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TANTRA OR YOGA. CLINICAL STUDIES, SECTION 3: COMPARATIVE PAPER

TANTRA O YOGA. ESTUDIOS CLÍNICOS, 3ª PARTE: COMPARATIVA

Oscar R. Gómez oscar@tantra.org.es
Argentine School of Tantra, Argentina.
https://orcid.org/0000-0003-4469-8298

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Abstract
Several clinical studies show how tantric practices and exercises of Vedic traditions—such as Yoga—or Theravada or Mahayana Buddhism have a significant psychobiological impact. This study compares the neurophysiological correlates of practices called tantric and non-tantric meditations through a qualitative systematic review of the collected data. It was evidenced that tantric practices produce increased sympathetic activity, a state of "phasic alertness," and improved performance in visual cognitive tasks. They promote greater wakefulness, reduced propensity for sleep, increased cognitive activity, and metabolic changes contrary to those observed in non-tantric practices due to the relaxation induced by such practices. In contrast, non-tantric practices create a better relaxation response with increased parasympathetic activity and inhibition of the sympathetic system, inducing a hypometabolic state of deep rest where the practitioner remains awake and their attention is in "tonic alertness," accompanied by symptoms corresponding to this hypometabolic state—hypotonia, decreased oxygen consumption, reduced heart rate, and lower blood lactate concentration—changes in normal endocrine function, increased phenylalanine concentration in advanced meditators, elevated plasma prolactin levels, a five-fold increase in plasma arginine vasopressin levels, and a chronic and acute decrease in thyroid-stimulating hormone. This neurophysiological difference corresponds to the differences found in the investigated texts, which indicate that tantric practices aim to increase alertness or an awakened quality of the mind and warn against excessive calm. Conversely, the scriptures and meditation

instructions of the Vedic tradition—Yoga, Theravada, or Mahayana—aim to achieve stillness and calmness. We suggest future clinical research from a more interdisciplinary approach, incorporating the theoretical/philosophical framework of the different types of meditation.

Resumen

Varios estudios clínicos muestran cómo las prácticas tántricas y los ejercicios de las tradiciones védicas -como el yoga- o budistas *theravada* o *mahayana* tienen un impacto psicobiológico significativo. Este estudio compara el correlato neurofisiológico de las prácticas llamadas meditaciones tántricas y no-tántricas mediante una revisión sistemática cualitativa de los datos recolectados. Se evidenció que las prácticas tántricas producen aumento en la actividad simpática, del estado de «alerta fásica» y en el rendimiento en tareas cognitivo visuales. Promueven una mayor vigilia y menor propensión al sueño, generan un incremento en la actividad cognitiva y modificaciones metabólicas contrarias a las que se verifican de las no-tántricas como consecuencia del relax inducido por esas prácticas. En oposición, las no-tántricas crean una mejor respuesta de relajación con actividad parasimpática incrementada e inhibición del sistema simpático, que induce un estado hipometabólico de descanso profundo donde el practicante permanece despierto y su atención en «alerta tónica» con los síntomas correspondientes a ese estado hipometabólico -hipotonía, disminución del consumo de oxígeno, de la tasa cardíaca y de la concentración de lactato en sangre-, modificación del normal funcionamiento endócrino, aumentos en la concentración de fenilalanina en los meditadores avanzados, en los niveles de prolactina plasmática, un incremento de cinco veces en los niveles plasmáticos de arginina vasopresina, mientras que la hormona estimulante de la tiroides disminuye de forma crónica y aguda. Esta diferencia neurofisiológica se corresponde con las diferencias encontradas en los textos investigados que señalan que las tántricas apuntan a incrementar el estado de alerta o una cualidad despierta de la mente y advierten contra la calma excesiva y, por el contrario, las escrituras y las instrucciones de meditación de la tradición védica -yoga, theravada o mahayana- apuntan a lograr quietud y calma. Indicamos futuras investigaciones clínicas desde un enfoque más interdisciplinario e incorporamos el marco teórico/filosófico de los diferentes tipos de meditación.

