

Kundalini and transpersonal development: Development of a Kundalini Awakening Scale and a comparison between groups

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Development of a pilot psychometric instrument, the 'Kundalini Awakening Scale' (KAS) is described. The KAS was administered to groups of 24 Yoga teachers, 37 Yoga students, 22 people following other spiritual traditions, and 28 people from a general population. Results indicated that kundalini experience was highest in the group of people from other spiritual traditions. Second highest were the Yoga teachers, followed by Yoga students and, finally, the general population. There was also evidence that kundalini experience increases with years of Yoga practice (not age), and with a regular regime of meditation. The group following other spiritual traditions showed greater evidence of more disruptive and negative kundalini experiences. It is suggested that this may result from their following a relatively unstructured path of development, in contrast with the Yoga groups which follow a safer, structured approach to kundalini arousal.

'This mechanism, known as Kundalini is the real cause of all genuine spiritual and psychic phenomena, the biological bases of evolution and development of personality, the secret origin of all esoteric and occult doctrines, the master key to the unsolved mystery of creation, the inexhaustible source of philosophy, art, and science, and the fountainhead of all religious faiths, past, present and future.' (Krishna, 1993, p.257)

Introduction

In Yoga and Tantra traditions, *kundalini* is an energy that is said to lie dormant in the base of the spine. It is believed that this energy is, for most people, in a non-active or a semi-active state and that its full awakening leads to a totally different state of consciousness – a state where the subject is said to be free from all causality, from

the dualities of joy and suffering. This state is called *samadhi* and the yogin who attains it is freed from the karmic cycle of rebirth and death.

These notions of *samadhi* and of *kundalini* are intimately related with the *chakra* system. *Chakras* are considered energetic centres and the seven main ones are supposedly located along the vertebral column. It is believed that kundalini lies dormant in the first chakra, at the base of the spine, and once it is aroused it should go through all of these main chakras until it reaches the *sahasrara* at the top of the head. When the yogin is able to make the kundalini permanently reside in this last chakra, then *samadhi* is obtained. Iyengar, a well known Yoga master describes the state of *samadhi* as ‘seeing the soul face to face, an absolute, indivisible state of existence, in which all differences between body, mind and soul are dissolved’ (Iyengar, 2002, p. 4). Wilber (e.g., 1995) calls it the non-dual and Aurobindo (e.g., Dalal, 2001) refers to it as the supermind.

References to kundalini in the literature can be traced back to the Upanishads, the commentaries on the Vedas (the sacred scriptures of the Hindus), written more than 2000 years ago. It is believed in Yoga philosophy that if kundalini is not safely released, in the body and mind of a person who has prepared for this awakening, then many dangers can arise. These dangers include mental, emotional and physical perturbations that can actually be so intense as to inflict death on the person who goes through them. Gopi Krishna suffered one such spontaneous awakening of kundalini as a consequence of his regular meditative practice. He described his experiences as if energy of a much higher voltage than the body was used to deal with had been released, causing all sorts of disruptive alterations in his mental and physical health (Krishna, 1993). Evelyn Underhill, who elaborated a study on Catholic mysticism, seems to share this view when she speaks about the ‘immense strain which exalted spirit puts upon a body which is adapted to a very different form of life’ (Underhill, 1911/1995, p. 59).

In the human body, according to Yoga, there are several *nadi*. These are energy conductors (the equivalent of what acupuncture calls meridians) which form part of the *chakra* system. Along the vertebral column there are 3 main *nadi*: *ida* and *pingala*

on the sides and *sushumna* in the middle, following the line of the spinal cord. In order for kundalini to be successfully aroused it would be expected to go through *sushumna*. But, according to Krishna (1993), it sometimes rises to the *sahasrara* chakra through one of the other two nadí. According to his explanation this is what accounts for some of the differences in the symptoms described by different individuals: an awakening through pingala (the solar nadí) would cause the person to feel a burning heat, for example, while an awakening through ida (the lunar nadí) would, on the contrary, produce a feeling of unbearable cold.

