person who radiates success and enlightenment in the whole society.

TM thus suggests scientifically documented proof that their meditation technique will work to make all the reader's dreams come true. It appeals to the modern Westerner who trusts the word of science (rather than religion) and who aspires to be a successful person in the world.

When considering meditation as it is portrayed by TM, one would expect to find unique, physiologically measurable characteristics in meditators. If, however, meditation is considered in a traditional Eastern framework, in which meditation is portrayed as an inner experience; it is not unreasonable to expect that meditation and rest will have similar physiological characteristics. A body that is not in motion, whether sitting still, resting, consciously relaxing, or meditating will still be a body that is not in motion. This being so, the question must be posed: why meditate rather than relax? What motivates people to meditate? A considerable amount of time is invested in a practice that requires much more effort than relaxation (to sit up as opposed to lying down resting) and the power to remain concentrated (rather than daydreaming or engaging in internal dialogue).

One assumes that if meditation did not offer some enhancement over and above rest people would simply rest. To date, most research has looked for differences between meditation and relaxation in physiological and behavioral terms. If there is a difference this difference may lie not in physiological differences but in the subject's subjective experience. Support for this is found in several studies comparing meditation with other self regulation strategies. In these studies although no significant physiological differences were found between groups, subjects who meditated reported their experience as being more profound, deep or enjoyable than subjects who practiced other self regulation strategies. (Morse et al , 1977; Caulten & Prymak, 1977; Travis, 1976; Curtis & Wessberg 1975-6). It is to the meditators' subjective experience, therefore, that we now turn.

Methodological Problems

Some methodological problems in studying subjective experience are briefly outlined before reviewing studies on subjective experience:

- 1) **The nature of the state itself.** Meditative states are characterized by lucid, formless experiences that differ sometimes quite radically from the usual tangible perceptions of objects and activities found during waking. These states are sometimes described as being beyond verbal description (Goleman, 1977). Those not trained in the observation of subtle experiences will tend to report only tangible experiences.
- 2) **Generalizability of an altered state of consciousness (ASC).** What is learned in one state is not always recalled in another state (Fischer 1971). Just as most of our dream experiences during sleep fade upon waking, so may the experiences associated with ASC fade. Only experiences that have some form tend to find their way into memory, (Walsh, 1977) and these experiences do not depict the intangible quality of the experienced state. "Only the products of cognitive and mental activities are available to consciousness" (Mandler, 1975, p.245). It follows then that subtle perceptions in meditation may not always be reported because they are not remembered.
- 3) **Measuring related activities as the state itself.** Some techniques involve retrospective content analysis of meditation states in terms of thought intrusions (Kanas & Horowitz, 1977) or involve the subject pressing a button during meditation to determine the frequency of thought intrusion with a later questioning of the content of thoughts (Van Nuys,

1973; Kubose, 1976). These experiments measure content of thought rather than quality of experience. A mind free of thoughts is not necessarily the same experience as meditation; it is enhancement of awareness rather than lack of thought that defines meditation.

- 4) **Lack of words to describe these states.** The predominantly external orientation of western thought is reflected in the English language which includes very few words to describe internal, abstract and formless states, and very poorly developed for the communication of inner experience (Tart, 1975a). For example, we have no English equivalent of the Sanskrit word samaadhi (as used in Anand et al 1961). 'Sam' means even, and 'dhi' is a root of the word buddhi or higher intellect and connotes the dissolution of subject-object separateness experienced in meditation which results in an even mind that is absorbed in oneness rather than differences.
- 5) **Colouring by religious or philosophical framework.** Subjects reports may be coloured by expectation and belief (Smith, 1975). A Buddhist is likely to describe a profound and deep state of meditation in terms of cessation of time whereas a Hindu may describe a similar state as eternal, infinite space. A non-philosophical subject may pass off the state altogether or put the experience down to illusion.
- 6) **Finding subjects with sufficient meditation experience and assessing the proficiency of the subjects.** Maupin's study used college students who were given 10 45-minute sessions in breath concentration. It is unlikely that much depth of experience could be experienced with so little training. Other studies have attempted to control for levels of

meditation experience. Davidson, Goleman and Schwartz (1976) used meditators of short, middle and long term experience (long term being more than two years of regular practice.) However, length of practice is not necessarily an index for the evaluation of the acquisition of skill or depth of practice.

Previous Research on Subjective Experience

The few studies that have explored meditators' subjective experience fall into two main categories of methodology. The first involves a classical experimenter and subject methodology that enables the study of larger numbers of subjects, including long term meditators. A less traditional method involves the experimenter also being the subject. This approach requires individuals that are trained in behavioural social skills in order that they can more objectively look at their subjective experiences. Tart (1971); Walsh (1977, 1978) and Shapiro (1980) have all used this approach in an analysis of their own meditation experience.

Shapiro (1980) focused on the thought content of his mind during meditation rather than on altered states per se. He reported the average of non-thought time across ten sessions using a Zen breath meditation. Sessions were taped. The breaths were counted out loud, counting at the end of each out breath. Any thoughts that arose were verbally reported. The frequency of thoughts and their contents were later analyzed, e.g. 16% of thoughts were about the future whereas 1% were about the past.

This study focuses more on experiences during meditation that are 'not-meditation' than a description of meditation itself. In trying to be systematic and exact in his description, Shapiro described the tangible rather than the intangible. The common experience during meditation, particularly in the beginning, is an awareness of the content of mind. However, one does not need to be in a very profound or altered state to become aware of these mental intrusions.

Another study in which the experimenter was also the subject was conducted by Charles Tart (1971) who reported his personal experience of practicing TM for one year. Like Shapiro, most of what he reported described the content of his thought.

Roger Walsh (1977; 1978) gave an account of the subjective experiences of two years practicing Vipassana meditation, a technique that aims at mindful awareness of all perceptions without judgement. I will quote Walsh in order to preserve the flavour of his experience.

The nature of meditation seems to be, especially at first, a slow but cumulative process, a fact which may be useful for beginners to know. However, with continued perseverance, subtle effects just at the limit of my perceptual threshold did begin to become apparent. I had expected the eruption into awareness of powerful, concrete experiences, if not flashes of lighting and pealing of bells, then at least something of sufficient intensity to make it very clear that I had "gotten it," whatever "it" was. What "it" actually turned out to be was not the appearance of formerly nonexistent mental phenomena, but rather a gradual incremental increase in perceptual sensitivity to the

formerly subliminal portions of my own inner stream of consciousness, a process which had begun in therapy. At first this was apparent as the occasional ephemeral appearance of a sense of peace of some other subtle, hard to categorize affect interspersed among innumerable pains, itches, doubts, questions, fears and fantasies which occupied the majority of meditation sitting time. (Walsh, 1977, p. 153)

Walsh also described a 'peak experience'.

At this point there was a moment of heightened clarity, and it was that "I" thoughts were somehow differentiated from others;...Immediately there followed a powerful awareness accompanied by intense emotion that "I" did not exist, and all that existed were "I" thoughts following rapidly one after another. Almost simultaneously the thought "My God, there's no one there!" arose, and my consciousness reverted back to its accustomed state. (Walsh, 1978, p.7)

Walsh also offered a psychological explanation for these insights and altered states.

The experience feels like having a faint but discernible veil removed from my eyes, and that the veil is composed of hundreds of subtle thoughts and feelings. Each one of these thoughts and feelings seems to act as a competing stimulus or "noise" which thus reduces sensitivity to any one object. (Walsh, 1977, p.184)

Many studies have employed a more traditional experimenter/subject approach. Kanas & Horowitz (1977) gathered information about subjective experiences during a ten minute meditation using a content analysis questionnaire. Subjects were shown a stress film and then asked to estimate the percentage of time spent thinking about the stress film, the experimental task, life issues, fantasies, mantra, other thoughts, or no thoughts during the meditation period. However, this study suffers from the same problems as the Shapiro (1980) and Tart (1971) studies in that it is preoccupied with the content of thought rather than the meditation state itself.

One of the first meditation studies involved 28 previously inexperienced subjects focusing on breathing for nine 45 minute sessions (Maupin, 1965). The subject's experiences were later rated by blind judges into 5 categories.

Type A. The identifying characteristic of these sessions is dizziness, some type of "befogged" consciousness, which occurs when a subject begins to concentrate. The experience is somewhat unpleasant, and it is common to find the subject retreating from the task of concentrating into increased thinking.

Type B. These are sessions in which the subject reports feeling quite calm and relaxed. His concentration need not have been very sustained.

Type C. Pleasant bodily sensations, often reminiscent of hypnotic phenomena, occur in these sessions. These sometimes involve feelings which would be strange in the ordinary state of waking

consciousness. Sensations like "vibrations" or "waves" are often reported, or the subject feels his body is "suspended" or "light." Typically, concentration is somewhat more sustained than in Type A or B sessions.

Type D. The distinguishing feature of these sessions is the vivid way in which the breathing is experienced. Often the belly movements seem larger, or the subject feels "filled with air." Concentration seems almost effortless in such sessions.