Keywords: Clinical studies; tantra; tantric; yoga; Theravada; Vipassana; Mahayana; Zen; mindfulness; Vajrayana; EEG; ECG; fMRI; neuroimaging; neurophysiology; immunology; endocrinology; psychology

Palabras Claves: Estudios clínicos; tantra; tántrico; yoga; Theravada; Vipassana; Mahayana; Zen; atención plena; Vajrayana; EEG; ECG; fMRI; neuroimagen; neurofisiología; inmunología; endocrinología; psicología

Introduction – Part Three

As mentioned in Parts 1 and 2, unlike the meditation practices of Yoga, Theravada, and Mahayana, the practice of Vajrayana—Tantra—does not cultivate relaxation but a state of maximum alertness. That is, being conscious and awake. The tantric scriptures, "*reserved for rulers*," aim to increase alertness or an awakened quality of the mind and warn against excessive calm (Rinpoche, 1999). In contrast, the scriptures and meditation instructions of the Vedic tradition—Yoga, Theravada, or Mahayana—"*widely disseminated*," aim to achieve stillness and calmness (Holmes, 1984) (Amihai, 2014).

The clinical evidence found indicates that tantric practices create better cognitive and physiological responses: increased arousal and "phasic alertness" (Petersen, 2012) (Sturm, 1999) while significantly reducing stress levels (Batista, 2014). In contrast, other types of meditation from Buddhist or Hindu traditions—Yoga—create a relaxation response and a state of "tonic alertness"—involuntary—with increased parasympathetic activity (Wallace, 1971) (Wu, 2008). This highlights the philosophical, social, and cultural consequences of these different types of meditations.

This review has been divided into three topics. In the first part, the neurophysiological correlates of the results of meditative practices derived from Yoga and Theravada and Mahayana Buddhism were reviewed. In the second part, the results of tantric practices were reviewed, and in this third part, they are compared.

Methodology

A qualitative systematic review of available studies on the psychological and neurophysiological consequences of meditations

practised in Yoga, Theravada, Mahayana, Vipassana, Zen Buddhism, and mindfulness schools, as well as meditations practised within esoteric Hindu Tantrism and Buddhist Tantrism or Vajrayana. A bibliographic search was conducted using the following keywords: meditation, yoga, Theravada, Vipassana, Mahayana, Zen, mindfulness, insight, tantra, tantrism, tantric, Buddhism, esoteric, Tibetan, Vajrayana, Hindu. Each keyword was searched individually and combined using the appropriate Boolean connector with each of the following keywords: EEG (electroencephalogram), ECG (electrocardiogram), fMRI (functional magnetic resonance imaging), neuroimaging, neurophysiology, immunology, endocrinology, and psychology. The search was conducted in both Spanish and English, using the following platforms: MEDLINE (PubMed), ISI Web of Knowledge, TripDatabase, Cochrane Library, and the references of the consulted articles were also exhaustively reviewed. The search included articles published before May 2017.

There is a wide variety of techniques referred to as "meditation," with such diverse forms and objectives that it is impossible to create taxonomies that encompass them all. Therefore, we suggest that future research use the term "exercises" for Yoga, Mahayana, Theravada, Vipassana, or tantric practices. For this research, we will refer to tantric meditation techniques as those originating from esoteric Hindu Tantrism and esoteric Buddhist Tantrism or Vajrayana, and non-tantric techniques as the rest of the meditation forms.

Development – Part Three: Comparative Analysis

As mentioned, the common aspect between "meditation" techniques and their different procedures is that they all aim to modify the behavioural, cognitive, and physiological patterns of practitioners.

However, given the significant differences in the procedures used in these exercises and the results obtained from the practices, we find a widespread error in attempting to verify them together to determine the mechanisms and clinical effects of both tantric and non-tantric meditation techniques. This is why we analysed the evidence by studying them separately first and then interpreting the clinical differences, showing both the philosophical differences and their corresponding physiological results in this final part of the research.