Krishna also argues that any deformity that might exist in the body or mind of the person who goes through the awakening will most probably be magnified, due to the process that is started by the kundalini, which performs a sort of purification or atonement in the body of the individual, preparing him or her to live a totally different way of life.

Gopi Krishna experienced a spontaneous burst of kundalini as a consequence of his meditative practices. Wilber (1995, p.255) suggests that 'meditation (or transpersonal development in general) is a simple and natural continuation of the evolutionary process, where every going within is also a going beyond to a wider embrace'. If we take meditation, as he says, to be a continuation of evolution, and if meditation might cause a kundalini arousal, then it is reasonable to suggest that kundalini might be an important part of that evolution.

This study is based on the assumptions that kundalini might be a common underlying factor of mystical experiences, that it is possible to identify a certain number of typical symptoms of a kundalini awakening and that the differences between mystical experiences among various traditions are caused not only by the different interpretations of the same phenomenon, but also by different ways of arousing the kundalini in combination with different physical and psychological characteristics of each individual.

Rawlinson (1997, 2000) draws a useful distinction between different types of religious or spiritual traditions. He talks about *hot* and *cool* traditions and *structured* and *unstructured* ones. The *hot* traditions believe in the importance of a relationship

to a transcendent Other (e.g., God or Gods), the *cool* ones attribute salvation only to an inner process of individual growth. The *structured* traditions propose that a specific path or method should be followed in order to obtain salvation or liberation while the *unstructured* ones believe that there is no particular path or way to God or to liberation. The hot-cool and structured-unstructured distinctions combine together so that we can usefully talk of hot-structured, cool-structured, hot-unstructured and cool-unstructured traditions. Examples of these may be found in both Eastern and Western cultures although, as Rawlinson recognizes, most traditions don't fit totally into a single category.

Based on this model it can be suggested that people who belong to any type of *hot* tradition will most probably interpret a kundalini awakening as a divine (or possibly demonic) intervention of some sort (Gopi Krishna himself said that some of his experiences seemed undoubtedly to have come from some divine source). On the other hand, people who come from a *cool* tradition will most probably attribute kundalini awakening to some internal source.

If we assume that kundalini may be a source of mystical experiences, then *structured* traditions might have been developed with the aim of safely stimulating and releasing kundalini. That certainly is the case of Yoga, where all the physical, respiratory, mental, and energetic techniques that are used clearly aim to perform the function of creating a healthy body and mind, capable of controlling and safely releasing kundalini. The *unstructured* traditions, on the other hand, might have resulted from the experiences of people who went through spontaneous and uncontrolled kundalini awakenings. These may be said to happen naturally either because it seen as God's will (for the *hot-unstructured*) or simply because it is part of our innermost nature (for the *cool-unstructured*).

There are two main theoretical approaches to transpersonal development. One sees transpersonal development as a spiralled path (e.g., Washburn, 1990, 1995.). The other argues that it follows a linear ascending process (e.g. Wilber, 1996). For Washburn (1990), who based his studies mainly on the Judaic-Christian traditions of the West, transpersonal development involves some regressive phenomena and can be

seen as a return of the ego to the unconscious dynamic ground, which has always been present but became repressed during ego development. For Wilber, who based his model mostly on Eastern philosophies, transpersonal development need not involve any type of regression, since what occurs is an ascent into a fundamentally higher state of consciousness.

In the light of Rawlinson's distinctions between *structured* and *unstructured* traditions, we can say that the differences between these two models might be due to their describing two different forms of kundalini awakening. Washburn seems to have based his studies on the spiritual development of people who belonged mostly to *unstructured* traditions (Catholic mysticism for example) while Wilber seems to have based his studies on much more *structured* meditative paths (such as Buddhist meditation).