Type E. The primary characteristic appears to be a very lucid state of consciousness which is deeply satisfying. There is a "non-striving" attitude, and the subject is able to take a calm detached view of any thoughts and feelings which happen to emerge. Concentration seems to be easy and fairly complete. A frequent accompaniment of this is extensive loss of body feelings.

Maupin then described three major patterns of response by these subjects who had described their meditation experience. Six of the subjects were rated as high experiencers since they had experienced detachment and pleasant body sensations; ten were rated as moderate experiencers; and twelve subjects were rated as low experiencers since they had reported nothing more than relaxation and dizziness. However, the subjects used in this study were very inexperienced. Further, the categorization into high medium and low experiencers is not very useful.

Deikman (1965) had subjects gaze at a blue vase and report on subjective changes. Dimensions similar to later studies emerged e.g. diffusion or loss of perceptual boundaries, a sense of merging and loss of

body feelings. Deikman (1966) added two further characteristics to Maupin's findings: the realness of the experience; and the accompanying unusual perceptions such as bright light, halos or visions.

The contents of mystical experiences have been studied by Bucke (1901/1961) who compiled biographies of 43 individuals from Moses to Bucke's own acquaintances who had experienced 'cosmic consciousness'. Bucke then coded these accounts for content. He noted the following characteristics: subjective light, moral elevation, intellectual illumination, a sense of immortality, a loss of the fear of death and sin, and the suddenness of the awakening.

James (1902/1961) also analysed the contents of mystical experiences and found that they shared certain features: 1. ineffability (inadequate ability to describe experience in words); 2. noetic quality (mystical states are states of insight, revelations full of significance, states of knowledge); 3. transiency (mystical experiences do not last very long and slowly fade away); 4. passivity (experiences happen spontaneously rather than at will, though their occurrence is increased by practices such as meditation).

Greenfield (1977) assessed individual subjective responses to mantra meditation, visualization and bare attention meditation over a 10 week period. Results indicated several significant differences in subjective experience across the three meditation techniques, but mystical experience was not significantly different across the techniques.

Kornfield (1979) gathered data from reports that meditators at an insight meditation (Vipassana) retreat gave their teachers. The data was divided into basic categories post hoc according to sense modality, (somatic,

visual, and mental experiences, mood changes etc.). It was further divided into sub-categories based on the classes of experiences most often reported. The somatic experience category thus contained 7 sub-categories: spontaneous movement, alterations in body image, 'energy' flow experiences, felt changes in temperature and weight, unusual breathing patterns, unusual experiences during walking, and changes in perception of pain). The data, although richly descriptive, does little more than list a range of experiences which may occur during meditation. Frequencies of these experiences were not given.

Thapa and Murty (1985) compared subjective reports of altered states of consciousness (ASCs) between 16 meditating subjects obtained from ashrams in Bangalore with 15 diagnosed schizophrenics and 15 subjects with complex partial seizures. Subjective ASC experiences were categorized using Ludwig's (1966) and Tart's (1975) criteria, both of which included 10 items, some of which overlapped. These were rated by subjects as either present or not present. Meditative ASC were characterized by changes in body image, time sense, emotional expression, meaning and significance, a feeling of rejuvenation, and altered thinking. Epileptic ASC were characterized by perceptual illusions, hallucinations, and distortions. Psychotic ASC were characterized by perceptual distortion, changes in body image, meaning and significance, hypersensitivity and altered thinking. Meditative ASC were also characterised by positive emotional affect, whereas psychotic and epileptic ASC were both characterized by fear, uncertainty and apprehension. Meditating subjects were grouped together although they spanned 2 to 28 years in experience.

Osis et al (1973) used a multifactorial analysis to determine the major dimensions of the meditative experience and then to test if these dimensions had any relationship to ESP scores. They found the major dimensions of the meditative experience were self-transcendence and openness, the mood brought to the session, an intensification and change in consciousness, meaningfulness, forceful exclusion of images, and general success of meditation. The most central, and the most complex, factor was found to be intensification and change of consciousness. This factor was more related to other dimensions than any other factor.

Osis et al were also interested in the extent to which a subject's mood (judged by a pre-meditation mood questionnaire) correlated with a post-meditation questionnaire. They found that there was virtually no correlation between the mood brought to the session and the meditation experience. This finding, later replicated by Kohr (1977), shows that meditation is not a continuation of the pre-session mood since the pre-session mood shows practically no overlap with factors in the meditation experience. Kohr (1977) extended Osis et al's research by assessing the change in the quality of meditators' subjective experience over a 28 day period. Results indicated that the quality of meditation experience improved from the first to the second 2-week period, with items comprising the factor of 'intensification and change in consciousness' exhibiting the greatest change.

Unfortunately both Osis et al's study and Kohr's are questionable since subjects were tested repeatedly over many sessions, which is a violation of a basic premiss of factorial analysis. In Osis's study, which is composed of

four repetitions of essentially the same experimental design, each of which was factor analyzed, three of the repetitions had only 23-25 subjects; and one had only 13 subjects, far too few subjects for a factorial design with so many questionnaire items. Further, one or two of these subjects in each repetition were experimenters who meditated with the subjects and filled in the questionnaires.

The above reports suggest a common body of experiences shared between meditators. Studies to date have, however, been either incomplete in their range of phenomenology studied; have used subjects with too little experience; have only described rather than quantified their data; or have been methodologically flawed. In addition, meditators of widely varying experience are lumped together without further analysis. Clearly there is a gradual increase in skill in meditation – one does not suddenly become a proficient meditator upon the learning of some meditation technique, or even after a few weeks of practice. If skill in meditation is reflected in variance of phenomenological experience a useful measure could be obtained. A comprehensive study of the phenomenology of meditation with regard to years of meditation experience is needed.

The Present Study

The present study was a correlational study that examined the subjective experience of meditators in relation to years of meditation practice. Meditators ranging from novice (four weeks exposure to meditation) to advanced meditators with up to twenty-seven years of meditation experience were used as subjects.

The measure used to assess subjective experience in meditation was a 42 item questionnaire. The items were created by taking themes isolated through a content analysis of written reports by 36 meditating subjects. The subjects were asked to give a written description of what they experienced from the time of sitting down to meditate. The most commonly occurring themes were then written in a form of the question "How often does this experience happen during meditation?" For each item, subjects marked the frequency with which the experience occurred using a range from 1 – 5: 1 (never); 2 (rarely); 3 (sometimes); 4 (frequently); 5 (very frequently).

Five pilot subjects completed the questionnaire after its conception, and were then interviewed concerning whether the items represented states that they had experienced, whether any further items should be added, and whether items were worded in a way that could be understood. Appropriate changes were made to the questionnaire in response to subject's comments. Items were similar to those selected by Osis et al (1973), Ludwig (1966) and Tart (1972), and Kornfield (1979).

In addition to measuring subjective experience during meditation, the questionnaire investigated subjects' experience during everyday life. Items included frequency of observing thought, finding fault with others and feeling happy during the day in order to assess the extent to which length of time practicing meditation affected these experiences. Again, subjects marked the frequency of experience using a gradation from 1 (never) to 5 (very frequently).

Subjects were also administered 15 items from the Tellegen Absorption Scale (T.A.S.). The T.A.S. is a 32 item scale developed by Tellegen and

Atkinson (1974) through a series of replicated, cross-validated factor analytic studies. Absorption is interpreted as a disposition for having episodes of total attention "during which the available representational apparatus seems to be entirely dedicated to experiencing and modeling the attentional object, be it a landscape, a human being, a sound, a remembered incident, or an aspect of one's self" (Tellegan and Atkinson, 1974, p. 274). Davidson, Goleman and Schwartz (1975) found a reliable increase in absorption scores across groups as a function of length of time meditating. Those meditating regularly for longer than 24 months had higher TAS scores than those who had meditated 1-24 months. In addition Pekala, Wenger and Levine (1985) found that the TAS correlated with vivid imagery, inward and absorbed attention, decreased self-awareness, increased alterations in state of consciousness, and alterations in subjective experience dealing with time, perception, body image and meaning. However, because this was not a longitudinal study the difference in absorption between long and short term meditators may have been due to selective attrition rather than to cognitive changes produced by meditation.

Finally, subjects were administered the Rosenberg Self Esteem scale (RSE). Studies have shown that RSE scores increase with length of time of meditation practice (Spanos et al 1979).

Method

Subjects

Subjects were 120 volunteering novice, intermediate and advanced meditators. One hundred and four of these subjects were contacted through the International Meditation Institutes in Ottawa, Montreal and their Himalayan retreat in Kullu, Northern India. The selection of subjects was determined by availability since the author had access to a number of advanced meditators at these centers. Of the 104 subjects, 62 were female and 42 male, ranging in age from 15 to 85 years. Subjects ranged from a few months to twenty-seven years meditation experience.

In addition, 16 'novice' subjects were recruited from Carleton University in order to create a group that was representative of typical meditation studies. These included 6 males and 10 females between 18-55 years of age. These subjects received two 30-40 minute training sessions along with instructions to practice for ten minutes per day at home for 25 days.

