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A STUDY OF MEDITATION IN THE SERVICE OF COUNSELING

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## A STUDY OF MEDITATION IN THE SERVICE OF COUNSELING

by Leah Dell Dick

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The purpose of this study was to investigate the effect of the practice of meditation on the university counselee's experience of well-being as revealed in perception of locus of control of reinforcement, time competence, and self support orientation. Subjects were randomly selected from the regular client population of the University of Oklahoma Counseling Center and randomly assigned to two sample groups; the experimental group (CM, N=9) was instructed in the transcendental meditation (TM) technique, and the control group (CR, N=9) was instructed to rest 15 minutes morning and evening each day during the treatment period. A second control group (M) was composed of 8 persons from the university community who on their own had started TM within a week of the CM group.

The general hypothesis stated that  $CM > M > CR$  on internal control, living in the present, and self support. The Adult Nowicki and Strickland Internal-External Locus of Control Scale (ANS-IE) and the Time Competence (Tc) and Inner Directed (I) scales of the Personality Orientation Inventory (POI) were administered respectively pre- and post-treatment to assess change in internal control, living in the present, and increase in self-support. The Study of Values was also given at pretest. The three groups were found to be essentially equivalent on the pretest measures.

No significant changes were found either between pairs of groups or within groups on the locus of control variable. The CM group, however, did show a significantly more positive change than did the CR group in time competence ( $p < .025$ ) and inner directedness ( $p < .05$ ). In addition, the pre to post positive differences for Group CM were significant at the .005 level for time competence and at the .005 level for inner directedness. The M group also changed significantly in the direction of inner directedness ( $p < .025$ ). The mean scores of the three groups were found to fit a straight regression line on the Tc and I scales, revealing that  $CM > M > CR$  on living in the present and self support.

The findings give support to the hypothesis that the practice of meditation will aid the university counselee in experiencing a sense of well-being. To the writer's knowledge no studies of the effects of meditation on persons in counseling have been reported. Replication and variation of the present design are necessary in order to generalize the above findings.

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# A STUDY OF MEDITATION IN THE SERVICE OF COUNSELING

## CHAPTER I

### INTRODUCTION

#### Purpose

The purpose of the present study was to investigate the effects of the practice of meditation on the value and behavior orientations of university student counselees. In the introduction which follows, the writer presents a brief background of the practice and purpose of meditation, discusses theory underlying an existential-phenomenological approach to counseling and psychotherapy, and hypothesizes that the practice of meditation will facilitate the attainment of the goals of the above approach in specific ways.

#### Background and Theory

In The Hindu View of Life Radhakrishnan (1927) explains that the ancient Hindus were able to assimilate many tribes, races, religious beliefs, and cultures, for the Hindus believed that each and all are expressions of the Absolute and that the many spiritual paths ultimately lead to the Supreme Reality. Basic to Hindu thought was the conviction that man naturally strives towards higher ideals and that the means developed by each group, as the group itself evolves, are worthy of respect. Each culture had its unique contribution to make to the total life of

the people, and in turn the ways of life of the various tribes and communities were modified by the influence of the other groups.

Hinduism, fully realized, is a dynamic organism, guided by a centuries-long tradition, allowing for the flow of life and thought that moves men towards attainment, from the Hindu point of view, of the highest goals. Whenever rigidity of belief has set in, the life of the great organism has been stifled. Eventually, however, some group or elevated individual has stirred and revitalized the Hindu movement. At present, Eastern thought and discipline are making a more far reaching impact on the Western world than at any previous period in history.

For thousands of years meditation has been practiced as a part of the yoga disciplines found in all forms of Hindu philosophy and religion. The word yoga derives from the root word yuji, which means "to join, unite, yoke," carrying with it the "connotation of exertion, diligence, zeal and enthusiasm" (Organ, 1970); or it may mean "'to link together,' 'to bring under the yoke'" (Eliade, 1969). The systems of yoga provided means by which union with the highest essence or "Supreme Reality" or the "Universal Self" (Dalal, 1971) could be actualized. The genius of the Hindus, according to both Eliade (1969) and Organ (1970) is that they have always provided, within their philosophical or religious frameworks, "something to do," a means for putting the "entire human being into action" toward his goal of overcoming objective-subjective duality to become fully united with the "Whole." The practice of meditation has been an integral part of all yoga systems. In other parts of the world, it has been an important aspect of Sufi discipline, and was essential to Buddha's "Noble Eight-fold Path" (Eliade, 1969).

The word "medi-tation," Naranjo (1971) tells us, refers to a "midst or center we find within us." Meditation is a practice in becoming centered, "a practice in being oneself and knowing oneself." In the Western world, in popular usage, the word meditation has often connoted ideation. Even though the Western mystic sometimes used an idea, such as, "to become one with God," he was not thinking in the sense of "thinking about" or finding a solution. He used the idea or thought to focus upon, to attend to fully, keeping out all other thoughts. "The following passage from The Cloud of Unknowing, a fourteenth-century religious treatise, describes a procedure to be followed in order to attain an intuitive knowledge of God" (Deikman, 1969a, p. 23):

...forget all the creatures that ever God made and the works of them, so that thy thought or thy desire be not directed or stretched to any of them, neither in general nor in special.... At the first time when thou dost it, thou findest but a darkness and as it were a kind of unknowing, thou knowest not what, saving that thou feelest in thy will a naked intent unto God...thou mayest neither see him clearly by light of understanding in thy reason, nor feel him in sweetness of love in thy affection...if ever thou shalt see him or feel him as it may be here, it must always be in this cloud and in this darkness.... Smite upon that thick cloud of unknowing with a sharp dart of longing love.

Prayer, as known in the West, is seen by Ornstein (1971) as perhaps having its roots in meditative practices. To illustrate, Ornstein quotes the following passages (p. 159):

If many words are used in prayer, all sorts of distracting pictures hover in the mind but worship is lost. If little is said or only a single word pronounced, the mind remains concentrated (St. John Climacus).

If thou wilt that thy prayer be pure, made up of good and lovely things, thou must choose a short one consisting of a few powerful words and repeat it many times (The Russian Pilgrim).

Visual symbols of "God," "unity," "purity," such as the cross,

the star of David, the mandala, and the circle, have been used as objects of meditation by Easterners and Westerners alike; yet other techniques have discouraged attending to visual symbols or imagery. Naranjo (1971) points out further diversities among meditation practices:

...some call for complete inaction, and others involve action (mantra), gestures (mudra), walking, or other activities. Again, some forms of meditation require the summoning up of specific feeling states, while others encourage an indifference beyond the identification with any particular illusion (p. 7).

Some examples of instructions for practicing meditation follow:

The radical approach begins with the resolve to do nothing, to think nothing, to make no effort of one's own, to relax completely and let go one's mind and body...stepping out of the stream of everchanging ideas and feelings which your mind is, watch the onrush of the stream. Refuse to be submerged in the current. Changing the metaphor, it may be said, watch your ideas, feelings and wishes fly across the mental firmament like a flock of birds. Let them fly freely. Just keep a watch.... (a yoga exercise, Chaudhuri in Maupin, 1969a, p. 183).

Your aim is to concentrate on the blue vase. By concentration I do not mean analyzing the different parts of the vase, or thinking a series of thoughts about the vase, or associating ideas to the vase, but rather, trying to see the vase as it exists in itself, without any connections to other things. Exclude all other thoughts or feelings or sounds or body sensations. Do not let them distract you but keep them out so that you can concentrate all your attention, all your awareness on the vase itself. Let the perception of the vase fill your entire mind (adapted from mystical practices by Deikman, 1969b, p. 201).

Breathe through the nose. Inhale as much as you require, letting the air come in by distending the diaphragm. Do not draw it in, rather let it come to you. Then exhale slowly. Exhale completely, getting all of the air out of your lungs. As you exhale slowly count "one." Now inhale again. Then exhale slowly to the count of "two." And so on up to "ten." Then repeat.... (a Zen method, Wienpahl in Maupin, 1969a, p. 183).

In "transcendental meditation" (TM), taught by Maharishi Mahesh Yogi, the "vehicle for transcending the level of conscious thought is a mantram, a key word or sound taken from Sanskrit and given to the

practitioner of TM by a trained teacher who instructs him in its use at an initiation" (Goleman, 1971, p. 2). Twice a day for 15 to 20 minutes, the meditator sits comfortably and silently repeats the mantram over and over. He is instructed to "favor" the mantram. When he becomes aware that he is thinking he effortlessly returns his attention to the mantram. TM is a popular technique practiced by an estimated 100,000 persons in the United States (Rubottom, 1972).

Some persons object to the TM movement and teaching because of its popularity and "faddishness." The technique itself, however, is ancient, yet it is a convenient one for Western man to employ. Because of the uniformity and simplicity of instruction and because many investigators have studied the physiological changes accompanying the practice of transcendental meditation (reported in Chapter II), the TM technique has been selected for use in the present study.

Deikman (1969a, 1969b), LeShan (1969), Naranjo (1971), Ornstein (1971), Ryzl (1970) and Wapnick (1969) have noted the similarity in reported mystical experiences, both East and West, to which have been given diverse metaphysical or religious explanations. Currently, the majority of investigators, instructors, and meditators agree that it is not necessary to have a mystical rationale for practicing meditation. In his essay on the implications of meditation for modern psychology, Ornstein (1971) explains how the various techniques of meditating apparently make use of the same psychological procedure which produces the same neurological effect; he then draws the following conclusion:

So the practices of meditation--whirling, chanting, concentrating on a nonsensical question, repeating a prayer over and over again, picturing a cross, looking at a vase, counting breaths, etc.--are probably not quite so exotic as those

who seek the exotic and esoteric would like, and are not properly considered as exercises in reasoning or problem-solving, but rather as exercises in restriction of attention. The somewhat bewildering superficial differences in the various practices--the koan, the mantram, the mudra, the mandala, the kasina exercises, the dharana exercises, the dhikr, the fhikr, the dance of the Meflevi dervishes, the Taoist meditation on the abdomen, the "Prayer of the Heart"--all can be understood as aids in focusing awareness on a single process, continuously recycling the same subrouting through the nervous system. When this is achieved, a common experience seems to be produced: awareness of the external environment diminishes and "turns off" for a period of time.

Psychologically, continuous repetition of the same stimulus may be considered the equivalent of no stimulation at all. The two situations, which form the psychological and physiological points of view are quite similar, insofar as they restrict awareness to that of a single source of unchanging stimulation, also seem to produce the same effects. So we can say (within our frame of reference) that concentrative meditation is a practical technique which uses an experiential knowledge of the structure of our nervous system to "turn off" awareness of the external world and produce a state of blank-out or darkness, the "void," the cloud of unknowing. The techniques of concentrative meditation are not deliberately mysterious or exotic but are simply a matter of practical applied psychology (pp. 168-169).

Deikman (1969b), who was the first to attempt to study the practice of meditation in the light of modern psychology and who influenced Ornstein, proposed that the procedure of meditating (that is, not thinking but rather attending to one repetitive stimulus) is the agent which produces the mystical experience and that the resulting phenomenon is "the consequence of a partial deautomatization of the psychic structures that organize and interpret perceptual stimuli" (p. 200). Deautomatization is the process of focusing attention on formerly automatic actions and percepts.

The results of several experiments tend to support Deikman's hypothesis (1969b, 1971). Bagchi (1971) described the process occurring for meditating Yogis as a "sort of voluntary de-afferentation and de-conceptu-

alization in order to obtain relaxed (a) attenuated awareness, (b) unwavering concentration on a single or no item, or (c) both at different times or a mixture of the two at the same time" (p. 576). Whether the effect is voluntary or merely the result of "one-pointed" attention, these workers agree that a sort of "undoing" of the automatic ways of thinking and perceiving occurs, permitting fresh and possibly more accurate perception. Kasamatsu and Hirai (1971) conclude that long-lasting structural changes occur with the practice of meditation over a long period of time, and Luthe (1971) reports that "a gradual process of multidimensional optimalization" (p. 641), which develops with autogenic training (a one-point attention technique similar to meditation), has been verified by physiologic and projective tests.

From ancient times until the present, what is sought by means of the practice of meditation is the "turning off" of so-called normal awareness--the limited construction built by conditioned perception--in order to become receptive to a larger, fuller awareness of reality. By purposely keeping thought from acting in its preconditioned way (whether wandering or reasoning) or by paying attention to a formerly automatic behavior, such as breathing, it is possible to begin the process of "deautomatization." Patanjali said that meditating is the "inhibition of the modifications of the mind" (Naranjo, 1971).

