

## THE EFFECT OF CONTEMPLATIVE PRACTICE ON INTRAPERSONAL, INTERPERSONAL, AND TRANSPERSONAL DIMENSIONS OF THE SELF-CONCEPT

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**ABSTRACT:** This study investigated the effect of Buddhist meditation on self-directedness, cooperativeness, and self-transcendence, representing the intrapersonal, interpersonal, and transpersonal levels of the self-concept, respectively. On empirical and theoretical grounds, the authors predicted that meditation experience would lead to development in each of these dimensions. Prospective meditators ( $n = 28$ ) with no experience, beginner meditators ( $n = 58$ ) with less than 2 years' experience, and advanced meditators ( $n = 73$ ) with more than 2 years' experience of meditation were compared on the intrapersonal, interpersonal, and transpersonal subscales of the Temperament and Character Inventory. The hypothesis was fully supported for all three dimensions of the self-concept, level of development being a positive function of meditation experience. Implications and limitations of the study are discussed.

### INTRODUCTION

Since the Western world became acquainted with Eastern worldviews in the 1960s (Suzuki, 1960), the practice of meditation—the main characteristic of the Buddhist way of life—has been increasingly applied within the clinical sector to supplement conventional psychotherapies (Carrington & Ephron, 1975; Kabat-Zinn, Lipworth, Burney, & Sellers, 1986; Schuster, 1979; Shapiro, 1982). As such, meditation is mainly applied as an eclectic tool for the client's self-regulation and self-exploration (Shapiro, 1992). The highly intellectual, contemporary writer and vigorous advocate of the perennial philosophy, Ken Wilber (1983), even claims: "meditation—or a similar and truly contemplative practice—becomes an absolute ethical imperative . . . if we are to contribute to evolution and not merely siphon it off" (p. 321).

Likewise, within its religious background, meditation aims for self-development. However, ultimately the cultivation of a nondualistic perception of existence is sought, transcending the experience of an independently existing self, thus supporting compassion and sensitivity to the welfare of others (Krishnamurti Foundation, 1996). Although the variety of meditation methods that have evolved is extremely large, Walsh (1983) summarizes them as "a family of practices that train attention in order to heighten awareness and bring mental processes under greater voluntary control" (p. 19). Hence, through observing and training the workings of one's mind, different states of self-consciousness are said to be reached.

Empirical research has been conducted to reveal the specific phenomenological, physiological, and psychological correlates of meditation (see Farthing, 1992, for a review). The most common phenomenological effect reported has been relaxation.

Physiological studies have identified changes in physiological activity as well as in cortical activity during meditative states. These bodily changes support the view that the described phenomenological, as well as the following psychological, effects of meditation are truly causal phenomena.

Within the psychological domain, research has related the practice of meditation at the intrapersonal level to an increment in internal locus of control (Hjelle, 1974), overall domain-specific sense of control (Astin, 1997), and self-determination (Penner, Zingle, Dyck, & Truch, 1974). At the interpersonal level, relations to the positive development of ego distance (Pelletier, 1974), altruism (Penner et al., 1974), social-psychological attitudes (Hanley & Spates, 1978), and empathy (Lesh, 1970), as well as a decrement in hostility (Abrams & Siegel, 1978), have been reported.

Psychological studies have suggested that meditation encourages self-actualization (Hjelle, 1974; Nidich, Seeman, & Dreskin, 1973; Seeman, Nidich, & Banta, 1972), a concept assessed through a measurement scale designed by Shostrom (1964) that taps 12 dimensions of personal orientation. The domains that were shown to be significantly, positively affected by meditation practice in these three investigations were inner directedness, spontaneity, self-regard, and self-actualizing value, classifiable as intrapersonal aspects; and capacity for intimate contact, clearly belonging to the interpersonal dimension. On the basis of a thorough meta-analysis, these changes were recently linked with meditators' increased self-transcendental experiences (Alexander, Rainforth, & Gelderloos, 1991).

Past research has already focused specifically on the self-concept construct, identifying a relationship between meditation practice and a more positive and strong definition of self-concept at the intrapersonal, interpersonal, and transpersonal levels (Turnbull & Norris, 1982; Nystul & Garde, 1977). Nystul and Garde's (1977) results depict meditators as judging their relation to themselves, to others, and to God more positively. Turnbull and Norris's (1982) study, on the other hand, illustrates that within the process of meditative practice, people's self-concepts approximate toward what they want to be like (i.e., their ideal self) and how they perceive others (i.e., their social self).