Daniels (2005) recognizes the differences between these models by arguing that 'Washburn's theory is consistent with much of the clinical data and undoubtedly represents many people's experience of transpersonal development especially, perhaps, those who do not follow a structured path of meditation (for whom Wilber's theory may have greater appeal)' (*ibid.* p.209). These clinical data may well reflect the experiences of people who have been through spontaneous kundalini awakenings, since those that have deliberately sought such experiences using a structured path of spiritual practice may be less likely to search for clinical help but rather attempt to deal with whatever problems they might face within the context of their own spiritual tradition.

Kundalini and Mystical Experience

Kundalini is generally understood as an energy that influences both our bodies and minds. As such, there are a number of physical and psychological characteristics that may be expected to identify kundalini arousal. The characteristics that were chosen for this study are the ones that have most frequently been described in the scientific and mystical literature as being related to kundalini phenomena. A person who experiences a kundalini arousal will not necessarily exhibit all the mentioned symptoms, but at least a few of them are expected to be present.

Some of the classic symptoms of a kundalini awakening include: sensations of some form of energy (almost like an electric current) circulating along the spine or the arms and hands or, sometimes, stored in the genital region; seeing lights in the exterior environment; seeing lights surrounding the body or inside it; perturbations in the digestive and the excretory systems; feelings of an incapacity to control the mind or the body; feelings of unbearable heat or cold in certain parts of the body. According to Krishna (1993) kundalini arousal might also be responsible for all sorts of paranormal phenomena, such as hearing voices or sounds, having visions, telepathic experiences and prophetic dreams. If kundalini is an important factor in transpersonal development, then kundalini may also be responsible for feelings of an expanded, higher or deeper state of consciousness.

In Underhill's (1911/1995) study of Catholic mysticism there are descriptions of experiences that are very similar to Gopi Krishna's descriptions of his kundalini awakening. In the writings of St. John of the Cross on the *Dark Night of the Soul* (2003), there are also some similarities between the type of sufferings he mentions and the ones described by Krishna. In St. Teresa of Ávila's book *Interior Castle* (1989), the soul is compared with a castle with seven mansions which bear some resemblance to the chakra system. For example, she mentions that once the soul reaches the fourth mansion 'the important thing is not to think much, but to love much' (1989, p. 76). In the chakra system it is also at the fourth chakra (the *anahata* chakra) that feelings of love and devotion towards the divine (*bhakti*) are said to reside.

Thomas, Brewer, Kraus and Rosen (1993) studied transpersonally developed people both in India and England. Their findings suggest that there are no real differences between Eastern and Western people who go through transpersonal development: both groups have the same probability of experiencing crisis in their development, and both are just as capable of attaining the higher stages of development. The differences don't seem to be in the culture (East vs. West) but in the type of path that each individual chooses to take within that culture. Unfortunately their study doesn't mention the type of path that each of the individuals had chosen, although it is mentioned that one of the English participants who reported having a

spiritual crisis was an Anglican clergyman and one of the Indian participants who didn't report having any spiritual crisis was living in an Aurobindo ashram. This possibly supports the view that the *structured* traditions (e.g., Aurobindo) may not emphasise regressive phenomenon in their path of spiritual development.

Gopi Krishna's case also corroborates this view: he was an Easterner, following an *unstructured* path, and he experienced a spiritual development similar to those described typically by the Catholic mystics in the West following a similarly unstructured type of path.

Lee Sannella (1992), a medical doctor, describes a study on kundalini based on the physio-kundalini model of Itzhak Bentov, a biomedical engineer who studied a number of symptoms and developed a neurological explanation for them. There are, however, some differences between these symptoms and the classical descriptions of a kundalini awakening. In Bentov's and Sannella's studies, symptoms of having some form of energy circulating through the legs and feet were frequently mentioned and came to be considered as part of the kundalini awakening. Yet they recognise that, in the classical literature about kundalini, these feelings are usually described as occurring only in the upper part of the body – the arms and hands and, mainly, along the spine. Sannella tries to account for these differences by saying that this physio-kundalini syndrome might only be a part of the more complex phenomenon of a kundalini awakening.