Eliade (1969) explains that the ideal of yoga is to live in an "eternal present," and this ideal is the foundation of Buddha's teaching. Buddha, who was nurtured in the yoga tradition, rejected all contemporary philosophies because he regarded them as obstacles "between man and absolute reality, the one true unconditioned essence" (Eliade, 1969). He described meditation as a means to create a new and "immediate experience

of his psychic and biological life," and he directed disciples to "meditate on physiological acts which before had been automatic and unconscious." Unbroken attending to breathing was emphasized for beginning meditators, even as it is today in zen training.

Naranjo (1971) asks the question "what is meditation beyond its forms?" and answers that a unity in the diversity of techniques is found in an attitude. "...meditation is concerned with the development of a presence, a modality of being, which may be expressed or developed in whatever situation the individual may be involved" (p. 8). Meditating is the practice of being "here, now."

Along the same line is the essay on "The Practice of the Presence of God" conversations and letters of the 17th century mystic, Brother Lawrence (1958):

That the most excellent method...of going to God was that of doing our common business without any view of pleasing men, and (as far as we are capable) purely for the love of God.

That it was a great delusion to think that the times of prayer ought to differ from other times;... (p. 26)

...My most useful method is this simple attention, and such a general passionate regard to God, to whom I find myself often attached...I should choose to call this state the bosom of God (pp. 38-39).

Too, the "way of Zen," which Fromm (1960) likens to the way to total awareness or reality, means "to wake up," "to make oneself empty," in order to be "open to receive" in this present moment. The act of meditation is practice in sustaining the "receptive mode" of consciousness (Deikman, 1971), it is allowing the unconscious (in terms of Jung's concept) to express itself in awareness (Kasamatsu and Hirai, 1971; Goleman, 1971).

Following James, Wilson (1972) suggests that "normal" consciousness

is limited by a lack of co-operation between the conscious and subconscious mind. The reality to which most persons are accustomed is kept rigid by automatic, preprogrammed ways of perceiving and responding--James' "habit neurosis." The opening up of this locked-in situation meant for James (1902) that "conscious strainings are letting loose subconscious allies behind the scenes" (p. 206).

One goal of psychoanalysis is to make the unconscious conscious. Freud, according to Fromm (1960), believed, on the basis of clinical evidence, that most of what we are conscious of is distorted in line with the dictates of society (with individual variations) and that most of what is real is often repressed. He believed that the unconscious was essentially the seat of irrationality and that the ego should be given control of the formerly repressed material.

On the other hand, Jung (1933) believed that light shed upon the unconscious would illuminate man's deepest source of wisdom as well as his morbid secrets; "...the ego is ill for the very reason that it is cut off from the whole, and has lost its connection with mankind as well as with the spirit" (p. 141). To the degree that man is unaware of part of his nature, he is also alienated from the universality of man, thus from his own humanness; and he only experiences a small portion of what is real in himself and others. This fractional experience of reality results in psychological problems which can be cured only by seeing reality more accurately, says Fromm. He prefers to think of cure as "the presence of well-being" instead of only "the absence of illness."

Well-being is defined by Fromm (1960) as "being in accord with the nature of man." An individual must be able to look beneath the superimposed social conditioning in order to see his truer nature. "My aim is

to bring about a psychic state in which my patient begins to experiment with his own nature--a state of fluidity, change and growth, in which there is no longer anything eternally fixed and hopelessly petrified" (Jung, 1933, p. 76). This task is often painful for the person finds that he is the one who must make choices and decisions. As Frankl (1963) has said, what is actualized in life depends on decisions rather than conditions. The essence of human existence for Frankl is responsible-ness. To be "response-able," as Perls (1969b) has put it, one must make his own choices. When someone or something else is given the credit or blame for his choices the individual gives up his response-ability. In the same vein May (1953) stated that "one recognizes that he exists in his particular spot in the universe, and he accepts responsibility for this existence...one must make his basic choices himself" (p. 145).

Well-being, then, as used in this paper, means to be able to experience things as they are and respond creatively, anew, as it were, to each moment. May (1953) expresses the essence of well-being in the following lines of Goethe:

He only earns his freedom and existence  
Who daily conquers them anew (p. 144).

Many psychologists and philosophers hold that the nature of man is to ever strive to bring himself into harmony with the whole (Allport, 1955; Angyal, Blos, Piaget in Kroll, et al., 1970; Bugental, 1967; DeRopp, 1968; Gendlin, 1962; Kanak, 1965; Ledermann, 1970; Maslow, 1962; May, 1953; Radhakrishnan, 1927; Rogers, 1961; Rogers and Stevens, 1967; and many others). According to such theorists as Frankl (1963), Fromm (1960), James (1902), Jung (1933), and Rank (1932) "religion" has been the vehicle for transcending alienation and is characterized by the belief "that the

visible world is part of a more spiritual universe from which it draws its chief significance; ...That union or harmonious relation with that higher universe is our true end" (James, 1902, p. 475). The religious person, says Fromm (1960), is whoever searches for meaning to existence.

Man's neurophysiological nature functions so as to overcome imbalance and to bring about harmony (Grossman, 1967; Krippner and Hughes, 1970; Luria, 1966), and the studies referred to in the following chapter consistently indicate that states of mind and body are not in conflict but in accord with each other. The deeply relaxed soma is accompanied by quietness of mind and vice versa; stress and anxiety by overly active neurophysiological processes, and the reverse; sluggish bodily activity by a dulled mind, and the opposite. Green et al. (1970) have summarized the "psychophysiological principle" that is emerging from the study of mind-body relations:

Every change in the physiological state is accompanied by an appropriate change in the mental-emotional state, conscious or unconscious, and conversely, every change in the mental-emotional state, conscious or unconscious, is accompanied by an appropriate change in the physiological state (p. 3).

Furthermore, findings by investigators of rapid eye movement (REM) sleep strongly indicate that this state of the sleep-dream cycle is a "programming" process, homeostatic and organizing, which serves an evolutionary-developmental function, promoting cortical efficiency (Krippner and Hughes, 1970). Researchers have discovered that the amount of time spent in REM sleep increases with phylogenetic development and decreases with ontogenetic development (infants spend about 40% of sleep in the REM state to the young adults' 20%). Studies of mentally retarded adults show that the least intelligent spent the least amount of time in REM

sleep, and that improving aphasic patients enjoy proportionally more REM sleep than unimproving aphasics. Alcohol, barbituates, amphetamines, and chlorpromazine are known to decrease REM sleep. When individuals are deprived of REM sleep they tend to make it up later if conditions allow.

The foregoing further suggests that man is equipped to achieve inner unity, to be in accord with his nature. Bodily processes strive to overcome disease and pain, yet dysfunctions imposed on the body by birth, accident or misuse, may sometimes prove to be more powerful than the natural forces. Psychologically, too, man organizes experience in accordance with his acquired frames of reference (Allport, 1955; Piaget in Kroll, 1970). Social and behavioral scientists agree that there is an orderliness in the procedure even though the framework may be at odds with what is true. The individual struggles to integrate his perceptions of experience in order to make a consistent picture of what he believes, consciously or unconsciously, that he is "supposed to be." Guided by unexamined assumptions, he squeezes, distorts, and denies experience, internal and external and thus keeps himself from realizing a more authentic existence.\* Often then, instead of blending with and enriching the "symphony of the universe," he finds himself in painful discord. According to Fromm (1960), this

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\*Such terms as "authentic existence," "in accord with one's nature," "humanness," "oneness with mankind," "unity," "sense of well-being," are used by this writer as expressions of a constructive view of the nature of man which asserts that man naturally strives towards unity, to overcome conflict and imbalance, as do other living organisms. As the human being co-operates with his nature--his humanness--and takes responsibility for his existence, he is in the process of becoming an authentic member of his species and experiences a sense of well-being.

conflict would appear to be the consequence of the inhibition of perceptual and conceptual organization imposed by culture through language, logic and acceptable or unacceptable content of experience.

Fromm believes that man seeks unity in one of two ways: either by regressing in various ways to the state before awareness existed, or by fully developing awareness, reason ("grasping truth by letting things 'be as they are'"), the capacity to love, until "one transcends one's own egocentric involvement, and arrives at a new harmony, at a new oneness with the world."

The theory of existential psychotherapy is built on the conviction that the majority of people who seek help today are longing for a sense of well-being in order to meet the basic problem of human existence, finding meaning in life (Frankl, 1963; Fromm, 1960; Jung, 1933; Ledermann, 1970; May, 1953; May, et al., 1958). "Existence stands for freedom, for one's capacity to 'take leave of what one is (ex) in order to establish oneself (sistere) on the level of that which formerly was only possible'" (Ledermann, 1970, p. 255). Frankl maintains that one finds meaning by becoming responsible, by discovering that he can transcend his "empirical self"--the self as it is as a result of the forces that have shaped it until now (Ledermann, 1970; May, 1953). To achieve this aim the person must wake up, confront his situation and shed illusions, fictions and lies. Too, the task of psychotherapy, as seen by Rogers (1961), Ellis (1962), and Perls (1969a&b) is to further the individual's ability to abandon or modify untrue beliefs about and unrealistic expectations of himself, others, and his environment. True awakening, says Fromm, is at the root of both "creative intellectual thought" and "immediate

intuitive grasp." To be "liberated" one cannot be confined by either others or himself. One cannot seek refuge in any authority outside himself.

Goleman (1971) proposes meditation as "metatherapy" which, over time, could bring about a fifth state of consciousness by fusing the meditative state (the fourth state, Wallace, 1970a) with the "normal" waking state, yet would differ from both. He believes this higher state of consciousness would also infuse sleep and dreaming. This fifth state may be what the Hindus, Zen Buddhists, Sufis and Western mystics have called a modality for being.

In relation to learning theory and especially to the technique of systematic desensitization (the pairing of deep relaxation with a hierarchy of anxiety arousing stimuli) Goleman pointed out that meditation provides a quiescent state of being in which the contents of the mind at that moment become the meditator's "desensitization hierarchy." As the meditator attends to his "being here, now" (by whatever method) he witnesses the thoughts flooding through awareness, allows them to be, and responds with calm. Thereby he may begin to free his former perceptions from their old categories and eventually see things for what they are, not demanding them to be something else. He begins to get in touch with his realness, his humanness, his oneness with mankind, ultimately transcending his separateness.

Having described various ways in which some European psychotherapists (Schultz, Happich, Desoille, Frederking, Mauz) make use of meditation, Kretschmer (1969) concludes that:

Meditation has a good chance of eventually becoming one of the leading therapeutic techniques. All the newer systems

with which the writer is familiar look for a development in this direction. But whether or not this development takes place depends completely on a deep-going reformulation of psychotherapeutic training and the practice of psychotherapy. It is of the greatest importance whether psychotherapy continues to be sought in the direction of meditation. We can only hope that psychotherapy will continue to develop into a genuine technique which can aid men in their goal of developing their highest psychic potentialities (p. 228).

It has been the writer's intention to show that meditation, practice in being quiet and paying attention--practice in sustaining the receptive mode of consciousness, should aid in achieving some of the agreed upon goals of counseling and psychotherapy, which are: to help an individual to perceive himself and others more accurately, to take responsibility for his own existence, and thus to experience a sense of well-being. This writer proposes that for an individual to create a quiet center within may enable him to discover that he can rely upon himself and more often respond to the environment in his own behalf (see himself in relation to others more accurately), living more fully in the present; the consequence of which is to experience well-being.

#### The Problem and Hypotheses

From the foregoing conceptual framework arises the question:

Does the practice of meditation enhance the student counselee's experience of well-being?

This study is planned to test the effects of practicing meditation in conjunction with counseling upon the student counselee's perception of his locus of control (internal or external) and of his value orientation in the direction of self-actualization.

Locus of control is measured by the Adult Nowicki and Strickland Internal-External Locus of Control Scale (ANS-IE, Nowicki and Duke, 1972)

which was designed to assess the degree to which a person perceives reinforcement to be contingent upon his own behavior or upon powerful others or unpredictable complex forces (Rotter, 1966). The ANS-IE is a paper and pencil test consisting of 40 questions which are to be answered either yes or no. This scale was developed 1) to parallel the children's locus of control scale (CNS-IE, Nowicki and Strickland, 1972) which "possessed highly satisfactory psychometric properties and adequate construct validity" (Nowicki and Duke, 1972) and 2) to provide an alternative to the Rotter Internal-External Locus of Control Scale (Rotter IE, 1966).

Although its usefulness has been demonstrated, the Rotter I-E Scale, is beset with the following problems as identified by several investigators (listed in Nowicki and Duke, 1972): it shows "a consistent and significant relationship to social desirability and denial of psychopathology," confounds "personal and ideological causation" and is inappropriate for subcollege populations because "of its difficult reading level and forced choice format" (p. 1).

Several studies conducted by various investigators and reviewed by Nowicki and Duke (1972) demonstrate satisfactory validity and reliability (reported in Chapter III) for the ANS-IE. The ANS-IE has been found to measure the same construct as the Rotter IE, and social desirability has been shown to be unrelated to the ANS-IE (Nowicki and Duke, 1972). On the basis of its usefulness thus far indicated the ANS-IE is believed to be an appropriate instrument to assess the locus of control orientation of the subjects of the present study.

