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A Relationship between Self-Actualization and the Practice of Zen Meditation

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A Relationship between Self-Actualization
and the Practice of Zen Meditation

A Thesis
Presented to the
Department of Psychology
and the
Faculty of the Graduate College
University of Nebraska

In Partial Fullfillment
of the Requirements for the Degree
Master of Arts
University of Nebraska at Omaha

by
William Charles Compton
February 1982

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THESIS ACCEPTANCE

Accepted for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Master of Arts, University of Nebraska at Omaha.

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Dedication

I would like to dedicate this thesis to my parents, Harry and Mildred Compton. Throughout my academic studies they have shown me unwavering support and encouragement. Their belief in the value of education and the examples they set by continuing the learning process throughout life, have sustained me during my educational pursuits.

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Finally, a note of thanks to Barbara Whiteman for her patience and understanding when I would launch into another discussion of a statistical problem hoping to somehow see the light at the end of the tunnel. I'm sure she was at times very tired of hearing about my thesis, but she never let it show.

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Abstract

A review of the literature on the psychological variables which have been associated with Zen meditation revealed a close correspondence between the stated goals of Zen meditation and the personality characteristics of the self-actualized individual hypothesized by Maslow. A review of the experimental literature on the relationship between Zen meditation and self-actualization showed contradictory findings concerning the effectiveness of Zen meditation for enhancing self-actualization. However, Kirschner's results indicated that a nine month learning period may exist for Zen meditation. It was therefore hypothesized that Zen meditation would not effect self-actualization scores until after this learning period was completed. The Personal Orientation Inventory (P.O.I.) was given to 36 subjects who had been practicing Zen meditation from 2 months up to 87 months and to 34 subjects who had never meditated. Those meditators who had practiced for 9 months or less were placed in the inexperienced meditator category and those who had meditated for longer than 9 months were placed in the experienced meditator category. Those subjects who had never meditated were placed in the comparison group category. Multiple t -tests were computed between the three groups for the Time Competent scale and the Inner Directed scale of the P.O.I. For both scales, the means of the experienced meditator group were significantly higher than the means of the comparison group, no significant differences were found between the means of the inexperienced and the comparison groups, and no significant differences were found between the

means of the inexperienced and the experienced meditation groups. However, significant correlations between age, education level, and length of time as a meditator indicated that the variables were confounded. Analysis of the unique variance shared with the dependent variables showed that time as a meditator was a significant predictor of scores on only the Inner Directed scale. Age and education level were not significant unique predictors on either scale. Additional discussion of the results included implications of the static-group comparison design used in the study, possible independent variables for future meditation research, and the implications of this study for the interpretation of past research on Zen meditation.

A Relationship Between Self-Actualization
and the Practice of Zen Meditation

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Published research on meditation has increased in volume to the point that the studies are now collected in books (Orme-Johnson, Farrow, & Domash, 1974; Bloomfield, Cain, & Jaffe, 1975; Shapiro & Walsh, 1980), bibliographies (Lesh, 1970 b.; Timmonds & Kamiya, 1970; Kanellackos & Ferguson, 1973; Timmonds & Kanellackos, 1974; Vessie, 1976), and literature reviews (Ferguson, 1975; Smith, 1975; Woolfolk, 1975; Radford, 1976; Walsh, 1979). The attempts to operationally define meditation have also been extensive. These attempts include changes in arousal (Fisher, 1971; 1978), a pattern of muscular tension and relaxation (Ikegami, 1973), attention deployment (Van Nuys, 1973), autonomic variables (Wallace, 1970), ego control mechanisms (Maupin, 1965), cognitive control mechanisms (Silverman, 1968), and reduction in oxygen consumption (Watanabe, Shapiro, & Schwartz, 1971). In procedural terms, meditation has been defined as the development of a modality of being or an attitude (Naranjo & Ornstein, 1971), and the de-automatization of experience (Diekman, 1966). Tart (1978), utilizing General Systems Theory, described it as a cognitive reorganization within the system.

In most studies of meditation, it is not often recognized that there are two types of meditational techniques. Meditation is broadly classified into either concentrative or mindfulness meditation (Naranjo

& Ornstein, 1971; Goleman, 1972; Brown, D., 1977). In the Western literature most investigators simply refer to meditation, without qualifying the type of meditational practice. Occasionally the two types of practice are even combined in a single study (e.g., Davidson, Goleman, & Schwartz, 1976; Davidson & Goleman, 1977) and simply referred to as "meditation." However, Brown, D. (1977) and Goleman (1972) note that the classic texts on meditation describe quite different goals for each of the two types of meditation. The failure to differentiate between the two types may be due to the fact that most meditative disciplines will initially teach beginning students a concentrative technique. However, later in the practice, some disciplines will begin mindfulness meditation. If an investigator were familiar with only the initial stages of meditation, he or she might conclude that concentrative meditation is the exclusive technique utilized in the meditative disciplines.

Although the classical literature on meditation mentions two distinct types of practices, there has been no adequate empirical investigation into the differences. However, since the classical literature makes such a sharp distinction between the two types of meditation, it seems that the validity of any study of meditation would be increased by incorporating a separation of the two types of meditation into the design. Thus, the present study will utilize practitioners of Zen Buddhist meditation exclusively. This discipline involves mindfulness meditation as a major portion of its practice.

Zen meditation is a particular form of Buddhist meditation that evolved in Japan. Buddhism arrived in Japan from China and Korea in approximately the sixth century A.D. (Robinson & Johnson, 1977). Zen became a distinct sect around the eighth century. A number of the Buddhist sects that arose in Japan stressed the need for complete faith in something beyond oneself. In contrast, the Zen sect was adamant in its insistence on self-understanding and self-reliance (DeBary, 1969). The truths of Zen Buddhism are to be realized by means of an inner realization which is primarily the result of individual effort. The inner realization is best defined as being epistemological and psychological, rather than metaphysical and religious.

Zen is also quite insistent concerning the incompleteness of a conceptual understanding of its axioms. The veridicality or falsity of its doctrines is to be judged primarily from an experiential reference point and secondarily by intellectualization and analysis. Goleman (1975) states that the Buddhist system of psychology ". . . is essentially phenomenological, a descriptive theory of internal states which can be tested only by an individual who undergoes the required training and subsequent experience himself" (p. 180). The emphasis of Zen Buddhism is therefore on meditation, rather than scholasticism or intellectualization.

Although Zen meditation utilizes aspects of both concentrative and mindfulness meditation, it emphasizes mindfulness meditation techniques

(Goleman, 1972; Naranjo & Ornstein, 1971). In mindfulness meditation the person is asked not to focus and restrict attention (as in concentrative meditation), but to broaden it.

"Mindfulness expands awareness to as many possible mental events--sensations, thought, memory, emotion, perceptions--exactly as they occur over time. Any new event that arises is taken as a meditative object; nothing is considered to be a distraction" (Brown, D., 1977, p. 242-243).

Interesting findings from the physiological research on Zen meditation appear to corroborate the description given by Brown. Kasamatsu and Hirai (1969) used experienced Zen priests as subjects and reported alpha and theta blocking of EEG waves which failed to habituate upon repeated presentations. The failure to habituate is generally described as perceiving each stimulus as if it were unique. In terms of the description given by Brown, each stimulus is taken as the object of meditation, nothing is considered a distraction. Using Zen priests as subjects, Tomura (1977) has even observed this failure to habituate during walking meditations.

However, it should be emphasized that mindfulness is not identical to the type of introspectionism that was utilized by the Structuralist school in psychology. Mindfulness meditation directs attention to mental events not to record them and classify them, as the Structuralists did, but to detach the meditator from their influence by passively observing the process of their formation and decay. Deatherage (1975) states that, "Buddhist psychology (Abhidharma) makes

each individual a scientist, carefully observing his own mental processes in order to be freed of the melodramas generated by those very processes" (p. 133). Akishige (1977) says that the object of Zen is to grasp the process of being conscious as it is distinct from, and distinguished from, the activities of objectification and conceptualization.

Phenomenological reports on the changes associated with Zen meditation have been present in the East for centuries (Goddard, 1966). However, Western empirical investigations into Zen meditation are of relatively recent origin. Maupin (1965) investigated some of the personality variables that he assumed were correlated with success in Zen meditation. He found that in his sample of college students capacity for adaptive regression and tolerance for unrealistic experiences (both measured by the Rorschach) significantly predicted positive response to Zen meditation. He found that amount of visual imagery during free association also predicted successful response to the meditation. However, measures of tolerance for unrealistic experience, rate of alteration of reversibility figures, and amount of autokinetic movement, did not predict success with meditation. Further, measures of receptive attention, concentration, and breadth of attention deployment did not predict response to meditation. Unfortunately, Maupin's subjects only practiced meditation for two weeks before data was collected and his subjects never practiced the mindfulness style of Zen meditation.

Fujita, Nakae, Iijima, Kanraku, and Sato (1963) also gave Rorschachs to practitioners of Zen meditation. However, their subjects were experienced Zen priests and monks who were in training for the priesthood. The responses from the two priests were not radically different than normals. However, the priest of the Soto school tended to be more rational, meticulous, and critical, while the priest from the Ishiguro school tended to be slightly more emotional. Interestingly, these responses are what might be expected from the different teaching styles of the two schools. Their data showed that the monks had relatively well-adjusted inner and outer controls for emotion, and abstract attitudes in problem solving. Their responses also showed very little propensity to accord with the external world and a slight escapist aspect in their interpersonal relations. After an intensive seven-day meditation (called a sesshin), their intellectual approach showed less abstractness, their perceived differences between ideal and actual self lessened, and there was a reduction in anxiety. Kora, Fujima, Nakae, Kenraku, Iijima, and Sato (1962) also found that the differences between perceived ideal self and actual self was less after a sesshin. They used monks as subjects and the Rorschach as their measure.

Nakamura (1977) conducted a study of Zen monks while they were in the monastery. He administered Gordon's Scale of Interpersonal Values and Schutz's Fundamental Interpersonal Relationship Orientation. On the scale of Interpersonal Values, Nakamura's subjects showed a tendency

toward conformity and a smaller than normal regard for recognition from others. Nakamura points out that these characteristics are typical responses for any Japanese. However, the scores on the benevolence scale were higher for the monks than for any other group that was tested, Japanese or American. This might be expected since Zen Buddhism places such a strong emphasis on the virtue of compassion. On Schutz's test, the monks scored lower than a control group on all measures except control-passive. This "... is the tendency to follow gently and leave one's well-being to others." The other characteristics measured were: inclusion-active and passive, affection-active and passive, and control-active. Nakamura also administered a questionnaire in an attempt to measure the amount of cognitive dissonance present in the monks. He concluded that the greater the discrepancy between the monk's expectations about monastic life and the actual life, the greater the dissonance. He hypothesized that this strong dissonance then leads to a stronger feeling of change and a stronger devotion to monastic life and to Buddhism. Nakamura also hypothesized that the changes in the role expectations and the attitude-belief system of the monks were a product of all of the behavior patterns associated with monastic life. He concluded that although Zen meditation is the center of the practice, it is still only a part of the overall practice. This hypothesis may be relevant to investigators who wish to study Zen meditation in the laboratory thereby divorcing it from the social network in which it usually appears.

DeGrace (1976) conducted one of the longest studies on naive subjects. He gave the California Psychology Inventory and Allport's Study of Values to French-Canadian university students. After five months of meditation, the subjects were post-tested. Results indicated a significant decrease on the scales for dominance, and capacity for status for the meditation group. DeGrace concluded that the meditators became less aggressive, less persistent, less manipulative, less verbal, less ambitious, less preoccupied with their future, and less interested in various aspects of social life after five months of a Zen-style meditation. However, even though the subjects meditated for five months, they still were not practicing mindfulness meditation and they meditated with their eyes closed. Zen meditation is done with the eyes open. This difference may seem trivial, but the experience of meditation can be radically different when the eyes are open as opposed to closed during meditation.

Doi (1977) and Chihara (1977) have reported interesting changes in perceptual processes as a result of Zen meditation. Doi found that the ability of subjects to reverse the Necker cube increased with Zen-style strong abdominal breathing. He also found that the Critical Fusion Frequency was lowered for a decreasing series of stimuli after a period of Zen meditation. Chihara found that during Zen meditation a subject's perception of the passage of time is underestimated. This phenomena was especially apparent during the early morning hours and in the evenings.

Kirschner (1975) used a structured interview format with subjects who had been practicing Zen meditation from nine months to five years. All subjects had begun Zen meditation because of various emotional problems and feelings of discontent. Behavioral changes reported by the subjects included the ability to be more intimate, positive changes in self-concept, more energy for work, more relaxation, and they experienced fewer mood fluctuations. However, subjects reported that sexual problems were not affected by Zen meditation. One of the most interesting findings was that subjects reported that it took approximately nine months of practicing Zen meditation before they felt that they had overcome the considerable difficulties of the practice and had learned to meditate properly. If future research should confirm this lengthy learning period for Zen meditation, then the validity of any of the shorter studies on Zen meditation may be seriously jeopardized. However, it has been suggested that students of meditation progress at different rates, both between subjects and within subjects (Brown & Engler, 1980; Burns & Chayv, 1980; Katagiri, Note 1). The hypothesized learning period, therefore, should be expressed as a mean value rather than a threshold value.

Davidson, Goleman, and Schwartz (1976) administered tests of hypnotizability (Shor Personal Experience Questionnaire), attention (Tellegen Absorption Scale), and anxiety (State-Trait Anxiety Inventory) to beginning (1 month or less), short-term (2 to 24 months), and long-term meditators (more than 24 months) and a control group. Some of

their subjects were practitioners of Zen meditation. On the PEQ a significant main effect was found for intensity of experience ratings, but not for frequency. Long-term meditators reported more intense experiences. On the TAS, a significant difference was found between the control group and the beginners, control group and the short-term, and between the beginners and the long-term meditators indicating greater attention deployment skills for the meditators as a function of experience with meditation. The results for the STAI indicated a significant decrease in trait anxiety as a function of how long the subject had been meditating. As interesting as these results might be, the subjects in this study practiced at least two different types of meditation. No effort was made to distinguish between the two types of meditation on either the pre-test or the post-test. Therefore, the applicability to practitioners of Zen meditation is questionable.