Both Sannella (1992) and Murphy (1992) give descriptions of cross-cultural episodes that could be interpreted as kundalini awakenings – for example an African tribe who performs a dance that is said to produce similar effects to a kundalini awakening. Sannella (1992) also talks about some of the experiences of Catholic mystics and says that kundalini could have been a possible cause for them. Sannella recognises that 'there is indeed a remarkable uniformity in the descriptions of the transformative process from widely disparate traditions' (*ibid.* p. 9) and gives as an example of this the presence of light, which tends to appear across all traditions as associated with mystical experience.

Bentov also believes in the possibility that the human species might be evolving to higher stages of consciousness and, echoing Krishna's statements, he suggests that the 'kundalini effect is a part of the development of the nervous system' (Bentov, in Sanella, 1992, p. 129). This means, as Krishna (1993) says, that a full development of the individual has to include these processes, modifying the nervous system to adapt to a new mode of functioning.

There have also been some case studies (Ossof, 1993; Scotton, 1996; Waldman, Lannert, Boorstein, Scotton, Saltzman, & Jue, 1992) which describe kundalini awakenings, mostly in people who have followed a relatively *unstructured* path of meditation or other spiritual technique. Most of these people had severe symptoms causing them stress and a limiting of their normal lives, which has made them search for therapeutic help and, in some cases, may even be initially mistaken for someone having a psychotic episode.

Thalbourne and Fox (1999) correlated panic attacks and kundalini, using their own scale to measure the level of kundalini arousal. They found a 'strong association between the kundalini experience and the occurrence of panic attacks' (*ibid.* p. 112). They also report that people experiencing heart attacks and people having kundalini experiences often share the same fears, like the fear of losing control or of going insane. Further, they found a positive correlation between transliminality (a variable indicating permeability of psychological boundaries, which has previously been associated with schizophrenia and manic-depression) and kundalini, but they say that it is not known if kundalini underlies transliminality or if transliminality triggers kundalini. They also compared their kundalini scale with other measures of psychopathology, namely the Manic-Depressiveness Scale and the Magical Ideation Scale and found that scores on the kundalini scale were positively correlated with these measures.

One of the reasons for these findings could be the emphasis that the Thalbourne and Fox scale places on physical symptoms which, although only a part of the kundalini experience, can be the most distressing, especially for people who don't possess a coherent frame of explanation for them. Their scale presents some questions

on what would probably be disturbing experiences (like hearing voices, or seeing auras) without any consideration as to whether these were felt to be positive or negative. Also their scale doesn't specifically have any item relating to positive changes or to the more subtle changes of consciousness which are also said to be part of the kundalini experience.

There is evidence that spontaneous kundalini experiences do not always lead to pathological consequences. Greyson (1993) compared a group of psychiatric patients with a group of people who had near-death experiences (considered in a previous study to present high levels of kundalini arousal) using a 19-item questionnaire based on Bentov's model. The psychiatric patients, in general, reported *lower* kundalini-type experiences than the NDE group, and the psychotic patients in particular had the lowest scores. Greyson suggests that 'these data also bolster the claim that kundalini is a non-pathological force that produces a unique pattern of physiological and psychological effects' (*ibid.* p. 54). He also concludes that 'certain specific physio-kundalini symptoms can be identified as being particularly helpful in differentiating kundalini awakening from mental illness' (*ibid.* p. 56).

In another study, Greyson (2000) tried to find some neuropsychological correlates of the physio-kundalini syndrome. He used his 19-item questionnaire with a sample of 321 participants recruited among the members of the International Association for Near-Death Studies. He found the people reporting high levels of kundalini arousal also showed a tendency to have high scores on certain neuropsychological variables: measures of fantasy proneness, dissociation, absorption and temporal limbic connection. He concludes that 'it appears that kundalini arousal is accompanied by a distinctive neuropsychological profile' (*ibid.* p. 132).