The instrument used to ascertain value orientation in the direction

of self-actualization is the Personal Orientation Inventory (POI, Shostrom, 1966). The POI consists of 150 two-choice comparative value and behavior judgments. The items are scored twice, first for two basic scales of personal orientation: time competence (Tc, 23 items) and inner directed support (I, 127 items), and second for ten subscales each of which measures a conceptually important element of self-actualization (Shostrom, 1966).

In the POI the assessment of a self-actualizing orientation is based on the theory and research growing out of Maslow's concept of self-actualization; the system of inner- and other-directedness developed by Reisman, et al., and the concepts as stated by Perls and May, et al., of time orientation (Shostrom, 1966). The 12 scales of the POI are designed to measure the following value and behavior orientations which are believed to be characteristic of a self-actualizing person:

1. Time competent (Tc)--lives more fully in the present while meaningfully tying the past and future to the present.
2. Inner-directed (I)--is more dependent upon self-support than environmental support.
3. Self-actualizing value (SAV)--affirms self-actualizing values in his behavior.
4. Existentiality (Ex)--responds existentially or situationally, not "hide-bound" by rules.
5. Feeling reactivity (Fr)--responsive to one's own needs and feelings.
6. Spontaneity (S)--is free to react spontaneously, to be oneself.
7. Self regard (Sr)--affirms self because of worth or strength.

8. Self-acceptance (Sa)--accepts self in spite of weaknesses or deficiencies.
9. Nature of man, constructive (Nc)--holds a constructive view of the nature of man, femininity, masculinity.
10. Synergy (Sy)--is able to transcend dichotomies, (this is a special meaning of the word synergy).
11. Acceptance of aggression (A)--is able to accept one's own natural aggressiveness as opposed to defensiveness, denial, and repression of aggressive impulses.
12. Capacity for intimate contact (C)--is able to develop intimate relationships to other persons unencumbered by expectations and obligations.

Over 100 studies have been conducted using the POI with clinically nominated relatively self-actualizing persons and non-self-actualizing persons, normal adults, college students, high school students, school teachers, clergymen, hospitalized psychiatric patients, convicted felons, alcoholics, and others (Knapp, 1971; Shostrom, 1966).

Scores on the POI have been compared to such variables as teaching effectiveness, achievement, counselor-effectiveness, dogmatism, authoritarianism and neuroticism, and test-retest reliability (reported in Chapter III) has been demonstrated with both a one week interval and a one year interval (Knapp, 1971; Shostrom, 1966). The test has been shown to be unrelated to social desirability and to be unaffected in a positive direction by response sets (Knapp, 1971; Shostrom, 1966, 1972; Warehime and Foulds, 1973).

The accumulated evidence seems to warrant the use of the POI to

assess a self-actualizing orientation in values and behavior.

The present study will make use of three groups: counselees who meditate (CM), counselees who rest (CR), and noncounselees who meditate (M), as in the following diagram.

	Meditation	No Meditation
Counseling	CM	CR
No Counseling	M	Not Used

Hypotheses say that  $CM > M > CR$  on Internal Control, Living in the Present, and Self Support

The hypotheses to be tested are:

I. Meditating counselees (CM) will change their perceptions of the locus of control of their behavior from external to internal to a significantly greater degree than will nonmeditating counselees (CR).

IA. Meditating counselees (CM) will change their perceptions of the locus of control of their behavior from external to internal to a significantly greater degree than will meditating noncounselees (M).

IB. Meditating noncounselees (M) will change their perceptions of the locus of control of their behavior from external to internal to a significantly greater degree than will nonmeditating counselees (CR).

II. Meditating counselees (CM) will change their value and behavior orientations towards living in the present (as opposed to past or future) to a significantly greater degree than will nonmeditating counselees (CR).

IIA. Meditating counselees (CM) will change their value and behavior orientations towards living in the present (as opposed to past or future) to a significantly greater degree than will meditating noncounselees (M).

IIB. Meditating noncounselees (M) will change their value and behavior orientations towards living in the present (as opposed to past or future) to a significantly greater degree than will nonmeditating counselees (CR).

III. Meditating counselees (CM) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will nonmeditating counselees (CR).

IIIA. Meditating counselees (CM) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will meditating noncounselees (M).

IIIB. Meditating noncounselees (M) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will nonmeditating counselees (CR).

## CHAPTER II

### RELATED RESEARCH

...our normal waking consciousness,...is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus, and at a touch they are there in all their completeness,...No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded (James, 1902, pp. 378-379).

This statement by William James is often quoted in the growing body of literature concerned with the investigation of states of consciousness. It serves well as a reminder that an important aspect in the study of man has long been ignored. More recently, Murphy (1969) has urged students of the human being to deepen and expand their research and to develop new methodologies in order to study the whole man. Currently trends in this direction are being promoted and communicated by such groups as the Association for Humanistic Psychology, the Transpersonal Institute, the Council Grove (Kansas) Annual Interdisciplinary Conference on the Voluntary Control of Internal States (sponsored by the Menninger Foundation), and the Academy of Parapsychology and Medicine. Sleep and dream research, also, has significantly influenced the study of states of consciousness. What may be emerging is a "new Science of Consciousness" which is fundamental to a "science of ultimates" (Weide, 1971).

Tart (1971a) asserts that the scientific method is designed to test hypotheses in order to minimize and counteract "errors of observation and reasoning." Because the phenomena of consciousness has long remained outside the pale of science, society has perhaps continued to operate on a number of faulty assumptions concerning the nature of man. There is no doubt that "observing" consciousness has seemed in the past to be a formidable task, especially in terms of the "objectivity" of the older, rigorous scientific disciplines. There is, however, a growing recognition, most thoroughly among the ranks of the physicists, that there is no such thing as the "detached observer." Observer and observed alike alter the condition of the other (Buhler, 1967; LeShan, 1969; Moustakas, 1967; Polyani, 1958; Tart, 1971a).

Having the intention to study human behavior with scientific rigor, many early 20th century psychologists believed that the method of introspection was not a reliable tool nor was "mind" thought to be a probable object for investigation (Chaplin and Krawiec, 1960). More recently, widespread interest in the study of human potential coupled with modern technological advancement have contributed to the development of methods to investigate states of consciousness. Stoyva and Kamiya (1971), inspired by dream study methodology, outline the use of "convergent indicators" (verbal report, physiological measurement, and operant conditioning), which they believe "provide substantial construct validity for the hypothetical internal state." Hilgard (1971) has termed this method "contemporary functionalism" which he agrees may become a valid method for introspection (verbal report) in that through training in "discriminating and control of internal mental states subjects will become more generally reliable and sensitive in reporting private events." Furthermore, Tart (1971a) suggests that

"consensual validation" is obtained by many separate reports of similar experiences under similar conditions. Accordingly, the hypothetical state of dreaming can be said to have both construct and consensual validity (Krippner and Hughes, 1970; Tart, 1969b; Stoyva and Kamiya, 1971).

#### Physiological Studies

Evidence is beginning to accumulate which suggests that the state of consciousness attained in meditation is different from the "normal," waking state, as well as from drowsiness or sleep, and that it is an extremely healthy psychophysiological state of "being"--a state of well-being. Wallace and Benson (1972) conducted a study of 36 practitioners of TM whose experience ranged from less than one month to nine years. The results, reported below, concur with the findings of other investigators (reviewed in Wallace and Benson, 1972) and further indicate that a "wakeful hypometabolic physiologic state" (Wallace, Benson, and Wilson, 1971) accompanies meditation.

Oxygen consumption decreased from 251 cubic centimeters per minute in premeditation to 211 cubic centimeters during meditation and gradually increased to 242 cubic centimeters in the postmeditation period. Similarly carbon dioxide elimination decreased during meditation and the ratio of oxygen intake to carbon dioxide elimination remained essentially the same throughout the premeditating, meditating and postmeditating periods (20-30 minutes each). Volume of air intake was one liter less per minute during meditation as a result of decrease in respiration of two breaths per minute. Allison (1970) also found that changes in respiration are immediate at the beginning and ending of meditation; that the rate of respiration, which is shallow, is about one-half the resting rate; and

that there is no build up of carbon dioxide.

Arterial blood pressure fell to a rather low level during the pre-meditation rest period and remained essentially unchanged through the testing session. Heart beat slowed on the average of three beats per minute.

Lactate concentration in the blood decreased rapidly during the first ten minutes of meditation from an average level of 11.4 milligrams per 100 cubic centimeters during premeditation to 8.0 milligrams, about four times faster than in people normally resting. Increased lactate production has been found to accompany anxiety symptoms, and infusion of lactate ion produces such symptoms. Too, higher lactate levels are found in resting patients with hypertension than in resting nonhypertensive patients. Wallace and Benson believe that increased skeletal muscle blood flow with increased aerobic metabolism during TM account for the decrease in lactate as well as for the subjects' feeling of muscular relaxation.

Skin resistance to an electric current increased markedly during meditation, more than four times in some subjects. The latter finding is in agreement with those of other experimenters (Bagchi, 1971; Bachi and Wenger, 1971; and Wallace, 1970a, 1970b). In two experiments comparing TM meditators (N = 8) to nonmeditators (N = 8) and comparing TM meditators (N = 6) to nonmeditators (N = 8) who planned to take TM instruction, Orme-Johnson (1971) found that skin resistance to a tone increased significantly ( $p = .004$ ) from premeditation to the meditation period for both groups of meditators. The change for nonmeditators was not significant. Another finding was that meditators made significantly fewer spontaneous galvanic skin responses (GSR) during meditation than did

nonmeditators resting with eyes closed. The rate of GSR per 10 minutes was 6.14 for meditators and 18.25 for nonmeditators in the first experiment ( $p < .05$ ), and 2.66 and 29.13 for meditators and nonmeditators respectively in the second experiment ( $p < .01$ ). Results were consistent on three different days.

The electroencephalographic (EEG) records of the TM subjects in the Wallace and Benson (1972) study revealed increased intensity of slow alpha waves\* (8 or 9 cps) in the frontal and central areas of the brain. Prominent theta waves\* (6-7 cps) in the frontal region accompanied this change for several subjects. Similar findings have been reported in studies of yoga and zen meditators who have had many years of experience (Anand, et al. 1971; Bagchi and Wenger, 1971; and Kasamatsu and Hirai, 1971).

Kamiya (1971), who pioneered the biofeedback study of the alpha wave state, has taught subjects to turn alpha "off" and "on" and to change the amplitude and frequency of the alpha rhythm. Subjects report that they don't think about anything, just listen for the tone (which informs them that they are producing alpha rhythm). This task seems similar to techniques of meditating requiring one-pointed attention.

Brown, et al. (1971) note that there is now a discrimination made between 8-12 cps activity in the occipital area and that found in the frontal regions of the brain. In a study of TM subjects Brown's group found that ten of eleven meditators produced 8-12 cps frontal area rhythms throughout the meditation period, while only three of eleven resting subjects showed this activity and with statistically significant ( $p < .01$ ) less frequency. The 8-12 cps frontal region activity has been termed by Chapman, Cavonius,

\*The Alpha rhythm (8-13 cps) in the occipital area is usually found under relaxed conditions with eyes closed. Theta waves (4-7 cps) are indicative of even deeper rest.

and Ernest (Brown, et al., 1971) kappa-rhythm. It is "present most markedly during mental tasks." These authors believe that the occurrence of consistent kappa rhythms suggest a higher level of consciousness than normal wakefulness. Other studies are planned to determine the "alpha-kappa-rhythm ratio" in individuals before and after they become meditators.

Orme-Johnson (1971) concludes that the considerable amount of evidence he reviews suggests that "TM appears to change the style of functioning of the nervous system in a direction associated with higher evolution and greater maturity" (p. 10).

The physiological and psychological effects produced by practicing autogenic exercises (Luthe, 1971) are similar to the changes seen in meditation. Autogenic training was developed in Germany over forty years ago by J. H. Schultz as an alternative to hypnosis as used in medical treatment. The method makes use of passive concentration on verbal formulas implying heaviness and warmth in the extremities, slowed breathing and heart rate, etc. Increase in temperature and weight in the extremities actually occurs and is attributed to relaxation and increasing blood flow. The method of passive concentration is similar to the meditation procedure. The well-researched technique of autogenic training has been found to be successful in treating all sorts of somatic disorders from circulatory disturbances to skin diseases, and has proved to be a valuable psychotherapeutic tool. The health-giving effects of autogenic training imply that "the function of the entire neurohumoral axis (cortex, thalamus, reticular system, hypothalamus, hypophysis adrenals) is directly involved and that the therapeutic mechanism is not unilaterally restricted to either bodily or mental function" (Luthe, 1971, p. 652).