Despite the difficulties mentioned in conducting comparative studies of two practices with different forms and objectives, we found one very significant study with negligible methodological inaccuracies. This was the study conducted by Ido Amihai and Maria Kozhevnikov from the National University of Singapore, Department of Psychology, Singapore, and the Martinos Center for Biomedical Imaging, MGH and Harvard Medical School, Charlestown, Massachusetts, USA, respectively.

They employed a mixed design in their research, involving practitioners of the Theravada style and practitioners of the Vajrayana style.

Ten practitioners—two women and eight men, with an average of 8 years of Theravada-style practice and an average age of 41.4—from the Yannawa Temple in Bangkok, Thailand, and nine practitioners—one woman and eight men, with an average of 7.4 years of Vajrayana-style practice and an average age of 47.5—from the Shechen Monastery in Kathmandu, Nepal, were included.

The study outlines the different monitored practices and their implementation as follows:

Procedure

Data from Theravada-style practitioners were collected in a meditation room at the Yannawa Temple (Bangkok, Thailand), and data

from Tibetan Vajrayana-style practitioners were collected in the library of the Shechen Monastery (Kathmandu, Nepal). Continuous EEG and EKG recordings were taken throughout the study.

At the beginning of the session, each participant was in a 10-minute resting condition, during which they were explicitly instructed not to meditate but to remain seated with their eyes closed and simply relax.

After a 5-minute break, Theravada practitioners were asked to perform 15 minutes of Shamatha meditation followed by 15 minutes of Vipassana meditation.

Tibetan Vajrayana practitioners were asked to perform 15 minutes of deity meditation after the resting condition, followed by 15 minutes of Rig-pa meditation.

The meditation orders were chosen at the request of the participants, who found it more natural to first meditate in Shamatha followed by Vipassana. Similarly, since Rig-pa (completion stages) follows the end of deity practice (generation stage), Vajrayana practitioners performed deity meditation first, followed by Rig-pa.

Unlike Theravada-style meditations, which are performed with the eyes closed, Vajrayana practices are often performed with the eyes open. However, to make the experimental conditions as similar as possible, we instructed all practitioners to meditate with their eyes closed. Importantly, we ensured that all our Vajrayana practitioners were comfortable with this request, and all confirmed that it would not affect their meditation (Amihai, 2014).

The study concludes that the Theravada style induces a relaxation response and generates a state of "tonic alertness" in a short time, 20 minutes, while the tantric style induces an arousal response during the same time interval, characterised by increased sympathetic activation

and generates a greater state of "phasic alertness." This contrast is also reflected in the political objectives of both groups: one to consolidate a caste system and the other to equalise people (Gómez, 2016).

The study also demonstrated that Vipassana/Theravada meditators were more relaxed during meditation practices than during rest, while the opposite pattern was observed for Vajrayana practices—these practitioners showed more arousal while engaging in tantric practice compared to rest, during which they remained completely relaxed.

Additionally, when testing the conditions of both groups of practitioners with the Mental Rotation Test (MRT) and Visual Memory Test (VMT), it was found that only Vajrayana meditators showed significantly improved performance in cognitive and motor tasks.

Such dramatic immediate improvements in cognitive and motor task performance could only be attributed to the heightened state of "phasic alertness" due to arousal, reflecting a rapid mobilisation of resources to process stimuli and prepare the system for an effective response.

The methodological inaccuracy we previously mentioned in this clinical study lies in the fact that Vajrayana practitioners were asked to close their eyes during their practices because Vipassana practitioners perform their meditations with their eyes open, "*to make the experimental conditions as similar as possible…*". Experimental conditions are similar when the research methodology is the same for both types of meditation, not when the types of meditation are performed in the same way. If both meditations are performed in the same way, they are the same meditation, and it would not be comparative. This request to close their eyes altered the form of the meditation being compared.