One possible criticism of these two studies is that they both used a sample of NDErs who perhaps present a different profile from a population of non-NDErs with a kundalini awakening. Therefore Greyson's results might not be due to the kundalini awakening as such, but more to the NDE itself.

Due to the possible limitations in the kundalini scales developed by Thalbourne and Fox, and by Greyson, this study reports on the pilot development of a new scale

of kundalini experience (the Kundalini Awakening Scale). In particular, this scale aims to incorporate both negative and positive aspects of the kundalini experience and to include not only physical symptoms but also those of a more transpersonal nature. This scale is then used to compare groups that may be expected to differ or be similar in their degree of kundalini experience.

The following main hypotheses were examined:

1. A group of Yoga teachers will score higher on kundalini experience than a group of Yoga students.
2. A group of Yoga practitioners will have similar levels of kundalini experience to a group of practitioners from other transpersonal traditions. This hypothesis was formed to test the assumption that all transpersonal development may involve kundalini awakening, whether or not spiritual practice involves any explicit attempt to arouse kundalini.
3. Both a Yoga group and a group from other traditions will score higher on kundalini experience than a group of people who don't meditate and who don't take part in any form of transpersonal activity or practice.
4. Those following a highly structured spiritual path (Yoga practitioners) will show less negative manifestations of kundalini experience than those following a more unstructured spiritual path.

This study can be divided in two parts: the first where the Kundalini Awakening Scale was developed and the second where the differences between these various groups were tested.

Development of the Kundalini Awakening Scale (KAS)

Items for the Kundalini Awakening Scale (KAS) were constructed based on the reports of Krishna's (1993) experiences, on Sannella's (1992) studies and Bentov's (in Sannella, 1992) model, on Grof and Grof's (1990) work regarding spiritual emergency, and on some case studies reporting what were interpreted as kundalini awakenings. It was also strongly based on Yoga theory and the view that a kundalini

awakening brings with it not only easily identifiable physical symptoms, but also some subtle changes of consciousness.

To devise an initial version of the scale (comprising 185 items) a list of symptoms was taken from the relevant literature and these symptoms were then incorporated into phrases formulated in the first person, which the participants could agree or disagree with. This first version was meant to include all the symptoms that have been mentioned in the literature as being related to a kundalini awakening, including those most frequently mentioned (such as the sensation of having an electric current, digestive perturbations, and seeing lights) as well as those mentioned relatively infrequently. Physical, observable symptoms were included, as well as more subjective symptoms, for example the feeling of having become more sensitive to artistic forms of expression, or the feeling of having a more expanded consciousness.

The questionnaire was originally devised in English because the vast majority of the literature was in English, as well as to make possible the discussion of the items with the English speaking second author. It was then translated into the Portuguese language by the first author (who is fluent in both languages) in order to recruit the targeted participants in Portugal. Because the data collection was done with a Portuguese version of the scale, we can not necessarily assume that the properties of the scale would be precisely equivalent to that obtained from an English version.

Examples of items (English originals) are: 'I've experienced light inside my head'; 'I've experienced having odd breathing patterns at times'; 'I've experienced an expansion of my being'; 'I've had experiences of elevation and bliss'; and 'I've experienced an unusual cold in my body moving from place to place'. Responses to items are made using a 7-point Likert scale, from 'strongly disagree' to 'strongly agree'.

Most psychometric scales are built phrasing some of the questions in a negative way and some in a positive way. This is intended to minimize possible desirability effects (the participants might feel the need to answer affirmatively to please the researcher) or to minimize the tendency of simply answering all the questions in the same way. For the KAS, all of the questions were asked in an affirmative manner, not

only because some items would become too confusing if expressed in the negative, but also because many of the items already have a negative connotation, for example items regarding the loss of bodily or mental control, or about being frightened by sounds or visions of people not materially present.