A method similar to autogenic training is a yogic relaxation exercise, shavasan, taught by Datey, et al. (1971), to hospitalized patients for the control of hypertension. A significant improvement followed for 52 percent of the patients. Again, this method--relaxing and attending to breathing--appears to be much like a procedure used in the practice of meditation.

The metabolic rate, skin resistance changes, and EEG pattern during sleep all differ from those seen in meditation (Kasamatsu and Hirai, 1971; Wallace, 1970a, 1970b; and Wallace and Benson, 1972). The findings indicate that meditation is a more deeply relaxing state than is sleep. Reports of the physiological correlates of hypnosis are not consistent (London, et al., 1971; Wallace, 1970b) and suggest that the changes vary according to the emotional states of the hypnotized subjects, as in the "normal" waking state (Deikman, 1969b; Kasamatsu and Hirai, 1971; Wallace, 1970b). Physiological variability would be expected, too, in meditation if emotional states change.

According to Wallace and Benson, (1972), operant conditioning via biofeedback produces specific responses, such as changing heart rate, blood pressure, urine formation, temperature, brain wave activity, etc., rather than the set of integrated responses marking the state of deep relaxation found during meditation. This writer, however, has found no study of biofeedback training that reports having measured other physiologic activity during the training period. Even so, meditating does have the advantage of being independent of external reinforcement. It is possible that further investigation may reveal that biofeedback training is accompanied by physiological responses similar to the correlates of meditation and that the use of biofeedback to produce relaxation

would be more suitable for some individuals than would meditation.

Wallace and Benson (1972) suggest that the hypometabolic state accompanying meditation is the opposite pole of the "fight or flight" hypermetabolic reaction that is evoked by "rapid and unsettling changes ...buffeting modern society." The constant stimulation of the sympathetic nervous system is believed to be largely responsible for many psychosomatic disorders (Wallace and Benson, 1972; Orme-Johnson, 1971). These investigators propose that the practice of meditation would help bring the energy-using sympathetic and the energy-restoring parasympathetic nervous systems into balance and thus produce better health along with more effective modes of responding to excitation. Landrith (1971) makes a similar comparison of the "fight-flight" reaction to responses developed by meditators. He suggests that since fighting or fleeing is now seldom appropriate that tension builds and could be alleviated by the regular practice of meditation.

Even though continued investigation of the physiological correlates of meditation and similar procedures must be done, the evidence so far suggests that the mental state of receptive, attenuated awareness is accompanied by deep neuro-physiological relaxation which permits the natural regulatory mechanisms of the body to operate effectively.

#### Psychological Studies

Lesh (1970a), Maupin (1969b), and Deikman (1971) suggest that the concept of adaptive regression or "regression in the service of the ego" may apply to the psychological process occurring in meditation. In a study of 28 male college student volunteers, Maupin found that the "capacity for adaptive regression and tolerance for unrealistic experience"

significantly predicted the ease and depth with which the students responded to meditation initially (nine sessions,  $\tau = .49$ ,  $p < .001$ ;  $\tau = .37$ ,  $p < .01$  respectively), while attention measures did not so predict ( $r$  not reported). Van Nuys (1971) has pointed out, however, that the attention measures Maupin used (digit span scores and average sums in continuous addition) may have been at fault.

Deikman (1969b) proposes that this "adaptive regression" or de-automatization is an undoing of stereotyped perceptual organization, perhaps allowing for an expanded experience of reality rather than the former reduction of reality. An experiment conducted by Deikman was designed to test the hypotheses that 1) the procedure of meditation is primarily responsible in producing the mystic experience; 2) experience in meditation reduces the effect of distracting stimuli; and 3) mystic experience is a result of "a partial deautomatization of psychic structures." Four persons who were professional acquaintances of the investigator participated in the experiment. None of the subjects had studied mysticism but all were aware that meditation is related to mystic practice. Each subject participated individually in twelve meditation sessions (concentrating on a blue vase) of about fifteen minutes each. At the end of each session the subjects responded to the same questions asked by the experimenter. The subjective reports of the participants were consistent with Deikman's hypotheses.

Following additional studies Deikman (1971) termed the cognitive style of meditation the "receptive mode" of consciousness (in contrast to the "action mode"). He explains that this style is one of "taking in" rather than "acting on" the environment and is viewed as "a different strategy for engaging the world, in pursuit of a different goal."

The use of meditation to develop empathy in graduate student counselor trainees was investigated by Lesh (1970a). The experimental group (N = 16) practiced a zen meditation exercise (concentrating on breathing) for 30 minutes every week day for four weeks. The two control groups consisted of persons who 1) had volunteered to meditate (N = 12) and 2) had refused to participate in meditation (N = 11). Two of the relationships found in this study are of interest here. The first suggested that empathic ability, as measured by the Affective Sensitivity Scale (ASS, Kagan, et al., 1965), is positively related to the degree of self-actualization, as measured by the Personality Orientation Inventory (POI, Shostrom, 1966); for all groups combined,  $p < .01$  pretest, and  $p < .001$  posttest. Second, meditation appears to improve empathic ability (changes in ASS mean difference scores,  $p < .001$ ) as well as self-actualizing attitudes and behavior. In a study of 15 undergraduate meditators (TM) and twenty undergraduate nonmeditators, Seeman, et al. (1972) also found that practicing meditation seemed to affect self-actualization positively. After two months of meditation for the experimental group the mean difference (MD) scores between groups on the main scale of the POI (inner-directed) was significant at the .02 level; similarly, MD scores between groups on three of the ten subscales of the POI were significant ( $p \leq .02$ ); and MD scores between groups on two other subscales were significant at the .10 level.

Other relationships drawn from the Lesh study were that:

1. openness to experience (measured by the Experience Inquiry, Fitzgerald, 1966) is positively related to depth of concentration in meditation (verbal report of experience rated by

naive judges) ( $\tau = .560$ ,  $p < .01$  at pretest;  $\tau = .412$ ,  $p < .05$  at posttest);

2. openness to experience is positively related to empathic ability (all groups combined,  $p < .001$  at both pre- and posttest);
3. Meditation appears to be an effective means of maintaining one's unique experience of life under circumstances that might tend to repress individual growth (verbal report of life situation);
4. certain experiences occur during meditation that may be indicative of a higher potential of perception or altered perception (verbal report of response to meditation).

A survey conducted by Benson and Wallace (1971) of 1862 persons who had practiced transcendental meditation for an average of twenty months, yielded information concerning changes in drug abuse behavior. Before their having become meditators, about eighty percent of the subjects had used marijuana. After practicing meditation, the subjects gradually decreased their marijuana usage until after 21 months only 12 percent continued to use marijuana. Similarly, 48 percent of the subjects had used LSD, while after 21 months only three percent continued to take LSD. The usage of other narcotics, hard liquor, and cigarettes also declined markedly. The majority of the subjects felt that meditation was instrumental in this change. Of course, the very fact that these people wanted to begin practicing meditation may be an important factor in the above findings.

In a study designed to control the self-selection variable, Brautigam (1971) set up an experimental group (taught TM technique,  $N = 10$ ) and a control group (group counseling,  $N = 10$ ) of young drug abusers residing in the city of Malmo, Sweden. After three months hashish use for the experimental group decreased from an average of 19.2 times per month per person to an average of three times a month, compared to a drop from

20.5 to 18.2 for the control group ( $p < .01$ ). Likewise the abuse of LSD, amphetamines, and opiates, which had always been used much less than hashish, declined from a mean of 2.4 to 0.2 for the meditators and increased from 3.0 to 6.8 for nonmeditators ( $p < .10$ ). The study had been planned for six months, but after three months the control group wanted to learn to meditate. For the five control subjects who meditated regularly over the next three months, the decrease in use of drugs was similar to that for the experimental group during the first three months. Rating themselves on the variables of self-confidence, stability, adjustment, nervousness and fatigue, the experimental group improved by one stanine while the control group did not change. Estimations by observers tended to agree with the self-ratings.

The effects of meditation on test anxiety, field dependence-independence, and reading level in third grade children were investigated by Linden (1972). Children practicing meditation ( $N = 28$ ) were found to become more field independent ( $p < .05$ ) and less test-anxious ( $p < .01$ ) than the control groups (one group given study skills counseling,  $N = 28$ , and one group given no special treatment,  $N = 28$ ). Increase in reading achievement was not found until "the effects of starting point on pretest scores on all variables were partialled out." Linden concludes that meditating helps children to deal with their environments more effectively, possibly strengthening their consciousness of self.

Shelly's theory of happiness is summarized by Landrith (1971) in a paper in which he reviews literature that indicates a neurological substrate to support Shelly's theory. A study was conducted to explore attitudes and behavior that are concomitant with "happiness" (defined

neurologically). Questionnaires on happiness (developed by Shelly) were distributed to 160 meditators (TM) and 145 nonmeditators of similar age and background. The means of the responses of both groups were analyzed but the statistical data were not reported. The results suggested that:

transcendental meditators are happier individuals; are more relaxed; are less sad; experience the feeling of enjoyment more often; seek arousal as much as do nonmeditators, however, extreme forms are avoided (extreme excitements); seek social contacts as often as do nonmeditators in spite of the fact that they tend to spend more time alone; seem to develop deeper personal relationships; depend less on their external surroundings for happiness (pp. 2-3).

Shelly proposes that the rest obtained during meditation is responsible for some if not all of the behavioral changes reported by the TM practitioners.

As evidenced in the previous section, physiological changes that take place during meditation appear to facilitate homeostatic balance in the autonomic nervous system. In his paper on the relation between autonomic stability and transcendental meditation Orme-Johnson (1971) summarizes research which reports the following psychological advantages that have been correlated with low levels of spontaneous GSR: greater resistance to stress and sensory deprivation, less conditionality to stress, less motor impulsivity, stronger egos, more field independence, less defensiveness, and nonhostile perception of the environment. Since levels of spontaneous GSR have been found to decrease greatly during meditation it seems plausible that the psychological correlates noted above may become strengthened as a result of the processes occurring during meditation.

Although by no means conclusive, the findings of psychological

investigations to date indicate that the practice of meditation may aid in the development of a sense of well-being.

### Verbal Reports of Meditators

Statements made by subjects of the Brautigam study, shortly after the start of the experiment, were unanimous in expressing a more positive outlook on life. Below are some of the personal responses to meditation and similar techniques reported by other authors.

#### Response to alpha training:

The ineffability of the alpha state is similar to the reports of mystics. It has a certain feel about it, but when the subject tries to analyze what it is, he stops producing alpha. It is a desirable state in which to be. Subjects report they stop being critical of anything, there is a calming down of mind (Kamiya, 1969).

The person "is relaxed and not experiencing visual imagery." Long periods spent in continuous alpha are pleasant (Hilgard, 1971).

#### Response to a zen technique:

Reported is a feeling of "calm, greater ability to cope with tense situations, and improved sleep...better body functioning ...the pattern of psychosomatic benefits closely parallels the effects of relaxation procedures such as Autogenic Training.... A more solid feeling of oneself often seems to result ('oneself' including both 'body' and 'mind') and, with that, more direct awareness of what one is experiencing" (Maupin, 1969b, p. 179).

#### Response to yoga meditation:

A feeling of "mental calm, relaxation and physical well-being" is experienced (Bagchi, 1971).

#### Personal response by Tart (1971b) to transcendental meditation:

A loss of response to alcohol, alert but "still" mind, increase in sensitivity with less tension, much calmer, more relaxed, more sensitive to inner processes; feels he has more choice about whether or not he gets tense and excited. Many similar responses are reported by others (Mallicoat, 1972; Rubottom, 1972; Schultz, 1972).

Response to autogenic training:

The practitioner becomes calmer, more at ease, feels more relaxed, interpersonal relations improve, frequency and volume of emotional outbursts diminish or cease completely, sleep disturbances are reduced; symptoms, e.g. headaches, insomnia, lack of appetite are dealt with more effectively; less susceptible to colds, nervous coughing, shortness of breath, sore throats, sinusitis (Luthe, 1971).

Response to shavasan:

The patient experiences "symptomatic relief" and a sense of well-being (Datey, et al., 1971).

Responses such as those cited above pervade the literature.

They appear to validate consensually the hypothesis that a sense of well-being accompanies the practice of meditation and like procedures. It is not known, however, whether or not the subjects referred to above had heard or read reports of others who had gone through meditation, autogenic training, etc. This writer has found no reports of negative results, that is, that meditation has produced harmful effects, although some beginners have reported frustration because of having difficulty in staying with the "attending to breathing" technique (Lesh, 1970a; Maupin, 1969b).