Three studies should be mentioned that do not deal with Zen meditation per se. They utilized practitioners of Theravadan Buddhism, which historically is the precursor of Chinese Buddhism and Japanese Zen (Robinson & Johnson, 1977). The Theravadan system of meditation also makes extensive use of mindfulness meditation.

Brown and Engler (1980) investigated the validity of attainment levels which are mentioned in the classic Buddhist texts on meditation. They used teacher ratings and self-report scores on the Profile of Meditation Experience to classify experienced meditators into four

ascending levels of attainment with Buddhist meditation. According to Brown and Engler, the classic texts predict the type of cognitive structure and cognitive organization that should be present at each of the four levels of attainment. They also gave their subjects the Rorschach and the Thematic Apperception Test. They found a striking similarity between the psychological measures, the classical texts, and the type of cognitive organization revealed by the Rorschachs at each level. They concluded that the primary dependent variable in meditation research is the cognitive reorganization and restructuring that are the result of committed meditational practice.

Burns and Ohayv (1980) report on Burn's research in progress with American students of Buddhist meditation in Thailand. Burns was administering the Minnesota Multiphasic Personality Inventory (MMPI) to his subjects at the beginning of their practice and at yearly intervals. He found the personality characteristics of his subjects to be highly diversified. However, all those subjects who progressed well with meditation tended to become less depressed, less defensive, more self-confident, and showed better control of themselves. Interestingly, he found that subjects who did not do well with meditation tended to be either dogmatically Buddhist or interested only in unusual states of consciousness. He suggests that expectations and psychological defensiveness may be important predictors of outcome. The one consistent finding was that every subject he tested scored high on the Feminine scale of the MMPI. His subjects were consistently empathic,

sympathetic, and understanding of others. Burns also mentions that the success rate (the percentage of students who do very well with Buddhist meditation) was 30% or less.

Greenfield (1977) investigated the relationship between three meditational techniques (two concentrative and one mindfulness) and personality factors. Some of the factors that were associated with intensity of meditation experience were hypnotizability, orientation to the paranormal, and degree of present religious orientation. He reported that overall the mindfulness procedure was the only procedure that was consistently preferred by the subjects. Subjects reported more positive attitudes toward this practice. They were also more consistent in their practice of this technique. Interestingly, his subjects were all female.

Finally, Kongtawng (1977) reported significantly greater positive changes in self-concept after his subjects (college students) practiced mindfulness meditation for a period of two months. He found no sex differences on his dependent measure (the Tennessee Self-Concept scale).

Psychologists who have investigated Zen meditation quite often conceptualize it as a type of psychotherapy (e.g., Nakamura, 1977; Maupin, 1962; Jamnien & Ohayv, 1980; Hirai, 1975; Koga & Akishige, 1977; Welwood, 1979). However, from the Eastern perspective meditation is not a psychotherapy that is expressly designed to aid the psychotic, the neurotic, or the dysfunctional in their attempt to meet a

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statistical criterion for normality or adjustment, although it may be used for that purpose (Reynolds, 1976; Sasaki, 1977; Zamami & Okeda, 1977). Indeed, meditation has as its goal the transcendence of what is considered normal mental health. Goleman (1971) has conceptualized meditation as a "meta-therapy." That is, a therapy that is designed to totally eliminate all neurosis, delusions, and illusions--even if these pathologies are accepted as normal by the individual or the society. In Freud's terminology, meditation is designed to eliminate the psychopathology of everyday life. A contemporary interpreter of Eastern psychology, Alan Watts (1961), says,

If we look deeply into such ways of life as Buddhism, Taoism, Vedanta, and Yoga, we do not find either philosophy or religion as these are understood in the West. We find something more nearly resembling psychotherapy. . . . The main resemblance between these Eastern ways of life and Western psychotherapy is in the concern of both with bringing about changes of consciousness, changes in our ways of feeling our own existence and our relation to human society and the natural world. The psychotherapist has, for the most part, been interested in changing the consciousness of the peculiarly disturbed individuals. The disciplines of Buddhism and Taoism are, however, concerned with changing the consciousness of normal, socially adjusted people (p. 3-4).

In Zen the comparison with psychotherapy is also evident. Koga and Akishige (1977) compare the Zen teacher to a therapist and the Zen monk to a client. However, the monk is to attempt an adjustment to the Buddhist idea of mental health, which may or may not be the ideal of the society. However, it seems that later changes in behavior brought about by Zen meditation may have as their prerequisite a degree of mental health that might be considered exemplary to a Western psychotherapist.

Shultz (1975) comments on these prerequisites:

Many of the "stages" receiving so much emphasis in Western developmental psychology--such as Piaget and Inhelder's (1958) highest stages of formal cognition and Erickson's (1958) first four stages of trust, autonomy, initiative, and industry--would be taken for granted by Buddhism as the foundation with which to begin building adult spiritual development (p. 18).

It should be pointed out that Schultz' "foundation" with which to build adult spiritual development may also be built by meditation practice. Apparently, Zen meditation fulfills the criteria of a meta-therapy. However, any interpretation of Zen meditation in terms of Western psychological concepts must be treated with caution.

It must be emphasized that the term meta-therapy denotes a qualitative difference in the psychotherapeutic process, not simply a quantitative difference (Wilber, 1977; Goleman, 1974). In fact, conceptualizations and practices based on Western psychotherapeutic models may be antithetical to Eastern meta-therapeutic practice. Brown and Engler (1980) mention a statement by an Asian meditation teacher that is germane to this point. When asked why many American students of meditation often fail to reach advanced stages of meditation, the teacher said, "Many Western students do not meditate. They do therapy . . . they do not go deep with the mindfulness" (p. 171). Stated very generally, a psychoanalytic style therapy is an exploration of the conscious and unconscious experience of each patient. Mindfulness meditation, on the other hand, can be viewed as a methodology for the training of attentional and cognitive adaptation skills. The

personalized content of each individual's experience is, in many ways, irrelevant. Nevertheless, in the process of meditation, it is hypothesized that the contents of experience will indeed be altered--often radically. But the style of self-exploratory therapy that is common in the West is not the methodology of meditative practices. So while meditation appears to fit Goleman's criteria for a meta-therapy, this does not necessarily imply an identity with Western psychotherapeutic practices or goals.

Conceptualizations of mental health that transcend the normal are reminiscent of Maslow's (1954) concept of self-actualization. Maslow defined that concept as the full use of one's talents, capacities, potentialities and capabilities. The self-actualized individual feels accepted, loved, loving, respect-worthy, respected, and safe. The self-actualized individual is also defined by the absence of certain negative criteria. These include the absence of neurosis, psychopathology, psychosis, and psychosomatic illness. Maslow (1970) says that "such people seem to be fulfilling themselves and to be doing the best that they are capable of doing . . . " (p. 150).

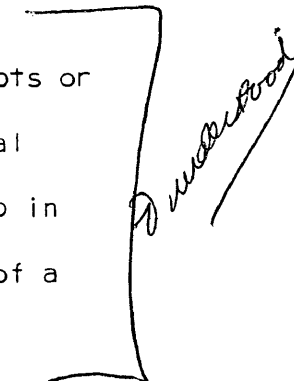
Maslow's concept of the self-actualized individual has its intellectual basis in the Western psychological literature of the twentieth century. However, the basis of Zen Buddhism lies in 2,500 years of philosophical and empirical investigations from India, China, Japan, and the entire Far East (Goddard, 1966). Considering the

different intellectual and cultural milieus that produced the Western concept of the self-actualized individual and Eastern Zen Buddhism, can we use a Western measure of self-actualization as an adequate descriptor for the personality changes brought about by the practice of Zen meditation? One investigator (Shultz, 1975) notices that similar personality characteristics are associated with both concepts.

These exemplars of meta-normal development [i.e. advanced practitioners of Buddhism] show a high overlap with the Being Values described by Maslow, especially aliveness, wholeness, generosity, beauty, effortless energy, and dichotomy transcendence . . . As embodiments of enlightenment, they transcend the false dichotomies of freedom and spontaneity versus order, appropriateness, or discipline; mysticism versus practical affairs and social organization; meditation versus philosophical analysis; art versus science (p. 18).

All of the characteristics mentioned by Schultz as being aspects of the advanced practitioner of Buddhism are characteristics that Maslow assigns to his self-actualizing individuals.

A major assumption of this paper is that although self-actualization and Zen Buddhism are two psychological concepts or systems that stem from quite different philosophical and cultural foundations, it does appear that there exists sufficient overlap in their descriptions of the ideal personality to warrant the use of a Western psychometric test of self-actualization to be used as a dependent measure with practitioners of Zen Buddhist meditation. In order to provide some justification for this assumption, the fifteen characteristics of the self-actualized individual that Maslow (1954) delineated will be presented and each characteristic will be followed by



references from Zen Buddhism that appear to present similar characteristics in the experienced practitioner of Zen.

The first characteristic of the self-actualized person that Maslow described is of an efficient perception of reality (Maslow, 1970, 153-154). Indeed, this is probably the most universal quality of self-actualized people. They seem to have an unusual ability to perceive other people correctly and efficiently. They view reality as it really is, rather than how they would like it to be. They are less emotional and more objective about their perceptions and they do not allow their desires and hopes to distort their observations.

Are there any parallels in Zen, or Buddhism in general, that point to this type of personality? Rahula (1959) begins his description of Buddhism by saying:

First of all, Buddhism is neither pessimistic nor optimistic. If anything at all, it is realistic, for it takes a realistic view of life and of the world. It looks at things objectively. It does not falsely lull you into living in a fool's paradise, nor does it frighten and agonize you with all kinds of imaginary fears and sins. It tells you exactly and objectively what you are and what the world around you is . . . (p. 17).

Another contemporary teacher of Buddhism writes of the goals of Buddhism by saying, "The whole approach of Buddhism is to develop transcendental common sense, seeing things as they are, without magnifying what is or dreaming about what we would like it to be" (Trungpa, 1976, p. 4-5).

Mad Studies
[Expand on concept of self-actualization and how it is achieved in Zen meditation and the importance of self-actualization for the program of the understanding of the nature of things. This "right understanding" is crucial to the First-Order path which is the goal of the program.]

The second characteristic that Maslow mentions is that self-actualized individuals display an acceptance of self, others, and nature (p. 155-157). They accept themselves along with all of their shortcomings, frailties, and weaknesses. Trungpa appears to speak of a similar goal in Buddhism:

So we acknowledge what we are rather than trying to hide from our problems and irritations . . . Then becoming more clearly aware of emotions and the life situations in which they originate we open to a still more panoramic awareness. A compassionate attitude, a warmth, develops at this point. It is an attitude of fundamental acceptance of oneself while still retaining critical intelligence. We appreciate the joyful aspect of life along with the painful aspect (p. 3-4).

The third characteristic of the self-actualized person is that their behavior is marked by spontaneity and simplicity (p. 157-159). There appears to be an absence of straining effort and artificiality. Kapleau's (1965) comments about a Zen teacher (i.e., roshi) show a striking similarity to this third characteristic.

But what the student responds to most keenly is the visible evidence of the roshi's liberated mind: his childlike spontaneity and simplicity . . . A novice who watches his seventy-eight year old roshi demonstrate of koan [i.e., a riddle that is not solvable by purely intellectual methods] with dazzling swiftness and total involvement, and who observes the flowing effortless grace with which he relates himself to any situation and to all individuals, knows that he is seeing one of the finest products of a unique system of mind and character development (p. 90).

Goleman (1972) lists among the personality attributes of an experienced practitioner of Zen a "childlike spontaneity and simplicity . . . [which] experiences life with immediacy and full awareness" (p. 189).

The fourth characteristic that Maslow listed for his self-actualized subjects was that they seemed to be dedicated to some task, vocation, or duty that they regarded as important (p. 159-160). They appeared to be oriented toward problems beyond their own personal immediate needs. They are problem centered and not ego centered. This task may not necessarily be a task that they would choose for themselves; it may be a task that they feel is their responsibility, duty, or obligation. In general, these tasks are concerned with the good of mankind as a whole; these tasks are nonpersonal and unselfish.

This orientation to an unselfish goal for others is highly suggestive of the bodhisattva ideal of Buddhism. The bodhisattva in Buddhism is a deeply compassionate being who has vowed to remain in the world until all others have been delivered from suffering. The bodhisattva vows not to enter Nirvana (i.e., a complete psychological liberation) until every sentient being is also liberated (Rahula, 1959). This compassionate commitment to the needs of others appears to be quite similar to the unselfish orientation that Maslow found in his self-actualized sample.

The fifth characteristic concerns the need for privacy and the sixth characteristic concerns the need for autonomy and independence (p. 160-162). Connected with the fifth characteristic is the observation that Maslow's sample appeared to be able to concentrate better than most people and that they tended to remain calm and serene during periods of personal misfortune. Finally, concerning the sixth characteristic, they do not seem to need honors,

status, or prestige to define their lives. In this context we could mention that every text on meditation mentions the increased concentration that is purported to be a by-product of the practice. More specifically, in Buddhism there are noted eight awarenesses that an enlightened person (i.e., a person who has realized his or her true nature) is assumed to possess. The first is that they have few desires. Maezumi and Glassman (1978) describe this as an absence of desires for fame, profit, flattery, and prestige. The other seven characteristics include such qualities as "knowing how to be satisfied," "practicing wisdom," and "enjoying quiet" (Yokoi & Victoria, 1976). These qualities seem quite consistent with Maslow's fifth and sixth characteristics of self-actualized persons.

The seventh aspect of self-actualized individuals is that they seem to possess a continued freshness of appreciation of the world--even for the more ordinary and familiar aspects (p. 163-164). Shapiro and Zifferblatt (1976) in an attempt to explain some of the goals of Zen write that the Zen practitioner learns to " . . . be more receptive to internal and external stimuli; or in the words of the Zen master, the individual learns, "To be able to see the flower for the five-hundredth time as he saw it the first time" (p. 522).