These questionnaire-based studies were truly experimental in nature, establishing treatment-to-treatment or before/after treatment conditions, focusing on one specific method of meditation (i.e., concentrative or mindfulness meditation [see below]). However, various methodological shortcomings, such as small number of participants, student samples, non-random allocation of participants to condition and/or absence of a control group, decrease their scientific value. Considering that probably a specific psychological type of person is attracted to meditation (Shapiro, 1987), the fact that only one study controlled for such group specificity bias by matching control and experimental groups for interest in the areas of Buddhism and meditation (Hjelle, 1974) threatens their validity still further. Moreover, Hjelle's study applied a cross-sectional design, thereby reducing the high-demand characteristics associated with longitudinal designs which require multiple administration

of a self-report reliant measurement tool that is, in any case, highly susceptible to such biases. Proceeding otherwise risks attributing meditation effects that might be either an intrinsic quality of the kind of people who approach this activity in the first place (Shapiro, 1987) or may have arisen from participants' compliance with guessed outcome expectations on behalf of the experimenter (Hjelle, 1974). Taking these methodological pitfalls into account, it would be preferable to investigate the subject matter under naturalistic conditions—using a quasi-experimental design—with a nonstudent sample and an attempt to restrict the key confounding factors, group specificity bias and demand characteristics.

### *The Objectives of the Present Study*

The current study set out to extend the insight into the effects of meditation on people's self-conceptualizations. The primary focal point was whether or not changes occur in people's self-concept at different stages of development within their regular, self-selected practice of Buddhist meditation. Here it must be stressed that within the Buddhist tradition it is believed that two kinds of meditation methods, concentrative and mindfulness meditation, have to be trained in parallel. Concentrative meditation methods teach the mind to create space for the truly meaningful matters in life by practicing the removal of thought processes through focusing one's entire attention on one specific stimulus. Mindfulness meditation methods teach sensitive awareness to that which is meaningful within and around us by directing one's entire attention to all thought processes (Goleman, 1988). The flexibility of the mind to apply either of them when necessary seems to be what is aimed for. As Geshe Tashi Tsering, a Tibetan lama and leader of the London Yamjang Buddhist center, explained to the first author: "The least we want is a dull, relaxed mind. We want sharp, alert, and receptive minds. The exclusive training of one type of meditation makes the mind dull." The study's naturalistic premise thus excludes the possibility of differentiating between these two types of meditation methods, as has been done in past research.

The second major objective was to extend the understanding of the effect of meditative practice by using a more recent and integrative model of the self-concept, taking the intrapersonal, interpersonal, and transpersonal dimensions equally into account. This seems particularly crucial, since the transpersonal has so far been little considered in a scientific manner. In particular, the only directly relevant discoveries made have been (a) meditators' self-reports claim a significantly more positive relationship between their selves and God (Nystul & Garde, 1977) and (b) the link between self-transcendental experiences and self-actualization (Alexander et al., 1991).

The neglect of this area in psychology has often been criticized (e.g., Bergin, 1991). Indeed, within the area of personality, the transpersonal dimension has only recently been acknowledged as being of significance. According to MacDonald and his colleagues (MacDonald, Tsagarakis, & Holland, 1994), there are only two personality measurements available that transcend conventional models, such as the "Big Five"<sup>w</sup>-factor model of Costa and McCrea (1992), by including this aspect. One of

them is Friedman's (1983) Self-Expansiveness Level Form (SELF); the other is Cloninger, Svrakic, and Przybeck's (1993) Temperament and Character Inventory (TCI). Since the SELF appears generally less comprehensive and supposedly bears weaknesses in terms of operationalization and definition as well as a gender bias (MacDonald, LeClair, & Holland, 1995), the TCI was judged to be more adequate for scientific inquiry.

In the TCI-associated psychobiological model of personality, Cloninger and his colleagues (1993) differentiate two distinct personality structures: temperament and character. Personality development is assumed to occur via the dynamic interaction between these two factors according to the epigenetic principle, reciprocal feedback. The temperament factors are assumed to "[be] independently heritable, manifest early in life, and involve preconceptual biases in perceptual memory and habit formation." Character factors "mature in adulthood and influence personal and social effectiveness by insight learning about self-concepts" (p. 975). In particular, temperament denotes traits having to do with associative learning in response to novelty, punishment, reward, and persistence, while the character dimension includes response biases in relation to three different facets of the self-concept that are the focus of this investigation: intrapersonal, interpersonal, and transpersonal. Specifically, how people identify their selves on these levels significantly defines their personality make-up.