Over 90% of subjects were born in Canada; the remaining subjects were from US, UK, Germany, Denmark, Norway, Columbia, Israel, and New Zealand.

Procedure

Experienced meditators were administered a five page questionnaire that assesses all variables of interest. Prior to the items assessing meditation, they were instructed as follows: "I am interested in what you experience during meditation. Please fill in all items on the five sheets. There are no right or wrong answers – I'm just interested in what you experience."

The Carleton 49.100 students who serve as a novice group of meditators received two meditation training sessions approximately 30-40 minutes in duration. The sessions involved an introduction to the concept of sitting in silence in meditation, followed by a guided introduction to a standard meditation technique involving relaxation, breathing gently, and the use of a mantra or word, which is repeated in order to steady the mind.

Following the instructions there was a 10-15 minute silence. The session concluded with information on how to establish meditation practice at home. There were two week intervals between the two training sessions and a further two weeks before the test session during which subjects were asked to spend 10-15 minutes a day sitting in silence using the technique given. Following this these subjects were administered the same questionnaire as the intermediate and advanced meditator. A few additional items were added at the end of these questionnaires that asked for the amount of time spent in meditation during the period of the study.

For details of meditation instructions and other information given in the meditation training sessions, see appendix A.

Results

Data screening

Preliminary data screening showed normal distributions for nearly all items (i.e. skewness and kurtosis values below the 3.09 value for $N = 120$ and 93 items). Logarithmic and inverse transformations were applied to correct three items with high skewness and kurtosis. This was necessary since not one subject reported feeling never or rarely happy during everyday life whereas 70% of subjects reported feeling often happy during everyday life; 90% of subjects reported never or rarely feeling dull during meditation; and 90% of subjects reported never, rarely or sometimes feeling more separate during meditation, causing excessive skewness. Other than these items, scores on positive attributes of meditation generally tended to increase, and scores on negative attributes generally decreased, with length of time in meditation giving an overall normal distribution. There were no incidences of multicollinearity or singularity.

The relatively small proportion of missing data was scattered randomly throughout the data matrix and would not, therefore, affect the generalizability of results. Missing data was excluded pair-wise in the analyses.

To test if the data is a sample from a multivariate normal population, which factor analysis requires, Bartlett's test of sphericity was used. The Kaiser-Meyer-Okin measure of sampling adequacy was 0.85, which is very adequate for the proposed analysis, and the Bartlett test of sphericity gave a significance of .0000.

Principle Component Analysis

Meditation Experience Scale (MES)

In order to assess the psychometric properties of the measures created for this study, a principle component analysis was used to extract underlying dimensions. Through this extraction the numerous variables were reduced to a small number of salient dimensions or factors.

Results of an initial principle components analysis (PCA) for the Meditation Experience Scale (MES) gave a high eigenvalue for the first factor (eigenvalue =14.81 accounting for 35.3% of variance). The scree plot (see fig 1) showed a sharp decrease between the first and subsequent eigenvalues (2.98, 2.03 etc.) indicating that these items largely loaded on one factor, i.e. were a measure of essentially one underlying dimension. However, to investigate the components of that dimension, further extractions were explored.

Forcing two, four and five factors of various extractions and rotations all gave matrices with many items loading on more than one factor. A three factor matrix using PCA extraction with quartimax rotation, however, cleanly split the 42 items with very few cross loadings and relatively clear interpretability of two of the factors. The two items loading on the third factor, which described transcendent, inwardly absorbed states, also tended to load on factor 1, giving an overall impression of two main factors. Factor 1 encompassed 31 of the items creating a positive experience in meditation dimension; factor 2 was a distraction dimension,

Figure 1

Eigenvalues for MES factors

including dwelling on thoughts, feeling sad or dull, being distracted by thoughts or by the surrounding environment.

A PCA with varimax rotation forced to three factors created a distraction factor identical to factor 2 in the quartimax rotation. The remaining 33 items, however, were more evenly split between a restful, watchful, blissful, still-mind state (18 items creating factor 1) and a transcended, inwardly absorbed state beyond the sense of time, sensory perception, boundaries and the usual sense of self. (15 items creating factor 2). Although, naturally, there were some items that loaded on both factor 1 and 2, the three factor solution offered clear and interpretable components.

The characteristics of the three principal components underlying the MES are outlined as follows:

1. **Observing/blissful dimension (MES 1):** The items loading on this factor assess 4 highly intercorrelated sub-dimensions: the cognitive processes used to bring about the meditation state, for example stepping back from the mind, observing the mind in a detached way, observing the workings of the mind; getting in touch with a formless reality beyond the normal everyday state; feelings of bliss and love; and unusual experiences such as inner experiences of light, energy rising, or perceived changes in body size or shape.

2. **Transcendence dimension (MES 2):** The items loading on this factor describe transcendence of ones normal perception – experiencing a mind that is empty of its usual content, not experiencing one's usual sense

of oneself, experiencing the flow of time differently, feeling entirely inwardly absorbed, being 'beyond experience;' feeling rested and relaxed.

3. Distraction dimension (MES 3): This dimension consisted of two closely inter-related sub-dimensions: dwelling on thought, being distracted by the environment, fantasizing, and feeling more mentally active than prior to the meditation practice; and a second distraction in the form of feeling sad, dull or bored, and feeling separate.

The items in each of the three dimensions and their loadings are shown in Table 1. Tables showing correlations of variables within each dimension are included in appendix D.

Within each meditation dimension items were summed to yield three meditation scores for each subject. Thus, for each subject a score was calculated on the Observation/bliss, Transcendence and Distraction dimension of meditation.

To assess internal consistency within factors Cronbach's alpha reliability coefficients were examined. Results showed that the observing/blissful dimension gave a Cronbach's alpha of .94; the transcendence dimension gave a Cronbach's alpha of .88; and the distraction dimension gave a Cronbach's alpha of .78, showing a high degree of internal consistency within each factor. Table 2 shows these results.

Figures 2, 3 and 4 show the distribution of scores on each meditation dimension and also provide the descriptive statistics associated with each dimension. The frequency distribution of scores on the Observation/bliss

Table 1**Loading of variables on 3 dimensions for Meditation Experience Scale (MES)**

dimensions 1 loading		dimensions 2 loading		dimensions 3 loading	
oneness	.79	absorbed	.74	dwelling	.73
formless	.75	empty	.73	dull	.61
bliss	.74	transcend	.72	disturbed thought	.59
watchful	.71	inwards	.64	sad	.58
light	.69	boundary	.60	increased breath	.56
love	.68	usual	.59	fantasy	.53
energy	.66	distant	.53	distracted	.50
heart	.66	time pass	.53	active mind	.49
workings	.65	control	.43	separate	.46
dissolved	.65	discomfort	-.42		
step back	.65	time flow	.40		
detached obs	.63	usual sense	.38		
beyond	.62	relaxed	.38		
perfect	.60	rested	.37		
mind still	.59	unaffected	.24		
breath stops	.51				
body size	.50				
ineffable	.37				

Table 2**Cronbach's alpha for each factor**

Dimension	Cronbach's alpha
Observation/bliss	.9406
Transcendence	.8821
Distraction	.7777
Well-being	.8775
Disharmony	.7465
Awareness	.5690

Figure 2

Frequency distribution of Observation/bliss dimension scores

Mean	Median	Std dev	Variance
60.3	63	15.4	237.9

Figure 3**Frequency distribution of Transcendence dimension scores**

Mean	Median	Std dev	Variance
52.4	53	9.75	95.1

Figure 4**Frequency distribution of distraction dimension scores**

<u>Mean</u>	<u>Median</u>	<u>Std dev</u>	<u>Variance</u>
20.6	21	5.1	26.07

dimension show a positive skew. Frequency distribution of scores on Transcendence and Distraction dimensions show an approximately normal distribution.

Experience During Daily Life Scale (EDLS)

Results of an initial principal components analysis (PCA) for the Experience in Daily Life Scale (EDLS) showed a more even distribution of eigenvalues across factors than for the MES (see scree plot fig. 5). A PCA extraction with varimax rotation offered the clearest interpretability of factors and the least occurrence of items loading strongly on more than one factor, thereby maximizing independence of factors. This solution included 4 factors. The fourth factor, however, consisted of only a single item (daydreaming during the day). This item was dropped and the remaining three factors are described below.

1. Well-being dimension (EDLS 1): The 10 items loading on this factor describe sense of ease, patience and acceptance; feeling in harmony with life; feeling happy and joyful; being aware of one underlying essence of life.

2. Disharmony dimension (EDLS 2): These 7 items describe assess inadequate, anxious or impatient; finding fault in others, taking things too seriously.

3. Awareness dimension (EDLS 3): The 3 items loading on this factor describe watching ones thought or ones breath, vivid awareness of everything around.

Figure 5

Table 3 shows loading of variables on the 3 EDLS dimensions. Tables showing correlations of variables within each dimension are included in Appendix D.

Cronbach's alpha results for the Well being, Disharmony and Awareness dimensions were .88, .75 and .57 respectively. The Cronbach alpha results for each dimension are shown in table 2. The low alpha value for the Awareness dimension is due to that dimension consisting of only three items.