Even though the evidence to date needs further substantiation, a great deal of concurrence has been reported from a variety of sources. The data reviewed in this chapter tend to suggest that the practice of meditation (and what appear to be physiologically and experientially similar states) is accompanied by or may bring about profound physiological relaxation, a more at-ease, open, and growth-enhancing psychological stance, and general feelings of well-being.

There is, of course, need for replication of the studies cited as well as for investigation of such questions as: are there important

differences among various techniques of meditation? what are the long term effects of meditation on modern man? how do the effects of meditating compare with mind control training, autogenic training, systematic desensitization, alpha wave training, etc.? is the practice of meditation suitable to all individuals? Continued physiological research and further study of the effects of meditation on drug use is now in progress (Gatozzi and Luce, 1971). What is already known, however, is sufficient to warrant the study of possible differences between meditating and nonmeditating counselees.

## CHAPTER III

### METHOD

#### Design

The present study made use of one experimental group and two control groups. The writer's intention was to test the effects of meditation on students involved in regular counseling. The design used is a combination of Campbell and Stanley's (1963) Designs 4 and 10. Design 4 calls for random selection of subjects from a common population and random assignment of these subjects to groups, thus controlling the main effects of history, maturation, testing, instrumentation and selection. Design 10 is appropriately used when randomized selection is not possible; a "naturally assembled" group is used. In the case of Design 10, if the experimental and control groups are equivalent on pretest scores, then the variables of history, maturation, testing and instrumentation, so important to internal validity, are controlled.

In the present study the design included an experimental group and a control group from the same population (persons in regular individual counseling) plus another control group from a different population (persons not in counseling). By comparing a second control sample from a different population to the two samples from the same population, the design used in this study strengthened the control of extraneous variables. The subjects of each of the three sample groups were tested before and

after eight weeks of the treatment (either meditation or rest). The mean differences between pre- and posttest scores and the variances of the mean differences were compared for each pair of groups.

#### Population and Sample

Two of the sample groups were selected by random drawing of names of all persons who had been participating in individual counseling at the University of Oklahoma Counseling Center for six or more consecutive weeks. One-half the number of each counselor's clients was selected and assigned randomly to the experimental group (instructed in TM) or to a control group (instructed to rest, Appendix B). Two extra names were drawn for each counselor in case any of the initially selected persons should decline to participate. Two of the subjects drawn for the experimental group and one for the control group did decline. These were each clients of different counselors. The first alternate selection for each of the three counselors was then contacted, and all consented to participate.

Two weeks before meditation instruction was to take place the counselors gave each subject a letter (Appendices A & B) which explained that he had been selected by random drawing to participate in a research project to investigate the effects of meditation on counseling and that he would be asked to respond to questionnaires during the following week and again eight weeks later. The experimental group was informed of the time and place for TM instruction, and the control group was given instruction to rest quietly for fifteen minutes morning and evening every day during the eight-week period from February 3, 1973, to March 31, 1973. Each subject who agreed to participate signed a consent form at the end of the letter.

The ten subjects who made up a second control group were persons who were not in counseling and were located through the local Students' International Meditation Society (SIMS). These people on their own had decided to take meditation instruction. The experimenter contacted six of these subjects at their verification meeting on the evening following their initial meditation, one week before the experimental group began meditating. It was explained that a study of the effects of meditation on counseling was being conducted and that individuals who were just beginning TM and who were not involved in counseling were being asked to answer the questionnaires at that time and again in eight weeks. The other four noncounseling beginning meditators were given the same information at their first verification meeting by the TM instructor one week after the experimental group had started to meditate.

One person in each of the counseling groups and two in the non-counseling group did not fully complete the inventories and were dropped from the study. The final groups, then, consisted of a counseling-meditation group (CM, the experimental group, N=9), a counseling-resting group (CR, N=9), and a noncounseling-meditation group (M, N=8).

The subjects of the CM sample group were five females and four males whose ages ranged from 20 to 41 years, with a mean age of 26.5. One person only was older than age 31. Six were university undergraduates, and three were graduate students.

The CR sample group was composed of four female and five male subjects whose ages ranged from 20 to 39 years, two above age 26 (38, 39), with a mean age of 26.4 years. As in Group CM, six of these subjects were undergraduates, and three were graduate students.

Three of the members of the M sample group were male and five female. Their ages ranged from 15 to 39 years, two of which were above age 29 (37, 39), with a mean age of 24.25. Three of these subjects were high school students, four were university undergraduates and one was a graduate student.

In terms of means and variances, the three groups were found to be essentially equivalent on the pretest measures (further described in the section on Instrumentation): Study of Values (Allport, Vernon, and Lindzey, 1960), six scales; the Adult Nowicki & Stickland Internal-External Locus of Control Scale (ANS-IE, Nowicki and Duke, 1972); and the Personality Orientation Inventory (POI, Shostrom, 1966), 12 scales. There were, however, a few differences. Four of 57 means comparisons and two of 27 variances comparisons were significant. The results are summarized in Table 1. The means of the pretest scores were compared between Groups CM and CR, CM and M, and M and CR by applying Student's t test, two-tailed, (Ferguson, 1966) in order to reveal any baseline differences among the groups. In addition, pretest variances (standard deviations reported in Table 1) obtained on the Study of Values, the ANS-IE, and the Tc and I scales of the POI were compared between each pair of groups by the F test (Ferguson, 1966).

Both counseling groups obtained significantly higher scores on the Aesthetic (A) scale of the Study of Values than did the noncounseling group (CM > M,  $p < .01$ ; CR > M,  $p < .05$ ). The CM group scored significantly lower on the time competent scale (Tc) of the POI than did Group M ( $p < .05$ ); and Group M scored significantly higher than Group CR on the Self-Regard scale (Sr) of the POI ( $p < .05$ ). The variances of the two

TABLE 1

t-VALUES OF DIFFERENCES BETWEEN PRETEST MEANS FOR GROUPS CM & CR,  
CM & M, AND M & CR ON THE STUDY OF VALUES,  
THE ANS-IE, AND THE POI

Scale		CM	M	CR	CM & CR		CM & M		M & CR	
		$\bar{X}$ (sd)	$\bar{X}$ (sd)	$\bar{X}$ (sd)	df	t	df	t	df	t
Study of Values	T	43.33 (4.55)	43.62 (7.27)	43.88 (11.47)	16	.13	15	.10	15	.06
	E	33.22 (9.48)	35.00 (9.24)	28.77 (6.74)		1.15		.39		1.60
	A	55.00 (5.02)	43.75 (7.68)	51.66 (5.38)		1.36		3.62**		2.48*
	S	39.44 (5.52)	39.75 (9.24)	42.55 (5.64)		1.18		.08		.76
	P	36.88 (5.49)	40.37 (8.38)	39.77 (5.52)		1.12		1.03		.18
	R	31.22 (6.94)	37.50 (11.80)	33.33 (10.35)		.51		1.36		.78
ANS-IE		14.11 (5.58)	9.75 (4.71)	12.44 (7.20)		.56		1.73		.90
POI	Tc	14.44 (1.94)	16.62 (2.12)	14.11 (3.91)		.23		2.26*		1.68
	I	84.78 (9.86)	85.00 (9.65)	78.11 (17.26)		1.01		.22		.997
	SAV	20.22	19.88	17.44		1.44		.23		1.21
	Ex	21.44	23.12	21.44		.00		.69		.58
	Fr	17.11	17.00	15.22		1.06		.08		1.08
	S	13.56	12.12	11.44		1.39		1.34		.47
	Sr	9.89	11.62	8.33		1.11		1.48		2.16*
	Sa	14.00	14.75	14.22		.12		.57		.33
	Nc	11.22	10.38	11.00		.16		.57		.37
	Sy	7.22	7.12	6.78		.62		.14		.42
	A	16.00	15.38	15.55		.21		.35		.09
	C	20.11	20.75	18.33		.85		.39		1.05

\*p < .05 two-tailed

\*\*p < .01 two-tailed

counseling groups differed at the .02 level on the Theoretical (T) scale of the Study of Values (CM < CR) and at the .10 level on the Tc scale of the POI (CM < CR).

Even though the mean scores for all three groups on the aesthetic scale were high, compared to the collegiate population from which the norms were derived (N=8369), the mean scores for the two counseling groups fell at the upper limits of the range for 82 percent of the norm population. It would not be surprising that all of the subjects of this study show a high interest in aesthetics if it were known that people who seek experiences in order to change or grow are attracted to "works" in which form and beauty are perceived, since these individuals are sensitive to inner disorder or lack of synthesis. Spranger (1928) stated that the aesthetic type has an "empathic intuition." He may experience form and beauty in science as well as art. If Spranger is correct that inner form is "the law of the purposive organic development of the inner being," it may be that people who seek counseling are of the aesthetic type who have obstructed their inner development.

Too, persons seeking counseling may be concerned with expression of feeling as manifest in creative work since they often have difficulty in expressing their personal thinking and feeling in interpersonal relationships. According to May (1953, 1958), Frankl (1963), and Fromm (1960), as well as many others, the anxiety which leads many persons to seek help is a result of feeling powerless, helpless, unable to act in their own behalf or relate to other people. Consequently, the person may rely on more autistic forms of expression.

Then again, art forms are an acceptable mode of expressing that which is "unreal," that which is not "concretized" in everyday experience

(Rank, 1932). The troubled person may find some affirmation and release by involving himself directly or indirectly with aesthetic expression. "One of the liberating effects of art and indeed also of artistic experience, is found in its teaching us to question the conventional and traditional picture of reality and to see it again 'originally,' i.e., animated (beseelt sehen)" (Spranger, 1928, p. 152). Investigation of the relationship between "aesthetic type" and involvement in counseling would be of value.

The difference found between Groups CM and M in time competence does not lend itself to simple explanation. As the reader may observe by inspecting Table 1, the mean score for Group CM (14.44) is arithmetically closer to the mean score for Group M (16.63) than is the mean score of Group CR (14.11). This seemingly paradoxical result appears to be a function of the size of variance in the three groups. Although the variances of Groups CM and M and of Groups M and CR were not different, the variances of Groups CR and CM differed at the .10 level. It may be logical to have expected that the noncounseling group would be more time competent than the counseling groups. Yet, since no significant pretest differences were found on the large majority of the other scales and since the M and CR groups were found to not significantly differ on the Tc scale, no clear cut statement can be made in regard to whether or not the CM and M groups differed in time competence at pretest.

The fourth difference found in the baseline data was that Group M, scored significantly higher on the Self Regard (Sr) scale of the POI than did Group CR. Although the mean score for Group CM was also lower than that for Group M, the scores did not differ statistically. The Sr scale assesses the individual's ability to like himself because of his strength

as a person--esteems himself worthy and capable of taking action on his own behalf. As noted above, persons asking for help often feel weak and powerless, and thus may place a low value on their own resources. The difference found here suggests that the noncounseling subjects may trust more their own strength than counseling subjects.

#### Instrumentation

The Study of Values was administered in order to check whether or not the three groups differed in personality as assessed by the relative prominence of interests and motives underlying evaluative attitudes. The six interest scales of the Study of Values are based on Spranger's theory of "types of men" which are classified as theoretical, economic, aesthetic, social, political and religious. First published in 1931, this instrument has been revised two times (in 1951 and 1960) and is well-standardized on college and college-ability adult populations. Split-half reliability estimates for the six scales ranged from .84 to .95 (N=100). A positive correlation for each item with the total score for its value was significant at the .01 level (N=780). Coefficients of correlation for a one-month test-retest interval ranged from .77 to .92 (n=34) and for a two-month interval from .84 to .93 (N=53).

Locus of control was measured with the ANS-IE, which consists of 40 items to be answered either "yes" or "no." External responses are scored; therefore, the lower the score the more internal is the perception of locus of control of reinforcement. Satisfactory reliability and validity has been demonstrated for the ANS-IE, having internal consistency estimates ranging from .75 to .81 (N=750) and a test-retest coefficient of .86 for 58 subjects after a four-week interval (Duke

and Mullens, 1973).

The Tc and I scales of the POI were used to assess orientations concerning living in the present and inner-other directedness. The scales are composed of 23 (Tc) and 127 (I) forced-choice items. One week test-retest reliability estimates (N=48) were .71 and .77 for the Tc and I scales, respectively. Coefficients for the 10 subscales ranged from .52 to .82, nine of which were above .65. Correlation coefficients obtained after a one-year interval (N=46) ranged from .32 to .74 for the twelve scales of the POI. It was concluded that these findings were well within the ranges of test-retest reliability studies for the MMPI and the EPPS over the same length of time. (Knapp, 1971; Shostrom, 1966)

The internal-external locus of control construct may seem to be quite similar to that of inner-other directedness. According to Rotter (1966), however, generalized expectancies of the locus of control of reinforcement is an altogether different dimension than Riesman's system of inner-other directedness (Riesman, et al., 1950). Internal-external control has to do with believing that either one's personal attributes and behavior determine reinforcement or that unpredictable external forces are in control. On the other hand, inner-other directedness has to do with what controls behavior; one's own goals, beliefs and desires or the need to conform to the assumed expectations and wishes of others.

