

5. The Meditation Depth Index (MEDI) and the Meditation Depth Questionnaire (MEDEQ) by Harald Piron

Summary

Is there a universal dimension of “Meditation Depth” valid to every individual and way of meditation? Or is there only a very subjective feeling of depth, that differs from person to person and from tradition to tradition? 45 authorized meditation teachers were asked about the depth of different experiences verbalized in 30 items. The agreement is highly significant. Five clusters, interpreted as depth structures, could be found through cluster analysis: “hindrances”, “relaxation”, “personal self”, “transpersonal qualities” and “transpersonal self”. An item- and factor-analysis supports a uni-dimensional Depth – factor in a group of 122 meditators. On this base the Meditation Depth Questionnaire was constructed. First investigations support the reliability and validity of the instrument.

Key words: Essential dimension of depth in meditation, levels of depth, Meditation Depth Questionnaire

The Meditation Depth Index (MEDI) and the Meditation Depth Questionnaire (MEDEQ)

*On the steps of the ladder the soul ascends to God, into the unification with Him.
The higher the soul is ascending to God, the deeper it is descending into itself:
The unification takes place in the innermost of the soul, in the deepest ground.*

Edith Stein

Introduction

The main topic of this study is the analysis of the depth dimension in meditation and the construction of a "Meditation Depth Questionnaire". Three problems are focused: (1.) The problem of stages, (2.) the problem of the different traditions and (3.) the problem of dimensions.

Most of the teachers and masters of meditation agree that there are different stages of depth in meditation. For example the Zen-master Sheng-Yen states: "*Buddhists, Christians, Hindus, Taoists, Sufis and Jewish mystics all describe enlightenment experiences. Are all such experiences the same? So long as you practice sincerely, regardless of the path, any experience which gives you a more profound view of life, and which has a powerfully positive effect on your character, can be called "enlightenment". But these experiences differ in their depth, and in this sense they cannot be said to be exactly the same. Even the same person will experience different levels of enlightenment at different times*" (Sheng-Yen, 1989, 49). In all traditions there are models of stages, for example the story of the ox and the herdsman in Zen, the eight stages of Yoga by Patanjali, the seven flats by Teresa from Avila and many different stages in Tibetan Buddhism.

The second problem is that traditions differ in the conceptualisation of stages. But there are some mystics who prefer rather a universal than a conceptually separating view. The Benedictine father and Zen teacher Willigis Jäger said about the classic spiritual paths of the great traditions: "*Each one has its own signs. But finally they have the same basic structure. All of them lead to the same summit*" (Jäger, 2000, 62). To quote another great spiritual teacher from the Tibetan culture: „*Saints and mystics of all times have decorated their insights and realization with different names, gave them many faces and interpretations; but everyone experiences the same essential nature of the spirit. Christians and Jews call it "God", Hindus call it "the Self", "Brahman" and "Vishnu", Sufis call it "the hidden essence", and Buddhists "Buddha-nature". In the heart of all religions there is the certainty that a basic truth exists and that this life is a sacred opportunity to develop oneself and to realize this truth*" (Sogyal Rinpoche, 1996, 67 f). The realization of this basic truth may be the summit in the words of Willigis Jäger.

There are much more statements like these from mystics in all traditions. Of course we can look at our own meditative experiences and see that our states of consciousness neither are Buddhist, nor Christian, but simply that what they are. We could describe it in terms of phenomenology. There are still some questionnaires about meditative and mystic experiences (for example: Osis, Bokert & Carlson, 1973; Müller, 1997; Ott, 1995; v. Quekelberghe et al, 1992), constructed with the intention of independence from tradition and method. However, an essential depth dimension couldn't be found. Probably the result of factor-analysis depends very much on the selection and formulation of items. For example, Müller (1997, 79) found three different factors of deep meditative experiences: *Relaxation* (of body and mind), *Mystical experience* (love, light, happiness, unity) and *Nirvana-factor* (no thoughts, no emotions). Müller concluded that there are three basic types who experience meditative depth in different ways. For some meditators, a deep meditation was characterized by high relaxation, while Mystical experience and Nirvana factor scored low. The subjective criteria for monitoring their curves of depth were found to be different. The three factors were seen as comparable good indicators for meditative depth, explaining 58 % of the total variance. Most of the sample were practitioners of "Transcendental Meditation", containing beginners as well as advanced meditators. The problem of stages was not being considered. Deep meditation was what the meditators of different levels mentioned to be deep.

Another way to measure meditative depth or development is the form of an index. Engel (1997, 161) constructed the Meditation Development Index based on a 7-point scale. According to the Zen development theory Engel discerned eight stages. The first one is a

premeditative stage (“0”) where meditation is used and understood as a tranquillizer. The next stages are: (1) Searching (uncertainties, changes, search for orientation), (2) Effort (investigation of psychic material; struggle, fight), (3) Level of work (calm, regular exercises), (4) Support (pleasant meditation, supporting itself and the meditator, sufficient motivation to continue), (5) Being Uplifted (beginning synchronicity and absorption, new experiences of time and space), (6) Resolution (universal synchronicity and totality, removal of the subject/object dichotomy, experience of unity) and (7) Afterwards (no more obstruction through “I” or “personality” after meditation). In this form, different stages are considered.