However, despite this methodological error—which prevents validating other factors but is not the focus of this study—this trial on the results

of both practices confirms our own clinical research conducted between 1996 and 2001 and the findings from this review. That is, the study confirms that the practice of Rig-pa meditation—tantric—produced improvements in cognitive tasks, while the practice of Kasina meditation—non-tantric—did not lead to any improvement. As the authors of the study themselves state:

> "*In conclusion, in accordance with Tibetan scriptures that describe Shamatha and Vipassana techniques as those that calm and relax the mind, and Vajrayana techniques as those that require 'an awakened quality' of the mind, we show that Theravada and Vajrayana meditations are based on different neurophysiological mechanisms and give rise to opposite responses of relaxation or arousal*" (Amihai, 2014).

Amihai and Kozhevnikov hypothesised that the deity and Rig-pa practices of the Vajrayana tradition, as outlined, would generate cognitive and physiological arousal responses, while Vipassana and Shamatha of the Theravada tradition would generate a relaxation response. The authors state: "that the dramatic improvements in visual tasks of tantric meditators immediately after a stimulus or activity are indicative responses of a heightened state of phasic alertness."

The experimental results show that only tantric practices lead to a substantial and immediate increase in performance in these cognitive and motor tasks, while Theravada meditators showed no improvement in their performance after practice.

Other studies also show that Theravada meditation types lead to a state of "tonic alertness," and Shamatha may lead to a decrease in the activity of neural structures that are more active during unfocused activity than during demanding attention tasks (Brewer, 2011). These

areas include the ventral medial prefrontal cortex, posterior cingulate, inferior parietal lobe, and dorsal medial prefrontal cortex, referred to as the brain's "default network"[1] (Buckner, 2008).

And, as evidenced, unlike the tantric Buddhist scriptures that emphasise the realisation of "self-existing wakefulness" or "an awakened quality" of the mind and warn against excessive calm, the Theravada scriptures emphasise stillness and tranquillity (Bhikkhu, 2012), as do the meditation instructions of Mahayana and Zen Buddhism, which also stress calmness (Buksbazen, 2002).

Additional evidence, such as that found by (Corby, 1978) and (Telles, 1993), also points to the generation of arousal during Hindu tantric practices as well as in various Vajrayana practices (Kozhevnikov, 2013), in the same way as demonstrated by the study presented first for this comparison (Amihai, 2014).

Britton (2014) notes: Tantric meditation, unlike non-tantric practices, generates a state of relaxed alertness, protecting the system against the extremes of hyperactivity—excitement, restlessness, anxiety—and hypotonia—laxity, drowsiness, sleep.

A series of neuroimaging and subjective behavioural studies conducted on tantric meditators before, during, and after practices suggest that their meditations may promote greater wakefulness and reduced propensity for sleep, especially as the practice advances (Britton, 2014).

Thus, tantric practice engenders greater and prolonged wakefulness, which may be an indicator of neuroplastic changes induced by tantric practice. In this sense, "awakening" is not a metaphor but rather an interactive process of neuroplastic modifications and increased efficiency

[1] Default-mode network (DMN): It is often read in academic articles in Spanish as "red neural por defecto," which, in our opinion, is incorrect.

that develops a new level of sensitivity, perception, and self-perception (Britton, 2014). Additionally, from this study, it is evident that Rig-pa meditation, associated with g-tummo, allows the practitioner to build an early warning system against impulsive negative actions to abort them. Medium-term practitioners reduce their level of impulsivity (Becerra, 2011).

We also found that non-tantric meditative practices foster self-compassion in the practitioner (Chiesa, 2009), while in tantric practices, the goal and result are an increase in levels of compassion for other beings (Lutz, 2004).

Regarding the tantric practices of deity meditation and openness meditation, we did not find similar practices among non-tantric meditations to conduct comparative studies.

The task of constructing the internal sensation of a deity—such as the compassion of Manjushri (Yeshe, 1987) or the destructive power of the "Lord of Knowledge," *Trailokyavijaya*—or building an intense internal sensation of love for another person[2], are not practices found in Theravada, Mahayana, mindfulness, or the other studied traditions. We did find practices of non-specific love, directed toward the universe or mythological gods, but not toward specific individuals. In this group of non-tantric practices, attention is directed to external objects such as kasina or mandalas. Thus, since the internal and external flow of the breath is what is attended to during Shamatha meditation, this would not evoke intense emotional reactions.