The distribution of scores on each of these dimensions along with descriptive statistics are shown in figures 6, 7 and 8. Graphs show approximately normal distribution for all three dimensions.

Correlations

Pearson Product Moment Correlations were computed among the following: the three meditation dimensions, the three experience in daily life dimensions, RSE, TAS, age, gender and years of meditation experience. Table 4 shows the results. The highest correlations in the matrix were, as expected, between the observing/blissful dimension and the transcendence dimension (.77), and between these two meditation dimensions and the well-being dimension (.61 and .64 respectively). The EDLS Disharmony dimension correlated .55 with the MES Distraction dimension; the EDLS Awareness dimension correlated .55 with the MES Observation/bliss dimension and .44 with the MES Transcendence dimension.

Table 3**Loading of variables on 3 dimensions for Experience During Daily Life Scale (EDLS)**

Well-being	loading	Disharmony	loading	Awareness	loading
one life	.76	inadequate	.79	watch thought	.72
harmony	.74	wish better	.77	watch breath	.67
joyful	.71	anxiety	.75	vivid awareness	.49
patient easy	.69	takes seriously	.72		
accepting	.66	finding fault	.57		
one essence	.63	impatience	.52		
undisturbed	.58	compassion	.51		
happy	.54				
both sides	.51				
mind at peace	.50				

Table 4

Pearson Product Moment Correlations among the variables assessed.

Well-being	1.00											
Disharmony	-.45**	1.00										
Awareness	.37**	-.07	1.00									
Observing	.60**	-.19*	.54**	1.00								
Transcendence	.63**	-.25**	.43**	.77**	1.00							
Distraction	-.47	.53**	-.08	-.39	-.43	1.00						
RSE	.34**	-.43**	.27**	.44**	.53**	-.39**	1.00					
TAS	.14	.25**	.28**	.35**	.18*	.04	-.12	1.00				
YEARS	.58**	-.32**	.38**	.57**	.54**	-.32**	.47**	.03	1.00			
AGE	.20*	.00	.08	.12	.21*	.18*	.12	-.07	.46**	1.00		
GENDER	-.09	.09	.10	-.04	.01	.04	.04	.11	-.15	.02	1.00	
	Well-being	Awareness	Transcendence	RSE	TAS	Years	Age	Gender				
	Disharmony	Observing	Distraction									

* correlations significant at .05 level

** correlations significant at .01 level

Figure 6**Frequency distribution of scores on Well-being dimension of EDLS**

<u>Mean</u>	<u>Median</u>	<u>Std dev</u>	<u>Variance</u>
35.4	36	5.46	29.83

Figure 7**Frequency distribution of scores on Disharmony dimension of EDLS**

<u>Mean</u>	<u>Median</u>	<u>Std dev</u>	<u>Variance</u>
19.3	20	4.30	18.50

Figure 8**Frequency distribution of scores on Awareness dimension of EDLS**

Years of meditation practice correlated highly with these same three factors: Observation/bliss $r = .58$; Transcendence $r = .57$; Well-being $r = .58$. Years of meditation also correlated with self esteem $r = .47$, but less strongly with other factors in the matrix.

From this correlation matrix it is clear that gender has very little relationship with the other variables in the matrix. Age also plays little part except, naturally, correlating with years of meditation experience.

Absorption, measured by TAS scores, correlated to some extent with the Disharmony dimension (.25) and the Awareness dimension (.28). Absorption correlates .35 with the Observation/bliss dimension.

Scatter Plots

One of the key interests of this study was to investigate changes in experience during meditation with years of meditation practice. Subjects ranged in experience from 0.1 to 27 years. A novice group, formed of Carleton students, augmented the numbers in the 0.1 range of experience, giving a slight positive skew in the frequency distribution. Subjects' years of experience scores did not fall into natural groups or divisions indicating that the data were best treated as a falling along a continuum. Years of meditation experience was, therefore, treated as a continuous variable.

Scatter plots showing the relationships between years of meditation and each of the three meditation and three daily life dimensions are shown in figures 9-14.

Regression of MES 1 on years meditation

Regression of MES 2 on years meditation

Regression of MES3 scores on years meditation

Regression of EDLS 1 on years meditation

Regression of EDLS 2 on years meditation

Regression of EDLS 3 on years meditation

Inspection of the scatter plots indicated a clumping of scores from the recruited novice group (with 0.1 years experience) at the lower end of the observation/bliss dimension. A similar effect, although less noticeable is evident for the transcendence scores. To assess the extent to which this low score clumping was exaggerating the correlation coefficients, correlations between the three meditation variables and years of meditation were recomputed after dropping the 16 novice subjects with less than one month experience from the analysis.

All correlations remained significant after dropping the novices. Correlations with and without novices are shown in table 5.

Regression Analyses

Naturally, those who have meditated for longer periods of time will tend on average to be older than novices. To assess whether relationships between meditation dimensions and other variables were simply due to greater maturity, three initial regression analyses were conducted using each of the meditation variables as a criterion variable and age, years of practice, TAS and RSE as predictor variables. For each analysis age was forced into the equation on the first step. The remaining predictors were entered in stepwise fashion.

For the observation/bliss dimension, age did not contribute significantly to the prediction of observation/bliss scores, $R = .12$, $F = 1.68$, $p = .2$. Years of meditation was entered on the next step, $R = .60$, $F = 33.11$, $p < .001$; followed

Table 5

Correlations between meditation dimensions and years meditation when novices are included and excluded in the analysis.

		R	F	Significant F
Observing dimension	with novices	.58	59.87	.000
Observing dimension	without novices	.48	30.65	.000
Transcendence dimension	with novices	.54	50.81	.000
Transcendence dimension	without novices	.51	35.50	.000
Distraction dimension	with novices	.33	13.88	.000
Distraction dimension	without novices	.24	6.16	.014
		R	F	Significant F
Well-being dimension	with novices	.59	61.81	.000
Well-being dimension	without novices	.53	39.51	.000
Disharmony dimension	with novices	.33	13.56	.000
Disharmony dimension	without novices	.29	9.51	.003
Awareness dimension	with novices	.40	22.30	.000
Awareness dimension	without novices	.39	18.55	.000

Degrees of freedom of error = 118.

by TAS on the third step, $R = .68$, $F = 32.71$, $p < .001$; and RSE on the final step, $R = .72$, $F = 30.09$, $p < .001$.

For the transcendence dimension, age contributed significantly to the prediction of transcendence scores, $R = .20$, $F = 5.24$, $p = .03$. Years of meditation was entered on the next step, $R = .55$, $F = 25.25$, $p < .001$; followed by RSE on the final step, $R = .63$, $F = 25.16$, $p < .001$.

For the distraction dimension, age contributed significantly to the prediction of distraction dimension scores, $R = .19$, $F = 4.53$, $p = .04$. RSE was entered on the next and final step, $R = .59$, $F = 31.57$, $p < .001$.

A second set of 3 regression analyses was conducted using the meditation dimensions as criterion variables in order to determine how the EDLS variables in combination with the other predictors, contributed to the production of meditation scores. Once again, age was forced into the each of these analyses on the first step and the remaining predictors were entered stepwise.

For the observation/bliss dimension, age did not contribute significantly to the prediction of observation/bliss scores $R = .1$, $F = 1.28$, $p = .264$. The well-being dimension was entered on the next step ($R = .61$, $F = 33.37$, $p < .001$; followed by the awareness dimension $R = .69$, $F = 31.88$, $p < .001$. On the fourth step years of meditation practice was added, $R = .73$, $F = 35.18$, $p < .001$; followed by TAS, $R = .75$, $F = 29.99$, $p < .001$. On the final step RSE was added, $R = .78$, $F = 28.52$, $p < .001$.

For the transcendence dimension, again age contributed significantly to prediction of transcendence scores $R = .20$, $F = 4.60$, $p = .05$. On the next

step the awareness dimension was added, $R = .64$, $F = 40.11$, $p < .001$. On the third step RSE was added $R = .72$, $F = 41.78$, $p < .001$ and on the final step TAS was added $R = .74$, $F = 34.45$, $p < .001$.

For the distraction dimension, age did not contribute significantly to prediction of distraction scores $R = .05$, $F = .35$, $p = .55$. Disharmony was added on the final step $R = .55$, $F = 25.71$, $p < .001$.

These results show that when the variables from the experience in everyday life were added, years of practice ceased to be the best predictor. Experience during everyday life dimensions offered more predictive power. The addition of these dimensions increased the total R^2 of Meditation Experience scores by .09 for the observation/bliss dimension; .11 for the transcendence dimension; and .25 for the distraction dimension. The greater increase for the distraction dimension's predictability is due to the close relationship between the distraction dimension in the Meditation Experience Scale and the disharmony dimension in the Experience during Everyday Life scale.

The effect of age did not reach significance at the .01 level for any of the six criterion variables, but did reach significance at the .05 level for the transcendence dimension indicating that age plays some part in the ability to transcend. Table 6 shows stepwise additions to R , R^2 , F and significant F values for these regressions.