Both problems, dimensionality and stages were to be investigated by this study to the depth dimension in meditation. The leading questions were: Do experts from different traditions agree in their view regarding the dimension of depth? Is it possible to distinguish different levels of depth by statistical evaluation of these expert ratings? If both questions can be answered with ‘yes’, a third question is to evaluate: Are the levels of depth to be interpreted as different dimensions or is there only one dimension transcending and integrating the different levels? The latter is supposed by the author. Three problems seemed to be very important: The selection and formulation of items, the selection of experts from different spiritual traditions and the composition of meditators, representing different traditions.

Method

For validation of the construct and application to meditators it seemed to make sense to create two forms of measurement: a questionnaire and an index. An index only requires to mark the level that was experienced in the deepest stage, that one in the lowest and the average level regarding the past meditation(s). With these three values a meditation could be described very well. The idea of an index was taken from Engel in analogy to his Meditation Development Index. A questionnaire should allow more differentiation than an index and would be necessary for validation of the construct. First the methods are explained. The results are documented separately.

Construction of the Meditation Depth Index (MEDI)

To find out if there is an agreement between experts from different traditions regarding the depth of meditation, 45 authorized teachers were asked about the depth of different experiences verbalized as 30 items in a questionnaire form. These 30 items were the result of some procedures of elaboration and selection: On the base of 27 interviews with meditators on different levels practising different ways of meditation there were collected 50 aspects of experiences. In a second step the number of items was reduced by three criteria: items with same meaning should be reduced or summarized; irrelevant items should be eliminated; different levels of depth should spread widely. These criteria were applied through interviews with 12 advanced meditators who also were teachers in some of the main traditions: Zen (4), Tibetan Buddhism (3), Qigong (2), Yoga (1) and Christian (2). At the end the formulation of the items should be presented in a language that is not only understandable by one or some traditions but by all of them. For example: “I experienced God” or “I experienced emptiness” or “I experienced Sat-Chit-Ananda” are statements for insiders coming from a special tradition. Five items were taken from the KFB by Müller, because they described five of the fifty aspects very well: “I felt myself as one with everything”; “I felt strong energy or power”; “Thoughts had come completely to rest”; “I experienced boundless joy”; “Sometimes I sensed my body as very light”.

The result list of 30 items was given to these 45 experts. The criteria for the expert group were a regular meditation praxis since more than 12 years and an authorization as a

meditation teacher by a master or "Guru" honoured in his tradition. For composition the numbers of representatives of the traditions should be nearly comparable. Modern schools like the Osho- or TM-movement should not be considered, because they don't fit in the category system of the main traditions and are characterized by ideologies that seem to be questionable in the eyes of the author. The following traditions were intended to be considered: Christian contemplation, Theravada-Buddhism, Zen, Tibetan Buddhism, Yoga and Qigong.

The instruction on top of the rating form was the following:

Please allocate to each described item a depth value between 0 and 4, after you have got a general view of the total spectrum of experiences reflected on this list. The following key is meant as a support for orientation:

0 = very flat 1 = flat 2 = medium deep 3 = deep 4 = very deep

Example: I found it difficult to relax. 0 1 2 3 4

The two questions were investigated:

- 1) Do the experts agree in their ratings of depth?
- 2) Are there different levels of depth?

1) Investigation of the agreement of the experts

For the first question, the correlation between the ratings of the 40 experts was calculated by the Kendall's W. Bortz & Döring (1995, 618) define the resulting coefficient of concordance as a non-parametric coefficient that shows the agreement of *n* orders of precedence. The data in the actual study are based on the "law of categorical judgement". Therefore *n* orders of precedence are produced through the ratings of *n* judges regarding *x* objects (items). The agreement of these *n* orders of precedence is represented by the coefficient of concordance. A coefficient with the value *one* would express absolute agreement. *Zero* means no agreement. A significant concordance shall be expected because in accordance with Jäger a common basic structure of depth is supposed.

2) Investigation of levels of depth

The third criterion for selection of the items was a wide spread of depth, so different levels of depth should be found. Four grouping the items in dependence of their depth, cluster analysis was applied. Through that procedure, items with similar degrees of depth are allocated to the same cluster. Cluster analysis is a statistical procedure that groups objects being similar in one or more characteristics. The cluster analysis by Ward was chosen, because according to Milligan (1981) it would produce the best results. The requirements are given: (1.) The data are supposed to be interval-scaled for they represent ratings of homogenous degrees (Bortz & Döring, 1995, S. 624), (2.) the scale is the same for all ratings and (3.) ratings with higher correlations shall determine the allocation to a cluster stronger than ratings with less correlations, that means that more deviating, eccentric ratings should

weight less. The most difficult problem in cluster analysis is the decision of the optimal number of clusters. No objective criterion is given. The difference between the number of objects, that corresponds with the number of total steps of clustering, and the step where the biggest jump of the coefficient is noticed is recommended by some authors as optimal number of clusters. Another important criterion is the understanding of the meanings of different clusters. If there are distinguished too many clusters, the interpretation would be very difficult or less plausible.

For interpreting the clusters as levels of depth, three conditions should be fulfilled:

- (1.) The clusters shall be integrated clearly into one dimension of depth: No item belonging to one cluster should represent a deeper state than an item belonging to a deeper cluster.
- (2.) The average degrees of depth of two neighbouring clusters within this dimension should differ significantly.
- (3.) The intervals between the average degrees of depth of two neighbouring clusters should be homogenous.