According to Cloninger et al. (1993), people's self-concepts vary in their degree of self-identification within three dimensions: self-directedness (intrapersonal level), cooperativeness (interpersonal level), and self-transcendence (transpersonal level). Self-directedness is referred to as a developmental process, concerning a person's "self-determination and 'willpower', or the ability . . . to control, regulate and adapt behaviour to fit the situation in accord with individually chosen goals and values" (p. 979). Cooperativeness is defined as "Individual differences in identification with and acceptance of other people" (p. 980). Finally, self-transcendence is encapsulated as "[the] identification with everything conceived as essential and consequential parts of a unified whole" (p. 981).

On the basis of the empirical findings of meditation's psychological correlates, positive development should be expected within the intrapersonal, interpersonal, and transpersonal domains of the self-concept. Although the most appropriate method of studying this phenomenon would certainly be to accompany participants through this process (i.e., a longitudinal design), in the light of the outlined difficulties with demand characteristics it appears advisable to compare different individuals who are at different stages in their meditative practice at one point in time (i.e., a cross-sectional design). The control of this potentially confounding variable can be seen as the study's third key point. The fourth empirical objective is the restriction of another bias, namely group specificity bias, by matching the control group (made up of individuals who are planning to start practicing Buddhist meditation, or "prospective meditators") and the experimental groups ("active meditators") for their interest in Buddhist meditation.

Furthermore, as the effect of meditation is clearly not an all-or-nothing process (Krishnamurti Foundation, 1996), it is necessary to distinguish between individuals who have become involved recently (beginner meditators) and individuals who have been involved for a longer period of time (advanced meditators). To acknowledge the effects of meditation as a continual process, involving the acquisition of skills that need to be learned and which are not simply picked up at once, can be seen as the fifth focus of the study.

On the basis of past research, we hypothesized that there would be significant development in all three aspects of the self-concept—the intrapersonal (self-directedness), interpersonal (cooperativeness), and transpersonal (self-transcendence) dimensions—as a positive linear function of meditation experience. We therefore predicted that scores on each of the corresponding subscales of the TCI would be higher for advanced meditators than for beginner meditators and higher for beginner meditators than for prospective meditators.

## METHOD

### *Design*

A cross-sectional design was employed, with one independent variable and three dependent variables. The independent variable was meditation experience, encompassing three levels. The first sample was composed of participants who had the intention to start practicing meditation but no experience yet. This group, labelled *prospective meditators*, was the baseline comparison group, controlling for group specificity of people drawn to Buddhist meditation. The second sample, called *beginner meditators*, consisted of participants who had meditated regularly (i.e., at least once a week) for less than 2 years. The third group, *advanced meditators*, consisted of participants who had meditated at least once a week for more than 2 years. The participants' performances in these last two samples should be relatively equal if they were based on motivational factors such as experimenter bias and demand characteristics (Alexander et al., 1991). The cut-off of 2 years followed the advice given by several spiritual leaders of the Buddhist centers and has, furthermore, been applied in past meditation research (Shapiro, 1992). Within each sample there were two subgroups, divided according to whether participants were attending Western or Tibetan Buddhist meditation centers.

The three dependent variables were the participants' scores on the intrapersonal, interpersonal, and transpersonal subscales of the self-concept inventory. To control for the existing mean age difference between groups, this factor was included in the design as a covariate.

### *Participants*

Participants were drawn from people attending six Buddhist meditation centers in London. Three of these centers were adherents of the Tibetan Buddhist tradition, two of the centres being mahayanist and one being vajrayanist. The remaining three

centers followed a Westernized version of Buddhism designated Friends of the Western Buddhist Order. These centers were selected on the basis of availability; study participants taken from them hence represented an opportunity sample of the population of people who are interested in the practice of meditation. A total of 300 questionnaires was distributed, with an overall response rate of 53%. Approximately equal numbers of questionnaires were returned for the three samples from both Tibetan and Westernized Buddhist centers. The total sample consisted of 159 participants, of which 17.6% were prospective, 36.5% were beginner, and 45.9% were advanced practitioners of Buddhist meditation. Within these three experimental samples, gender was relatively equally represented, and age was positively related to meditation experience (see Table 1). The three samples were almost exclusively Caucasian: 100% of the prospective meditators, 87% of the