Using the same procedure, EDLS variables were used as criterion variables with age forced into the equation on the first step and years, absorption and self esteem entered stepwise.

Table 6

Incremental changes for Observation/bliss, Transcendence and Distraction scores in R, R², F and significant F with 1) age, years, TAS and RSE as variables and 2) with addition of EDLS dimensions when variables are entered stepwise.

1) age, years, TAS and RSE as variables

	Variable	R	F	df	Sig.F
Observation/bliss	Age	.12	1.68	1,117	.199
	Years	.60	33.11	2,116	.000
	TAS	.68	32.71	3,115	.000
	RSE	.72	30.09	4,114	.000
Transcendence	Age	.20	5.24	1,117	.026
	Years	.55	25.25	2,116	.000
	RSE	.63	25.16	3,115	.000
Distraction	Age	.19	4.56	1,117	.043
	RSE	.59	31.57	2,116	.000

Age, years, TAS and RSE with EDLS variables added

	Variable	R	df	F	Sig.F
Observation/bliss	Age	.10	1,116	1.28	.264
	Well-being	.61	2,115	33.37	.000
	Awareness	.6	3,114	31.88	.000
	Years	.73	4,113	35.18	.000
	TAS	.75	5,112	29.99	.000
	RSE	.78	6,111	28.52	.000
Transcendence	Age	.20	1,116	4.60	.032
	Awareness	.64	2,115	40.11	.000
	RSE	.72	3,114	41.78	.000
	TAS	.74	4,113	34.45	.000
Distraction	Age	.05	1,116	.35	.551
	Disharmony	.55	2,115	25.71	.000

For the well-being dimension, age contributed significantly to prediction of well-being scores $R = .19$, $F = 4.56$, $p = .04$. On the next step the years of practice was added, $R = .59$, $F = 31.57$, $p < .001$.

For the disharmony dimension, age did not contribute significantly to prediction of disharmony scores $R = .014$, $F = .02$, $p = .88$. Years of meditation practice was added on the next step, $R = .37$, $F = 9.05$, $p < .001$, and TAS was added on the final step, $R = .49$, $F = 12.01$, $p < .001$.

A Multivariate Analysis of Variance (MANOVA) was used to assess the effects of gender on scales. Results showed no significant sex differences on any of the scales. (See table 7 for relevant means)

One of the primary focuses of meditation research is the assessment of clinical efficacy of meditation for relaxation and stress release. Two items in the MES questionnaire: "I feel relaxed," and "I feel rested and re-energized afterwards" assessed these attributes of meditation. Interestingly, on examination of an extended correlation matrix that included all items from MES and EDLS along with the other predictor variables, feeling relaxed and feeling rested correlated $r = .255$ correlation. Thus, although these variables are related, the relationship is not particularly strong.

Table 7

Mean values, standard deviation, F and p values for males and females on Meditation Experience (MES), Experience During Everyday Life (EDLS), RSE and TAS scores.

		Mean		SD	F	p
Observation/bliss	males	60.87	15.62	.27	1.115	.60
	females	59.34				
Transcendence	males	52.04	9.34	.02	1.115	.90
	females	52.07				
Distraction	males	20.34	5.13	.22	1.115	.64
	females	20.80				
Well-being	males	35.9	5.52	.91	1.115	.34
	females	34.93				
Disharmony	males	18.94	4.54	.97	1.115	.33
	females	19.73				
Awareness	males	9.62	2.20	1.2	1.115	.28
	females	10.04				
TAS	males	39.68	7.57	1.45	1.115	.23
	females	41.33				
RSE	males	23.80	2.52	.21	1.115	.65
	females	24.00				

Discussion

From the content analysis of meditators written reports two scales have been created and validated. The Meditation Experience Scale measures degree of proficiency and absorption in meditation. Principle component analysis isolated three underlying dimensions of this scale – observing/blissful, transcendence, and distraction. The Experience during Everyday Life Scale measures degree of ease, harmony and watchfulness during everyday life. The underlying dimensions isolated were named well-being, disharmony, and awareness. A moderate relationship was found between years of meditation practice and scores on these dimensions. Self esteem scores correlated positively with years of meditation practice.

Despite the methodological flaws in their studies Osis (1973) and Kohr (1976), found dimensions that were similar to those that emerged in the present study. The factors Osis et al called self-transcendence and openness (oneness, love and joy, relaxed, rested, sense of presence) and stillness of mind (items such as absence of images, lack of awareness of noise, few thoughts and insights) are similar to the Observation/blissful and Transcendence dimensions in the present study. In the fourth repetition of the Osis experiment a negative experience factor emerged, which bore some resemblance to the present Distraction dimension. However, items in the Meditation Experience Scale were more highly correlated with each other than those in the Osis study, and the dimensions emerging in the present study were internally much more cohesive than the Osis study. Internal reliability of factors was not reported in the Osis study, and some items loaded strongly on several factors making interpretability difficult. By

comparison the present study emerged with more clearly defined factors of greater interpretability.

Results of this study support previous studies (Spanos et al, 1979) in finding that RSE scores increased with length of time of meditation practice. Both MES and EDLS scores correlated significantly with RSE and TAS scales.

In the regressions using variables entered step-wise, RSE was a salient variable in predicting Distraction and Disharmony dimensions. RSE also accounted for variance in the Observation/blissful and Transcendence dimensions scores after years of meditation was entered. Self-esteem scores clearly show a relationship with MES and EDLS scores. In the step-wise regressions, TAS contributed to Observing/blissful, Transcendence and Distraction dimension scores. TAS contributes less predictability to Disharmony dimension scores. It cannot be determined from a cross-sectional study, however, whether self-esteem and absorption are pre-requisites for success in meditation or whether meditation increases scores on the self esteem and absorption scales. Only longitudinal research taking measures of RSE before meditation training and again after a significant time period (many months or a few years) can address this issue.

Pekala, Wenger and Levine (1985) found TAS to correlate with increased alterations in state of consciousness, increased absorbed attention and alterations in subjective experience dealing with time, perception, body image and meaning. These findings were supported by this study. Meditation Experience and Experience during Everyday Life

scores correlated significantly with TAS scores. The TAS also correlated significantly with awareness dimension scores.

However, the results of the study by Davidson, Goleman and Schwartz (1975) who found a reliable increase in measures of attentional absorption across groups as a function of length of time meditating is not supported. Unlike RSE, EDLS and MES scores, TAS failed to reach significance when regressed on years meditation experience.

Support of traditional view of meditation

Returning to traditional descriptions of meditation given earlier in this paper (page 12), we see that the common themes of experience described in these texts are supported by this study. The Vishuddhimagga's stage description of meditation shows many commonalities with the results of this study, despite this text arising from a different tradition from the subjects participating in this study (from the Pali Theravadin Buddhist tradition). Results of this study support the direction of change over time as the Vishuddhimagga annotates: starting with beginners that experience incessant thinking and fantasy during the meditation period, evolving to a quieter mind. The Vishuddhimagga describes more advanced stages of meditation that happen with practice. Changes in the flow of time are experienced, along with experiences of vast expanses without disturbance, feeling established in stillness, culminating in experiences of oneness. Results of this study show that dwelling in thought, fantasy and other mental distractions do decrease with time; conversely experiences of changes in the flow of time, experiences of oneness, having still mind etc.

increase with time. It is possible that with greater numbers of subjects and further analysis subjects could be allocated to stages according to the Vishuddhimagga system. It is also possible, however, that progress is a continuum rather than the distinct stages portrayed in the Vishuddhimagga.

Theresa of Avila wrote, "and even if she would, she could not think of any single thing," (James, 1961, p.321), as quoted on page 14. An item in the MES that clearly changes with meditation practice is the item, 'my mind becomes still or stops altogether'. A still mind is rarely reported by novices, but very frequently reported by advanced subjects.

The text quoted from the Bhagavad Gita on page 14 is also affirmed by this study. "With his vision transformed into Unity ...he now sees his own Self in identity with the Whole and permeating all beings" (Shyam, 1985). The item 'all that I see appears to be of one essence' in the EDLS measures an aspect of the above description. Experienced meditators report 'often' experiencing 'all as one essence.' Again, this experience increases with time, it seems, since the novice will report rarely experiencing this item.

The above quotes originate from Buddhist, Christian and Hindu sources respectively. The similarity of content supports there being basic characteristics of meditation, and that these basic characteristics seem to be consistent over time and culture. The quotes were taken from texts written centuries ago, yet seem to accord with the experience of more skilled meditators today.

Rest versus relaxation

One of the key focuses of contemporary research is in the relaxation benefits of meditation. A large proportion of both physiological and clinical research is absorbed in this issue. Results of this study support previous claims of reduced anxiety with practice of meditation. Regression of anxiety on years of meditation practice was highly significant.

Feeling rested and relaxed loaded on the Transcendence factor, indicating that the relaxation and rest attributed to meditation seem to be more highly correlated with transcendence than with than with the techniques and practice of meditation or with unusual experiences such as experienced changes in body size, experiences of light or energy rising.