To test the hypothesis that the average degrees of depth differ significantly, a T-test was applied. If all of these conditions are fulfilled, the clusters can be seen as levels of depth with homogenous intervals. The construction of the Meditation Depth Index would be finished after creating understandable titles with simple descriptions of the levels of depth.

Construction of the Meditation Depth Questionnaire (MEDEQ)

In accordance with Bortz & Döring (1995, 202) a good test should fulfil six conditions:

- 1) homogeneity of the items belonging to one dimension
- 2) wide spread of the indices of difficulty (best between .2 and .8)
- 3) high coefficients of selectivity
- 4) clear instructions for the tested person to fill out and for the tester to evaluate the questionnaire (objectivity)
- 5) reliable measurement of the characteristic by a suitable collection of items (reliability)
- 6) theoretical well-founded and empirical supported grasping of the intended construct (validity)

Collecting of the sample of meditators

To evaluate these six conditions a sample of meditators was built. The meditators were found through inquiries and notices in different centres for meditation in Germany, addresses received from teachers of meditation, announces in magazines and finally through the help of some friends who were in contact with meditators. In the process of collecting the participations it was required to pay attention to comparable numbers of the represented traditions and ways of meditation. The same traditions and ways of meditation as in the sample of experts should be represented. The comparable numbers of participations of the different ways were attained through selection of the meditation centres and teachers. The data were collected between springtime and autumn 1999. The invitation letters put together with the questionnaires should be given only to people who practise sincerely on a regular basis, letting unconsidered the years of previous experience.

The instruction on top of the Meditation Depth Questionnaire was:

Please mark how much the following descriptions fit your meditation experiences of the last week. The following key is meant as a support for orientation:

0 = *not at all* 1 = *a little bit* 2 = *mediocre* 3 = *much* 4 = *very much*

Example: I found it difficult to relax. 0 1 2 3 4

Along with the invitation letter and the MEDEQ, the Meditation Depth Index (MEDI), the Meditation Development Index (MDI) by Engel, the Key-Items representing meditative depth by Müller & Ott, the Symptom Check List (SCL 90 R) by Derogatis and the "Trierer Persönlichkeitstragebogen" (TPF) by Becker were given to the participations. In the MEDEQ-form the tradition or way of practice, the previous experience in years, the frequency of meditations per week and the average duration of a meditation unit were asked. On another sheet personal data as age, sex and education should be noted. In October 1999, 122 meditators had sent their questionnaires back to the author.

Procedure of evaluation

First the dimensionality was tested. Meditation depth was supposed as a uni-dimensional construct. The items (as well as the clusters) should fit into one dimension of depth. For testing the hypothesis of uni-dimensionality a rotation is not required (Bortz & Döring, 1997, 615). So a simple factor analysis without rotation was applied. The condition of interval scale can be supported because the Kolmogorov-Smirnov-Test didn't show a significant result. Items loading less than 0.6 should be eliminated (Bortz & Döring, 1997, 201). The homogeneity of the whole test usually is to be measured with Cronbach's Alpha. It represents also the internal reliability as consistency of the test (Bortz & Döring, 1997, 184).

Furthermore the *indices of difficulty* were calculated. A wide spread of these indices can be interpreted as a wide spread of the levels of depth. Because in the process of selecting the items the spread of depth was one of the three criteria, a good spread of the indices of difficulty is supposed. The indices of difficulty for each item are to be calculated by the formula for multistage items: The sum of the attained scores of all participations is to be divided by the sum of the maximal attainable scores for each item. That means the higher the index value, the more meditators have higher amounts in that item. Items representing deeper states should show lower indices of difficulty.

Next the *coefficients of selectivity* were calculated as product-moment-correlations between the item values and the total score. Items with coefficients less than 0,5 should be eliminated, for they wouldn't represent the depth dimension satisfactory and couldn't discern clearly between meditators of different levels.

The *objectivity* is given by clear instructions to the meditators and a standardized evaluation of the test. If the previous conditions are fulfilled, the total score can be defined as the sum of the marked values of items which show positive coefficients of selectivity minus the sum of the marked values of items which show negative coefficients.

For further evaluation of the reliability the *split-half-reliability* by Spearman-Brown and the *parallel-test-reliability* by testing the (product-moment-) correlation (by Pearson) between the scores of MEDEQ and MEDI were calculated.