[2] A factor that must be considered in research on this type of practice and teaching is the pre-existing emotional load in the subject being studied. For example, it is certain that a visualised Tibetan deity would lead to a high degree of arousal due to the emotional content it holds for a Tibetan meditator, but not for someone unfamiliar with these traditions. In the trials conducted with individuals trained at the Argentine School of Tantra, images with high emotional content specific to the trained subject—depending on their region, culture, and age range—are used (Gómez, 1996), rather than Trailokyavijaya, presented in the second part of this research.

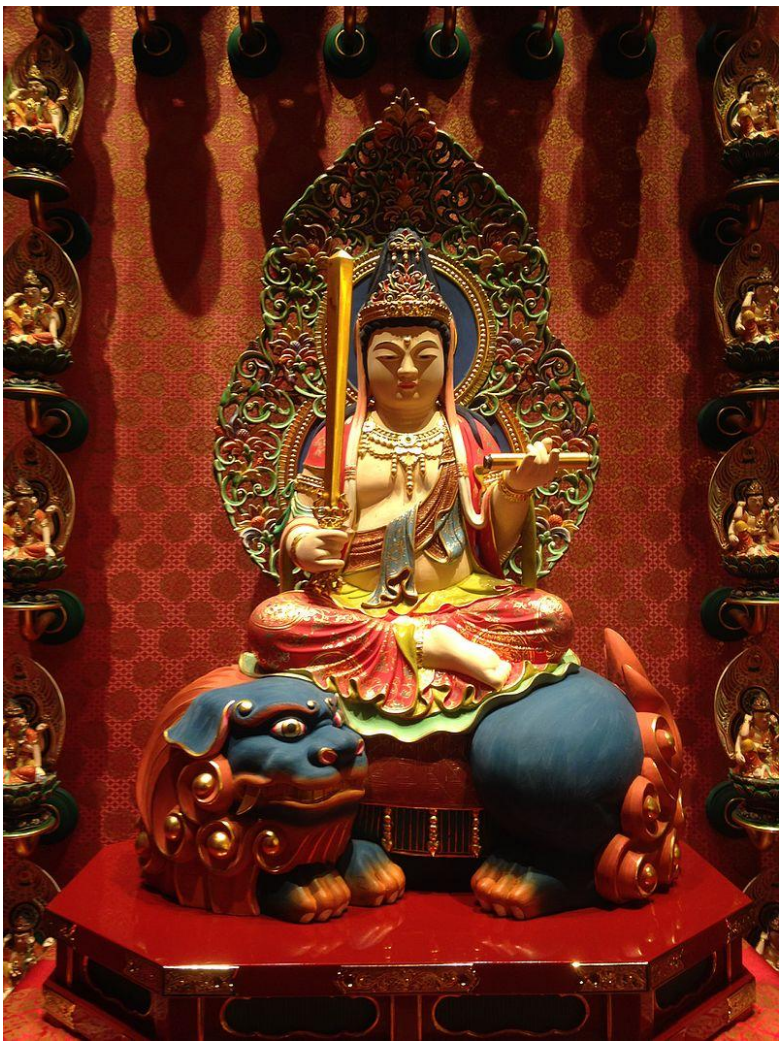

Image of Manjushri at the Buddha Tooth Relic Temple and Museum in Singapore. © Wikimedia.

Conclusion of Part Three

Analysing the results obtained, we can conclude that esoteric Hindu tantric practices and esoteric Buddhist tantric practices produce "awakening and clarity" as a result, in contrast to non-tantric meditations, which produce relaxation and daydreaming (Britton, 2014).

As demonstrated, unlike Theravada and Mahayana meditation types, which produce greater relaxation, research on Vajrayana practices and certain Hindu tantric practices showed increased arousal with a state of mental calm.

In light of these findings, it can be corroborated that the techniques described here as non-tantric hold enormous potential for healing processes in individuals, as well as a means of adapting to a society they may perceive as oppressive and unhealthy. Meanwhile, tantric practices aim to achieve a higher degree of consciousness, mental clarity, and energy to function effectively in the environment.