Implications for further research

The effect of years of meditation practice on MES and EDLS scores shown by this study has implications for further research. If all meditators, regardless, of proficiency or experience in meditation, are considered equally as subjects for research purposes, the effect of practice will not be taken into account. This is one of the failings of most previous research.

Most scientific research uses novices as subjects. Many of the novices in these studies had less than one month meditation experience by the end of the experiment; the majority had less than one year of practice. This study illustrates the difference between novices and more advanced

students. The highly significant relationship between subject's ability to meditate as measured by these scales and their years of practice of meditation indicates that studies which use novice meditators may have only limited generalizability and external validity. It is worth considering what is being measured, and therefore concluded, about meditation when novices, who frequently fail to attain many of the characteristics of meditation attained by advanced meditators, are used as subjects.

One of the limitations of a cross-sectional study is that it is not possible to delineate whether practice or attrition is responsible for the results obtained. It cannot be concluded that meditation practice causes enhancement in self esteem, increases depth of meditation, and creates more patience and ease in every day life. Longitudinal research is necessary to assess if years of meditation practice causes the effects seen here, or if the effect is due to selective attrition. Traditional scriptures and writings about meditation depict just the changes described here over time. It is not known, however, how many monks and ascetics dropped their practice throughout history, leaving only those who were naturally adept in this practice in the monasteries!

Years of practice and TAS scores have little relationship, yet TAS scores do correlate significantly with the Observing/blissful dimension and Transcendence dimension scores. A possible interpretation is that a certain degree of absorption as measured by the TAS, is a pre-requisite to meditation. Longitudinal studies are needed to determine the extent to

which TAS scores measured before meditation training predict later success at meditation.

Conformity

It could be argued that the effect of years of practice on scores may be due to social conformity or role play – that is, more advanced subjects may be more likely than novices to present idealized responses in order to impress the investigator or to support their own belief system. A subject who has been meditating for a longer period of time may be more invested in certain beliefs or in presenting themselves a certain way. The case for the effect of conformity is well established. Some cases against this interpretation are offered here.

Even novice meditators are aware of what the profile of a good meditator on these scales would look like, let alone a subject who has been meditating and in the company of meditators for a couple of years. Yet there is a considerable increase in scores between 2-year and 20-year meditators.

Many of the novices have recently invested in meditation classes, are keen, and aspiring to be like more experienced members in the meditation group. However, on the other hand, that novices are not as invested in meditation may account for some of the difference in scores.

Not all items changed equally with years of meditation practice. Meditators with otherwise high MES scores report rarely or never experiencing some items that other high MES scorers often-experience.

Not all experiences increased as one would expect. Inner experiences of light and energy rising up the spine, for example, did not increase much with years practice. Since these kinds of experiences are esteemed by many, one would expect a higher incidence of such reports in experienced meditators, if conformity with demands was determining their reporting of experiences.

While advanced meditators reported lower frequencies of distraction than novices, they still reported a considerable frequency of distractions supporting that they were not simply trying to please. Since Observing/bliss and Transcendence dimensions increase despite distractions, a possible interpretation is that the meditators' proficiency at dealing with distractions increases with practice rather than the experience of distractions ceasing.

No doubt a wish to present oneself in a certain light is a salient bias, it is also possible that the effect of years of practice on MES scores is even underestimated in this study. Advanced meditators get used to experiencing very profound states of stillness, so occurrences of distraction will have a greater impact on them. For example, if a novice was to experience the meditation of an advanced student on a 'not so good day,' the novice may well find the experience far more deep and profound than their 'good days.' However, since these experiences are all subjective and science has not yet found a measure that can validate their experience, there is no choice but to rely on the subject's reports.

Conclusion

Although there is a considerable overlap between novice and advanced meditators, novices are more likely to report low scores on the Observing/blissful and Transcendence dimensions and high scores on the Distraction dimension. This difference has implications for meditation research that uses such novices as subjects. Meditation experience is underestimated in these studies since a substantial proportion of the subjects cannot generate strong experiences of meditation. The results of this study show that more attention should be paid to the experience and ability of subjects used in meditation research. According to these results, university students recruited as subject have clearly different profiles of inner experience than mature meditators. When novice subjects are used in studies, there has to be more clarity about what will be measured in such studies. The issue of proficiency is salient in this field since meditation in novice meditators differs from meditation in more advanced meditators.

These findings suggest strong cognitive component in a meditator's ability to focus, become detached from the mind and to observe the mind's workings. Future research could help distinguish to what extent it is the cognitive abilities versus the transcendental experiences that create the beneficial effects of meditation.

Research to date has largely neglected trying to examine or quantify meditation experiences. These experiences are essential features of meditation and worthy of further study.

Appendix A

Meditation instructions for novice group

"Sit in a comfortable position. Your back should be upright, but relaxed. Relax your shoulders and arms. You may like to do a few shoulder and head rolls to release any tension you may have in your shoulders and neck.

"Take a few full deep breaths. Breathe out any tiredness or stress you may be feeling, and breathe in energy and vitality. Whatever your mind has been busy with during the day, let it all go. The next few minutes is a time for sitting quietly with yourself. There is nothing that needs to be done, nothing to be planned or thought about. Rest your attention on the gentle rising and falling of your breathing, and relax.

"Since the mind tends to tangent off into thought very easily, many techniques have been developed to keep one's mind steady. Perhaps the most well-known and tried and tested technique is the repetition of a word called a mantra. A mantra is a word, sometimes an English word like love or peace, sometimes a Tibetan or Sanskrit word which has a resonance and meaning that people have found effective in helping to bring about a meditative state. One such mantra is the Sanskrit mantra 'Om.' Repeat this softly and easily, either just as it comes or in time with your breath. The mantra should be repeated very gently and easily.

"As your mind becomes more settled, you may become aware of a formless, watchful awareness. As you become more absorbed in this awareness you will be increasingly able to simply watch any thoughts that pass through your mind without getting wrapped up in them. This

awareness is very peaceful. We will just sit in this peaceful state for a few minutes.

"Any time you find your self wandering off into a train of thought, simply bring your attention back to the mantra without any sense of judgement. If you find yourself getting deeply absorbed in a peaceful state, there is no need to continue repeating the mantra unless you want to."

[10 minutes silence.]

"For the next four weeks I would like you to take a few minutes each day to sit quietly and follow this technique. It could be at any time of the day that suits you – early in the morning before you get up, before going to school, at breaks between classes, or in the evening. Unplug your phone and leave a note on your door if you think you'll be disturbed. You may even like to get together with others in this group – some people find it easier to meditate in a group. People who meditate regularly report many benefits from their meditation. You may well find, for example, that a few minutes meditation will help settle and clear your mind so you can study more effectively, and cope with stress more effectively.

"In two weeks time there will be a refresher session. Come to the session even if you don't manage to meditate every day. It should inspire your meditation.

"Do you have any questions about meditation and how to practice? "

Appendix B

Philosophical background of subjects in this group

The majority of the subjects that have participated in this study have come in contact with, directly or indirectly through other students, books or tapes, the teachings of Swami Shyam. Some have taken meditation or yoga classes with me, a few have taken classes with a friend who teaches in Montreal. A large number of subjects in this study reside at or visit a meditation retreat in the Himalayas, inspired by the teachings of Swami Shyam.

Swami Shyam, now 70 years old, lives in Kullu, in Northern India, where, in 1973, he founded the International Meditation Institute. Swamiji's teaching includes a thorough grounding in meditation, both in a practical sense of silent sitting, and deep understanding the basic principles of meditation. Meditation is practiced in a traditional Eastern context that requires a refined lifestyle (e.g. pure vegetarian diet, practice of yoga etc.) and study of traditional scriptures, through classes, listening to discourses and reading. In addition, good morals, appropriate dress, along with respect for the lifestyle and customs of local people are required of each student.

The means of meditation practice Swamiji teaches is as follows: Sit at ease in any posture. Close your eyes. Watch the space in front of your eyes. Focus your attention on the mantra *amaram hum madharam hum*, or focus on your true nature which is consciousness. If any thoughts arise, remain neutral, just watching. Your attention should be focused on the

knowingness or awareness that exists prior to thought. Practice meditation regularly, morning and evening.

Meditation is the heart of Swamiji's teachings. Without meditation, as he and so many other sages have spoken, spirituality remains conceptual and intellectual. Swamiji speaks of the vision of oneness, the profound vision that experiences the essence of reality. He stresses that it is the practice of meditation that has brought about this vision in him, and the resulting freedom. Without direct experience of this essence, which is one's true nature, people invariably remain bound in their conditions and unable to realize their full potential. One reason people practice meditation is to become free from conditions and able to self actualize.

Freedom, both spiritually and on a personal level, is strongly accented in Swamiji's teaching. He stresses that we meditate to become free or liberated, not to take on another set of conditions, however refined or 'spiritual' they may thought to be. Students are strongly encouraged in this respect to leave behind old habits and mental patterns that do not serve them. A particular interest is taken in transcending, or undoing, the ego's sense of separateness. It is through deep meditation on one's true nature that the ego's hold is dissolved.