The *validity of the content* was already considered by the construction of the MEDI: The three criteria for selection of the items, the agreement of the experts and the three conditions for interpreting the clusters as levels of depth should support a good validity of content if the results are as expected. Furthermore the *validity by criterion*, the *convergent validity* and the *discriminate validity* were tested. The *validity by criterion* was tested by the *technique of the known groups*. The chosen criterion was the previous meditative experience. It is known among experts and teachers of meditation that advanced practitioners with more previous experience meditate deeper than beginners. So the validity by criterion would be supported if a significant difference in Meditation Depth between the two groups of more and less advanced practitioners can be shown. The dividing line is defined as the median. For testing the *convergent validity* the scores of the MEDEQ and MEDI along with those of the Meditation Development Index by Engel and the Key-Items of the KFB, mentioned by Ott (via telephone) representing best the meditative depth, were analysed by a factor analysis. The hypothesis of uni-dimensionality was supposed according to the theory of universal depth dimension. The *discriminate validity* was calculated through the correlations between the MEDEQ, the Personality Inventory called TPF by Becker (1989) and the Symptom Check List (SCL 90 R) by Derogatis (Franke, 1995). In accordance with previous studies to the relationship between meditation and mental health (Shapiro & Gilber, 1978; Delmonte, 1986; Murphy & Donovan, 1988; Deberry et al. 1989; Kabat-Zinn et al., 1992 ; Miller et al., 1995), correlations between Meditation Depth and some personality factors measured by the TPF, such as Mental Health, Self-forgetfulness, Loving ability, Self esteem and Meaningfulness are to be expected. Furthermore the absence of symptoms, measured by the TPF and (negatively) by the SCL 90 R should correlate with Meditation Depth also, because there are many studies supporting a positive effect of meditation on wellness (Engel, 1997). For testing the discriminate validity the critical value of correlation was set on .6. If one of these scales correlates with the score of MEDEQ higher than 0.6, the validity of the construct must discuss very carefully.

Results

First the results concerning the Meditation Depth Index, than the characteristics of the Meditation Depth Questionnaire are documented.

Characteristics of the Meditation Depth Index (MEDI)

The agreement of the experts

40 addressed experts decided to participate and sent their ratings back to the author. This is a quote of 89 %. They reported an average of 19,7 years of meditation experience and of 10,2 years of teaching that technique. The sample included 9 authorized teachers of Christian contemplation, 7 Zen-teachers, 6 teachers of Buddhist meditation in Theravada-tradition, 5 of the Tibetan Vajrayana, 7 teachers of Chi Gong and 6 teachers of Yoga. 38 experts were Germans, one American and one French. The result of the Kendall`s W - test shows a highly significant correlation between the ratings of these 40 experts regarding the depth of different experiences verbalized in 30 items. The coefficient of concordance is 0.7.

Levels of depth

The second question, concerning the levels of depth, was tested by cluster-analysis. From 30 steps of clustering, the 28th step showed the highest jump of the coefficient: from 625 to 1640. So the solution of two clusters would be the clearest. The allocations shown in table 1 can be compared with the items phrased in table 2. Two groups could be distinguished most clearly: Those items expressing hindrances (1, 4, 9, 12, 13, 18) and the rest. The solution with three clusters distinguishes between hindrances, rather personal (2, 3, 5, 8, 10, 14, 17, 20, 21, 29) and rather transpersonal experiences (6, 7, 11, 15, 16, 19, 22, 23, 24, 25, 26, 27, 28, 30). The solution with four clusters differentiates additionally between two groups of transpersonal experiences and the solution with five clusters divides also the personal experiences. This solution with five clusters seemed to be the best compromise between differentiation and understandable meaning. In table 2 the items are allocated to the five clusters in the order of their depth.

Table 1: Solutions with different numbers of clusters
Allocations of the 30 items to x clusters

Item	number of clusters					
	7 clusters	6 clusters	5 clusters	4 clusters	3 clusters	2 clusters
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	2	2	2	2	2	2
4	3	3	1	1	1	1
5	2	2	2	2	2	2
6	4	4	3	3	3	2
7	4	4	3	3	3	2
8	5	5	4	2	2	2
9	1	1	1	1	1	1
10	2	2	2	2	2	2
11	6	6	5	4	3	2
12	1	1	1	1	1	1
13	1	1	1	1	1	1
14	2	2	2	2	2	2
15	6	6	5	4	3	2
16	4	4	3	3	3	2
17	5	5	4	2	2	2
18	1	1	1	1	1	1
19	7	6	5	4	3	2
20	5	5	4	2	2	2
21	2	2	2	2	2	2
22	6	6	5	4	3	2
23	4	4	3	3	3	2
24	6	6	5	4	3	2
25	4	4	3	3	3	2
26	4	4	3	3	3	2
27	6	6	5	4	3	2
28	6	6	5	4	3	2
29	2	2	2	2	2	2
30	7	6	5	4	3	2

The two clusters of personal experiences were called “relaxation” and “personal self”. The two transpersonal clusters were designated as “transpersonal qualities” and “transpersonal self”. The titles of the three deeper clusters are terms which were taken from Assagioli’s model of human personality (Assagioli, 1988, 1992). They seemed to be very suitable and useful because they are independent from any religion and tradition.

Table 2: Solution with 5 clusters

average depth:

standard deviation:

Cluster 1: "Hindrances"

13) I felt bored.	0,33	0,69
12) Mainly I was more in a state of dozing or sleeping.	0,38	0,63
18) I was glad that the meditation had finished.	0,45	0,60
1) I found it difficult to relax.	0,48	0,64
4) There was a constantly change of thoughts in my mind.	0,70	0,88
9) I was very busy in order to use the recommended method properly.	0,80	0,56

Cluster 2: "Relaxation"

17) I felt well.	1,78	0,80
20) I sensed my breathing comfortably calm and fluent.	1,88	0,61
8) I became more and more calm and patient.	1,88	0,65

Cluster 3: "Personal Self"