Maslow observed that his subjects commonly had what he termed peak experiences. These refer to moments of intense excitement or ecstasy as well as moments of extreme peacefulness and stillness (p. 164-165). Maslow (1964) compared these peak experiences to mystical or religious experiences. The central importance of mystical experiences to the Eastern psychologies is

mentioned in nearly every work on these psychologies (e.g., Tart, 1975). An excellent account of similar experiences in Zen may be found in Kapleau's (1965) book, The Three Pillars of Zen: Teaching, Practice, Enlightenment.

The ninth characteristic of self-actualizing people is that they seem to have a genuine desire to help their fellow human beings (p. 165-166). They seem to possess a feeling of compassion for all of humanity. Concerning this characteristic, it seems only necessary to refer back to the earlier discussion of the bodhisattva ideal of Buddhism (see characteristic four) as an example of a similar orientation to life.

In their interpersonal relationships, self-actualizing people tend to form deeper and more personal relationships than those of most people (p. 166-167). In this context it seems appropriate to mention the intense devotion that is often shown to the teacher by the student in the Eastern psychological systems (Dass, 1976; Evans-Wentz, 1951). From the Western literature, Kirschner's (1975) subjects who practiced Zen meditation reported positive changes in their capacity for intimacy, and Blantz (1973) reported a significant increase on the Personal Orientation Inventory (P.O.I.) subscale Capacity for Intimate Contact for his subjects who practiced Zen or Transcendental Meditation.

Maslow described his subjects as being very democratic (p. 167-168). He described them as being willing to learn from anyone who was willing to teach them. One of the more interesting characteristics attributed to Gautama Buddha (the founder of Buddhism) is his insistence that his followers not rely

on authority figures in their personal search for truth. Rahula (1959) states, "Not only the freedom of thought, but also the tolerance allowed by the Buddha is astonishing to the student of the history of religions" (p. 4). The Buddha is professed to have admonished his students to, "Let all listen, and be willing to listen to the doctrines professed by others" (p. 5). Ruhula states that, "The spirit of tolerance and understanding has been from the beginning one of the most cherished ideals of Buddhist culture and civilization" (p. 5).

Referring to his twelfth characteristic, discrimination between means/ends and good/evil, Maslow writes, "our subjects are somewhat more likely to appreciate for its own sake, and in an absolute way, the doing itself; they can enjoy for its own sake the getting to some place as well as the arriving" (p. 169). A contemporary Zen master expresses an attitude that seems quite similar to this quality that Maslow finds in his subjects.

More important than any stage that you will attain is your sincerity, your right effort . . . If our practice is only a means to attain enlightenment, there is actually no way to attain it. We lose the meaning of the way to the goal . . . We do not slight the idea of attaining enlightenment, but the most important thing is this moment, not some day in the future (Suzuki, 1977, p. 100-101).

Maslow's next characteristic of self-actualized individuals is that they have an unhostile sense of humor (p. 169-170). Their humor does not deride other people, there is no humor at someone else's expense. References to the humor of Zen teachers are numerous (e.g., Hyers, 1972). In his book about the relationship between Zen and humor, Hyers (1973) states,

In Zen as in no other religious movement are the practical records, the techniques for spiritual realization, the art and aesthetics, and the portrayal of the spirit and style of its masters so intimately intertwined with the comic spirit and perspective. In the sayings of the Zen masters one soon discovers that the object of laughter is really oneself, trapped in the predicament and folly of mankind (Frontpiece).

So the laughter in Zen seems to be directed at ourselves and the human situation rather than at others. It would also seem to be difficult to integrate a hostile sense of humor with Zen practice which places such a strong emphasis on compassion.

The fourteenth characteristic of self-actualizing individuals was a universal trait among Maslow's subjects. This was creativity (p. 170-171). However, these subjects expressed a special type of creativity. Maslow (1970) states, "The creativeness of the self-actualized man seems rather to be kin to the naive and universal creativeness of unspoiled children . . . Whatever one does can be done with a certain attitude, a certain spirit that arises out of the person performing the act" (p. 170-171). Concerning this attitude that Maslow found in his subjects, we can refer back to the quote by Kapleau (see characteristic three) which stressed the childlike spontaneity and effortless grace of the roshi. It might also be mentioned that the relationship between the arts and Zen has been a close one for centuries. D. T. Suzuki (1959) in his book, Zen and Japanese Culture, writes convincingly on the close association between Zen, the arts, and creativity. Research by Ueda (1962) and Sakuma, Takizawa, Ueda, and Otani (1963) report that the practice of Zen develops creativity in Zen monks. However, Cowger (1973) found no significant relationship between meditation and creativity as measured by Torrance's Test for Creative Thinking. But Cowger's data may be flawed by the fact that his

subjects had only been meditating for 21 days. Torrance's test also defines creativity in terms of a product, whereas Zen and Maslow define it in terms of a process or an attitude.

The final characteristic that Maslow mentions in connection with self-actualizing people concerns a resistance to enculturation and an ability to transcend the limitations imposed by a particular culture. Maslow's subjects appeared to be in harmony with their culture while maintaining a certain detachment from it (p. 171-174). In order to illustrate a similar attitude in Zen, reference will be made to a set of pictures which are often used to illustrate the steps to enlightenment; the Ten Ox Herding pictures. The last picture illustrates a person who has realized the last stage of development in Zen. Someone at this stage lives in the world but apparently is not attached to the particular culture that he or she finds themselves in. Their outward appearance conforms to the norms and mores of the culture, but they are not trapped by the culture. They are in the world, but not of it (Kapleau, 1965, pp. 301-313).

The preceding discussion of the similarities between the personality characteristics of Maslow's self-actualized individuals and the personality characteristics that might be expected in experienced practitioners of Zen Buddhism does not presume to argue for an identity of the two concepts. The comparison is merely to indicate that certain similarities do exist between the two. Most certainly there are areas where the two have quite different conceptualizations of goals, methods, and psychology (e.g., conceptualizations

of the reality of the personal self). However, the areas of overlap between the two appear to be sufficient and extensive enough that certain aspects of personality change as a function of practicing Zen meditation may be measurable with instruments designed to measure self-actualization.

The measure that has been used exclusively to measure self-actualization in Zen meditation studies is the Personal Orientation Inventory (P.O.I.) (Shostrom, 1964). In the present study it was used as the measure of self-actualization.

The P.O.I. consists of 150 two-choice comparative value judgment questions in a self-administered format. The items were chosen from significant value judgment problems seen by therapists at the Institute of Therapeutic Psychology over a period of five years. Shostrom derived his scores from Riesman's (1950) system of inner and other directedness, Maslow's (1954; 1970) concept of self-actualization, and the concept of time orientation of May, Angel, and Ellengerger (1958) and Perls (1947; 1951).

The P.O.I. consists of two major independent scales and ten overlapping subscales. The first major scale is the Time Competent scale (23 items). In general, this scale measures the degree to which the person is present-oriented. The time-competent person lives primarily in the present with full awareness, contact, and feeling-reactivity. The time incompetent person lives primarily in the past with regrets, guilts, and resentments and/or lives in the future with idealized goals, plans, expectations, and fears.

The second major scale is called the Support scale or Inner Directed scale (127 items). It is designed to measure whether a person's mode of reaction is characteristically self-oriented or other-oriented. Individuals who are guided by internalized principles and motivations are termed inner directed on this scale. Other-directed persons are motivated to a great extent by their peer group or other external forces.

The remaining ten subscales of the P.O.I. are intended to reflect different facets of development that are important for the self-actualizing person. These scales are not independent and, in fact, item overlap has been calculated to be 94% (Silverman & Fisher, 1968).

Due to the non-independence of the ten subscales, they will not be used in the final data analysis. Any conclusions drawn from a comparison of two or more non-independent scales could be misleading. Under these circumstances it is highly possible that the scales measure to some degree the same construct. The Time Competent scale and the Inner Directed scale will be the only scales used in the analysis of the results.

Validity studies of the P.O.I. include Shostrom's (1964) study in which the instrument significantly discriminated between clinically judged self-actualizing subjects, a norm group, and non-self-actualizing subjects. Significant differences were at the .01 level for both the Time Competent and the Inner Directed scales. Knapp (1965) found that scores on the P.O.I. significantly differentiated between a neurotic sample and controls (total $N = 84$) using the Eysenk Personality Inventory as the measure of neuroticism. He

found significant ($p < .01$) negative correlations with neuroticism on both the Time Competent and Inner Directed scales and significant ($p < .01$) positive correlations with extraversion on the Inner Directed scale. Knapp and Comrey (1973) found significant positive correlations between the P.O.I. and the Comrey Personality Inventory (a measure of psychological health). The Inner Directed scale of the P.O.I. had significant ($p < .05$) correlations in the predicted direction with 7 of the 10 scales of the C.P.I. The Time Competent scale had significant ($p < .01$) correlations with 2 of the 10 scales of the C.P.I. Fox, Knapp, and Michael (1968) tested a sample of hospitalized psychiatric patients, a sample of normals, and a sample of subjects judged to be self-actualizing by practicing psychiatrists ($N = 184$). They found that the P.O.I. significantly differentiated ($p < .01$) between the hospitalized sample and the other two samples on all scales of the P.O.I. Fisher (1968) found significantly lower scores for a sample of convicted felons who had been tested on the P.O.I. ($N = 150$). The differences were significant ($p < .01$) on all of the scales of the P.O.I. Phillips, Watkins, and Noll (1974) found a significant correlation ($r = .39, p < .01$) between the Time Competent scale and the Purpose of Life Test (a measure of Frankl's concept of existential vacuum). They also found a significant correlation ($r = .32, p < .01$) between the Personal Theoretical Orientation to Experience Questionnaire (a measure of the difference between self-actualization and self-transcendence) ($N = 100$) and the Inner Directed scale. They concluded that although the scores on the P.O.I. were a function of the subject's agreement with Maslow's underlying philosophy, the P.O.I. nonetheless was still an accurate instrument to measure

self-actualization. McClain (1970) used 30 counselors at a 9 week seminar on counseling skills as subjects and had each of them rated as to their level of self-actualization. The raters were three group leaders at the seminar. The inter-rater reliability was $\underline{r} = .77$ ($\underline{p} < .005$). The highest correlation between ratings and scores on the P.O.I. was obtained for the Inner Directed scale ($\underline{r} = .69$, $\underline{p} < .01$). The Inner Directed scale accounts for 127 of the 150 items on the P.O.I. Grossack, Armstrong, and Lussiev (1966) compared the scores on the P.O.I. with scores on Edwards Personality Profile Score and the 16 PF of Cattell. They found significant correlations ($\underline{p} < .05$ or higher) in the predicted direction between the Inner Directed scale and 4 scales on the EPPS. They found significant ($\underline{p} < .02$) correlations in the predicted direction on 4 scales of the 16PF also with the Inner Directed scale. Braun (1969), however, found no correlation with self-actualization and the tests that he administered. He used the Seashore Test of Musical Ability to measure ability to discriminate stimuli (in this case, auditory stimuli), the Watson-Glaser Critical Thinking Appraisal to measure deductive reasoning, and the Barron-Welsh Art scale to measure preference for ambiguity. All of these abilities are hypothesized to be related to self-actualization. However, subjects that scored high on self-actualization did not have significant scores (i.e., $\underline{p} < .10$) on any of these tests.

Reliability studies have also tended to show results which are highly favorable to the P.O.I. (Shostrom, 1966). Shostrom (1964) reports reliability coefficients of .91 and .93 for the two major scales which were obtained by test-retest methods with an inter-test interval of 13 weeks. His sample

consisted of college freshmen ($N = 650$), patients in therapy ($N = 150$), members of a sensitivity training group ($N = 75$), school psychologists ($N = 15$), normal adults ($N = 160$), subjects judged relatively self-actualized ($N = 29$), and subjects judged relatively non-self-actualized ($N = 34$). The last two groups were nominated by clinical psychologists. Utilizing a sample of undergraduate students ($N = 48$), Klavetter and Morgar (1967) found test-retest reliability coefficients of .71 and .77 for the Time Competent and Inner Directed scales respectively. Ilardi and May (1968) report reliability coefficients on the Time Competent scale and the Inner Directed scale of .55 and .71 respectively ($p < .05$). Their population consisted of student nurses and they used an inter-test interval of 50 weeks. They also suggested that maturation and educational level may have been factors which influenced their data. At the conclusion of their study they stated that, "The findings reported for the P.O.I. are well within these ranges of somewhat comparable MMPI and EPPS test-retest reliability studies" (p. 71).

Studies on the resistance of the P.O.I. to dissimulation (i.e., the process of concealing the truth under false appearance) have also been fairly consistent. Foulds and Warehime (1971) administered the P.O.I. to 95 subjects with instructions to "fake good" on the instrument. Interestingly, their instructions resulted in significantly depressed scores ($p < .05$) on 9 of the 12 scales. Only one scale, the Self-Regard scale, showed a significant increase ($p < .01$). Unfortunately, no specific significance levels were reported for the two independent scales. They also found that women had significantly higher scores than men on the Self-Regard scale and men had

significantly higher scores on the Synergy scale. Warenhime and Foulds (1973) administered the P.O.I. and told their subjects ($N = 95$) to either "fake cultural conformity" or "fake a healthy personality or deny psychopathology." The instructions to "fake cultural conformity" tended to depress the scores on the retest while the other instructions tended to increase retest scores, but only slightly. Braun and La Faro (1969) found that two different groups obtained lower scores ($p < .05$) on the Inner Directed scale when asked to "fake good" and answer as a "well-adjusted person would answer." Another two groups were given instructions in the concept of self-actualization and were given knowledge about the P.O.I. prior to the administration of the retest. These two groups obtained higher scores on the retest. The t -tests were significant ($p < .01$) for both the Time Competent and the Inner Directed scales. They concluded that the P.O.I. was highly reliable, but that it was not resistant to a knowledge of the underlying concept. That is, specific instruction in the concept of self-actualization and the nature of the P.O.I. may elevate scores. Under this condition the P.O.I. is susceptible to dissemulation.