TABLE 1  
BASIC DETAILS OF SAMPLES

	<i>n</i> (females)	<i>n</i> (males)	<i>n</i> (Western)	<i>n</i> (Tibetan)	Mean age in years (range)
Prospective meditators	17	11	15	13	31.68 (20 - 68)
Beginner meditators	28	30	34	24	33.78 (19 - 64)
Advanced meditators	24	39	36	17	40.64 (18 - 73)

beginner meditators, and 98% of the advanced meditators. The participants' occupational backgrounds were so wide ranging (e.g., students, builders, charity workers, musicians, teachers, clerks, writers, designers, lecturers, lawyers, therapists) that no categorization was attempted.

### *Materials*

One hundred and two items were drawn from three of the subscales of the Temperament and Character Inventory (TCI) (Cloninger et al., 1993): 38 items from the intrapersonal subscale, 38 items from the interpersonal subscale, and 26 items from the transpersonal subscale. The TCI, a paper-and-pencil self-assessment questionnaire containing seven subscales relating to the four temperament and three character factors, has generally received adequate support in terms of reliability and validity (MacDonald et al., 1995). Nevertheless, more research is required for a definitive judgement of its psychometric value. Each subscale represents separate aspects of the respective subdimension. The intrapersonal, self-directedness scale encompasses five different aspects, represented as continua: personal responsibility taking vs. blaming, purposefulness vs. goal-undirectedness, resourcefulness vs. apathy, self-acceptance vs. self-striving, and congruent second nature vs. personal distrust. The interpersonal, cooperativeness scale is specified by five basic continuous developmental qualities: social acceptance vs. intolerance, empathy vs. social disinterest, helpfulness vs. unhelpfulness, compassion vs. revengefulness, and pure-heartedness vs. selfishness. The transpersonal, self-transcendence scale is divided into three distinct, key, developmental continua: self-forgetfulness vs. self-con-

sciousness, transpersonal identification vs. self-isolation, and spiritual acceptance vs. rational materialism.

The items were administered as a single questionnaire, in random order. However, the following changes were made: the original subscales were shortened somewhat, the wording refined, and the response pattern changed. Within the intrapersonal subscale, items referring to self-acceptance were reduced from 11 to eight, and only nine items relating to congruent second nature were included instead of 12. Within the interpersonal subscale, four items were omitted: one from the helpfulness domain, two from the compassion domain, and one from the pure-hearted conscience domain. The transpersonal subscale was reduced from 33 items to 26, three items being removed from the spiritual acceptance section, three items from the self-forgetful section, and one from the transpersonal identification section. Items were eliminated following advice from spiritual leaders at the Buddhist centers, who judged particular items as inadequate, intrusive, or repetitive. Cronbach's alpha was performed on the resulting subscales, in all cases exceeding the generally accepted criterion for internal consistency of 0.7. The values obtained were 0.86 for the intrapersonal subscale, 0.78 for the interpersonal subscale, and 0.78 for the transpersonal subscale. To prevent response bias, the wording of the items was frequently reversed, resulting in 51 negative and 51 positive statements. To expand the participants' choice, a four-point Likert-type scale (strongly agree, slightly agree, slightly disagree, strongly disagree) was chosen instead of the pre-given yes/no format. No neutral response option was allowed, due to the problems of interpreting a midway position, which is ambiguous as to whether the participant is opinionless or simply indecisive. The participants' answers were scored as follows: For the positive statements, "strongly agree" was given a value of 3, "slightly agree" a value of 1, "slightly disagree" a value of -1, and "strongly disagree" a value of -3. For the negative statements, this schema was reversed. These scores were totaled for the individual subscales, yielding three individual scores for each participant relating respectively to the intra-, inter- and transpersonal self-concept dimensions. Possible scores ranged from -114 to +114 for the intrapersonal and the interpersonal subscales and from -78 to +78 for the transpersonal subscale.

Prior to completing the questionnaire, participants were asked to provide information on the following demographic characteristics: age, gender, occupation, ethnicity, actively practiced religion, duration of meditation experience, frequency of meditation experience, and method of meditation practiced.