The Portuguese questionnaire of 185 items was given to 140 people (in Portugal) using a snow-ball technique of sampling (meaning that a number of questionnaires were given to a few people who accepted the task of passing them along to other people). As such, the participants came from very different backgrounds. They included under-graduate students, workers from a court of law, workers from a swimming pool, workers from a primary school, students from a post-graduate course, and members of an association of retired women.

The scale also asked for information on the participant's age, gender, educational level, and whether the person regularly meditated or engaged in any spiritual practice or activity. Twenty four people from this group answered that they regularly participated in some spiritual activities: ten regularly attended Catholic mass, one attended adult Sunday school, three practised *Reiki*, one practised Yoga, seven regularly prayed or engaged in introspection and two regularly attended Catholic youth discussion groups.

From these 140 participants, 117 answered all the questions and were used for analysis. These formed a group of 43 men and 74 women. Ages ranged from 19 to 66 years ($M = 36.2$, $SD = 13.1$).

Using these data, an item analysis was performed. From this, a final Kundalini Awakening Scale (KAS) was constructed, composed of 76 questions. Items that were eliminated were those that the item analysis identified as contributing least to the Cronbach's alpha of the scale.

It was decided that the final questionnaire would be a rather longer than is usually desirable, because the symptoms of a kundalini awakening are so varied and individual. It was considered that a more extensive scale could also be useful in

helping to identify different types of awakenings that people might go through, based on the different symptoms described.

Cronbach's alpha for the final KAS is 0.981, indicating that the scale is a highly reliable measure. An exploratory principal components factor analysis was made which revealed one main component that accounted for 43.56% of the variance. The second component accounted for only 6.03% of the variance and the twelve other components that had eigenvalues greater than 1.00 together accounted for an additional 26.02% of the variance. These results are interpreted as indicating that the KAS assesses a largely unitary dimension of kundalini experience.

KAS comparisons between groups

The second part of the study used the final revised scale of 76 kundalini items. This was given to (a) a group of Yoga teachers, (b) a group of Yoga students, and (c) a group of people from other spiritual traditions. The participants from the two Yoga groups were all contacted in the main centre of the Yoga Samkhya Institute in Lisbon. In the group of Yoga students, preference was given to people who had been practising for a shorter length of time. The group of Yoga teachers was composed of 9 men and 15 women, with ages varying from 21 to 51 years ($M = 36.1$, $SD = 7.2$). The group of Yoga students comprised 14 men and 23 women with ages ranging from 19 to 67 years ($M = 35.4$, $SD = 12.8$).

This particular Yoga school was chosen because it practices a structured type of Yoga composed of 12 techniques, from more physical ones (like *asana*, the physical postures) to more mental or psychological ones (like meditation), stimulating the practitioners to have the required physical health and mental discipline to successfully awaken and control kundalini. Techniques which have a direct influence on the energetic body of the practitioners, stimulating kundalini, are also regularly used and incorporated in their practices.

The group from other spiritual traditions was contacted during a workshop organised by the Portuguese-Brazilian Transpersonal Association (ALUBRAT). This group had 5 males and 17 females, with ages ranging from 21 to 73 ($M = 41.5$, $SD =$

13.7) All but one of the participants in this group had been meditating regularly for a minimum of two months, with most participants (15 of them) having been regular meditators for three or more years. Only two people in the group reported no participation in any spiritual practice (although one of them meditates and both attend transpersonal conferences and workshops). This group was chosen because all but three of the people in the group reported regular participation in more than one transpersonal activity. This, together with the fact that the workshop was about “Magic and psychic protection” were taken as a sign of a relatively *unstructured* type of path (when compared with the Yoga groups).