On a personal level, students can come and go to the teachings and meditation sessions as they choose; everyone is free to arrive at or leave a session at any time. Students live independently, renting rooms, apartments or houses from local people in the village. A simple life is recommended in order to free up time and energy for meditation and study.

Physical comfort, however, is not denied; students bring their guitars, tape recorders or whatever, and fit their homes out comfortably.

Swamiji stresses that students should remain financially strong and independent, and capable in the world. He himself was married with five children and worked as a court legislature for twenty years before becoming a full time meditation teacher. Since Swamiji did not have the luxury of 'solitude in a cave' he is an example that it is the practice of meditation itself that is important, not the giving up of material possessions, proving great feats of scriptural learning, or escaping to the wilderness that creates the spontaneity, joy and freedom he lives.

He continues an ancient tradition of writing spiritual knowledge into poetry that is put to music and sung. He is known in India as a contemporary poet-sage. Swamiji has also published many books, some are his own writings and songs, and some are his translations of classical scriptures.

Part of the training at the retreat center involves being called on to speak in front of the group, often without any warning or any particular topic. The speaking and discussions revolve around meditation and increasing awareness and wisdom. Consequently students are more articulate and more used to addressing aspects of meditation than many students of meditation. Most of them have thought a lot about meditation; some have taught meditation.

Although Swamiji answers individual student's questions very differently, he gives the same basic teachings to everyone who comes to him. There are no secret teachings, secret initiations in the group -

students of all levels are present at the teachings, and therefore no taboos, and no areas that should not be discussed.

All the students have at least a good working knowledge of English since this is the language Swamiji generally teaches in. For all of the above reasons, therefore, this group has been ideal for this study.

Age _____ Male/Female Country of birth _____

Length of time practicing meditation _____

Experiences during meditation

Please read the following items rating each item between 1 and 5 according to how often you experience these items during meditation

- Mark: 1 if you never experience this item during meditation
 2 if you rarely experience this item during meditation
 3 if you sometimes experience this item during meditation
 4 if you often experience this item during meditation
 5 if you very often experience this item during meditation

Circle a number

1 I find myself impartially observing my mind from a detached state	<u>1 2 3 4 5</u>
2 I feel great bliss rising from within me	<u>1 2 3 4 5</u>
3 I am distracted by thoughts	<u>1 2 3 4 5</u>
4 My mind wanders into fantasy	<u>1 2 3 4 5</u>
5 I feel unaffected by my surroundings	<u>1 2 3 4 5</u>
7 My mind becomes more active than usual	<u>1 2 3 4 5</u>
8 I have experiences that I am unable to put into words	<u>1 2 3 4 5</u>
9 I feel rested and re-energized afterwards	<u>1 2 3 4 5</u>
10 My body feels as if it is changing in size or shape	<u>1 2 3 4 5</u>
11 I mentally step back and watch my thoughts	<u>1 2 3 4 5</u>
12 I am distracted by the environment around me	<u>1 2 3 4 5</u>
13 I feel sad or depressed	<u>1 2 3 4 5</u>
14 I become very watchful	<u>1 2 3 4 5</u>
15 My mind becomes very still or stops altogether	<u>1 2 3 4 5</u>
16 I have inner experiences of light	<u>1 2 3 4 5</u>
17 I experience oneness with the universe	<u>1 2 3 4 5</u>
18 I feel energy rising up my spine	<u>1 2 3 4 5</u>
19 I become aware of formless dimensions within me	<u>1 2 3 4 5</u>

(Experiences during meditation continued)

- Mark:**
- 1** if you never experience this item during meditation
 - 2** if you rarely experience this item during meditation
 - 3** if you sometimes experience this item during meditation
 - 4** if you often experience this item during meditation
 - 5** if you very often experience this item during meditation

20 My usual sense of being an individual person dissolves	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
21 My breath suspends or stops on its own for periods of time	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
22 I completely transcend all sense perception	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
23 I become aware of the workings of my mind	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
24 I find myself continuously dwelling on thoughts and feelings	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
25 I am able to actively control what I attend	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
26 I feel dull and bored	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
27 I become more than usually conscious of being a separate individual	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
28 I need to breathe more	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
29 I become vividly aware of all sense perception	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
30 I feel relaxed	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
31 It feels like my usual body-mind boundaries melt away	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
32 My perception of the flow of time changes	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
33 I experience tremendous love	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
34 Time passes when I have no recollection of what I experienced	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
35 My attention is all inwards and I am oblivious of surroundings.	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
36 I feel emotionless and distant	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
37 I feel a profound sense that everything is perfect as it is	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
38 My awareness is completely empty of thoughts and feelings	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
39 I find myself effortlessly absorbed in stillness	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
40 I feel my heart opening	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
41 I experience a sense of being beyond mind and body	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
42 I feel physical discomfort	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>
43 I feel dissolved and spaceous	<u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u>

Experience during everyday life

Please read the following items. Rate each item between 1 and 5 according to how often you experience these items in every day life i.e. during ordinary everyday activities.

- Mark: 1 if you never experience this item in everyday life
 2 if you rarely experience this item in everyday life
 3 if you sometimes experience this item in everyday life
 4 if you often experience this item in everyday life
 5 if you continuously experience this item in everyday life

Circle a number

1 I feel happy (during everyday life)	1 2 3 4 5
2 I watch my breath for extended periods of time	1 2 3 4 5
3 I feel anxiety and tension	1 2 3 4 5
4 All that I see appears to be of one essence	1 2 3 4 5
5 I experience peace of mind	1 2 3 4 5
6 I find myself taking myself and life very seriously	1 2 3 4 5
7 I accept myself as I am and feel perfect	1 2 3 4 5
8 I find myself watching my thoughts	1 2 3 4 5
9 I feel undisturbed by the world	1 2 3 4 5
10 I have feelings of inadequacy and insecurity	1 2 3 4 5
11 I feel impatient when things don't go the way I want	1 2 3 4 5
12 I find myself daydreaming	1 2 3 4 5
13 I feel one with the life around me	1 2 3 4 5
14 I am vividly aware of everything around me	1 2 3 4 5
15 I feel in harmony with myself and my surroundings	1 2 3 4 5
16 I feel tremendous compassion for others suffering	1 2 3 4 5
17 I find myself wishing I was better than I am	1 2 3 4 5
18 I find myself finding fault with everyone and everything	1 2 3 4 5
19 I feel very joyful	1 2 3 4 5
20 I see both sides of all issues	1 2 3 4 5
21 I feel patient and at ease regardless of circumstances	1 2 3 4 5

Please circle the appropriate number.

(1 = Never; 2 = sometimes; 3 = often; 4 = Very Frequently)

1. Sometimes I feel and experience things as I did when I was a child. 1 2 3 4
2. I can be greatly moved by eloquent or poetic language. 1 2 3 4
3. While watching a movie, a T.V. show, or a play, I may become so involved that I forget about myself and my surroundings and experience the story as if it were real and as if I were taking part in it. 1 2 3 4
4. If I stare at a picture and then look away from it, I can sometimes "see" an image of the picture, almost as if I were still looking at it. 1 2 3 4
5. Sometimes I feel as if my mind could envelop the whole world. 1 2 3 4
6. I like to watch cloud shapes change in the sky. 1 2 3 4
7. If I wish, I can imagine (or daydream) some things so vividly that they hold my attention as a good movie or story does. 1 2 3 4
8. The crackle and flames of a wood fire stimulate my imagination. 1 2 3 4
9. It is sometimes possible for me to be completely immersed in nature or in art and to feel as if my whole state of consciousness has somehow been temporarily altered. 1 2 3 4
10. Different colours have distinctive and special meanings to me. 1 2 3 4
11. I am able to wander off into my own thoughts while doing a routine task and actually forget that I am doing the task, and then find a few minutes later that I have completed it. 1 2 3 4
12. I can sometimes recollect certain past experiences in my life with such clarity and vividness that it is like living them again or almost so. 1 2 3 4
13. Things that might seem meaningless to others often makes sense to me. 1 2 3 4
14. While acting in a play, I think I could really feel the emotions of the character and "become" her/him for the time being, forgetting both myself and the audience. 1 2 3 4
15. I often take delight in small things (like the five-pointed star shape that appears when you cut an apple across the core, or the colours in soap bubbles). 1 2 3 4

Instructions:

Please indicate your degree of agreement or disagreement with each of the following statements by circling the appropriate option for each statement.

SA = strongly agree

A = agree

D = disagree

SD = strongly disagree

-
1. On the whole, I am satisfied with myself.	SA A D SD
2. At times I think I am no good at all.	SA A D SD
3. I feel that I have a number of good qualities.	SA A D SD
4. I am able to things as well as most other people.	SA A D SD
5. I feel I do not have much to be proud of.	SA A D SD
6. I certainly feel useless at times.	SA A D SD
7. I feel that I'm a person of worth, at least on an equal plane with others.	SA A D SD
8. I wish I could have more respect for myself.	SA A D SD
9. All in all, I am inclined to feel that I am a failure.	SA A D SD
10. I take a positive attitude toward myself.	SA A D SD

Appendix D

The second set of 3 regression analyses using Experience During Everyday Life dimensions as criterion variables included Meditation Experience variables in conjunction with the other predictors.