#### TM Instruction

Training in TM consists of two 45-minute lectures, personal instruction, and group meditation and discussion on each of three evenings succeeding the day of individual instruction. The lectures include

a summary of physiological research, subjective reports concerning the benefits of TM, and a brief history of TM and its relation to ancient Vedic tradition. Appointments for personal instruction are made at the end of the second lecture. At the individual instruction session, which may last up to sixty minutes, the initiate is given a mantram (a key word or sound taken from Sanskrit) which he practices with the teacher. He then meditates alone for twenty minutes. The mantram is to be repeated silently over and over and is the focus of meditation. After the meditation period the teacher asks the new meditator standard questions about his experience to insure that he understands the technique correctly. It is recommended that the individual practice meditation for fifteen to twenty minutes twice a day, morning and evening, before meals or about two hours after meals. The group meetings on the following three evenings are for the purpose of verifying and checking the meditation procedure. Individual instructions for TM beginners and verification methods are standardized and presented in the same form by every teacher to each initiate.

#### Procedure for Collecting and Analyzing the Data

The ANS-IE scale, the POI, and the Study of Values were administered at the pre-experimental testing session. The ANS-IE and the POI only were answered again eight weeks after the beginning of the experiment.

The members of Groups CM and CR responded to the questionnaires at the Counseling Center at their convenience during the week prior to TM instruction. The members of Group M completed the measures during the week in which they had begun meditating. The Counseling Center

receptionist handed each subject the inventories and explained that he should fill them out according to the printed instructions and in the order he preferred. The same procedure was followed at the second administration.

During the second week of the project each subject was given a form (Appendix C) on which to keep a daily record of his meditation or rest periods. The form was to be returned after the first four weeks, and another one was to be picked up for the second four week period. This was done to make interim contact with the subjects as well as to provide the experimenter with information concerning the regularity of the subjects' meditation or rest.

A letter (Appendix D) was mailed to each participant during his eighth week of involvement in the project to inform him that it was time to respond again to the inventories and to ask that he come to the Counseling Center the following week at his convenience to complete the measures.

The t test, one-tailed (Ferguson, 1966) was used to test the significance of the mean differences from pre- to posttest on the ANS-IE and the POI between Groups CM and CR, CM and M, and M and CR, and to compare each group with itself. Differences in variance of change scores were compared by means of the F test (Ferguson, 1966) between each pair of groups on the ANS-IE and the Tc and I scales of the POI. Pre- to posttest differences in variance for each group on the above scales were tested by the t test according to Ferguson (1966). Departure from linearity (Ferguson, 1966) was used to determine whether the pre to post mean differences did fall in the expected sequence (CM > M > CR).

## CHAPTER IV

### RESULTS AND DISCUSSION

The present study has made use of three groups of subjects in order to compare changes that may have occurred as a result of the practice of meditation. Group CM (N=9) was composed of counselees who were given instruction in TM. The subjects of Group M (N=8) were not in counseling and had taken TM instruction of their own accord. Group CR (N=9) was composed of counselees who did not take TM instruction. Baseline data on the pre-test measures were compared between each group and each of the other two groups, and the analysis is presented in Chapter III. Of the 57 means-comparisons made, in only four instances were significant differences found between any two groups. Approximately three differences could be expected as a result of chance alone.

The hypotheses for which this study was designed were tested by means of Student's t test, one-tailed, applied to the mean differences obtained by subtracting pre- from posttest scores on the ANS-IE and the Tc and I scales of the POI for each group compared with the mean differences for each other group: Group CM with Group CR, Group CM with Group M, and Group M with Group CR. An F test was made to determine whether or not the set of group means fit a straight regression line:  $CM > M > CR$ . The .05 level of significance was designated. The results of the analysis of these data are reported below. In addition, one-tailed t tests of the pre- and

posttest differences were made for each group separately, and variances were compared between change scores for each pair of groups as well as between pre- and posttest for each group alone.

#### The Results of the Tests of Hypotheses I, IA, and IB

Hypothesis I: Meditating counselees (CM) will change their perceptions of the locus of control of their behavior from external to internal to a significantly greater degree than will nonmeditating counselees (Group CR).

Hypothesis IA: Meditating counselees (CM) will change their perception of the locus of control of their behavior from external to internal to a significantly greater degree than will meditating noncounselees (M).

Hypothesis IB: Meditating noncounselees (M) will change their perception of the locus of control of their behavior from external to internal to a significantly greater degree than will nonmeditating counselees (CR).

Perception of locus of control was assessed by the Adult Nowicki and Strickland Locus of Control Scale (ANS-IE). The ANS-IE is composed of 40 items to be answered either "yes" or "no." The scale is scored for "externality;" one point is counted for each external response, and it would be possible to obtain a score of 40. The posttest score will be lower than the pretest if the subject has become more internal in his perception of the locus of control of his behavior.

None of the mean scores on the ANS-IE for any of the three groups changed significantly more than did the mean scores for either of the other two groups. The results of the statistical analysis are summarized in Table 2. No differences in variances were found.

Furthermore, there were no significant differences found between pre- and posttest scores for any one group, although the mean score obtained for each group was lower on the posttest than on the pretest. Table 3 presents these results. Variances did not differ.

TABLE 2

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE ANS-IE BETWEEN GROUPS CM & CR,  
CM & M, AND M & CR

Groups	MD	df	t
CM = CR	- .22	16	-.10
CM = M	-1.16	15	-.57
M = CR	- .94	15	-.40

TABLE 3

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE ANS-IE FOR EACH GROUP

Group	MD	(sd)	df	t
CM	-1.66	(3.94)	8	-1.27
M	- .50	(4.44)	7	- .32
CR	-1.44	(5.17)	8	- .84

The analysis of these data indicate that there were no differences between the three groups in their perception of the locus of control of their behavior as being more internal as a result of meditation. Group CM = Group CR, Group CM = Group M, and Group M = Group CR. Hypotheses I, IA and IB are rejected.

The Results of the Tests of Hypotheses II, IIA, and IIB

Hypothesis II: Meditating counselees (CM) will change their value and behavior orientations towards living in the present (as opposed to past or future) to a significantly greater degree than will nonmeditating counselees (CR).

Hypothesis IIA: Meditating counselees (CM) will change their value and behavior orientations towards living in the present to a significantly greater degree than will meditating non-counselees (M).

Hypothesis IIB: Meditating noncounselees (M) will change their value and behavior orientations towards living in the present to a significantly greater degree than will nonmeditating counselees (CR).

The Time Competence (Tc) scale of the POI consists of 23 items. A choice is made between two statements for each item, one time competent and one time incompetent. The scale is scored for time competence; thus, the score will increase as an individual's value and behavior orientations become more time competent. A score of 23 is possible, although it is expected that no one will respond to all items in the time competent direction.

A summary of the results of the statistical analysis of the mean differences obtained on the Tc Scale for each group compared to that of each other group is reported in Table 4 and for each group separately in Table 5. Comparisons of variances revealed no significant differences.

TABLE 4

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE T<sub>c</sub> SCALE OF THE POI BETWEEN GROUPS  
CM & CR, CM & M, AND M & CR

Groups	MD	df	t	p<*
CM > CR	3.33	16	2.43	.025
CM ? M	2.32			
M = CR	1.01	15	.795	

\*one-tailed

TABLE 5

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE T<sub>c</sub> SCALE OF THE POI FOR EACH GROUP

Group	MD	(sd)	df	t	p<*
CM	3.44	(2.79)	8	3.70	.005
M	1.12	(2.10)	7	1.52	
CR	.11	(3.02)	8	.11	

\*one-tailed

The mean difference of 3.44 for Group CM was found to be significantly larger than the mean difference of .11 for Group CR ( $p < .025$ ), and the mean increase of 3.44 points for Group CM was found to be significant at the  $p < .005$  level of confidence. The results of this analysis indicate that meditating counselees changed their value and behavior orientations towards living in the present more than did nonmeditating counselees. Hypothesis II is not rejected.

The mean difference of 1.12 obtained by Group M from pre- to posttesting was smaller than the 3.44 difference for Group CM; no  $t$  test was possible, however, because groups CM and M differed at baseline on the Tc scale. Hypothesis IIA, meditating counselees will change their value and behavior orientations towards living in the present more than will meditating noncounselees, remains in question.

The difference between the increase in mean scores for Groups M and CR yielded a  $t$  of .795. Therefore, the expectation that meditating noncounselees would change their value and behavior orientations towards living in the present more than would nonmeditating counselees was not supported. Hypothesis IIB is rejected.

#### The Results of the Tests of Hypotheses III, IIIA, and IIIB

Hypothesis III: Meditating counselees (CM) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will non-meditating counselees (CR).

Hypothesis IIIA: Meditating counselees (CM) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will meditating noncounselees (M).

Hypothesis IIIB: Meditating noncounselees (M) will change their value and behavior orientations from environmental support to self support to a significantly greater degree than will nonmeditating counselees (CR).

The 127 items making up the Inner-directed (I) scale of the POI consist of paired statements, one to indicate inner-directedness, the other to indicate other-directedness. The sum of the inner-directed choices is the score obtained on the I scale.

Table 6 presents the results of the analysis of the comparisons of mean differences obtained by each group from pre- to posttest on the I scale. The results of the tests of significance of the mean differences for each group alone is summarized in Table 7. Variances did not differ.

The mean increase in scores for Group CM on the I scale was 11.67 compared to an increase of 3.11 for Group CR. This difference is significant at the .05 level of confidence. The analysis of these data indicate that meditating counselees changed their value and behavior orientations from environmental support to self-support more than did nonmeditating counselees. Hypothesis III is not rejected.

Although the mean difference of 7.62 for Group M was in the expected direction, it was neither significantly smaller than the increase for Group CM nor significantly larger than that of Group CR. Meditating counselees did not change more than meditating noncounselees in moving towards self-support, even though the increase in the I scale mean score was significant at the .005 level for meditating counselees and at the .025 level for meditating noncounselees. Both groups changed significantly but the degree of change was not greater for Group CM than for Group M. Hypothesis IIIA is rejected.

As noted above, the mean increase of 7.62 in scores on the I scale for Group M was not significantly different from the increase of 3.11 for Group CR. Meditating noncounselees did not change signifi-

TABLE 6

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE I SCALE OF THE POI BETWEEN GROUPS  
CM & CR, CM & M, AND M & CR

Groups	MD	df	t	p<*
CM > CR	8.56	16	1.91	.05
CM = M	4.05	15	1.05	
M = CR	4.51	15	.99	

\*one-tailed

TABLE 7

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE I SCALE OF THE POI FOR EACH GROUP

Group	MD	(sd)	df	t	p<*
CM	11.67	(8.17)	8	4.28	.005
M	7.62	(7.63)	7	2.82	.025
CR	3.11	(10.71)	8	.87	

\*one-tailed

cantly more in their value and behavior orientations from environmental support to self-support than did nonmeditating counselees although the change in scores for Group M alone reached significance at the .025 level. Hypothesis IIIB is rejected.

The results of the analysis of whether the variance of deviations from linearity significantly differ from zero revealed that a straight line of regression is a good fit to the set of mean differences for the three groups on the Tc and I scales. Since the variance of deviations from linearity did not differ from zero (no significance) the set of mean differences fall significantly close to a straight regression line. This finding supports the general hypothesis that Group CM > M > CR on time competence and inner directedness. The statistical data is reported in Table 8.

A summary of hypotheses rejected and not rejected is presented in Table 9.

TABLE 8

F-VALUES OF DEPARTURES FROM LINEARITY BY THE SETS OF GROUP  
MEAN DIFFERENCES ON THE Tc AND I SCALES OF THE POI

Scale	Source of Variation	SS	df	S <sup>2</sup>	F
Tc	Linear regression	50.00	1	50.00	.325
	Deviation	2.35	1	2.35	
	Within	166.00	23	7.22	
	Total	218.35	25		
I	Linear regression	329.39	1	329.39	.004
	Deviation	.31	1	.31	
	Within	1858.76	23	80.82	
	Total	2188.46	25		

TABLE 9  
 HYPOTHESES REJECTED AND NOT REJECTED

	Hypotheses		Result
I	CM > CR		rejected
IA	CM > M	internal control	rejected
IB	M > CR		rejected
II	CM > CR		not rejected*
IIA	CM > M	living in present	not tested
IIB	M > CR		rejected
III	CM > CR		not rejected*
IIIA	CM > M	self support	rejected
IIIB	M > CR		rejected
	CM > M > CR	living in present and self support	not rejected*

\*Supports the hypothesis that CM > M > CR in experiencing of well-being.