A further comparison group of 28 people who had filled in the first version of the questionnaire was used to represent a general population (scores were used from the 76 items in the final scale). Only people who answered that they didn't meditate regularly and didn't participate in any spiritual activities were chosen. Individuals in this group were also chosen in an attempt to match as far as possible the gender, age and educational level of the other three groups. This group was composed of 8 men and 20 women, with ages ranging from 23 to 62 years ($M = 31.5$, $SD = 8.7$).

Total scores on the KAS for the four groups of participants were initially compared using a one-way analysis of variance and revealed highly significant differences between groups ($F_{(3,107)} = 38.977$, $p < 0.0005$). The raw effect size (proportion of variance accounted for) is 0.522. Post-hoc Tukey HSD tests showed that all groups differed from each other beyond the 0.001 level of significance, with the exception of the Yoga teachers vs. ALUBRAT comparison which was significant at $p < 0.05$. Means for the four groups are shown in Table 1.

Table 1. Mean (SD) KAS scores by group

	Yoga Teachers	Yoga Students	ALUBRAT	General Population	F_(3,107) [Effect Size]
N	24	37	22	28	
Total	341.21 (90.08)	248.08 (99.17)	416.55 (66.93)	161.57 (89.59)	38.977* [0.522]
Changes	77.17 (16.43)	61.27 (24.02)	90.77 (13.61)	38.07 (22.42)	31.287* [0.467]
Negative experiences	46.96 (15.32)	37.30 (15.77)	59.86 (13.71)	28.07 (16.92)	18.963* [0.347]
Positive experiences	41.75 (12.53)	27.27 (14.05)	48.82 (11.20)	16.29 (10.33)	35.694* [0.500]
Involuntary positionings	11.00 (5.03)	7.73 (4.47)	15.14 (5.99)	5.82 (4.35)	17.348* [0.327]
Physical symptoms	80.58 (26.79)	56.46 (25.23)	101.86 (22.75)	41.61 (26.09)	27.701* [0.437]

* $p < 0.0005$

Assuming that the KAS is a valid measure of kundalini awakening, these results support the hypothesis that people who regularly participate in some kind of transpersonal practice have a number of experiences not commonly present in a population of non-practitioners and which can be plausibly attributed to a certain level of kundalini arousal.

It could be argued that people who engage in any kind of transpersonal practices already have a predisposition to experience the kind of symptoms described in the questionnaire. However, because the group of Yoga students reported less kundalini experiences than the teachers, this might indicate that there is a developmental process resulting from the practice of Yoga. To examine this, KAS scores were correlated

with the number of years of Yoga practice in the combined sample of teachers and students. This revealed a small but significant positive correlation of 0.376 ($p < 0.005$). That this indicates an effect of *practice* rather than age is shown by an analysis of covariance which reveals that age is not significantly related to scores on the KAS ($F_{(1,97)} = 0.391$, ns).

Further evidence that transpersonal practice may lead to kundalini arousal comes from an analysis of KAS scores between Yoga practitioners (teachers and students) who regularly meditate ($N = 34$) and those who do not ($N = 25$). It was not possible to include the ALUBRAT group in this analysis because only one person in this group reported not meditating regularly. Results from a two-factor (Yoga group x meditation) ANOVA showed that the regular meditators have significantly higher total KAS scores than those who do not meditate regularly. There was no significant interaction between Yoga group (teachers and students) and meditation practice, although the effect of regular meditation was rather more pronounced in the students. These results possibly suggest that kundalini experiences are greater in the more dedicated students and teachers who have a more regular practice. This may confirm the view that the experiences of kundalini awakening are caused by a developmental process, although it is also possible that the more dedicated individuals have a predisposition for kundalini experiences.

Despite the evidence from the factor analysis of a unitary factor of kundalini experience, five conceptually distinguished sub-scales were derived from KAS responses in order to examine any tendency for the groups to report different types of experiences, especially when comparing Yoga groups with the ALUBRAT group. The following sub-scales were scored:

1. **Changes:** behavioral changes, changes in perception, changes in the modes of mental functioning and changes of consciousness (15 items).
2. **Negative experiences:** comprising all items about negative or frightening experiences or experiences with negative consequences (12 items).
3. **Positive experiences:** experiences felt to be positive or with positive consequences (9 items).