Another investigation which has found the P.O.I. to be susceptible to dissemulation was conducted by Rowe (1973). He found that scores could be altered in a predictable direction when subjects were told who would evaluate them on the basis of their test scores. The subjects were students enrolled in an introductory teacher training course. The P.O.I. was given at the beginning of the course and at the conclusion. Rowe found that the test scores could be altered to fit the different potential evaluators.

Interestingly, the discussion leaders for the course were identified as being humanistic in orientation. In 1969, Braun and La Faro had found that scores on the P.O.I. could be elevated by a knowledge of the concept of self-actualization. It is possible that the subjects in Rowe's study may have learned the concept of self-actualization from their group discussion leaders during the course. If the process was not overt, at least an effect such as modeling may have been present. This methodological flaw may have accounted for Rowe's results.

Warehime, Routh, and Foulds (1974) administered the P.O.I. to 276 female subjects. Before the retest they gave one group instruction in the concept of self-actualization, another group information about social adjustment, and a third group no additional information. They found that those subjects who had received information about self-actualization had learned the concept but that they did not use that information on the retest. They concluded:

Overall our results strongly suggest that the Personal Orientation Inventory measure of self-actualization previously found to be negatively affected by fake good instructions (Foulds & Warehime, 1971) is remarkably unsusceptible to dissimulation (p. 161).

Studies specifically designed to test self-actualization and its relation to Zen meditation began with Lesh (1970a). Using the Personal Orientation Inventory as his measure of self-actualization with graduate students, he concluded that Zen meditation may be an effective means of helping people become more self-actualized. He also found significant increases in empathy (as measured by the Affective Sensitivity scale) in those subjects who practiced Zen meditation. A final result which is applicable to Zen

meditation concerns the subject's openness to experience. Lesh found a positive correlation between subjects' responses to meditation and their openness to experience (as measured by the Experience Inquiry). That is, the more open a person was to unusual experience, the more positive response they would have to Zen meditation, at least for up to four weeks of meditation.

Cowger (1974) taught his subjects Zen meditation in an attempt to increase self-actualization, decrease anxiety, and increase creativity. His results showed an increase in self-actualization (as measured by the Personal Orientation Inventory) after four weeks of meditation. However, on this measure there was no significant difference between his meditating subjects and subjects who practiced a relaxation technique. He found that with his subjects, meditation was effective in reducing transitory anxiety and anxiety proneness while relaxation training seemed to assist people in reducing anxiety proneness only. Finally, meditation did not appear to affect subject's creative responses.

Blantz (1973) used the Personal Orientation Inventory, the Tennessee Self-Concept scale, and the Omnibus Personality Inventory in his study which attempted to test for differences between the two major styles of meditation. He taught half of his subjects a concentrative meditation (Transcendental meditation) and the other half a Zen style of meditation. At the end of ten weeks, he found no clear distinction between the meditative techniques except on the anxiety level scale of the Omnibus Personality Inventory. Although anxiety decreased in all subjects, those using the Zen technique showed

significantly lower anxiety scores. Both groups showed increased self-actualization on the Personal Orientation Inventory, and more positive self-concept on the Tennessee Self-Concept scale on the post-test scores. Unfortunately, Blantz's research contains some methodological problems. First, he did not utilize a control group for his study so he could not assess changes in a non-meditating group. Second, the instructions that he gave to the mindfulness group were very similar to those he gave to the concentrative group. Since the two groups only practiced meditation for ten weeks, it is possible that the practice time was not long enough and that both groups were doing essentially the same technique for the entire study.

Carson (1975) used Zen meditation as an intervention with elderly subjects (60-86 years). She hypothesized that meditation would lead to an increase in self-esteem, intimacy, relaxation, awareness, and acceptance of self. One of her measures was the Personal Orientation Inventory. However, after six weeks she found no significant differences on any of her measures, although the most accomplished meditator in her sample did show changes in the predicted direction. Unfortunately, Carson's study is marred by the usual problem in meditation research. That is, the length of the intervention may have been too short. Six weeks may not be long enough to learn Zen meditation. Carson suggested that future research should have a longer intervention. Interestingly, she also suggested that future research utilizing Zen meditation should teach a concentrative meditational technique as a prerequisite to mindfulness meditation. Indeed, this is the traditional sequence used to teach mindfulness meditation.

Moles (1977) hypothesized that Zen meditation would destabilize normal ego functions by differentially focusing attention on "internal" events. As part of his study he administered the Personal Orientation Inventory. After four weeks of meditation he found no significant differences on the P.O.I. However, Moles suggested that his subjects were going through a preparatory process. This process was to allow greater regression in service of the ego and greater access to unconscious material. Moles suggested that the length of time spent with meditation may not have been long enough to allow a full development of the preparatory process.

In a recent study, Krueger (1980) compared the effects of Zen meditation and relaxation training on variables assumed to be important in the counseling process. One of the client variables investigated was the subject's present-centeredness. Krueger used the Time Competent scale of the P.O.I. for his index of this variable. After five weeks of practice with Zen meditation, he found no significant differences between the pre- and post-tests. Krueger suggested that further research with Zen meditation might use clinical research designs or the intensive study of single individuals.

Overall, the research on the relationship between Zen meditation and self-actualization has not been very consistent. One of the possible reasons for this inconsistency, indeed, one of the possible flaws in most meditation research, is the short lengths of time that the subjects practice meditation before the post-testing takes place. Most of the researchers on Zen meditation mention that more time may have been needed with the technique.

Maupin (1962), Walsh (1979), Brown and Engler (1980), and Katagiri (1981; Note 1) all report that a consistent characteristic of the beginning meditator is difficulty with the practice. Maupin (1962) and Moles (1977) also report an increase in primary process thinking in beginning meditators. For the beginning meditator often the confrontation with their own "inner" world can be anxiety producing and confusing. Moles mentions a "preparatory phase" that his students appeared to be going through. This phase may be anxiety producing and confusing. Brown and Engler (1980) state that, "Overall the beginner's experience is largely a matter of adaptation to the flow of internal experience" (p. 170). At the same time, some of the student's expectations about their progress in meditation might be challenged as they discover that the technique is not particularly easy (Shimano & Douglas, 1975) and adjustments may have to be made in their social lives (Katagiri, Note 2). Confrontation with these issues could conceivably lead to a decrease, or at least no significant increase, in their feelings of personal adjustment and competence. This might be reflected in a lowering of scores on a measure of psychological health. Brown and Engler also state that this necessary phase of adaptation has very little to do with meditation in the formal sense. It is more properly defined as a preparation for formal meditative practices. Therefore, it is hypothesized in the present study that as the beginning meditator begins to become aware of his or her own "internal" processes, this will lead initially to no significant increases in measures of psychological adjustment, such as the P.O.I. Once these initial confrontations are resolved, meditation can begin in a more formal sense, and concurrently, a

significant increase should be noticed on the dependent measure.

Kirschner (1975) also mentions that the initial experience of his subjects with Zen meditation is of difficulty with the practice. His subjects report that they felt a measure of success was achieved with the Zen technique only after nine months of practice. If an adaptation phase is indeed necessary when attempting to learn Zen meditation, and if this phase does last for about nine months, then the validity of most of the research on psychological variables associated with Zen meditation can be seriously questioned. If, as Brown and Engler (1980) suggest, meditation does not begin in the formal sense until this adaptation phase is resolved, then any study which attempts to assess changes in behavior or personality as a result of Zen meditation should use subjects who have resolved the initial conflict of learning the technique of Zen meditation.

When attempting to assess the effects of Zen meditation an additional complication presents itself when only short-term meditators are used as subjects. Zen meditation is often taught to beginners in two or more phases (Naranjo & Ornstein, 1971; Rahula, 1959; Kapleau, 1965). The initial phase must be mastered to some degree before the later phases are attempted. In the first phase the student is instructed to pay attention to their breath and simply count the inhalations and exhalations. The student may count only the inhalations, only the exhalations, may count up to ten and then repeat, or up to four and then repeat; there are a number of variations of this basic technique. However, all of the variations are an exercise in greater

concentration. Therefore, they are all simple concentrative meditation techniques. At this phase of the practice there is no difference between the two major types of meditation. During the second phase, the student is instructed to observe his or her breath without trying to alter the process in any way. The counting is eliminated at this stage. This phase appears to be a transition phase between a concentrative technique and a mindfulness technique. The repetitive stimulus of breath counting is eliminated, but attention is still focused primarily on a physiological stimuli. The next phase is mindfulness meditation. In this phase the concentration of the initial stages is combined with greater awareness of internal and external events. Brown, D. (1977) says that in this phase, "any new event that arises is taken as a meditative object; nothing is considered a distraction" (p. 242-243). It must be emphasized that this phase is difficult to learn. It involves a retraining of many habitual characteristics of attention. Additionally, as Brown and Engler (1980) point out, meditation in the formal sense does not begin until this adaptation phase is resolved. Finally, for the investigator interested in Zen meditation, there is still another type of meditation.

Zen meditators familiar with mindfulness meditational techniques may also practice a technique called "shikan-taza." It is described as a state of intense concentration combined with expanded awareness. Kapleau (1965) reports on a lecture by Yasutani-roshi, a contemporary Zen teacher:

This state cannot be maintained for long--in fact, you ought not to do shikan-taza for more than a half hour at a time sitting . . . If you are truly doing shikan-taza, in half an hour you will be sweating . . .

because of the heat generated by this intense concentration . . . the shikan-taza adept sits without strain, alert and mindful. But do not for one minute imagine that such sitting can be achieved without long and dedicated practice" (p. 54).

It appears that mindfulness meditation is a technique which involves stages of learning the practice. In the studies on Zen meditation which used naive subjects, only Maupin (1965), Blantz (1973), and DeGrace (1976) taught their subjects phase two in addition to phase one of mindfulness meditation.

Blantz, however, describes the second phase of his meditation as "shikan-taza," but given the short intervention time (10 weeks), the short period of daily meditation (30 minutes), and Blantz's brief meditation instructions to his subjects, it is doubtful that they were doing shikan-taza. Indeed, Blantz did not report in any of his subjects the intense concentration described by Yasutani-roshi. It appears that one hypothesis from the research with naive subjects might be that many of the subjects may not resolve the adaptation phase, and they also may never experience the more advanced stages of mindfulness meditation.

This leads to the next problem with most research on Zen meditation. That is, the lack of longitudinal studies. Brown, D. (1977) mentions that the most obvious theme in the classical meditation literature is a longitudinal emphasis. He also mentions that while concentrative meditational techniques tend to progress through specific levels of practice, this is not the case for mindfulness meditations. He says, " . . . mindfulness meditations, on the other hand, do not have well defined levels. After many years of practice, there is a sudden and dramatic reorganization of cognition" (p. 243). This again, suggests that research on Zen meditation should be studying long-term

meditators who have resolved the adaptation phase as well as studying the beginning meditator. Physiological research also seems to confirm this. Kasamatsu and Hirai (1966) found an interesting relationship between EEG patterns and the number of years of Zen meditation practiced. Those subjects who were less experienced meditators showed a predominance of alpha wave patterns during meditation while the experienced subjects tended to show theta and delta waves during meditation. The range of meditation experience was from 1 year to 30 years.

Another interesting result from the physiological literature is reported by Miike (1977). He found that individual differences in the EEG patterns of monks appeared to be related to experience with Zen meditation (as might be expected), and also with the age of the subject. The greater the experience and age of the subject the more likely it was that theta and delta waves would be present during meditation.

Since the longitudinal approach is so time consuming, researchers interested in Zen meditation might consider the cross-sectional approach as a preliminary methodology. While a measure of control is lost, some relationships can be investigated and then either pursued further or abandoned based on the results of the relatively time-efficient cross-sectional method. Davidson, et al. (1976) and Brown and Engler (1980) have reported intriguing results with this approach.

This study investigated the relationship between the practice of Zen meditation and a measure of self-actualization. Utilizing a cross-sectional design, it examined experienced and inexperienced meditators, and also a comparison group. The definition of experienced and inexperienced meditators was derived from Kirschner's (1975) hypothesized learning period of nine months for Zen meditation. Inexperienced meditators were those subjects who had meditated for nine months or less. Experienced meditators were those subjects who had meditated for longer than nine months. Therefore, this study also tested Kirschner's hypothesis of a nine month learning period.

Hypotheses

Three hypotheses were tested in this study. The first was that the self-actualizing scores of experienced meditators will be significantly higher than those of a comparison group. The second hypothesis was that the self-actualizing scores of an inexperienced group would not be significantly higher than those of a comparison group. The assumption behind this hypothesis was that an inexperienced meditator will be involved in learning the technique of Zen meditation and will, therefore, not be meditating in the formal sense. Therefore, if meditation is the independent variable, the person's self-actualization scores should not increase until the technique of Zen meditation is learned. The third hypothesis was that the self-actualizing scores of experienced meditators will be significantly higher than the self-actualizing scores of a group of inexperienced meditators. The mean of an experienced group, an inexperienced group, and a comparison group were used

to statistically test the hypotheses.

Stated statistically the null and alternative hypotheses are:

Hypothesis One:

H_O : Mean (experienced meditator group) \leq Mean (comparison group)

H_A : Mean (experienced meditator group) $>$ Mean (comparison group)

Hypothesis Two:

H_O : Mean (inexperienced meditator group) $>$ Mean (comparison group)

H_A : Mean (inexperienced meditator group) \leq Mean (comparison group)

Hypothesis Three:

H_O : Mean (experienced group) \leq Mean (inexperienced meditator group)

H_A : Mean (experienced group) $>$ Mean (inexperienced meditator group)

Method

Subjects

Subjects came from two samples. The first sample consisted of 42 practitioners of Zen meditation from six Midwestern Soto Zen Centers. Of these, three subjects did not complete a sufficient number of questions to make the questionnaire valid and were dropped from the analysis. Of the remaining 39 students, three had been meditating for lengths of time that were significantly longer than the other subjects (108 months, 127

months, and 144 months). They too were dropped from the statistical analysis. For the remaining 36 subjects the mean length of time as meditators was 33.72 months (2 years, 9.72 months, standard deviation of 27.71 months) with a range from 2 months to 87 months (7 years, 3 months). There were 23 males and 13 females in the sample.