5) I became aware of a centre inside myself.	2,20	0,65
21) Sometimes I sensed my body as very light.	2,23	0,77
10) I experienced some control over my mind; I could observe my thoughts from a distance.	2,23	0,66
14) I sensed a field of energy around me.	2,33	0,76
3) I got intuitive insights or understandings about my life.	2,33	0,62
29) I felt a strong energy or power within myself.	2,50	0,60
2) I experienced equanimity and inner peace.	2,50	0,75

Cluster 4: "Transpersonal Qualities"

28) There was no meaning of any meditation techniques anymore.	2,70	0,65
19) The feeling of time disappeared.	2,73	0,68
11) My mind was alert and clear.	2,78	0,70
15) I felt love, surrender, connection.	2,90	0,59
27) I experienced humility, grace, gratitude.	2,95	0,68
24) I felt being accepted unconditionally.	3,05	0,75
30) I sensed myself as formless energy.	3,05	0,75
22) I experienced boundless joy.	3,13	0,69

Cluster 5: "Transpersonal Self"

16) Thoughts had come completely to rest.	3,20	0,61
25) There was no differentiation, comparison or judgement anymore. Everything could be as it was.	3,23	0,70
6) I felt myself at one with everything.	3,38	0,74
26) My mind, the field of consciousness and awareness was empty from thoughts, emotions and sensations.	3,43	0,64
23) My mind/consciousness expanded to an infinite space.	3,50	0,60
7) There was no subject and no object anymore.	3,75	0,54

The three conditions for interpreting the clusters as levels of depth were found to be fulfilled except the third one in the case of the interval between hindrances and relaxation. This interval is larger than the others (s. table 3). So interval scale is only supported for the levels from relaxation to transpersonal self. The first two conditions were proved to be right. The clusters are integrated clearly into one dimension of depth. No item belonging to a lower

cluster represents a deeper state than an item belonging to a deeper cluster (s. table 2). The average degrees of depth of two neighbouring clusters within this dimension differ significantly ($p=0,0001$).

Table 3: Levels of depth

Level of depth	Average depth	Standard deviation
1. Hindrances	0,523	0,186
2. Relaxation	1,85	0,058
3. Personal Self	2,33	0,126
4. Transpersonal Qualities	2,91	0,162
5. Transpersonal Self	3,42	0,201

To measure Meditation Depth by the MEDI, the levels should be described in simple terms:

1. Hindrances
(restlessness, busy mind, laziness, feeling bored)
2. Relaxation
(feeling well, smooth breathing, patience and calmness)
3. Concentration
(mindfulness, attentive control over the mind, being detached to thoughts, emotions and sensations; strong energy; being centred)
4. Essential qualities
(love, surrender, connection, joy, grace, humility; transcending time, methodical level and separation)
5. Non-duality
(complete rest of thoughts, no differentiations, comparisons and judgements anymore; unity of all; emptiness and infinity of consciousness; subject/object-transcendence)

For using the index as measuring instrument of Meditation Depth, the meditator is being instructed to mark the level that was experienced in the deepest stage, that one in the lowest and the average level regarding the meditations of the last week.

Characteristics of the Meditation Depth Questionnaire (MEDEQ)

The sample of meditators

The average experience in a regular practice among the 122 meditators was 11,3 years. They reported meditating an average of 10 times per week. The average duration of a meditation was 36 minutes. The sample included 20 practitioners of Raja-Yoga or Advaita, 17 from Theravada-Buddhism, 18 from Tibetan Buddhism, 20 practitioners of Zen-meditation, 17 of Christian contemplation and 13 of Taoist meditation or Qigong. 17 meditators couldn't

get allocated to any special tradition because they have found an own synthesis or practiced without tradition.

Item analysis

The result of factor-analysis supports the thesis of uni-dimensionality. From the 30 items of the questionnaire, 29 items load from 0.72 to 0.93 on one and the same factor. The item no. 3 about insights and understandings loads only to – 0.19 on this dimension. So it cannot be allocated to this factor. The other items show highest loadings on one and the same factor (s. table 4). The item no. 11 about clearness and alertness loads highest.

Table 4: Analysis of main components
3 components extracted

Component: Item:	1	2	3
1	-,814	,226	-,177
2	,822	,165	,417
3	-,187	-,646	,366
4	-,891	3,082E-02	-5,772E-02
5	,765	-,280	,125
6	,790	,295	,358
7	,717	,430	,392
8	,771	-,306	,174
9	-,792	8,679E-02	,140
10	,841	-,203	-1,480E-02
11	,926	-6,187E-02	8,236E-02
12	-,851	,237	6,189E-02
13	-,752	,258	,106
14	,874	6,991E-02	5,157E-02
15	,835	8,055E-02	,142
16	,848	,257	,105
17	,916	-7,999E-02	3,362E-02
18	-,775	,340	5,632E-02
19	,896	7,178E-02	-5,122E-02
20	,888	-,133	-5,912E-02
21	,873	-,106	-,152
22	,838	,143	7,283E-04
23	,843	,225	-3,919E-02
24	,802	-7,471E-02	-,129
25	,830	,182	-,178
26	,797	,195	-,179
27	,817	8,286E-02	-,147
28	,828	,101	-,229
29	,892	-,145	-,178
30	,850	,135	-,233

The identified factor explains 69,5 % of the total variance for the 29 reliable items. The *homogeneity* or internal consistence of this dimension measured by *Cronbach`s Alpha* amounts to 0.92.