Results of the Tests of Differences from Pre- to Posttests  
between Groups CM and CR, CM and M and M and CR  
on the Ten Subscales of the POI

The ten subscales of the POI are derived from the 150 items which make up the two main scales, viz., Time Competent and Inner-directed. The number of items designated to each subscale sum overall to 150 items. The constructs assessed by these subscales are simply more specifically stated attributes of the time competent, inner-directed self-actualizing person. The subscales are listed below:

Self-Actualizing Value (SAV)	Self-Acceptance (Sa)
Existentiality (Ex)	Nature of Man, Constructive (Nc)
Feeling Reactivity (Fr)	Synergy (Sy)
Spontaneity (S)	Acceptance of Aggression (A)
Self-Regard (Sr)	Capacity for Intimate Contact (C)

Increases in scores on the subscales are indicative of movement towards self-actualizing values and behavior. Differences in pre- and posttest scores on the subscales of the POI between each pair of the three groups which were compared in this study would be expected to be in line with the previously stated hypotheses: Group CM > Group CR, Group CM > Group M and Group M > Group CR.

The analysis of mean differences of each group from pre- to post-test compared to the mean differences of each of the other two groups on the ten subscales of the POI is summarized in Table 10. The comparisons of mean differences obtained on these scales were analyzed by applying Student's  $t$  test, one-tailed, to the data.

Group CM, meditating counselees, was found to have increased their scores from pre- to posttest significantly more than Group CR,

TABLE 10

t-VALUES OF MEAN DIFFERENCES FROM PRE- TO POSTTEST  
ON THE TEN SUBSCALES OF THE POI BETWEEN GROUPS  
CM & CR, CM & M, AND M & CR

Scale	No. of Items	Groups	MD	df	t	p<*
SAV	26	CM = CR	.44	16	.26	
		CM = M	-.28	15	-.20	
		M = CR	.72	15	.46	
Ex	32	CM > CR	4.23	16	2.50	.025
		CM = M	2.06	15	1.01	
		M = CR	2.17	15	.89	
Fr	23	CM = CR	1.55	16	1.31	
		CM > M	2.11	15	1.62	.10
		M = CR	-.56	15	-.52	
S	18	CM = CR	.11	16	.08	
		CM = M	-.89	15	-.83	
		M = CR	1.00	15	.70	
Sr	16	CM > CR	2.22	16	2.22	.025
		CM > M	1.99	15	1.76	.05
		M = CR	.23	15	.16	
Sa	26	CM > CR	2.55	16	2.80	.01
		CM > M	2.69	15	2.56	.025
		M = CR	-.14	15	-.13	
Nc	16	CM = CR	.78	16	.67	
		CM = M	-.44	15	-.52	
		M = CR	1.22	15	1.11	
Sy	9	CM = CR	.67	16	1.06	
		CM = M	.06	15	.11	
		M = CR	.61	15	.82	
A	25	CM > CR	4.11	16	3.07	.005
		CM = M	.88	15	.55	
		M > CR	3.23	15	2.06	.05
C	28	CM = CR	1.78	16	1.08	
		CM = M	1.53	15	1.01	
		M = CR	.25	15	.12	

\*one-tailed

nonmeditating counselees, on four of the POI subscales. The mean positive difference of 3.56 for Group CM on the Existentiality scale was significantly higher than the negative difference of .67 obtained by Group CR ( $p < .025$ ); the increase of 3.11 in mean score for Group CM compared to the .89 difference for Group CR on the Self-Regard scale was significant at the .025 level; the difference between Groups CM and CR on the Self-Acceptance scale was significant at the .01 level, the groups obtaining mean differences of 3.44 and .89 respectively; and the Acceptance of Aggression scale differentiated at the .005 level between the mean difference scores of 3.0 for Group CM and -1.11 for Group CR.

Meditating counselees (Group CM) obtained larger increases in scores on the Self-Regard (Sr) and Self-Acceptance (Sa) scales than did meditating noncounselees (Group M). The mean differences of 3.11 for Group CM and 1.12 for Group M on the Sr scale reached significance at the .05 level. Mean increases in scores on the Sa scale were 3.44 and .75 for Groups CM and M respectively ( $p < .025$ ). The difference between the change scores of 2.44 for Group CM and .33 for Group M on the Feeling Reactivity scale was significant at  $p < .10$ .

Meditating noncounselees (Group M) increased their scores on the Acceptance of Aggression scale significantly more than did the non-meditating counselees (Group CR). The mean differences were 2.12 and -1.11 respectively, differentiating the two groups at the .05 level.

In summary, Group CM improved more than Group CR on existentiality, self-regard, self-acceptance, and acceptance of aggression; Group CM improved more than Group M in self-regard, self-acceptance and feeling reactivity; and Group M improved more than Group CR in acceptance of aggression.

Discussion

Two important findings revealed in the results of this study are that all change scores were in the predicted direction and that all significant differences found were in accord with the hypotheses. In other words, in the significantly different comparisons found, Group CM was always greater than Group CR or Group M and Group M greater than Group CR. In no instance were these orders reversed.

On the ANS-IE scale no significant differences were found between change scores for any of the three groups studied, nor did any one group differ significantly from pre- to posttest. The practice of meditation did not appear to affect these subjects' perceptions of the locus of control of their behavior. The posttest mean scores for all three groups fell within one standard deviation of the mean of normal adult populations (Nowicki and Duke, 1972; Duke and Mullens, 1973). It may be that perception of locus of control towards internality when comparable to the adult norm is fairly stable over time and experience. On the other hand, it is possible that perception towards greater internality would occur as a result of more meditating experience over a longer period time than was allowed for this study.

Locus of control is a measure of generalized expectancy and is defined as the degree to which one perceives reinforcement to be contingent upon his own attributes and actions or upon such variables as fate, chance, powerful others or complex, outside forces. The results of the three groups performances on the ANS-IE suggest that the subjects studied possess a "normal" view of the importance of their own actions in receiving reinforcement and that eight weeks of meditation had not affected

this perception. Apparently, no investigation of the "ideal" degree of internality has been made. Rotter (1966) believes, however, that persons at either extreme of the reinforcement dimension are likely to be mal-adjusted. The experimenter had utilized the internal-external control measure having had the expectation that persons in regular counseling would tend to perceive control of reinforcement to be more external than was actually the case.

Analysis of results on the Tc scale of the POI revealed that meditating counselees (Group CM) changed towards time competence to a greater degree than did nonmeditating counselees (Group CR), but the difference between Groups CM and M (meditating noncounselees) was not testable. Group M did not change more than Group CR, although the difference found was in the expected direction. If Group M were more time competent than the other groups at the outset, which remains a question as noted in Chapter III, it is possible that these subjects were not as highly motivated to move as those of Groups CM and CR.

It is generally agreed that people who seek counseling often tend to live "primarily in the past, with guilts, regrets, and resentments, and/or in the future, with idealized goals, plans expectations, predictions and fears" (Shostrom, 1966) rather than living meaningfully in the present. The practice of centering in oneself, becoming aware of the present moment, would be expected to desensitize the person's thoughts concerning past or future events by inhibiting his preoccupation with what is not occurring in the present. Meditation, the practice of "turning off" external awareness by means of attending to a repetitive stimulus, appears to induce greater change in individuals who may have

found it difficult to "be present" or "attend" (counselees) than for those for whom living in the present may have been less difficult (noncounselees). Time competence as related to self support will be discussed below.

Meditating counselees (Group CM) moved towards self support as measured by the I scale of the POI, more than did nonmeditating counselees (Group CR) but not more than meditating noncounselees (Group M). Even though Group CM did not change more than Group M nor Group M more than Group CR, the increases made by the two meditating groups (CM and M) were significant while that of the nonmeditating group appears to have been due to chance.

The greater number of items contributing to the I scale may have made it more probable that change occurring for any group would become apparent. The I scale discriminated significantly between meditators and nonmeditators.

The person who is oriented towards living in the present is expected to rely more on his own self support and self-expressiveness than one who is directed more towards the past or future (Shostrom, 1966). While relating his past experience and long term goals to the present he is not depending on or blaming these past and future factors for his present actions. Rather, he utilizes his knowledge and hopes to help him to respond creatively, as he is now, to the unique situation of the present. Thus time competence is seen as being interdependent with inner-directedness. It would seem that meditation should strengthen the individual's awareness that he can rely on himself as he is practicing being present rather than past or future. Instructions for meditating recommend that one let go of usual patterns of thinking which often

concern the past or future. When the meditator becomes aware that he is thinking he is simply to return his attention to meditating without evaluating himself or his thoughts. His task is to keep his attention on one object, e.g., a mantram or his breathing. This act is interpreted by the writer to be practice in being present now, alone with oneself, accepting what is there to experience--a form of desensitization. The empirical findings reported in Chapter II strongly indicate that the psychophysiological state correlated with the practice of meditation is one of restful awareness. Feelings of fear and anxiety are not compatible with physiological and psychological relaxation. Therefore, experience of discomforting feelings would be expected to be replaced gradually by the experience of calmness and stability brought about by the action taken by the meditator himself. The accumulated experience of being able to produce a calm, pleasant state would be expected to facilitate an individual's orientation towards self-support. He perhaps may discover that he can do something of value for himself.

Changes made by the CM and M groups on the time competence and inner-directed scales were further specified in the differences obtained on the POI subscales. The subscales on which significant differences between groups occurred were Existentiality, Self-Regard, Self-Acceptance, and Acceptance of Aggression, Group CM having improved more than Group CR on all four scales and more than Group M on the Sr and Sa scales. Group M also made a greater positive change than Group CR on Acceptance of Aggression. The difference between change scores for Groups CM and M on Feeling Reactivity was significant at the .10 level.

These findings indicate the areas in which the greatest changes occurred. It is interesting to note that the concepts assessed by the

above scales all have to do with self-awareness and with self-value. Existentiality refers to one's flexibility to respond appropriately in a given situation rather than to react in a stereotyped fashion dictated either by rigid internal principles or by the need to conform to others' beliefs. Self regard has to do with liking oneself because of one's strength, self-acceptance is concerned with liking oneself in spite of one's weaknesses, and acceptance of aggression indicates one's ability to accept his feelings of anger and aggression as natural. Feeling reactivity is defined as sensitivity to one's own needs and feelings. It appears that meditators improved in personal awareness and self-valuing but have not yet incorporated these feelings into the more global concepts of self-actualizing values, constructive nature of man and synergy, that are attributed to self-actualizing people.

Is it possible that something other than meditation was the variable effecting change scores, e.g., experimenter demand, self-fulfilling prophecy, having been selected, faking, or the fact of just doing something, having an added experience?

The study was designed to give the subjects as little contact with the experimenter as possible. Instructions and information were communicated in written form, and the inventories were administered by someone other than the experimenter. Also, the subjects were clients of seven different counselors which was expected to minimize counselor effect. Had self-fulfilling prophecy been operating it would have been expected to affect both meditating groups to the same degree rather than one group more than the other.

In regard to the possibility that adding an experience could have been the major influence on changes, the reader may recall that all subjects were given an added task to perform. It could be argued that having

been selected to meditate might have inspired those subjects more than having been selected to rest; yet, the noncounseling meditators were not "selected"--they had made a choice to meditate before having been informed about the study. Since it is not known whether or not the rest group would have been willing to meditate, it is a possibility that the two counseling groups differed on willingness to meditate, although they did not differ on any of the nineteen scales administered. The nonmeditators, however, were willing to rest twice a day, but they may not have considered this as great a risk as meditating. The resolution of cognitive dissonance that may be a result of risk-taking would be expected to influence any experiment.

The scales employed to assess change have been demonstrated to be resistant to social desirability and faking, as reported in Chapter I. According to Warehime and Foulds (1973) an individual must understand well the theory underlying the test instrument in order to fake responses in the desired direction. Both groups of counseling subjects would be presumed to know about or not know about self-actualizing and internal-external control theories to a similar degree. In addition, if subjects had faked their responses why would they have done that the second time rather than the first, or why would not the nonmeditating subjects have responded in a more favorable direction also? It seems unlikely to the writer that faking had a significant and systematic influence on the results of this study.

Even though all of the changes predicted were not found, those which occurred were systematic. Whatever variable was operating affected change in the manner that had been predicted as a result of meditation. The results tend to support the hypotheses that meditation will facilitate

the attainment of greater self-support and present-oriented living for college ability adults involved in counseling.

#### Suggestions for Future Research

The utilization of additional groups would give greater scope to an investigation of the kind made in this study. For instance, counseling and noncounseling groups could be given reading and discussion about meditation, self-actualization and internal-external control. Another group could be formed of counselees who volunteered to meditate because of their prior interest in the technique.

Furthermore it would be enlightening to investigate the characteristics of individual subjects who changed significantly as opposed to those who did not, in order to discover whether or not there is a similarity in types of people falling into each category.