4. **Involuntary positionings:** experiences where the body assumes a certain position without the person consciously intending to do it. These positions are usually *asana* (the postures used in Yoga) or *mudra* (gestures also used in Yoga) which the person had never done before (3 items).
5. **Physical symptoms:** Physical sensations and experiences (20 items).

Scores on these sub-scales between the four groups were compared using one-way ANOVA. These results are shown in Table 1 and reveal highly significant overall differences between groups for all sub-scales, with effects sizes in the moderate to strong range.

The sub-scale results are generally consistent with those for the total KAS scores. In all cases, the group from ALUBRAT reports the highest number of experiences, followed by the group of Yoga teachers, then the group of Yoga students and finally the group from the general population. Post-hoc Tukey HSD tests showed that, for negative experiences, involuntary positionings and physical symptoms, the Yoga students did not differ significantly from the general population. Also the Yoga teachers did not differ significantly from the ALUBRAT group for changes and positive experiences. All other between-group comparisons were significant beyond $p < 0.05$.

It is interesting to note that the Yoga teachers differ significantly from the ALUBRAT group only on involuntary positionings, negative experiences, and physical symptoms (significantly higher in all cases for the ALUBRAT group). These three sub-scales indicate features of kundalini arousal that may be considered to be more disturbing for the individual, especially for those who don't have a coherent explanation for them. The sub-scale for involuntary positionings in particular involves a number of symptoms that are not so frequently reported in the literature, but which are more often associated with spontaneous high levels of kundalini arousal in people who had no preparation for it. This possibly suggests that the ALUBRAT group (following a relatively *unstructured* path) have a type of spiritual development with more negative and dangerous experiences, perhaps involving more violent and

uncontrolled bursts of kundalini. In contrast, the Yoga groups (following a more *structured* path) may follow a relatively smoother course with more subtle changes.

Conclusions

Results from this study support the following conclusions:

- a) There are a number of symptoms common to people who practice some transpersonal activities which can be plausibly attributed to a kundalini awakening.
- b) These symptoms are not usually present in a population of people who don't follow any transpersonal discipline or tradition.

The data also suggest that people who follow different transpersonal paths may experience different kundalini symptoms. In particular, negative symptoms may be associated more with unstructured spiritual practice. There is also some evidence that the process of kundalini arousal may be developmental, with meditation having an important influence on that process.

This study should be considered as a pilot investigation into the psychometric assessment of kundalini and the potential research applications of such assessment. Further research is indicated, both to refine the assessment methodology and to more accurately compare people following a purely unstructured path with those following a more structured path. These studies would ideally be longitudinal in nature, where the KAS (or a future development of this scale) is administered at various points during the course of development or practice. It would also be interesting to use the KAS with different populations, for example, people with psychotic disorders (because kundalini has been related to these disorders in some studies) as well as people with artistic or intellectual abilities above the average, to test the hypothesis that they might owe their abilities to a certain level of kundalini arousal.

Generally our results are consistent with expectations from traditional accounts of kundalini experience and practice. Transpersonal researchers are, however, only taking initial steps towards the scientific study of kundalini phenomena. For this

reason, it remains important for researchers to listen carefully to those who have experienced these phenomena first-hand and in all their plenitude.

'... in the real successful cases, the transformative process generated may lead to that sublime state which carries the erring mortal to superphysical heights, in joyous proximity to the everlasting, omniscient, conscious Reality, more wonderful than wonder and more secret than secrecy, which, as embodied life, manifests itself in countless forms – ugly and beautiful, good and bad, wise and foolish, living, enjoying, and suffering all around us.' (Krishna, 1993, p.382)

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