For the *indices of difficulty* Bortz & Döring (1995, 199) recommend a wide spread best between 0,2 and 0,8. Table 5 shows spreads between 0,22 and 0,84. The average index is 0,55. For the items representing the hindrances the index is already subtracted from 1. For

those, high indices mean that many meditators experience only few hindrances. The item with the highest difficulty (equates lowest index) is no. 7: “There was no subject and no object anymore”.

The *coefficients of selectivity*, calculated as product-moment-correlation between the item values and the total score value, are each significant ($p = 0.01$). The coefficients are listed in table 5 together with the indices of difficulty. Again the item no. 11 (*My mind was alert and clear*) is seen to represent best the dimension and to select best between meditators of different levels.

Table 5: Coefficients of selectivity and indices of difficulty

Item	Coefficient of selectivity	Index of difficulty
1.	-,81	,77
2.	,82	,46
4.	-,89	,70
5.	,77	,40
6.	,79	,34
7.	,72	,22
8.	,77	,70
9.	-,79	,73
10.	,84	,67
11.	,92	,66
12.	-,85	,80
13.	-,75	,84
14.	,87	,51
15.	,84	,41
16.	,85	,37
17.	,91	,66
18.	-,77	,84
19.	,90	,54
20.	,89	,74
21.	,87	,65
22.	,84	,40
23.	,85	,35
24.	,81	,56
25.	,83	,35
26.	,80	,30
27.	,82	,38
28.	,83	,49
29.	,89	,61
30.	,85	,40

Reliability

The *split-half-reliability* by Spearman-Brown amounts to 0.90. The correlations between the total score of MEDEQ and the three indices of MEDI are highly significant ($p=0,01$) (table 6). The *parallel-test-reliability* is supported.

Table 6: Correlations between MEDI and MEDEQ

<i>MEDI</i>	<i>Total score of MEDEQ</i>
Average level	.886 **
Lowest level	.707 **
Deepest level	.847 **

** significant, $p=0,01$

Validity

The T-test for evaluating the *validity by criterion* comes to a significant difference ($p=0,0001$) of Meditation Depth between the meditators who practice at least 11 years and those who practice less than 11 years. The average degree of Meditation Depth among the more advanced practitioners is 84,7, that one of the less advanced meditators amounts to 45,0.

A simple factor analysis of the 29 reliable items from the MEDEQ, the 10 Key-items by Müller & Ott, the 3 indices of the MDI by Engel and the 3 indices of the MEDI supports the thesis of uni-dimensionality with a common factor explaining 67,18 % of the total variance. The loadings of the indices of the MDI amount from 0,88 to 0,93, those of the MEDI between 0,73 and 0,91, the loadings of the Key-items amount from 0.64 to 0.93 instead of one that shows a value of 0,37 and describes the perception of light: “Within or around myself I perceived light”. All other items or indices can be allocated to the same dimension (s. table 7). So the *convergent validity* is supported.

Table 7: Analysis of main components
5 components extracted

Item/Index	1	2	3	4	5
MEDEQ 1	-,817	,123	4,323E-04	,256	,177
MEDEQ 2	,804	,290	8,604E-02	-,274	-,184
MEDEQ 4	-,886	-6,109E-02	8,840E-02	,134	5,393E-02
MEDEQ 5	,751	-,160	,213	-,343	-,111
MEDEQ 6	,774	,390	-3,892E-03	-,197	-,103
MEDEQ 7	,690	,509	4,069E-02	-,181	-6,962E-02
MEDEQ 8	,769	-,225	,164	-,349	-,163
MEDEQ 9	-,803	5,894E-02	,176	3,603E-02	-8,029E-02
MEDEQ 10	,831	-,143	-1,432E-02	-,277	5,640E-02
MEDEQ 11	,920	5,915E-02	-4,070E-02	-8,375E-02	-,112
MEDEQ 12	-,855	,135	,193	4,617E-02	7,045E-02
MEDEQ 13	-,771	,183	,311	-3,547E-02	-8,987E-03
MEDEQ 14	,856	,130	5,371E-02	-,120	3,583E-02
MEDEQ 15	,822	,214	7,593E-02	4,721E-02	-,148
MEDEQ 16	,834	,348	1,245E-02	9,376E-02	-1,364E-02
MEDEQ 17	,919	1,779E-02	-6,136E-02	3,077E-02	-,124
MEDEQ 18	-,786	,235	,200	5,975E-03	,120
MEDEQ 19	,899	,117	-5,855E-02	,103	-1,433E-02
MEDEQ 20	,893	-9,547E-02	-,103	-5,638E-02	1,873E-02
MEDEQ 21	,878	-9,882E-02	-5,440E-02	1,176E-02	,116
MEDEQ 22	,829	,169	,205	,179	2,525E-02
MEDEQ 23	,826	,284	,130	8,581E-02	,149
MEDEQ 24	,808	-,134	,223	,104	6,215E-03
MEDEQ 25	,817	,111	,238	2,610E-02	,306
MEDEQ 26	,788	,143	,281	,127	,236
MEDEQ 27	,798	1,067E-02	,301	-8,716E-02	,305