The second population consisted of 34 subjects who had never meditated. This sample was taken from students in an introductory psychology course at the University of Nebraska at Omaha. Thirty-six subjects filled out the questionnaire. One subject did not finish the questionnaire and was dropped from the study. Another subject had previously practiced meditation and was dropped from the study. There were 12 males and 22 females in the final sample.

Instrument

The instrument used as a measure of self-actualization was Shostrom's (1964) Personal Orientation Inventory (P.O.I.), shown in Appendix I. In addition, a demographic questionnaire specifically designed for this study was administered (Appendix II).

Procedure

Since the experimental treatment (in this instance, meditation) had been given to one of the groups in the past, a Static-Group Comparison was utilized as the research design.

The questionnaires for the meditation group were administered to volunteers at two Zen Centers by the experimenter. The questionnaires were mailed to the other Zen Centers and administered by a local volunteer. All questionnaires were administered approximately 10 minutes after the center's regularly scheduled meditation sessions had ended. All subjects were given a test packet which contained the following:

1. The Personal Orientation Inventory with Answer Sheet.
2. A questionnaire asking for demographic information and information about their Zen practice.
3. An instruction sheet (Appendix III).
4. Two copies of an informed consent form (Appendix IV).
5. A pencil.

Subjects were asked to read the instruction sheet and, if everything was satisfactory, to begin to complete the questionnaires. When each subject finished, they were given a copy of the Debriefing Form (see Appendix V). Administrators at the other centers were asked to follow these same procedures when administering the test packets.

Administration of the test packet to the comparison group was performed by the experimenter. All testing was done approximately 10 minutes after a regularly scheduled class had ended on two consecutive days. Subjects were asked if they had ever practiced meditation of any kind. The one subject who responded in the affirmative was allowed to complete the questionnaire but the results were not included in the study. The test packet contained all of the same elements of the packet given to the meditation group except for the questionnaire that asked for information about Zen practice. The instruction sheet was modified to read, "Inside you will find one questionnaire.", and

item 1.b. was dropped from the sheet (c.f., Appendix III). The Debriefing sheet that the comparison group received was modified by the addition of a single sentence above the last paragraph. It read, "Your scores will be compared with those of people who have been practicing Zen meditation" (c.f., Appendix IV). All other procedures were identical to the ones utilized with the meditation group.

Results

Cronbach's alpha was computed as a reliability coefficient for both the Time Competent (TC) and the Inner Directed (ID) scales. Initial coefficients were: TC = .61 and ID = .85. Item analysis revealed a number of questions that were either negatively correlated with other items on the scales or had low correlations ($r < .15$) with the other items. These items were deleted. Coefficients were recomputed after deletion of seven questions on the Time Competent scale and 30 questions on the Inner Directed scale. This left a total of 113 items on the P.O.I. The final alpha coefficients were TC = .71 and ID = .90. (Questions that were excluded from the final scoring are noted with stars in Appendix I.) Setting the criterion for inclusion of a question at $r < .15$ had the advantage of removing all of the negative correlations from the item analysis. Although this criterion may be considered low in some instances (Nunnally, 1967), it was felt that when using a personality measure that allows for only two choice options for each question (i.e., "true of me" and "not true of me") it would be advantageous to keep the number of questions on each scale as high as possible. This would allow each subject's score to

more accurately reflect their relationship to other subjects.

Skewness and kurtosis measures were evaluated as standard normal deviates. For the Time Competent scale these scores were: skewness, $\underline{z} = .09$ and kurtosis, $\underline{z} = .80$. For the Inner Directed scale they were: skewness, $\underline{z} = -.00$ and kurtosis, $\underline{z} = -.72$. None of these values were significant, and hence, normal distributions were assumed for these variables.

Analysis of the differences between the comparison and the experimental groups revealed significant differences between the groups for age and education level. Table 1. presents the ranges, means, standard deviations, and significant differences between age and education level for the two populations. A two-tailed test for the difference of proportions revealed no significant differences between the groups for the number of males ($\underline{z} = -1.66, p < .10$) and for the number of females ($\underline{z} = 1.48, p < .14$).

In order to test the hypotheses, student's \underline{t} -tests were computed between the means of the three groups. For the Time Competent scale, \underline{t} -test showed a significant difference between the mean score of the experienced meditators and the mean score of the comparison group, no significant difference between the mean scores of the inexperienced meditators and the comparison group, and no significant difference between the mean scores of the experienced meditators and the inexperienced meditators (although the difference approached significance). Although these results for the Time Competent scale do not support null hypothesis 1 and although the results do support null hypotheses 2 and 3 (Table 2.), the significant differences between the groups

Table 1.

Group comparisons for age and education level

Variable:	Groups						df	t
	comparison ^{a.}			experimental ^{b.}				
	Range	M	SD	Range	M	SD		
Age	17-38	22.35	5.16	17-48	31.58	7.60	62	5.97 *
Education level	12-16	13.03	1.22	10-20	15.92	2.75	49	5.73 *

a. N = 34b. N = 36* $p < .01$

Table 2.

t-tests between the comparison, inexperienced meditator, and experienced meditator groups for the time competent and the inner directed scales.^{a.}

Dependent scale	Groups				t	df	p ^{b.}
	experienced		comparison				
	M	SD	M	SD			
time competent	12.80	2.29	10.88	2.77	2.82	57	< .01
inner directed	75.32	10.17	64.35	11.07	3.89	57	< .01
	inexperienced		comparison		t	df	p
	M	SD	M	SD			
time competent	11.00	3.82	10.88	2.77	.11	43	< .46
inner directed	70.27	13.55	64.35	11.07	1.46	43	< .08
	experienced		inexperienced		t	df	p
	M	SD	M	SD			
time competent	12.80	2.29	11.00	3.82	1.45	13.28	< .09
inner directed	75.32	10.17	70.27	13.55	1.24	34	< .11

a. comparison group $N = 34$; inexperienced meditator group $N = 11$; experienced meditator group $N = 25$

b. one-tailed tests

in age and education level confound the results.

For the Inner Directed scale t -tests showed a significant difference between the mean scores of the experienced meditators and the comparison group, no significant difference between the mean scores of the inexperienced meditators and the comparison group (although the difference approached significance), and no significant difference between the mean scores of the experienced meditators and the inexperienced meditators (again, the difference approached significance). The results (Table 2.) for the Inner Directed scale are thus the same as those for the Time Competent scale in terms of the original hypotheses and in terms of the confounding with age, education level, and sex.

Discussion

As a first step in the investigation of these confounded results, Pearson product moment correlation coefficients were computed between the scores on the two dependent scales and time (i.e. how long the subject has been a Zen meditator), age, education level, and sex (see Table 3.). For the entire sample significant correlations were found between the Time Competent scale and: time, education level, and the Inner Directed scale. Significant correlations were found between the Inner Directed scale and: time, age, and education level. Although these significant correlations suggest that age and education level, as well as time, may be significant predictors of scores on the dependent measures, these results are confounded with time and should be

Table 3.

Zero order pearson product moment correlation coefficients between all variables.^a

	dependent variables		independent variables			
	TC	ID	TIME	AGE	ED	SEX
TC	1.00	.506**	.259*	.034	.282*	-.153
ID		1.00	.453**	.307**	.396**	-.007
TIME			1.00	.470**	.549**	-.155
AGE				1.00	.428**	-.222
ED					1.00	-.067
SEX						1.00

Note. TC = time competent scale; ID = inner directed scale; TIME = time as a mediator; AGE = age of subjects; ED = education level of subjects; SEX = sex of subject.

a. N = 70

* $p < .05$ ** $p < .01$

interpreted cautiously.

In order to isolate the effects of meditation experience, Pearson product moment correlation coefficients were computed for the experimental group and the comparison group separately (Table 4.). For the experimental group, significant correlations were found between the Inner Directed Scale and: the Time Competent scale, time, age, and education level. Significant correlations were also found between education level and: time, and sex. For the comparison group, significant correlations were found only between the Time Competent scale and the Inner Directed scale, and between education level and sex. A test for the differences between the correlations within each group revealed a significant difference between the two groups for the correlations of age with the Inner Directed scale ($z = 2.14$, $p < .03$). These results indicate that older subjects in the meditation group (who were likely to have meditated longer) had higher Inner Directed scores than younger subjects (who were more likely to be less experienced meditators). Whereas the older subjects in the comparison (nonmeditating) group were more likely to have lower Inner Directed scores than the younger subjects in that group. Interestingly, the negative correlations between age and the Time Competent scale in both groups indicate that older subjects tended to score lower on this scale in both groups regardless of meditation experience.

Given the significant differences between the groups, the significant correlations, and the significant difference between correlations, age and education level were hypothesized to act as covariates in the sample. Sex was

Table 4.

Zero order pearson product moment correlation coefficients between all variables for the comparison and the experimental groups separately.

	Experimental group ^{a.}					
	TC	ID	TIME	AGE	ED	SEX
TC	1.00	.449**	.194	-.106	.188	.035
ID		1.00	.390**	.307*	.336**	.159
TIME			1.00	.175	.316*	.016
AGE				1.00	.236	-.151
ED					1.00	.322*
SEX						1.00
	Comparison group ^{b.}					
	TC	ID	TIME	AGE	ED	SEX
TC	1.00	.479**		-.177	.216	-.235
ID		1.00		-.215	.022	.075
TIME						
AGE				1.00	-.151	.051
ED					1.00	-.341*
SEX						1.00

Note. TC =time competent scale; ID = inner directed scale; TIME = time as a meditator; AGE = age; ED = education level; SEX = sex

a. $\underline{N} = 36$ b. $\underline{N} = 34$ TIME = 0

* $p < .05$ ** $p < .01$

not significantly correlated with either of the dependent scales, therefore it was not hypothesized to act as a covariate.

At this point in the analysis, an analysis of covariance was apparently indicated in order to remove the effects of age and education level from the dependent scores. Huitema (1980) lists eight assumptions that should be met before an analysis of covariance can be interpreted meaningfully. They are (in order of relative importance): (1.) random selection and random assignment of subjects to treatment groups, (2.) homogeneity of within-group regressions, (3.) statistical independence of covariate and treatment, (4.) fixed covariate values that are error free, (5.) linearity of within-group regressions, (6.) normality of conditional Y scores, (7.) homogeneity of variance of conditional Y scores, and (8.) fixed treatment levels. In the present study all the above assumptions were either tested or assessed. Assumptions (1.), (2.), (3.), and (7.) were not met.

In the present study intact groups were used for the treatment groups. Therefore random assignment to treatment groups was not possible. This procedure may result in the treatment groups not having the same expected value on the covariates. The null hypothesis that the treatment groups have the same expected value was tested by calculating an analysis of variance on the covariates. In this study the analysis of variance on the covariates was significant for both age ($F(2,67) = 18.01, p < .01$) and for education level ($F(2,67) = 17.74, p < .01$) indicating nonequal values between groups on the covariates. These results also reveal the non-independence of covariate and

treatment. The assumption of homogeneity of regression can be assessed by testing the equality of covariate regression coefficients between groups. The null hypothesis of equality of coefficients was rejected only for the Inner Directed scale with age as the covariate ($F(2,64) = 3.80, p=.03$). The assumption of homogeneity of variance of conditional Y scores was not met between the inexperienced meditator group and the experienced meditator group for the Time Competent scale ($F(34) = 2.78, p=.04$). All other tests of this assumption between groups showed no significant differences between the groups.

Due to these violations of assumptions the results of an analysis of covariance would have been difficult to interpret. Therefore it was decided that an analysis of covariance would not be calculated.

However, it was possible to assess the significance of the beta weights associated with the independent variables when time as a meditator was not coded into three groups. That is, a multiple regression equation was computed for each dependent scale using raw scores, not category means, for all independent variables. The regression equation for the Inner Directed scale showed a significant beta weight for time ($F(1,68) = 5.32, p<.05$) while the beta weights for age and education level were not significant. None of the beta weights were significant for the Time Competent scale.

Further analysis of time as a predictor of Inner Directed scores showed that the proportion of variance accounted for by time adjusted for the effects of age and education level (i.e., $R^2(\text{time, age, education level}) - R^2(\text{age, education level})$) was significant.

education level)) was significant ($F(1,66) = 6.052, p < .05$). The proportion of variance accounted for was 6.96%, although this is probably a low estimate due to the amount of variance shared with age and education level in this sample. The fact that time was a significant predictor of Inner Directed scores was given stronger support by the fact that the proportion of variance accounted for by age adjusted for time and education level was not significant for either dependent scale and by the fact that the proportion of variance accounted for by education level adjusted for time and age was also not significant for either dependent scale. It should also be remembered that in this sample the reliability coefficient for the Inner Directed scale was $r = .90$ indicating a high degree of reliability for this scale.

The finding that age and education level were significantly correlated with the dependent scales in the meditation group is consistent with Ilardi and May's (1968) suggestion that these variables may influence scores on the P.O.I. However, in studies investigating the effects of long-term meditation it may be difficult to control for these two variables without a large sample. Unfortunately, the paucity of subjects available for research into the effects of Zen meditation is probably the single most limiting factor in such research. If, however, a large sample of subjects is available, it may be prudent to control for age and education level by a method other than analysis of covariance (e.g., a matched groups design) in order to gain a clearer understanding of the relationship between the variables. Smith (1957) and Lord (1967, 1969) argue that analysis of covariance is not a substitute for experimental control or adequate knowledge

of causative influences and should therefore be used with caution.

It is possible that education level affects subjects by influencing the cognitive interpretation of experiences. Fisher (1978) has suggested that a given state of arousal may be interpreted as a peak experience or self-possession depending on the intellectual and spiritual sophistication of a person. Indeed, Bourque (1968) found that subjects who described ecstatic-transcendental experiences in aesthetic terms were generally well educated and white, while those who described these experiences in religious terms tended to be poor, uneducated, rural, and black. The intellectual interpretation of such phenomena, may be a factor in research that uses primarily self-report measures. From this study the tentative hypothesis would be that as subjects' education level increases, their cognitive interpretation of states of arousal or unusual phenomena would tend to agree more with the academic concept of self-actualization than with traditional religious explanations. Since age and education level are correlated in this study, the identical effect, or a similar one, may also be operating with respect to the subject's age.