Ideally, larger N's would be desirable as well as long term follow up. Interviews with close associates of the subjects would give information concerning behavioral change as perceived by others. It may be, however, that persons perceive change in themselves before it becomes apparent to others. Experience or practice is needed to consistently actualize in behavior re-oriented values concerning the importance of past, present and future and self-support. Too, small but important changes being made by an individual may not be readily perceived by others who have experienced this person to behave in a particular way and continue to interpret his behavior according to such expectations. Data collected from close associates would probably be more relevant after a longer period of time, such as six months to a year.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

The practice of meditation throughout history has been employed by Eastern and Western mystics alike in order to become aware of a larger reality, to realize God, to transcend objective-subjective duality--to expand awareness. The practice of meditation in this country seems to have increased greatly within the last few years along with increasing interest in and investigation of human potential and states of consciousness.

The act of meditating appears to be practice in becoming centered. The practice may be conducted by means of many different techniques, each of which seem to involve the restricting of attention to a single repetitive stimulus. After having reviewed studies which have investigated the effects on the nervous system of attending to a repetitive stimulus or a visually blank field (ganzfeld), Ornstein (1971) concludes that the techniques of meditation "are simply a matter of practical applied psychology." Scientific investigations of the physiological and psychological correlates of meditating indicate that the practice produces a state of restful alertness. The evidence suggests that meditation is accompanied by feelings of well-being.

According to many theorists (Frankl, 1963; Fromm, 1960; Ledermann, 1970; Maslow, 1962; May, 1953; May, et al., 1958; Perls, 1969b), the principal goal of counseling and psychotherapy is to help an individual to

become able to take responsibility for his own existence and thus experience a sense of well-being. This writer has proposed that the regular practice of meditation accompanied by feelings of well being over time should also facilitate the attainment of the goal stated above.

The purpose of the present study was to investigate the effect of the practice of meditation on the student counselee's experience of well-being as revealed in perception of locus of control of reinforcement, time competence and self support orientation.

The Adult Nowicki and Strickland Internal-External Locus of Control Scale (ANS-IE, Nowicki and Duke, 1972) was administered to assess locus of control. Orientations towards time competence and self support were measured by the Personal Orientation Inventory (POI, Shostrom, 1966). Changes in scores on these scales from before to after an eight-week treatment period were compared between three groups, each with the other two.

The groups studied consisted of 1) persons involved in counseling who were given instruction in Transcendental Meditation (TM) (Group CM), 2) persons not in counseling who on their own had decided to take TM instruction (Group M), and 3) persons involved in counseling whose task was to rest twice daily during the eight week period (Group CR). Meditating subjects were instructed to meditate morning and evening during the eight-week period.

The counseling subjects (Groups CM and CR) were randomly selected and assigned to meditation and no meditation groups. The number of subjects selected for this study consisted of approximately one-half of the population being seen regularly at the University of Oklahoma Counseling Center. The non-counseling subjects (Group M) were high school and university students who had elected to take meditation instruction, not having known about the study.

It was hypothesized that Group CM would make greater changes than Groups M and CR in internality in perception of locus of control of reinforcement, in time competence and in self-support; and that Group M would make greater changes than Group CR on the above dimensions.

No significantly different changes were found between any of the three groups nor for any one group alone in perception of locus of control. Meditation did not appear to affect perception in locus of control as measured by the ANS-IE.

The results, however, did support two of the principle hypotheses: that meditating counselees (Group CM) would improve more than nonmeditating counselees (Group CR) in time competence and self-support, as assessed by the POI. The subhypothesis that Group CM would improve more than Group M in time competence, was not testable because the groups differed at pretest. Although Group CM did not change more than Group M in self-support, these meditating groups each differed significantly in the predicted direction from pre- to posttest.

The hypotheses that Group M would improve more than Group CR in time competence and self support were not supported by the analysis of the data. As noted above, the change that Group M made in self support reached statistical significance, yet that difference was not greater than that for Group CR which was not significant.

The findings support the general hypothesis that Group CM > Group M > Group CR in that all of the differences obtained were in the predicted order and that the mean differences for the three groups on the Tc and I scales did not deviate significantly from a straight regression line.

The results of this study lead to the following conclusions:

1. Counselees and noncounselees perceive the locus of control

of reinforcement to be internal to the same degree as do normal adults.

2. Neither the practice of meditation nor the practice of rest by college ability individuals over an eight-week period seem to affect perceptions of the locus of control of reinforcement.
3. A reorientation of values in the direction of living in the present and depending on self support is facilitated by the practice of meditation over an eight-week period for university students in counseling.
4. A reorientation of values towards self support is facilitated by the practice of meditation over an eight-week period for college-ability persons who are not involved in counseling.
5. College-ability persons not in counseling may be more time competent at the outset (that is before treatment) than university students involved in counseling.
6. The practice of meditation over an eight-week period does not effect change in time competence (living in the present) for college-ability noncounselees.
7. The practice of resting twice a day over an eight-week period does not change the orientation of values for university students in counseling in regard to living in the present, depending on self support or any other self-actualizing attitude measured in this study.
8. The practice of meditation facilitates university counselees in becoming more self-aware, self-valuing and self-trusting.

9. College-ability noncounselees change positively in self-awareness and self-valuing, as a result of meditating, but not to as great a degree as do university counselees.
10. College-ability persons who involve themselves in self-improvement or self-change practices, such as counseling and meditation, appear to have a greater interest in aesthetics than the average adult, possibly indicating a high need for inner development.
11. University students who seek counseling exhibit an exceptionally high interest in aesthetics which suggests that these persons may have obstructed their urge towards inner development and that there may be an important relationship between interest in aesthetics and desire to change.

The findings resulting from this study support the hypothesis that the practice of meditation will aid the student counselee in experiencing a sense of well-being. The Lesh (1970a) and Seeman, et al. (1972) studies reported in Chapter II found that meditation positively affected self-actualizing value orientations of university students, graduate students in the former case and undergraduate students in the latter. To this writer's knowledge no studies have been reported which have investigated the effects of meditation on counseling.

Replication of the present study with counselees from other universities as well as with non-university counselees is needed. As has been noted in Chapter IV, investigations utilizing more treatment groups and long term follow-up, including the obtaining of behavioral data, would be even more revealing concerning the validity of the results found in this study.

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\*Available from Paul H. Levine, Ph.D., director, SIMS Institute for Advanced Studies on TM, 1015 Galey Ave., Los Angeles, Ca. 90024.

## APPENDIX A

As a recipient of services provided by the University of Oklahoma Counseling Center you are being asked to participate in a research project. The purpose of the study is to investigate the merits of transcendental meditation as an adjunct to individual counseling. The persons who are being asked to participate in the study have been selected by drawing their names from among the names of all of the clients who are being seen regularly at the Counseling Center.

You will be asked to respond to some questionnaires before the study begins and again two months later, and you will receive instruction in transcendental meditation free of charge. You may answer the questionnaires any week day from January 26 through February 2 at the Counseling Center between the hours of 8:00 and 5:00 and on Saturday between 8:00 and 12:00 noon.

The introductory lectures will be given on January 31 at 7:00 p.m. in Dale Hall room 112. Arrangements for individual instruction, which will be held on February 3 or 4, can be made with Mr. Williams after the lectures. (This will take from 30 minutes to an hour). The new meditators will meet for about an hour on each of the next three evenings for a check of their progress.

For further clarification please contact Leah Dell Dick at the Counseling Center on Monday, 9:00 - 10:00, Tuesday, 9:00 - 11:00, Wednesday, 3:30 - 4:30, Thursday, 1:30 - 2:30 and Friday, 9:00 - 11:00 and 1:30 - 4:30.

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The undersigned agrees to participate in the study on Transcendental Meditation to be conducted during the months of February and March, 1973.

## APPENDIX B

As a recipient of services provided by the University of Oklahoma Counseling Center you are being asked to participate in a research project. The purpose of the study is to investigate the merits of transcendental meditation as an adjunct to individual counseling. The persons who are being asked to participate in the study have been selected by drawing their names from among the names of all of the clients who are being seen regularly at the Counseling Center.

Your name was drawn for the control group, i.e., you will do another task instead of meditating. However, after March 31, you may receive instruction in transcendental meditation, free of charge, if you wish. During the 8 week period from February 3 to March 31 your task will be to take a 15 minute rest, both morning and evening each day. Find a comfortable place where you can be by yourself and undisturbed for this short time. Minimize all external stimulation as much as possible, e.g., taking the phone off the hook and drawing the blinds.

You will be asked to respond to some questionnaires before the study begins and again 8 weeks later. You may answer the questionnaires any week day from January 26 through February 2 at the Counseling Center between the hours of 8:00 and 5:00 and on Saturday between 8:00 and 12:00 noon.

For further clarification please contact Leah Dell Dick at the Counseling Center on Monday, 9:00 - 10:00, Tuesday, 9:00 - 11:00, Wednesday 3:30 - 4:30, Thursday 1:30 - 2:30 and Friday, 9:00 - 11:00 and 1:30 - 4:30.

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The undersigned agrees to participate in the study on Transcendental Meditation to be conducted during the months of February and March, 1973.

APPENDIX C

\_\_\_\_\_  
(Name)

Please keep track of your meditation periods or rest periods so that I will have some idea of how regularly each person does his task. This is not meant to be a looking-over-your-shoulder device but simply to give me a fairly accurate idea of what's going on. There will be no recriminations.

Leah Dell Dick

began Feb. \_\_\_\_\_  
(0, 1 or 2 times)

Week 1  
Sat.  
Sun.  
Mon.  
Tues.  
Wed.  
Thurs.  
Fri.

Week 3  
Sat.  
Sun.  
Mon.  
Tues.  
Wed.  
Thurs.  
Fri.

Week 2  
Sat.  
Sun.  
Mon.  
Tues.  
Wed.  
Thurs.  
Fri.

Week 4  
Sat.  
Sun.  
Mon.  
Tues.  
Wed.  
Thurs.  
Fri.

Please return to me at the end of 4 weeks and pick up another sheet for the next 4 weeks.

APPENDIX D

March 26, 1973

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(Name)

This is to remind you that the 8 week period for the meditation study will end (appropriate date). I will appreciate your taking the tests during the week of (appropriate date) at your convenience. One of the scales will not be repeated so you will need only about 30 minutes to finish.

Those of you who were in the control group and who wish to learn the transcendental meditation technique, leave a note on my door (304) by April 13th. The instruction will be given the following week.

Sincerely,

Leah Dell Dick

## APPENDIX E

### ANS-IE Scale

Please answer each question "yes" or "no" according to which is more true for you. Fill in the appropriate space on the answer sheet.

1. Do you believe that most problems will solve themselves if you just don't fool with them?
2. Do you believe that you can stop yourself from catching a cold?
3. Are some people just born lucky?
4. Most of the time do you feel that getting good grades meant a great deal to you?
5. Are you often blamed for things that just aren't your fault?
6. Do you believe that if somebody studies hard enough he or she can pass any subject?
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?
9. Do you feel that most of the time parents listen to what their children have to say?
10. Do you believe that wishing can make good things happen?
11. When you get punished does it usually seem its for no good reason at all?
12. Most of the time do you find it hard to change a friend's (mind) opinion?
13. Do you think that cheering more than luck helps a team to win?
14. Did you feel that it was nearly impossible to change your parent's mind about anything?
15. Do you believe that parents should allow children to make most of their own decisions?
16. Do you feel that when you do something wrong there's very little you can do to make it right?
17. Do you believe that most people are just born good at sports?
18. Are most of the other people your age stronger than you are?
19. Do you feel that one of the best ways to handle most problems is just not to think about them?
20. Do you feel that you have a lot of choice in deciding whom your friends are?

21. If you find a four leaf clover, do you believe that it might bring you good luck?
22. Did you often feel that whether or not you did your homework had much to do with what kind of grades you got?
23. Do you feel that when a person your age is angry at you, there's little you can do to stop him or her?
24. Have you ever had a good luck charm?
25. Do you believe that whether or not people like you depends on how you act?
26. Did your parents usually help you if you asked them to?
27. Have you felt that when people were angry with you it was usually for no reason at all?
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?
30. Do you think that people can get their own way if they just keep trying?
31. Most of the time do you find it useless to try to get your own way at home?
32. Do you feel that when good things happen they happen because of hard work?
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?
34. Do you feel that it's easy to get friends to do what you want them to do?
35. Do you usually feel that you have little to say about what you get to eat at home?
36. Do you feel that when someone doesn't like you there's little you can do about it?
37. Did you usually feel that it was almost useless to try in school because most other children were just plain smarter than you were?
38. Are you the kind of person who believes that planning ahead makes things turn out better?
39. Most of the time, do you feel that you have little to say about what your family decides to do?
40. Do you think it's better to be smart than to be lucky?