MEDEQ 28	,814	6,063E-02	-3,087E-02	-4,874E-02	,251
MEDEQ 29	,893	-,167	,116	-5,918E-02	,192
MEDEQ 30	,839	9,711E-02	,135	7,800E-02	,263
Key item 1	,879	3,495E-02	-,110	9,303E-02	-2,756E-02
Key item 2	,869	-8,010E-02	-8,091E-02	-3,551E-02	-2,413E-02
Key item 3	,925	1,450E-02	-,157	2,511E-02	-5,159E-03
Key item 4	,668	-,439	,267	4,427E-02	-6,744E-02
Key item 5	,723	-,367	-2,286E-02	,154	-1,807E-02
Key item 6	,373	-,223	,523	,331	-,427
Key item 7	,635	-,363	-,129	,167	,181
Key item 8	,809	-5,702E-02	-,292	8,614E-02	,177
Key item 9	,833	-,178	-,214	-8,354E-02	,100
Key item 10	,667	-,360	,298	-4,361E-02	4,601E-02
MEDI 1	,911	9,144E-02	-4,510E-02	,208	-,126
MEDI 2	,734	,220	-9,351E-02	,263	-,172
MEDI 3	,883	-,160	-,185	7,413E-02	-8,322E-02
MDI 1	,928	9,343E-02	-5,663E-02	,171	-,112
MDI 2	,883	,147	-7,965E-02	,196	-5,036E-02
MDI 3	,930	3,409E-02	-8,237E-02	9,341E-02	-,150

The *discriminate validity* was calculated through the correlations between the scores of the MEDEQ, the Personality Inventory called TPF and the Symptom Check List (SCL 90 R). The correlations are significant but doesn't surmount the critical value of 0,6 (s. table 8).

Table 8: The correlations between Meditation Depth (MD), the TPF-scales and the Total symptom score of SCL 90-R

MD and Behaviour control (TPF):	-,28 **
MD and Mental health (TPF):	,49 **
MD and Meaningfulness (TPF):	,37 **
MD and Self-forgetfulness (TPF):	,47 **
MD and Absence of symptoms (TPF):	,47 **
MD and Expansiveness (TPF):	,39 **
MD and Autonomy (TPF):	,35 **
MD and Self esteem (TPF):	,46 **
MD and Loving ability (TPF):	,38 **
MD and Total symptom score (SCL 90 R):	-,49 **

** significant, p=0,01

Discussion

The results support the reliability and validity of the Meditation Depth Questionnaire and the Meditation Depth Index. The main idea of one essential and universal dimension of Meditation Depth, transcending and integrating different levels, could be supported. The items were selected very well as highly relevant to Meditation Depth and second they were verbalized in a way that they fit into one dimension: Relaxation meets concentration in the medium level, both meet clearness and endless joy in the deeper states and finally relaxation, concentration, bliss and non-duality come together.

In terms of the mystic and spiritual traditions the clusters or levels of depth can get interpreted as stages. It is not to be said that all these ways of meditation are the same, from the view of each religion they may differ. In the yogic tradition for example Patanjali discerned between eight stages. *Yama* and *Niyama*, the outer and the inner discipline, are the

first two steps. Outer and inner hindrances are to be overcome. *Asana*, the right posture, and *Pranayama*, the regulation of breath are leading into a relaxed and calm state of mind and body. *Pratayahara*, directing the senses and the mind to the inner centre and *Dharana*, setting the mind in concentration, mark the middle depth area. After a lot of practice, Dharana leads into the state of *Dhyana*, where the mind is one-directed without interruption. The feeling of time disappears and the mind becomes clear without obstacles. In the last stage called *Samadhi*, the feeling of subject and identity disappears. The one undifferentiated Whole becomes realized and the true nature of every thing in universe is realized as being one with the Whole. In the deepest Samadhi, the duality of subject and any object gets transcended. Even the universe doesn't exist anymore.

In the Tibetan Buddhism there is a model of stages called *Paramitas*. *Paramita* is a word from Sanskrit and means "transcendent act". In fact it is not an act in the common sense but an expression of the true nature of being. These Paramitas are six in number and show the path of spiritual or meditative development: The first Paramita is charity (*Dana*). Without charity meditation is not a spiritual path. It would be a nice relaxation technique but nothing more. The next is discipline (*Sila*). Discipline contains a selfless and strong determination, harmony and temperance in one's way of living and the absence of destructive thoughts and deeds. In cultivation of discipline, the obstacles and hindrances are seen as friends who want to teach us in serenity and give us a mirror to reflect our Unconsciousness. Therefore we should meet them with loving kindness. The next Paramita is patience (*Ksanti*). It can be regarded as a result of developing discipline. Patience is the state of a relaxed mind and body. It feels quiet well. If it is possible to relax even in the stormy, hurricane-like moments, patience is perfect. Then there comes strength (*Virya*). This is the fourth Paramita, connected with a feeling of flowing energy and an attitude of peaceful enthusiasm. There is a strong power being felt within. Nothing can destroy the inner balance anymore. Equanimity arises. The next is called meditative stabilization (*Dhyana*). The mind becomes totally absorbed in the true nature of spirit, its own essence. Essential qualities like unlimited joy, love, humility, surrender and compassion manifest spontaneously and become real experiences. The level of methodical application is transcended because there is no need anymore to put any method into practice. The thought, "I should do something" would be the only obstacle. The feeling of time disappears and finally the meditator can stay in meditation as long as he wants. The last Paramita is wisdom (*Prajna*). The last duality gets transcended. It is the duality of subject and object, as well as meditation and non-meditation. The perfect Sage is free from any duality and attachment, no matter where he goes or what he does. There is also no attachment to emptiness anymore. There are also some analogies to the Christian tradition, especially the seven flats by Teresa from Avila, and to the Zen parable of the ox and the herdsman.