It should also be noted that significant correlations between education level and sex in both the meditation group and the comparison group confounded the effects of these variables. In addition it should be remembered that education level was also confounded with time in the meditation group.

Although the majority of published Western research on meditation has assumed that success in meditation is a function of the length of time spent as a meditator, this assumption has rarely been tested. The current results support that assumption but the small amount of variance that can definitely be attributed to this variable above and beyond that confounded with age and education level provides only weak support. It should also be noted that very few Western studies have ever used subjects who have meditated for longer than 10 weeks. Those studies that have used subjects with more experience usually derive their classifications of short-term meditators, long-term meditators, and beginning meditators without reference to theoretical or empirical justification (e.g., Davidson, Coleman, & Schwartz, 1976). Although many studies do show improvements in various functions as the length of time spent in meditation increases, research on meditation might be made even more precise by a search for indices of classification that match the experiential changes in meditation.

In an attempt to utilize a different system of classification for Zen meditators, Hirai (1978) used ratings by the meditation teacher to classify subjects. He found a strong relationship between teacher ratings and EEG recordings in experienced Zen monks. Those monks who were rated by the teacher as being more advanced in their practice and understanding of Zen tended to produce theta and delta waves during meditation. Those monks who were rated as less advanced tended to produce alpha waves. Brown and Engler (1980) in a provocative study used teacher ratings and scores on the Profile of Meditation Experience (P.O.M.E.) to classify students. They found strong

similarities between teacher ratings, scores on the P.O.M.E., Rorschach responses, and the stages of meditation delineated in the classical Buddhist texts on meditation. Their successful use of a questionnaire specifically designed for Buddhist meditators and a projective test offer intriguing possibilities for future researchers.

Two potential variables have been mentioned in the literature that may be important in further studies of meditation. These are concentration and attitude. Akishige (1963) and Yamaoka (1977) both mention that a subject's concentration correlates with changes in brain waves during meditation. They both found that the prevalence of alpha waves tends to increase as concentration increases. It should be mentioned that the concentration referred to here is a concentration of attention on awareness that is characteristic of mindfulness meditation. This is not a reference to a concentrative meditation technique. These investigators place such an importance on this variable that Akishige calls concentration the "principal factor" and the "chief element" in Zen practice. Presumably concentration increases as a function of length of time spent as a meditator. However, Ikegami (1977) and Suzuki (1966) place their emphasis on "attitude." Both investigators have found that without the proper attitude in the subject there are no encephalographic changes in the meditator, even when he or she assumes the characteristic meditation posture of Zen. However, the attitude referred to consists of knowledge about Zen Buddhist philosophy and a desire to practice Zen meditation. Presumably these qualities exist to some degree in all Zen meditators.

While these variables may indeed be important in Zen meditation, it should be remembered that in isolation they will certainly not lead to the personality characteristics of an experienced Zen practitioner or a self-actualized person. In actual Zen practice there are other variables with which these two will undoubtedly interact and the full model will most probably be the multivariate one.

However, at the present time there are no psychometric indices to measure these characteristics. This is an obvious handicap to an experimentally oriented investigation of these characteristics and their relationship to Zen meditation. Future research will hopefully alleviate this problem.

The type of meditation technique used by the subject may also be important. The four types of meditational techniques that may be present in Zen meditation are: (1.) counting the breath; (2.) watching the breath; (3.) mindfulness or vipassana; and (4.) shikan-taza. These are listed in the order that a student would probably learn them in the course of long-term Zen meditation practice. However, the student could utilize any of these techniques at any time in his or her practice. It is very interesting to note the change in type of meditational technique reported during meditation (Figures 1.). There appears to be a change in the type of technique reported as time increases. This indicates that the type of meditational technique reported in this sample may change over time--the more experienced practitioners stating they use the more "advanced" meditational techniques.

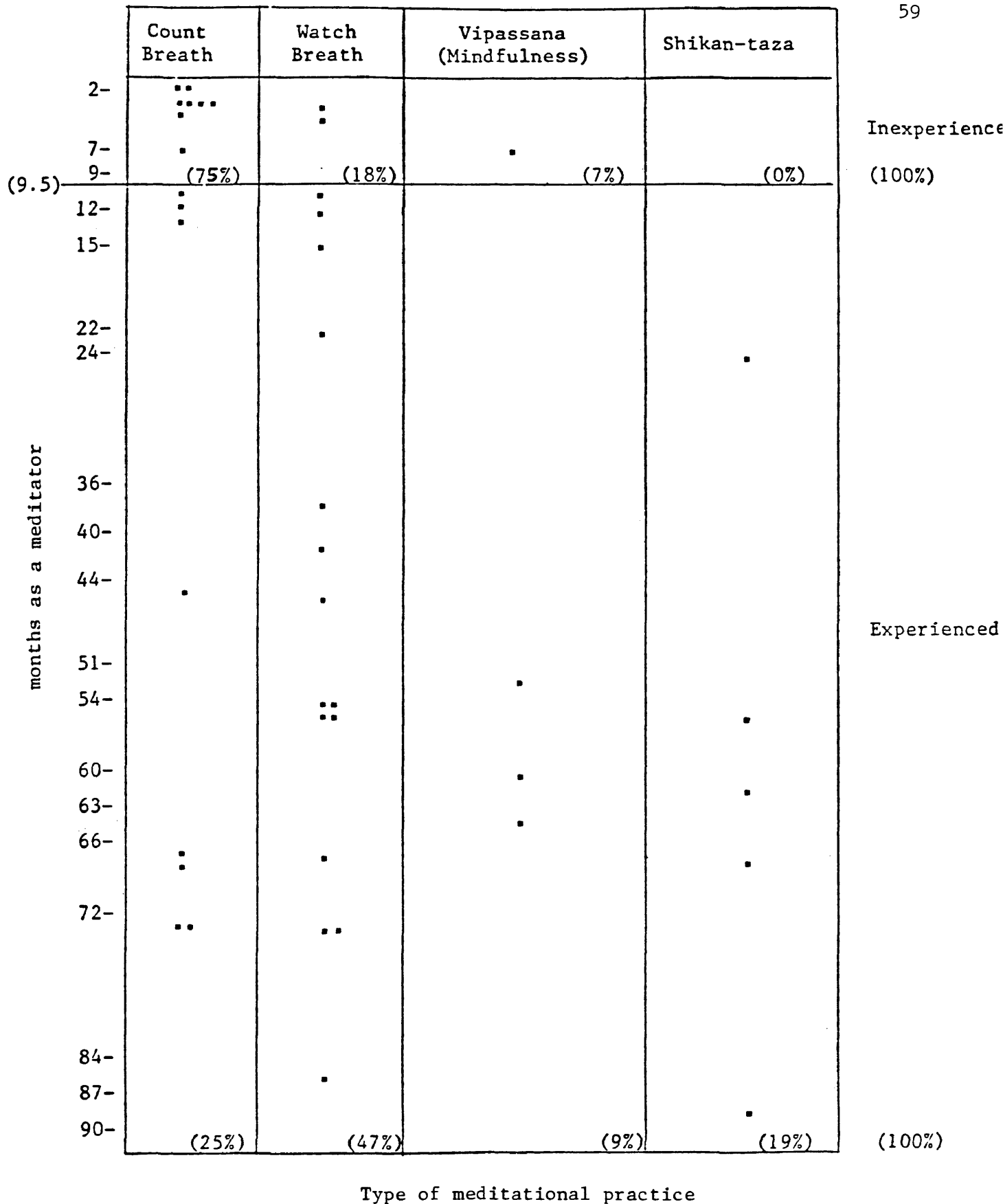


Figure 1. Scattergram of number of months as a meditator with type of meditational practice used. $N = 36$

The type of technique reported was a significant predictor for the Inner Directed scale. In fact, in a stepwise regression the type of technique reported was the second variable entered into the equation (time was the first variable entered). 'Technique' accounted for an additional 18.67% of the variance ($F(2,33) = 9.32, p < .01$) in the regression equation. It should be noted that the data on the type of meditational technique was self-report data. Knowledge of the proper terms to describe meditational technique may be a function of experience with Zen meditation and Buddhist terminology and not necessarily an accurate description of what is actually being used by each subject.

For the Time Competent scale another variable was a significant predictor. That was the number of meditations the subject reported. It is quite possible for someone to have practiced Zen meditation daily for a fairly short time and have spent more time in meditation than someone who had meditated inconsistently for a longer period of time. The variable 'number of meditations' accounted for an additional 15.39% of the variance ($F(2,33) = .28, p < .01$) after time was entered into the equation. The variable 'technique' was entered later in the stepwise regression equation. Further research is necessary in order to clarify the relationships between these variables and progress with Zen meditation.

Two variables that could also have a large effect on the data in this study are mortality and self-selection by the subjects. Concerning self-selection, it is possible that people who voluntarily choose to learn a

technique such as Zen meditation have already demonstrated some motivation for self-improvement that may not be demonstrated by all college students (Smith, 1975). In this sample 70% ($N = 26$) of the meditators practiced yoga or a martial art in addition to Zen meditation. Although self-improvement certainly need not be defined in terms of Eastern disciplines, and no similar data is available from the comparison group, the willingness of these subjects to devote their time to more than one discipline may be indicative of an enhanced motive for self-improvement. Concerning mortality, it is possible that subjects who have meditated for one year, two years, or longer may have been the subjects who initially would have had high scores on the P.O.I. The observed increase in scores would in this case be the result of these initially high scoring students staying with Zen meditation for a longer period of time. Those subjects who had initially lower scores on the P.O.I. may have dropped the meditation relatively quickly. However, Ferguson and Gowen (1976) found that in a sample of practitioners of Transcendental Meditation the subjects who showed the most commitment to the practice and were the most regular in their practice were those subjects who had initially scored the highest and those who had initially scored the lowest on a test of self-actualization (the Northridge Developmental scale). On the other hand, a study by Otis (1973) seems to suggest that a mortality effect is present in meditation research. He found that those subjects who persisted with Transcendental Meditation for more than 12 months were those who initially were calmer, less anxious, and more peaceful than the subjects who stopped practicing before 12 months.

In this study, a similar mortality effect may have been present. Inspection of the range of dependent scores for the comparison group and the experimental group reveal considerable similarity. For the Time Competent scale, the range for the comparison group was from 3 to 16 and for the experimental group from 4 to 16. For the Inner Directed scale the range of the comparison group was from 45 to 84 and the experimental group from 48 to 91. It is obvious that the high self-actualizing scores in the comparison group do not differ dramatically from those in the experimental group. An examination of the scattergrams in Figures 2. and 3. shows a decrease in the number of low scoring subjects as months as a meditator increases, but no substantial increase in scores above the high scoring subjects in the comparison and inexperienced meditator groups as meditation time increases. This pattern suggests that the low scoring subjects may discontinue Zen meditation leaving those subjects who would have initially scored higher. Once again, longitudinal research is necessary in order to determine what effects these variables have on the practice of Zen meditation.

A major assumption of this study has been that the personality characteristics of the self-actualized person are similar to the personality characteristics of the experienced Zen practitioner. Although the characteristics may be quite similar, there are points upon which they differ. In fact, Maslow may have hinted at these differences in his later works. Roberts (1978) mentions that in Maslow's later writings he indicated a need beyond self-actualization. Maslow termed this need "transcendence" and he placed it at the top of his needs hierarchy, that is, above

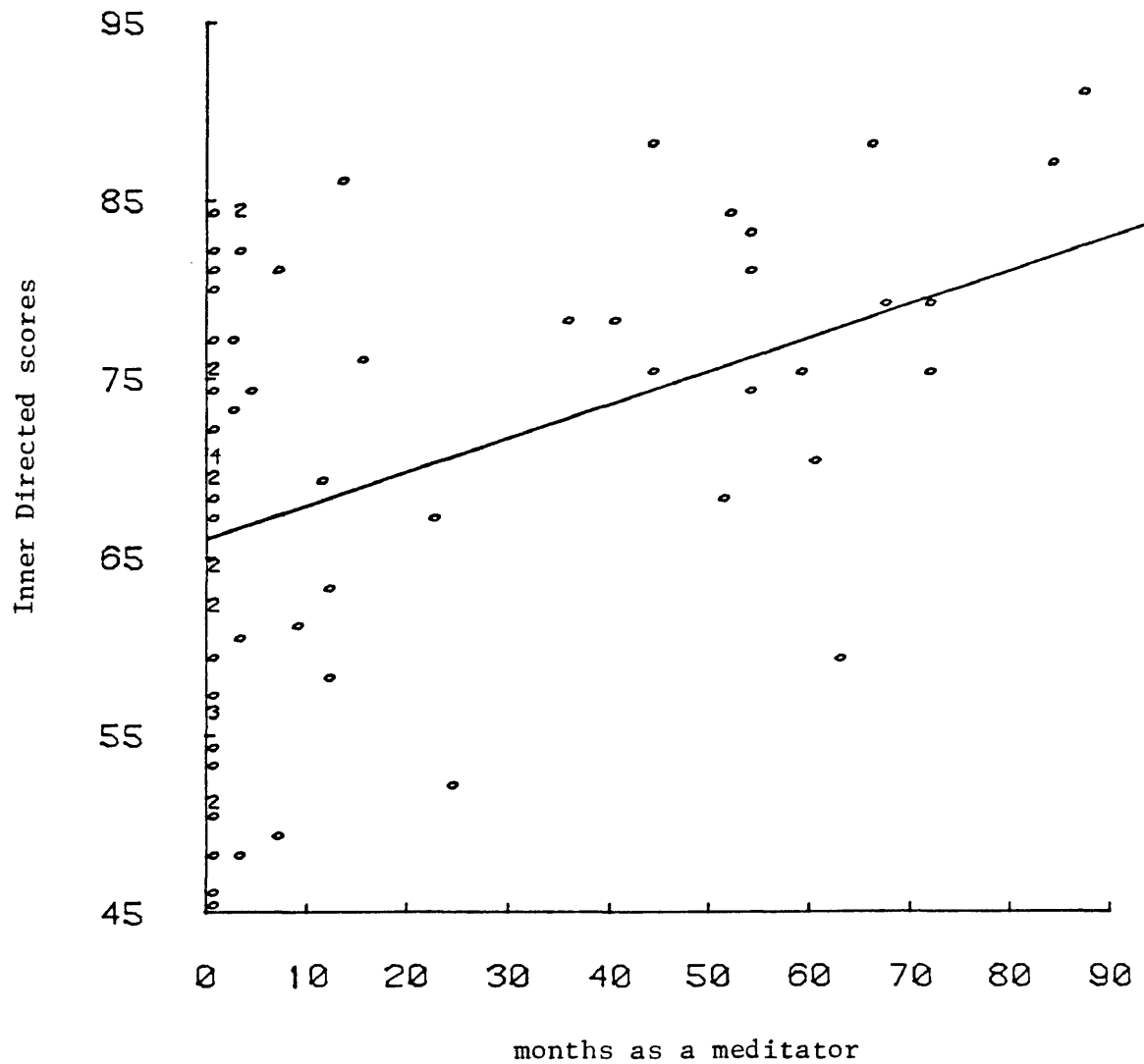


Figure 3. Scattergram of Inner Directed scores with months as a meditator.^a
 $N = 70$