### *Procedure*

Participants were recruited over a period of 7 weeks. They were approached on open days at the meditation centers, during introductory courses on meditation practice, or at regular meditative meetings. Participants were not told about the true purpose of the study in order to reduce potential social desirability. The study was introduced as a research project investigating general attitudes of Western people interested in Eastern philosophies. Participants were supplied with questionnaires and allowed to answer them in their own time, returning them to a third party or an

available box in the meditation center or via a stamped, addressed envelope directly to the investigator.

## RESULTS

Total scores on each of the three subscales of the TCI were computed. In the case of two participants, missing values on 11 and 7 items respectively were scored as zero. Since there were fewer items on the transpersonal subscale than on the intrapersonal and interpersonal subscales, scores were converted to proportions of the maximum possible, making direct comparisons possible between scales. An arcsin transformation was performed on the data prior to statistical analysis. Means and standard deviations of the resulting scores on the three subscales for each group are shown in Table 2.

A repeated measures analysis of variance was carried out with meditation experience (prospective, beginner, advanced) as a between-participants variable, scale (intrapersonal, interpersonal, transpersonal) as a within-participants variable, score as the dependent variable, and age as a covariate. Post hoc comparisons were conducted using Tukey's honestly significant difference test for the between-participants variable and Bonferroni tests for the within-participants variable. The significant results obtained are set out in Table 3.

Age was not significantly correlated with score ( $B = 0.00037$ ,  $t = 0.39$ ,  $p = 0.696$ ). The contribution of age to the prediction of score is negligible. There were highly significant main effects of both meditation experience and scale (see Figure 1). The results of the post hoc tests show that advanced meditators scored significantly higher than prospective meditators on all three subscales, advanced meditators scored significantly higher than beginner meditators on the interpersonal subscale, and beginner meditators scored significantly higher than prospective meditators on the transpersonal subscale (this last being the largest of these effects). All three groups scored significantly higher on the interpersonal than on the transpersonal subscale, and beginner and advanced meditators scored significantly higher on the interpersonal than on the intrapersonal subscale, but only the advanced meditators scored significantly higher on the transpersonal than on the intrapersonal subscale.

## DISCUSSION

The results of the current investigation demonstrated that scores on the intrapersonal, interpersonal, and transpersonal levels of the TCI were a positive function of meditation experience, suggesting that progress in Buddhist meditation leads to significant growth in these components of personality. Overall, scores were highest on the interpersonal scale and lowest on the intrapersonal scale. The greatest changes as a function of meditation experience were on the transpersonal scale.

These results are consistent with the empirical research reviewed in the Introduction indicating that the practice of meditation leads to positive development of people's self-concept definition at the intrapersonal level (Nystul & Garde, 1977; Turnbull &

TABLE 2  
MEAN SCORES (AND STANDARD DEVIATIONS) ON THE INTRAPERSONAL, INTERPERSONAL, AND TRANSPERSONAL  
SUBSCALES OF THE TCI FOR PROSPECTIVE, BEGINNER, AND ADVANCED MEDITATORS

	Prospective (n = 28)	Beginner (n = 58)	Advanced (n = 73)	Combined (n = 159)
Intrapersonal	1.710 (0.162)	1.779 (0.179)	1.831 (0.187)	1.791 (0.184)
Interpersonal	1.900(0.117)	1.919 (0.144)	1.990 (0.139)	1.948 (0.142)
Transpersonal	1.703 (0.211)	1.834 (0.169)	1.890 (0.175)	1.837 (0.191)
Combined	<b>1.771</b> (0.168)	1.844 (0.165)	1.904 (0.168)	