Again, age contributed significantly to prediction of scores on the well-being dimension, $R = .21$, $F = 5.47$, $p = .021$. On the next step the transcendence dimension was added, $R = .64$, $F = 39.75$, $p < .001$, followed by years of meditation practice, $R = .70$, $F = 36.16$, $p < .001$. On the third step the distraction dimension was added, $R = .72$, $F = 31.07$, $p < .001$, followed by RSE that was entered last, $R = .74$, $F = 26.29$, $p < .001$.

For the disharmony dimension, age did not contribute any predictability, $R = .00$, $F = .00$, $p = .99$. Awareness was entered next, $R = .54$, $F = 23.15$, $p = .00$, followed by TAS, $R = .59$, $F = 19.85$, $p < .001$. Years of practice was entered on the final step, $R = .63$, $F = 18.88$, $p < .001$.

For the awareness dimension, age did not contribute significantly to prediction of awareness scores, $R = .10$, $F = 1.18$, $p = .284$. The observing dimension was entered next, $R = .54$, $F = 23.36$, $p < .001$.

The addition of dimensions from the Meditation Experience Scale added .13 to the prediction of scores on the well-being dimension; added .19 to prediction of the disharmony dimension and .05 to prediction of the awareness dimension. Stepwise additions to R , R^2 , F and significant F values are tabulated in table 8.

Table 8

Incremental changes for Well-being, Disharmony and Awareness dimensions R, R2, F and significant F with 1) age, years, TAS and RSE as variables and 2) with addition of MES dimensions when variables are entered stepwise.

Regressions with age, years, TAS and RSE as predictors

	Variable Significant F	R	R2	F	
Well-being	Age	.19	.04	4.56	.042
	Years	.59	.35	31.57	.000
Disharmony	Age	.014	.000	.02	.877
	Years	.37	.14	9.05	.000
	TAS	.46	.21	10.32	.000
Awareness	Age	.07	.005	.69	.412
	Years	.42	.17	12.13	.000
	TAS	.49	.24	12.01	.000

Age, years, TAS, RSE and MES dimensions as predictors

	Variable Significant F	R	R2	F	
Well-being	Age	.21	.04	5.47	.021
	Transcendence	.64	.41	39.75	.000
	Years	.70	.48	36.16	.000
	Distraction	.72	.52	31.07	.000
	RSE	.74	.54	26.29	.000
Disharmony	Age	.000	.000	.000	.993
	Distraction	.54	.29	23.15	.000
	TAS	.59	.35	19.85	.000
	Years	.63	.40	18.88	.000
Awareness	Age	.10	.01	1.18	.284
	Observing/bliss	.54	.29	23.36	.000

Correlation Matrix for variables in Observing blissful Dimension

ONENESS	1.00000						
BLISS	.65784	1.00000					
FORMLESS	.74066	.52953	1.00000				
LIGHT	.59346	.53067	.52232	1.00000			
LOVE	.63281	.64127	.51975	.51051	1.00000		
WATCHFUL	.60249	.52307	.62026	.45135	.43253		
ENERGY	.52792	.45271	.50686	.51079	.42061	.41249	1.00000
HEART	.54582	.57593	.44953	.37627	.67744	.34706	.44440
WORKINGS	.47732	.41849	.59479	.34689	.33287	.62120	.37883
DISSOLVD	.68920	.53535	.72706	.48327	.55187	.53432	.37472
STEPBACK	.52953	.46671	.55960	.28136	.28454	.65945	.50423
DETOBS	.59239	.58787	.58881	.32124	.44704	.58111	.43645
BEYOND	.68464	.50674	.64739	.37563	.55863	.54345	.39190
PERFECT	.63240	.49419	.58183	.34452	.57858	.55871	.36165
MDSTILL	.64314	.56905	.64151	.42827	.57038	.60647	.47596
BODYSIZE	.39060	.28945	.34088	.43542	.29580	.27905	.34987
BTHSTOPS	.54534	.41386	.52459	.34105	.41745	.58034	.47956
INEFABLE	.24968	.10872	.23735	.24441	.31202	.10379	.20808

	HEART	WORKINGS	DISSOLVD	STEPBACK	DETOBS	BEYOND	PERFECT
HEART	1.00000						
WORKINGS	.38465	1.00000					
DISSOLVD	.46825	.50083	1.00000				
STEPBACK	.39896	.64667	.50742	1.00000			
DETOBS	.46497	.61224	.56010	.76556	1.00000		
BEYOND	.48352	.55935	.76326	.51033	.60166	1.00000	
PERFECT	.48302	.47946	.67695	.47841	.58763	.69755	1.00000
MDSTILL	.42172	.61377	.69145	.59373	.67619	.72728	.68328
BODYSIZE	.30983	.15787	.32742	.29247	.15451	.32862	.28390
BTHSTOPS	.33941	.50856	.57966	.54035	.52818	.61560	.58089
INEFABLE	.27909	.07726	.29501	.21139	.18502	.22690	.27187

	MDSTILL	BODYSIZE	BTHSTOPS
MDSTILL	1.00000		
BODYSIZE	.15426	1.00000	
BTHSTOPS	.65384	.29314	1.00000

Correlation Matrix for variables in Transcendence Dimension

	ABSORBED	EMPTY	TRANSEND	USUAL	INWARDS	BOUNDARY	CONTROL
ABSORBED	1.00000						
EMPTY	.72497	1.00000					
TRANSEND	.67691	.67245	1.00000				
USUAL	.62851	.58635	.71120	1.00000			
INWARDS	.50810	.52033	.45748	.43597	1.00000		
BOUNDARY	.57328	.56440	.60328	.72956	.36264	1.00000	
CONTROL	.33955	.41170	.47841	.47808	.29026	.48843	1.00000
DISTANT	.31944	.43683	.27614	.20696	.19506	.17468	.26579
TIMEPASS	.38284	.50272	.52429	.44729	.42191	.42791	.40875
TIMEFLOW	.50485	.38132	.40442	.42537	.45194	.64422	.33421
DISCOMF	.35359	.22937	.27541	.20605	.08700	.24733	.12580
UNAFECTD	.22523	.23476	.33982	.32753	.25210	.22749	.14299
RESTED	.41275	.42974	.46733	.47221	.34545	.40152	.26804
RELAXED	.43611	.36830	.32561	.29482	.28744	.40029	.21230

	DISTANT	TIMEPASS	TIMEFLOW	DISCOMF	UNAFECTD	RESTED	RELAXED
DISTANT	1.00000						
TIMEPASS	.22670	1.00000					
TIMEFLOW	.05848	.29456	1.00000				
DISCOMF	-.00328	.01682	.09993	1.00000			
UNAFECTD	.22371	.21055	.18223	.07850	1.00000		
RESTED	.13858	.33486	.32232	.01972	.25878	1.00000	
RELAXED	.13746	.18244	.31022	.06490	.18059	.25513	1.00000

2 of/de 2

PM-1 3½"x4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

PRECISIONSM RESOLUTION TARGETS

Correlation Matrix for variables in Distraction Dimension

	DULL	DWELLING	DISTHT	DISENV	ACTIVE	INCBTH	FANTASY
DULL	1.00000						
DWELLING	.39554	1.00000					
DISTHT	-.28792	-.48982	1.00000				
DISENV	.22476	.38065	-.52140	1.00000			
ACTIVE	.11893	.30839	-.31697	.20274	1.00000		
INCBTH	.29494	.32467	-.27211	.20797	.14067	1.00000	
FANTASY	-.13353	-.38713	.35810	-.29415	-.23871	-.20439	1.00000
SAD	.28327	.36213	-.24518	.14009	.30184	.17418	-.10745
SEPARATE	.31277	.45482	-.25281	.12845	.45014	.48322	-.08510
		SAD	SEPARATE				
SAD		1.00000					
SEPARATE		.24999	1.00000				

Correlation Matrix for variables in Disharmony Dimension

	INADEQU	IMPATIE	FAULT	ANXIETY	COMPASS	SERIOUS	WISHBET
INADEQU	1.00000						
IMPATIE	.44479	1.00000					
FAULT	.43452	.40363	1.00000				
ANXIETY	.63247	.49414	.46633	1.00000			
COMPASS	-.26575	-.00782	-.09100	-.19009	1.00000		
SERIOUS	.58955	.43470	.40859	.48556	-.26371	1.00000	
WISHBET	.55141	.39047	.37560	.49565	-.21955	.56558	1.00000

Correlation Matrix for variables in Well-being Dimension

Correlation Matrix:

	BTHWATCH	VIVIDAWR	WATCHTHT
BTHWATCH	1.00000		
VIVIDAWR	.13354	1.00000	
WATCHTHT	.42745	.35405	1.00000

Graph showing frequency distribution of age

Frequency distribution of TAS scores

Graph showing frequency distribution of RSE scores

Graph showing frequency distribution of years of meditation practice

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