^a. $y = 65.55 + .21(\text{time}) ; r^2 = .21$

self-actualization. Roberts points out that one of the differentiating characteristics of transcending people is that they tend to have a specific type of peak experience. Maslow (1970) wrote that, in addition to the other characteristics of self-actualizers, the transcendents seem to live in a world that includes "...transcendence;... "religion" of the mystical, personal, noninstitutional sort..." (p. 165). Maslow (1970) even compared these peak experiences to the Zen experience of satori (i.e., non-duality of subject and object). His personality descriptions of transcendents were beginning to come closer to descriptions that are often given of practitioners of Eastern meditative disciplines. Roberts shows that Maslow's later writings clearly indicate an emerging conceptualization of the personality type "beyond" the self-actualized individual.

Since Shostrom developed his Personal Orientation Inventory before 1964, it is quite probable that Maslow's definition of the transcender was not included as a factor in the P.O.I. Therefore, it might be assumed that what is being measured in the present study is the extent to which Zen practitioners share personality characteristics with self-actualizers--as they would have been defined prior to 1964. Since the validity of the P.O.I. has been studied rather extensively, we may assume that it does, in fact, measure a personality construct quite similar to self-actualization--again, as it was defined prior to 1964. However, it may not measure characteristics of self-actualized people as they were defined after 1964. Some of these later characteristics may have been more similar to concepts in Zen. This, of course, does not invalidate the results of the present study. The observed

mean differences in self-actualization scores between the groups is certainly an interesting finding in its own right. However, it does lend credence to the argument that there may be personality characteristics of the experienced Zen practitioner that are not measured by the P.O.I. An examination of the Zen literature points to where some of these differences may be.

One of the main differences between Maslow's concept of the self-actualizing person and the Zen concept of personality appears to be in the respective conceptualizations of a personal self. While Maslow seemed to assume the reality of a personal self, except in moments of transcendence, the Zen position is that the concept of a personal self is completely illusory. The Zen conceptualization appears to be in direct contradiction to the notions of self and ego that are present in most Western psychologies and psychotherapies (Gragnani, 1974; Fadiman & Frager, 1976; Wilber, 1977). Without the conceptualization of a personal self, the distinction between self and object or subject and object ceases to exist. A contemporary Zen teacher expresses this position as follows:

"It is easy to believe in the priority of the mind as subject over its object . . . but who can verify that you, as a subject, exist? . . . The search for a first cause will go on endlessly. In the same way emphasis can be put on the priority of the object. This emphasis would produce a materialistic view which would present us with the same problem as the priority of the subject—who verifies?

What causes subject and object to exist? . . . It is the attachment to the notion of an ego-identity that causes you to believe in the substantiality of subject and object.

In actuality, nothing has any substance . . . anything which you might think of as a single entity is actually a continuous interplay and interdependence of a countless variety of conditioned elements. Since the basis of being for any single entity cannot be substance, neither can

the basis for the ideas of subject and object be substantiality in any form" (Katagiri, 1976, p. 1-2).

Additionally, in the Buddhist tradition it is taught that the last sermon given by the historical Buddha before his death concerned the eight awarenesses of the enlightened person (Maezumi & Glassman, 1977; Yokoi & Victoria, 1976). These awarenesses are personality characteristics assumed to exist in an enlightened human being. They include recognizing the illusory nature of the self, giving up all attachments to abstract conceptualizations, and cultivating deep concentration in meditation. These characteristics may or may not be shared by Maslow's self-actualized person. Further research is necessary to determine how to test the relevance of these concepts to Zen meditation and self-actualization.

While the similarities of the self-actualized individual and the experienced Zen practitioner have been investigated in only a limited manner, the differences between the two have not been explored at all. Future research in this area should prove to be quite valuable in conceptualizing the characteristics of mental health.

One final caution concerning research in this area touches on the philosophical issue of the objectivity of the scientist. In a very provocative article, Shimano and Douglas (1975) warn us that, "Zen gives us access to experience that is not 'like' any other, as we so meaningfully describe a new perception or experiences . . . [therefore it] is vulnerable to seemingly plausible explanations that destroy true understanding" (p. 1300). They caution us that although we usually describe a new experience in terms of

our old experiences by way of analogy, the Zen experience is not truly analogous to any experience we have ever had. They say that "without personal experience, the investigator is fated to fall into explanation by false analogy" (p. 1301). Although Shimano and Douglas' suggestion is an unusual one for the Western behavioral scientist, they may have pointed to a caution that is indeed valuable, albeit unique, to research on Zen in particular and alternate states of consciousness in general.

Conclusion

The results of this study offer some support for the effects of Zen meditation on self-actualization, provided that meditation is practiced for at least 9 months. Moreover, the effects may be stronger than those reported in this study due to the confounding of meditation time with age and education level.

The relationship between type of meditational practice and dependent variables, as well as a search for better predictor variables in general, warrants further research. In addition, dependent measures that more accurately reflect the unique effects hypothesized by Zen Buddhism would be extremely beneficial to future research.

As in many other areas of psychology, the study of meditation is hampered by an almost complete lack of good longitudinal empirical studies. Without such studies all the important variables and interactions may not be discovered. However, the Eastern literature on Zen meditation is filled with phenomenological studies of a longitudinal nature. It seems highly appropriate that anyone working in this area should familiarize himself or

herself with the literature from both sources in order to more fully understand the process of meditation. However, it is still more than evident that whether one begins a phenomenological or an experimental investigation of meditation the collection of data that is reliable, valid, and does justice to the phenomena will require both patience and perserverance.

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Appendix I
Personal Orientation Inventory

PERSONAL ORIENTATION INVENTORY

EVERETT L. SHOSTROM, Ph.D.

DIRECTIONS

This inventory consists of pairs of numbered statements. Read each statement and decide which of the two paired statements most consistently applies to you.

You are to mark your answers on the answer sheet you have. Look at the example of the answer sheet shown at the right. If the first statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "a". (See Example Item 1 at right.) If the second statement of the pair is TRUE or MOSTLY TRUE as applied to you, blacken between the lines in the column headed "b". (See Example Item 2 at right.) If neither statement applies to you, or if they refer to something you don't know about, make no answer on the answer sheet. Remember to give YOUR OWN opinion of yourself and do not leave any blank spaces if you can avoid it.

Section of Answer Column Correctly Marked	
	a b
1.	<input checked="" type="checkbox"/> <input type="checkbox"/>
	a b
2.	<input type="checkbox"/> <input checked="" type="checkbox"/>

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Do not make any marks in this booklet.

Remember, try to make some answer to every statement.

Before you begin the inventory, be sure you put your name, your sex, your age, and the other information called for in the space provided on the answer sheet.

NOW OPEN THE BOOKLET AND START WITH QUESTION 1.

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1. a. I am bound by the principle of fairness.
b. I am not absolutely bound by the principle of fairness.
2. a. When a friend does me a favor, I feel that I must return it.
b. When a friend does me a favor, I do not feel that I must return it.
3. a. I feel I must always tell the truth.
b. I do not always tell the truth.
- ★ 4. a. No matter how hard I try, my feelings are often hurt.
b. If I manage the situation right, I can avoid being hurt.
5. a. I feel that I must strive for perfection in everything that I undertake.
b. I do not feel that I must strive for perfection in everything that I undertake.
- ★ 6. a. I often make my decisions spontaneously.
b. I seldom make my decisions spontaneously.
7. a. I am afraid to be myself.
b. I am not afraid to be myself.
8. a. I feel obligated when a stranger does me a favor.
b. I do not feel obligated when a stranger does me a favor.
9. a. I feel that I have a right to expect others to do what I want of them.
b. I do not feel that I have a right to expect others to do what I want of them.
10. a. I live by values which are in agreement with others.
b. I live by values which are primarily based on my own feelings.
11. a. I am concerned with self-improvement at all times.
b. I am not concerned with self-improvement at all times.
12. a. I feel guilty when I am selfish.
b. I don't feel guilty when I am selfish.
13. a. I have no objection to getting angry.
b. Anger is something I try to avoid.
14. a. For me, anything is possible if I believe in myself.
b. I have a lot of natural limitations even though I believe in myself.
15. a. I put others' interests before my own.
b. I do not put others' interests before my own.
- ★ 16. a. I sometimes feel embarrassed by compliments.
b. I am not embarrassed by compliments.
- ★ 17. a. I believe it is important to accept others as they are.
b. I believe it is important to understand why others are as they are.
- ★ 18. a. I can put off until tomorrow what I ought to do today.
b. I don't put off until tomorrow what I ought to do today.
19. a. I can give without requiring the other person to appreciate what I give.
b. I have a right to expect the other person to appreciate what I give.
20. a. My moral values are dictated by society.
b. My moral values are self-determined.
21. a. I do what others expect of me.
b. I feel free to not do what others expect of me.
- ★ 22. a. I accept my weaknesses.
b. I don't accept my weaknesses.
23. a. In order to grow emotionally, it is necessary to know why I act as I do.
b. In order to grow emotionally, it is not necessary to know why I act as I do.
- ★ 24. a. Sometimes I am cross when I am not feeling well.
b. I am hardly ever cross.

GO ON TO THE NEXT PAGE

25. a. It is necessary that others approve of what I do.
b. It is not always necessary that others approve of what I do.
26. a. I am afraid of making mistakes.
b. I am not afraid of making mistakes.
27. a. I trust the decisions I make spontaneously.
b. I do not trust the decisions I make spontaneously.
28. a. My feelings of self-worth depend on how much I accomplish.
b. My feelings of self-worth do not depend on how much I accomplish.
29. a. I fear failure.
b. I don't fear failure.
30. a. My moral values are determined, for the most part, by the thoughts, feelings and decisions of others.
b. My moral values are not determined, for the most part, by the thoughts, feelings and decisions of others.
31. a. It is possible to live life in terms of what I want to do.
b. It is not possible to live life in terms of what I want to do.
32. a. I can cope with the ups and downs of life.
b. I cannot cope with the ups and downs of life.
33. a. I believe in saying what I feel in dealing with others.
b. I do not believe in saying what I feel in dealing with others.
34. a. Children should realize that they do not have the same rights and privileges as adults.
b. It is not important to make an issue of rights and privileges.
35. a. I can "stick my neck out" in my relations with others.
b. I avoid "sticking my neck out" in my relations with others.
36. a. I believe the pursuit of self-interest is opposed to interest in others.
b. I believe the pursuit of self-interest is not opposed to interest in others.
37. a. I find that I have rejected many of the moral values I was taught.
b. I have not rejected any of the moral values I was taught.
38. a. I live in terms of my wants, likes, dislikes and values.
b. I do not live in terms of my wants, likes, dislikes and values.
- ★ 39. a. I trust my ability to size up a situation.
b. I do not trust my ability to size up a situation.
- ★ 40. a. I believe I have an innate capacity to cope with life.
b. I do not believe I have an innate capacity to cope with life.
41. a. I must justify my actions in the pursuit of my own interests.
b. I need not justify my actions in the pursuit of my own interests.
- ★ 42. a. I am bothered by fears of being inadequate.
b. I am not bothered by fears of being inadequate.
43. a. I believe that man is essentially good and can be trusted.
b. I believe that man is essentially evil and cannot be trusted.
44. a. I live by the rules and standards of society.
b. I do not always need to live by the rules and standards of society.
45. a. I am bound by my duties and obligations to others.
b. I am not bound by my duties and obligations to others.
46. a. Reasons are needed to justify my feelings.
b. Reasons are not needed to justify my feelings.

- ★ 47. a. There are times when just being silent is the best way I can express my feelings.
b. I find it difficult to express my feelings by just being silent.
48. a. I often feel it necessary to defend my past actions.
b. I do not feel it necessary to defend my past actions.
49. a. I like everyone I know.
b. I do not like everyone I know.
50. a. Criticism threatens my self-esteem.
b. Criticism does not threaten my self-esteem.
51. a. I believe that knowledge of what is right makes people act right.
b. I do not believe that knowledge of what is right necessarily makes people act right.
52. a. I am afraid to be angry at those I love.
b. I feel free to be angry at those I love.
- ★ 53. a. My basic responsibility is to be aware of my own needs.
b. My basic responsibility is to be aware of others' needs.
54. a. Impressing others is most important.
b. Expressing myself is most important.
55. a. To feel right, I need always to please others.
b. I can feel right without always having to please others.
56. a. I will risk a friendship in order to say or do what I believe is right.
b. I will not risk a friendship just to say or do what is right.
57. a. I feel bound to keep the promises I make.
b. I do not always feel bound to keep the promises I make.
58. a. I must avoid sorrow at all costs.
b. It is not necessary for me to avoid sorrow.
59. a. I strive always to predict what will happen in the future.
b. I do not feel it necessary always to predict what will happen in the future.
60. a. It is important that others accept my point of view.
b. It is not necessary for others to accept my point of view.
61. a. I only feel free to express warm feelings to my friends.
b. I feel free to express both warm and hostile feelings to my friends.
- ★ 62. a. There are many times when it is more important to express feelings than to carefully evaluate the situation.
b. There are very few times when it is more important to express feelings than to carefully evaluate the situation.
- ★ 63. a. I welcome criticism as an opportunity for growth.
b. I do not welcome criticism as an opportunity for growth.
64. a. Appearances are all-important.
b. Appearances are not terribly important.
- ★ 65. a. I hardly ever gossip.
b. I gossip a little at times.
66. a. I feel free to reveal my weaknesses among friends.
b. I do not feel free to reveal my weaknesses among friends.
67. a. I should always assume responsibility for other people's feelings.
b. I need not always assume responsibility for other people's feelings.
68. a. I feel free to be myself and bear the consequences.
b. I do not feel free to be myself and bear the consequences.