The thesis of uni-dimensionality of the construct Meditation Depth was supported by factor analysis. However, one item was found belonging not to the depth dimension: Insights and understandings (item 3). Probably insights and understandings form a dimension that is orthogonal to Meditation Depth. According to Vissuddhi-Magga from the Theravada-Buddhism (Mahathera, 1997) insights and understandings differ in dependence of the state of depth. Because no specification of insights is performed by that item, no correlation to the depth factor can be found. Another possible reason is given by the expert ratings: Item no. 3 was allocated by cluster analysis to the medium level. The standard deviation of .62 is not very high. In the deepest level (cluster 5), thoughts come completely to rest. Both states doesn't fit in the same dimension. Insights may arise when relaxation meets concentration and diminish in the deeper states. The item representing best Meditation Depth is no. 11 (*My mind was alert and clear*). It can be summarized by the word "presence". All other items may be indicators of the same with different indices of difficulty. The item with the highest difficulty

to achieve is no. 7 (*There was no subject and no object anymore*). Finally presence will get experienced or realized as non-duality as its deepest level. The experts' agreement about depth was highest in this aspect of subject/object-transcendence (s. table 2, standard deviation of item 7). The results support the words of Willigis Jäger about the spiritual paths: "*All of them lead to the same summit.*" And: "*...finally they have the same basic structure.*"

Some critical aspects should also be mentioned. The interviews serving for collecting the items were not standardized. Some aspects might not be considered. There are only six items representing hindrances. All of the other items were positively phrased. Between hindrances and relaxation, a big jump in depth can be noticed (s. table 3). This interval is larger than the others. Another level of depth may exist between hindrances and relaxation. Maybe it is the level of work mentioned by Engel. For measuring Meditation Depth by MEDI it would be more adequate to equate hindrances with value 0 and let the interval scale begin with relaxation (=1). Another critical aspect is the application of the method of "categorical judgement" as basic data for the Kendall's W – test. On a five-graduated rating scale it is much easier and more acceptable for the experts to assess the depth of different items, but more graduations would be more precise. The optimal number of graduations corresponds with the number of items. For further research it would be interesting if experts were willing to bring about 30 items into an order of precedence in regard to the depth dimension. Furthermore all of the experts belong to the western world, most are Germans. Although they were authorized teachers in the spiritual tradition they have chosen, probably experts from the motherland of their tradition may represent their way of meditation even better. The same argument applies to the sample of 122 meditators. They all are habitants of the western, mainly German culture too. Another effect of selection is to be discussed: The questionnaires were brought to some meditation centres in Germany and to meditation teachers and friends who gave them again to others, so it is not known who did not agree with this investigation and because of what reasons. All persons of the sample showed common characteristics: They were meditators with a regular practice, were motivated to serve as test subjects and accepted the way of investigation. They seem to be rather motivated meditators than sceptics. Regarding these effects of selection, the result of factor analysis could also be interpreted as a characteristic of a very special group of meditators, collected by uncontrolled accidents.

Generally, one pitfall in using this questionnaire might be to "produce" effects. If this is done with some success, very soon the next meditation units would become more and more stressful through hopeless attempts of repetition. But if the meditator has a good deal of introspective alertness or a good teacher, he would acknowledge the experience in the "here and now" whatever and however "flat" it is. So the danger to produce effects caused by the items of the questionnaire would decrease again. Some beginners may feel stressed because they keep in mind the following procedure of treating the questionnaire the whole time. But after some procedures it will work automatically and the treatment should be forgotten. In the opposite case there may be so advanced meditators, may they call themselves enlightened or not, who would not work with any questionnaire about meditation. Probably they are in a state of permanent non-duality so that they feel unable to discern between the items or the degrees to mark. But according to Zen, Tibetan Buddhism and Taoism, if the person gets beyond this attachment of no-form, non-duality or no-discernment, he would get deeper yet in order to be able of using the mind again. A problem concerned with self-ratings generally is a tendency among some people expressing themselves not authentically in order to look in a better light.

Probably the MEDEQ cannot measure enlightenment, whatever this may be. And surely, the questionnaire or index doesn't help very much to reach higher states of spiritual attainment. However, in the field of Meditation Research it could be very helpful to use a questionnaire that may measure Meditation Depth in relation to different times and in comparison with other variables or factors such as personality, mental health, serenity of

practice, physiological variables and so forth. More studies to the depth dimension in meditation and its different contexts would be of great worth. Perhaps one day, all questionnaires measuring some dimensions of meditative experiences could get evaluated in a big sample of meditators from different traditions. The stability of factors could get tested this way (as well as the patience of the tested persons). Repeated factor analysis would be of much interest in different groups of meditators. Furthermore studies to differences between the meditative ways would be valuable.

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Address of correspondence: Harald Piron; Burgmauer 12; 50667 Köln
E-mail: Piron@netcologne.de