TABLE 3  
SIGNIFICANT RESULTS OF ANOVA INCLUDING POST HOC TESTS

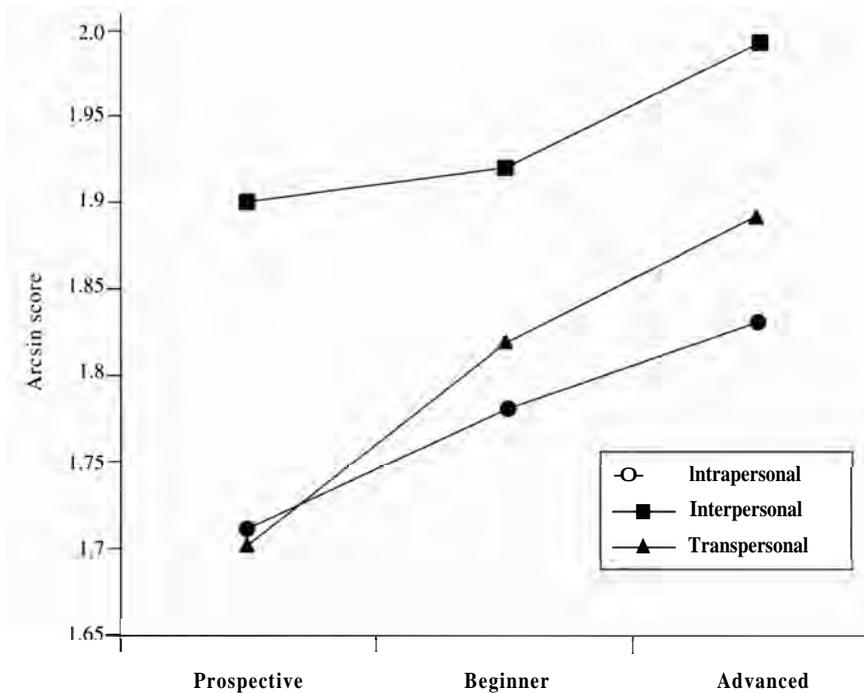
Effect	Prospective		Beginner		Advanced		Statistic	Post hoc tests	Tukye	HSD
Meditation Experience	Mean	SD	Mean	SD	Mean	SD				
Combined*	1.77	0.17	1.84	0.16	1.90	0.17	F(2,155) =9.41			
Intrapersonal	1.71	0.16	1.78	0.18	1.83	0.19		A>P (0.007)		
Interpersonal	1.90	0.12	1.92	0.14	1.99	0.14		A>P (0.008) A>B (0.009)		
Transpersonal	1.70	0.21	1.83	0.17	1.89	0.18		A>P (0.0001) B>P (0.004)		
Scale	Intrapersonal		Interpersonal		Transpersonal		Bonferroni			
	Mean	SD	Mean	SD	Mean	SD				
Combined*	1.79	0.18	1.95	0.14	1.84	0.19	F(2,312) =60.97			
Prospective	1.71	0.16	1.90	0.12	1.70	0.21		Inter>Trans (<0.0005)		
Beginner	1.78	0.18	1.92	0.14	1.83	0.17		Inter>Intra (<0.0005) Inter>Trans (<0.001)		
Advanced	1.83	0.19	1.99	0.14	1.89	0.18		Inter>Intra (<0.0005) Inter>Trans (<0.0005) Trans>Intra (0.007)		

\*p < 0.001

Norris, 1982), involving an increment in locus of control (Astin, 1997; Hjelle, 1974), inner directedness (Hjelle, 1974; Nidich et al., 1973; Seeman et al., 1972), and self-determination (Penner et al., 1974); and positive development of people's self-concept definition at the interpersonal level (Nystul & Garde, 1977; Turnbull & Norris, 1982), involving increments in altruism (Penner et al., 1974), ego distance (Pelletier, 1974), intimacy capacity (Hjelle, 1974; Nidich et al., 1973; Seeman et al., 1972), empathy (Lesh, 1970), and positive psychosocial attitudes (Hanley & Spates, 1978), as well as a decrement in hostility (Abrams & Siegel, 1978). More importantly, our results extend the findings of these authors to the transpersonal domain, as incorporated in the sophisticated theoretical model of the self-concept developed by Cloninger et al. (1993), building on the limited research in this area which indicates positive development of people's self-concept definition at the transpersonal level (Nystul & Garde, 1977), involving an increment in self-actualization (Hjelle, 1974; Nidich et al., 1973; Seeman et al., 1972), with increased self-transcendental experiences (Alexander et al., 1991), as a correlate of the practice of meditation.