69. a. I already know all I need to know about my feelings.
b. As life goes on, I continue to know more and more about my feelings.
70. a. I hesitate to show my weaknesses among strangers.
b. I do not hesitate to show my weaknesses among strangers.
71. a. I will continue to grow only by setting my sights on a high-level, socially approved goal.
b. I will continue to grow best by being myself.
72. a. I accept inconsistencies within myself.
b. I cannot accept inconsistencies within myself.
73. a. Man is naturally cooperative.
b. Man is naturally antagonistic.
74. a. I don't mind laughing at a dirty joke.
b. I hardly ever laugh at a dirty joke.
- * 75. a. Happiness is a by-product in human relationships.
b. Happiness is an end in human relationships.
76. a. I only feel free to show friendly feelings to strangers.
b. I feel free to show both friendly and unfriendly feelings to strangers.
- * 77. a. I try to be sincere but I sometimes fail.
b. I try to be sincere and I am sincere.
78. a. Self-interest is natural.
b. Self-interest is unnatural.
- * 79. a. A neutral party can measure a happy relationship by observation.
b. A neutral party cannot measure a happy relationship by observation.
80. a. For me, work and play are the same.
b. For me, work and play are opposites.
81. a. Two people will get along best if each concentrates on pleasing the other.
b. Two people can get along best if each person feels free to express himself.
82. a. I have feelings of resentment about things that are past.
b. I do not have feelings of resentment about things that are past.
83. a. I like only masculine men and feminine women.
b. I like men and women who show masculinity as well as femininity.
84. a. I actively attempt to avoid embarrassment whenever I can.
b. I do not actively attempt to avoid embarrassment.
85. a. I blame my parents for a lot of my troubles.
b. I do not blame my parents for my troubles.
86. a. I feel that a person should be silly only at the right time and place.
b. I can be silly when I feel like it.
87. a. People should always repent their wrongdoings.
b. People need not always repent their wrongdoings.
88. a. I worry about the future.
b. I do not worry about the future.
89. a. Kindness and ruthlessness must be opposites.
b. Kindness and ruthlessness need not be opposites.
90. a. I prefer to save good things for future use.
b. I prefer to use good things now.
91. a. People should always control their anger.
b. People should express honestly-felt anger.

92. a. The truly spiritual man is sometimes sensual.
b. The truly spiritual man is never sensual.
93. a. I am able to express my feelings even when they sometimes result in undesirable consequences.
b. I am unable to express my feelings if they are likely to result in undesirable consequences.
94. a. I am often ashamed of some of the emotions that I feel bubbling up within me.
b. I do not feel ashamed of my emotions.
95. a. I have had mysterious or ecstatic experiences.
b. I have never had mysterious or ecstatic experiences.
96. a. I am orthodoxly religious.
b. I am not orthodoxly religious.
97. a. I am completely free of guilt.
b. I am not free of guilt.
98. a. I have a problem in fusing sex and love.
b. I have no problem in fusing sex and love.
- ★ 99. a. I enjoy detachment and privacy.
b. I do not enjoy detachment and privacy.
100. a. I feel dedicated to my work.
b. I do not feel dedicated to my work.
101. a. I can express affection regardless of whether it is returned.
b. I cannot express affection unless I am sure it will be returned.
- ★ 102. a. Living for the future is as important as living for the moment.
b. Only living for the moment is important.
103. a. It is better to be yourself.
b. It is better to be popular.
- ★ 104. a. Wishing and imagining can be bad.
b. Wishing and imagining are always good.
105. a. I spend more time preparing to live.
b. I spend more time actually living.
106. a. I am loved because I give love.
b. I am loved because I am lovable.
107. a. When I really love myself, everybody will love me.
b. When I really love myself, there will still be those who won't love me.
- ★ 108. a. I can let other people control me.
b. I can let other people control me if I am sure they will not continue to control me.
109. a. As they are, people sometimes annoy me.
b. As they are, people do not annoy me.
- ★ 110. a. Living for the future gives my life its primary meaning.
b. Only when living for the future ties into living for the present does my life have meaning.
111. a. I follow diligently the motto, "Don't waste your time."
b. I do not feel bound by the motto, "Don't waste your time."
112. a. What I have been in the past dictates the kind of person I will be.
b. What I have been in the past does not necessarily dictate the kind of person I will be.
113. a. It is important to me how I live in the here and now.
b. It is of little importance to me how I live in the here and now.
114. a. I have had an experience where life seemed just perfect.
b. I have never had an experience where life seemed just perfect.
- ★ 115. a. Evil is the result of frustration in trying to be good.
b. Evil is an intrinsic part of human nature which fights good.

GO ON TO THE NEXT PAGE

- ★ 116. a. A person can completely change his essential nature.
- b. A person can never change his essential nature.
- 117. a. I am afraid to be tender.
- b. I am not afraid to be tender.
- 118. a. I am assertive and affirming.
- b. I am not assertive and affirming.
- ★ 119. a. Women should be trusting and yielding.
- b. Women should not be trusting and yielding.
- ★ 120. a. I see myself as others see me.
- b. I do not see myself as others see me.
- 121. a. It is a good idea to think about your greatest potential.
- b. A person who thinks about his greatest potential gets conceited.
- ★ 122. a. Men should be assertive and affirming.
- b. Men should not be assertive and affirming.
- 123. a. I am able to risk being myself.
- b. I am not able to risk being myself.
- ★ 124. a. I feel the need to be doing something significant all of the time.
- b. I do not feel the need to be doing something significant all of the time.
- 125. a. I suffer from memories.
- b. I do not suffer from memories.
- 126. a. Men and women must be both yielding and assertive.
- b. Men and women must not be both yielding and assertive.
- 127. a. I like to participate actively in intense discussions.
- b. I do not like to participate actively in intense discussions.
- ★ 128. a. I am self-sufficient.
- b. I am not self-sufficient.
- ★ 129. a. I like to withdraw from others for extended periods of time.
- b. I do not like to withdraw from others for extended periods of time.
- 130. a. I always play fair.
- b. Sometimes I cheat a little.
- ★ 131. a. Sometimes I feel so angry I want to destroy or hurt others.
- b. I never feel so angry that I want to destroy or hurt others.
- ★ 132. a. I feel certain and secure in my relationships with others.
- b. I feel uncertain and insecure in my relationships with others.
- 133. a. I like to withdraw temporarily from others.
- b. I do not like to withdraw temporarily from others.
- 134. a. I can accept my mistakes.
- b. I cannot accept my mistakes.
- 135. a. I find some people who are stupid and uninteresting.
- b. I never find any people who are stupid and uninteresting.
- 136. a. I regret my past.
- b. I do not regret my past.
- 137. a. Being myself is helpful to others.
- b. Just being myself is not helpful to others.
- 138. a. I have had moments of intense happiness when I felt like I was experiencing a kind of ecstasy or bliss.
- b. I have not had moments of intense happiness when I felt like I was experiencing a kind of bliss.

- ★ 139. a. People have an instinct for evil.
b. People do not have an instinct for evil.
140. a. For me, the future usually seems hopeful.
b. For me, the future often seems hopeless.
141. a. People are both good and evil.
b. People are not both good and evil.
142. a. My past is a stepping stone for the future.
b. My past is a handicap to my future.
143. a. "Killing time" is a problem for me.
b. "Killing time" is not a problem for me.
- ★ 144. a. For me, past, present and future is in meaningful continuity.
b. For me, the present is an island, unrelated to the past and future.
- ★ 145. a. My hope for the future depends on having friends.
b. My hope for the future does not depend on having friends.
146. a. I can like people without having to approve of them.
b. I cannot like people unless I also approve of them.
147. a. People are basically good.
b. People are not basically good.
148. a. Honesty is always the best policy.
b. There are times when honesty is not the best policy.
149. a. I can feel comfortable with less than a perfect performance.
b. I feel uncomfortable with anything less than a perfect performance.
150. a. I can overcome any obstacles as long as I believe in myself.
b. I cannot overcome every obstacle even if I believe in myself.



Appendix II
Demographic questionnaire

Name _____

PLEASE COMPLETE THE FOLLOWING QUESTIONNAIRE. PLEASE ANSWER AS HONESTLY AND ACCURATELY AS POSSIBLE. ALL ANSWERS WILL BE TREATED WITH STRICT CONFIDENTIALITY.

Are you a: male? _____; female? _____ (please check the appropriate blank)

How old are you? _____ years

What is the highest grade level that you have completed in school? (for example: a graduate of high school=grade level 12) _____

Length of zazen practice

1. How long have you practiced zazen? _____ years _____ months
2. how many days did you sit last month? _____ days
3. How many times each day (on the average) did you sit last month? _____ times
4. On the average, throughout your entire practice, about how many days a week did you usually sit zazen? _____ days
5. On the average, throughout your entire practice, about how many times per day did you sit zazen? _____ times
6. About how many two-day sesshins have you sat? _____
7. About how many seven-day sesshins have you sat? _____
8. About how many longer sesshins have you sat? _____
9. I have taken the following vows: (please check the appropriate blank/blanks)
_____ no ordination
_____ layman's ordination
_____ monk's ordination

Type of Practice

Please describe what you usually do when you meditate (for instance: count your breath, watch your breath, shikan-taza, visualization, vipassana, shamata, etc.)

Other meditation activities

Please list other meditational activities that you have followed and indicate the approximate length of time that you did each of them (for example: karate, transcendental meditation, tai chi chuan, yoga, ritualized prayer, etc.)

<u>activity</u>	<u>number of years</u> <u>practiced</u>	<u>how long ago did you stop?</u> (enter "0" if you still practice it)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Attainment level

Imagine for a moment that the "the path of Zen" consists of ten successive steps. How many steps do you honestly feel that you have completed?

_____ steps completed

Appendix III
Instruction sheet

INSTRUCTIONS

1. Inside you will find two questionnaires:
 - a. the Personal Orientation Inventory
 - b. a questionnaire that asks about your Zen practice.
2. These may be computer scored so please use the #2 pencil provided.
3. You need not fill in your name if you do not wish to.
4. Inside you will also find two copies of an Informed Consent form. Please read this form BEFORE you begin the questionnaires. If you agree with the form, sign your name on both copies and keep one copy for yourself.
5. When answering the questions please chose the option that best fits you or the option that is most right. All of the answers may not feel totally correct to you or may not fit you totally. But please answer the one option that is the best fit or is most correct.
6. Take your time--there is no time limit.
7. When you are finished either I or the person administering the test will explain to you the purpose of this study.
8. Thank You.

Appendix IV
Informed Consent form

INFORMED CONSENT FORM

UNIVERSITY OF NEBRASKA AT OMAHA

You are invited to participate in a study of Zen meditation. We hope to learn the effects of Zen meditation on certain personality variables. You have been selected as a possible participant in this study because you are either a practicing Zen student or you have never been a student of meditation and because you voluntarily agreed to participate in this study.

If you decide to participate, I will ask you to fill out a questionnaire that will ask you about your attitudes, beliefs, and behaviors in real life situations. This should take no longer than 40 minutes. There are no physical or psychological risks involved in the procedure. I can not and do not guarantee that you will receive any benefits from this study.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential. If you give us permission by signing this form, I plan to publish the results of this study. However, your name and any information that could be connected with you will not now, nor anytime in the future, be published.

Your decision whether or not to participate will not prejudice your future relations with the University of Nebraska at Omaha, or the Zen center to which you belong. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without prejudice.

You may have access to your test results at any time during the study.

It is my understanding that institutional facilities and professional care will be provided any subject who is injured as a result of any experimental research procedures, but that monetary compensation is not available.

If you have any questions, I expect you to ask me. If you have any additional questions later, I will be happy to answer them (William C. Compton, Department of Psychology, University of Nebraska at Omaha, (402) 554-2592). You will be given a copy of this form to keep.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING READ THE INFORMATION PROVIDED ABOVE.

Date

Signature

Wm C. Compton
Investigator



I wish to have a copy of the abstract summarizing the results of this study sent to me at the following address:

Appendix V
Debriefing Information

DEBRIEFING INFORMATION

These questionnaires were part of my Masters thesis in psychology. The title of the thesis is Self-actualization in Practicioners of Zen Buddhist meditation.

The term self-actualization was coined by Dr. Abraham Maslow. He used it to describe people who seemed to be "living their lives to their fullest potential". The people he described as being self-actualized seemed to be more "psychologically healthy" than most other people. The Personal Orientation Inventory was a measure of self-actualization.

In meditation research it has been quite often found that as the length of time one practices Transcendental Meditation increases, the person's score of self-actualization also increases. However, little research has been done with practitioners of Zen meditation. So the first part of this study was to see if scores of self-actualization increased the longer a person practiced Zen meditation.

Someone also hypothesized that it takes a beginning student of Zen about nine months of practice before thay feel comfortable with the type of meditation that Zen uses. The other part of this study was to see if that is a correct hypothesis.

If you have any questions, the Informed Consent form that you have has my name, address, and phone number on it. Give me a call or write me a letter and I will answer your question to the best of my ability. Thank you very much for your participation.