Moreover, the current investigation implemented methodological improvements over most previous studies by employing a sizeable, representative sample in a natural environment and by attempting to reduce demand characteristics and minimize group specificity bias. Construct validity could have been further enhanced by

**FIGURE 1**  
**MEAN ARCSIN SCORES ON THE INTRAPERSONAL, INTERPERSONAL, AND TRANSPERSONAL**  
**SUBSCALES OF THE TCI FOR PROSPECTIVE, BEGINNER, AND ADVANCED MEDITATORS**



inclusion of different tests measuring similar constructs, such as the Self-Expansiveness Level Form (Friedman, 1983), Ego Grasping Orientation questionnaire (Knoblauch & Falconer, 1986) or East West Questionnaire (Gilgen & Cho, 1979). No comparison was made between different methods of meditation, nor was the possible effect of frequency of meditation practice explored. However, the non-differentiation of meditative methods is not as substantive as it might first appear, as discussed below.

At first glance, and assuming the validity of a cross-sectional design, it might be concluded that Buddhist meditation is an effective tool for developing self-control with respect to one's life goals, social skills, and increased freedom from self-orientation. Furthermore, within Cloninger et al.'s (1993) framework, meditation could be suggested as an aid to character formation in particular and personality development in general, as changes in character also affect the other basic personality component, temperament. Before accepting such a causal hypothesis, potential problems with the study need to be addressed which may affect the interpretation of the results.

Firstly, reliance on questionnaires as a measuring instrument raises the possibility of false self-reports resulting from participants' social desirability. However, the different performance of the two groups of active meditators appears to counter such criticism (Alexander et al., 1991). This difference also suggests that the attempt to conceal the true purpose of the investigation was successful. Furthermore, Foulds and Warehime (1971) have demonstrated that it is not easy for meditators to fake "good responses on personality tests.

Secondly, there is the issue of response rate, which was 53%. Hence, the people who actually returned the questionnaires may represent only a specific subpopulation of the people willing to initiate Buddhist meditative practices, differing in crucial aspects that brought about the displayed performance. However, the response rates appeared to be fairly equal across the three groups, the number of questionnaires returned within each sample reflecting the representation of the relevant participants within each Buddhist center. The fact that participants were not required to answer and return the questionnaires immediately (since meetings at the centers were often late in the evening and the questionnaire took about 30 minutes to complete) resulted in variable conditions in which participants completed the questionnaires, possibly introducing additional sources of bias. However, this was considered preferable and more likely to give valid results than requiring immediate completion.

### *The Effect of Meditation Practice vs. the Effect of Beliefs, Expectations, and Values*

It was not possible in this study to investigate religious participation and its effects on self-perception, interpersonal interactions, and values, particularly relationship to the transcendent. There is undoubtedly a complex interaction between practice, doctrine, beliefs, values, and behaviors. Religiosity has been shown to relate to par-

ticipants' meditative experience (Shapiro, 1992). Religious participation and meditation are often confounded; future work should be directed toward disentangling these factors. It is possible that this was compounded in the present study by the removal of certain items from the TCI at the suggestion of spiritual leaders on whose cooperation data collection depended. Although we have no particular reason to believe this was the case, it is possible that this affected our results.

Despite the attempt to control for group specificity bias through the inclusion of prospective meditators, this confounding factor was not completely eliminated. This is due to an inescapable obstacle within meditation research termed the attrition problem (Shapiro, 1987), which refers to the probability that continuing as well as quitting the practice of meditation is linked to specific personality make-ups. Dropouts have been identified as more psychologically disturbed and less critical (Smith, 1978), as well as more neurotic (West, 1980). With the high dropout rates noted in initiators of meditation (Smith, 1976; West, 1980), this constitutes a major problem for valid scientific investigations in this area.

Likewise, it was impossible to eliminate demand characteristics, despite the cross-sectional design. Again, the reason is not a difficulty specific to the current study, but rather a common problem in this research area, namely participants' self-imposed expectations. If meditation turns out to be ineffective, the individual may give falsified reports based on attitudes formed to relieve the cognitive dissonance, arising from the discrepancy between personal expectations and personal experience and the frustration due to the fruitless time investment (Farthing, 1992). Evidence for the importance of expectations has been obtained by Smith (1976), who established that belief in effectiveness is a necessary condition for actual effectiveness of meditation. This is a special case of the placebo effect, where expectations are sufficient to bring about the respective outcome, which sceptics similarly raise against claims of meditation practice's efficacy (Shapiro, 1987).

These considerations appear even more problematic in the light of the findings of Shapiro (1992). He identified significant relationships between different effects of meditation and changing effect-expectations across time. In particular, it was demonstrated that meditators move, during the course of their meditative training, from the initial aim of self-regulation, across the intermediate aim of self-exploration, to the final aim of self-liberation and compassionate service. Hence, rather than increased skills in the practice of the method, change in expectations might be the primary cause of development in the different levels of self-concept. But what promotes this change in expectations?

If it is important that meditators believe in meditation effects to experience these effects, the way of teaching, or should one say the degree of persuasion, is clearly as crucial as the student's expectations. Therefore, one might rather speak of "guru" effects instead of meditation effects (Farthing, 1992). The current study failed to control for this confounding variable. However, such influences cannot explain the direction of progress in expectations.

### *Progressive Shifts in Meditative Projects*

A possible interpretation is as follows. If the Buddhist ideology appeals, the practitioner starts with what appears most important from a subjective viewpoint: self-regulation. This is the first meditative project, clearly related to the intrapersonal self-concept domain. The higher one's sense of control, the greater the prospect of engaging in the second meditative project: self-exploration. But how can the self be explored without any relation to other objects? Only through analysis of our responses to what exists around us can we know our selves (Gazzaniga & LeDoux, 1978). Hence, through this process we also need to know other selves, certainly relevant to the interpersonal self-concept level. The greater the capacity to regulate and understand our selves, the greater the space to start the final meditative project related to one's transpersonal self-concept: self-liberation and compassionate service. These hypotheses could be empirically investigated by exploring the relationships between the individual self-concept dimensions.

Given the influence of the individual's personality, expectations, and received teachings, the necessary ingredients for generating this complex process may lie primarily within the student and the instructor as well as within their interaction, rather than within the meditation method as such. This view matches Delmonte's (1987) conclusion:

Meditation is a self-directed and active process in which a technique is used by a person (and not on a person) in the context of particular subjective expectations and objectives. For this reason meditation may not be readily dispensed, like medication, to anxious or depressed patients if they show little motivation to practice. The value of meditation may be greater for those who wish to be involved in directing their own development than for those wanting to be "cured" passively. (p. 132)

It also sets in perspective Ken Wilber's previously quoted claim and demand for humans' active engagement in the processes of evolution through true contemplative practice.

Wilber (1983) also concurs with the view that it does not matter what methods are applied for contemplation so long as the result is *true* contemplation. What is important is the raising of awareness of the individual self and, thus, to all that exists in relation to it. Different individuals may need different strategies taught by different instructors. These strategies could be different forms of psychotherapy or meditation or a combination of such methods. This hypothesis also makes sense of the so-called equivalent paradox, a source of great headaches for many dedicated researchers. This refers to the fact that so far it has proven impossible to distinguish the outcome of different types of meditation, as well as of different types of psychotherapy, according to their respective contents (Shapiro, 1987).

However, when comparing psychotherapy and meditation, the latter may appear favorable as a method for two reasons: its simplicity and its dualistic stance on problems of human existence, emphasizing the training of both physical and mental awareness. Meditation may therefore be particularly useful as a secular tool for self-

regulation, self-exploration, and self-liberation, best taught at an early age, when cognitive and personality factors are not fully developed and hence do not represent an obstacle to experiencing the method's usefulness. This is an issue for future research.

Finally, the following directions for future research aimed at the analysis of meditation effects are suggested. Studies should focus on the systematic comparison of different people, distinguished particularly in terms of age, personality, and cognitive factors, in relation to different settings, investigated with multiple quantitative as well as qualitative assessment techniques, using randomized (in the case of truly experimental designs) as well as even-numbered and large enough samples, with cross-sectional as well as longitudinal analyses, exploring issues related to psychological well-being that have been suggested to be significantly affected by the practice of meditation, such as the intrapersonal, interpersonal, and transpersonal dimensions of the self-concept. Looking at this latter theoretical construct, the relationship between the different domains of self-conceptualizations as well as the effect of the newly gained self-concept on the temperament factors would also be issues worth exploring.

Unless such future empirical investigation unequivocally pinpoints the causal function of the different factors involved within the process of meditation that affect the self, researchers should be particularly careful about drawing conclusions and making recommendations like the one given by Hjelle (1974) in the context of his study: "An added benefit of the therapeutic application of Transcendental Meditation is that its effects are presumed to come about rapidly and do not depend on new beliefs or altered styles of living" (p. 627). It would be a truly paradisiacal prospect if identifying the catalyst for individuals' personal self-development would be that straightforward within the multicomplexity of contemporary human life.

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