These different physiological results confirm important philosophical correlates:

While Theravada and Mahayana scriptures emphasise that the purpose of meditation is to cultivate tranquillity along with mental stability, Vajrayana scriptures describe practices aimed at inducing states of heightened arousal.

That is, the tantric concept of enlightenment differs from the Vedic concept of enlightenment—"which is to know the true nature of men and gods"[3]—and becomes, in Tantrism, the awakening from a dreamlike state (Becerra, 2011).

This awakening aligns with psychophysiological responses, so that awakening in Tantrism "is not a metaphor," just as the Vedic or exoteric Buddhist concept of enlightenment has its physiological correlate in the daydreaming and hypotonia produced by their practices (Britton, 2014).

The goal of tantric practice is self-realisation and transformation, while the objective of non-tantric practices is to distract oneself, even from one's own discomfort. As Chiesa (2009) noted, non-tantric meditative practices foster self-compassion in the practitioner, while in tantric practices, the goal and result are an increase in levels of compassion for other beings (Lutz, 2004).

[3] We note in Part 2 of this study: "Vipassana refers to the understanding of the 'true nature of reality,' which is combined with the pacification of the mind" (Bodhi, 2012).

This increased degree of "self-compassion" produced by non-tantric practices benefits individuals with self-harming behaviours, while the increased degree of compassion in tantric practitioners enhances their affective skills and favours their interaction with others.

When comparing Theravada/Vipassana practices with "Self-Generation as a Deity," Amihai (2014) found that: "*The experimental results show that only tantric practices lead to a substantial and immediate increase in performance in these cognitive and motor tasks, while Theravada meditators showed no improvement in their performance after practice.*" Britton (2014) concludes: "*In this sense, 'awakening' is not a metaphor but rather an interactive process of neuroplastic modifications and increased efficiency that develops a new level of sensitivity, perception, and self-perception.*"

From the above paragraph, we conclude that: in tantric practices, "self-realisation" is also not a metaphor. It is the possibility for a person trained in tantric techniques to become what they desire to be, as in deity practices, they create an emotional package different from the one they are currently experiencing. In contrast, non-tantric meditation consists of focusing attention on one's own breath.

We believe that the above is sufficient to demonstrate the physiological correlate of a philosophy, such as the Vedic, which emerged to consolidate and stabilise a caste system, as well as the distribution and monopoly of power, and another philosophy, the tantric, which emerged to awaken individuals, free them from the oppression of the yoke/yoga and inequality, while driving the emancipation of others.

These diametrically opposed findings—relaxation in Theravada and Mahayana practices, and arousal in Vajrayana and Hindu tantric practices—point to opposite conclusions, indicating that to understand

the psychophysiological aspects of meditation, it is necessary to carefully examine its cultural and religious sources.

This highlights the importance of philosophical and cultural influences on meditation and demonstrates that the term "meditation" is too general when used as a unified descriptor for all Buddhist or Hindu practices.

The findings demonstrate that the assumption that "*to understand the psychophysiological influences of meditation, it should first be conceptually stripped of its cultural and religious biases*" (Kutz, 1985) is methodologically incorrect. This is why we suggest that future clinical studies take into account the philosophical aspect and the individual and social objectives of so-called meditation techniques. The opposite, which was done and suggested by Benson himself, is like attempting to conduct clinical trials on psychoanalytic practice without considering the postulates of psychoanalysis.

We strongly suggest that future clinical studies on these practices be conducted within an interdisciplinary framework to account for all the factors listed.

It is important to note that the effects of Vajrayana and Hindu tantric practices on physiology and behaviour are only beginning to receive due attention from the scientific community (See Appendix 2), and the long-term impact of tantric practices is still not known with certainty.

And, as Zeidan (2014) said, if tantric practices can be learned quickly—within 1 to 12 weeks—"*then patients may feel more inclined to practise tantric techniques, and clinicians may feel less reluctant to recommend the practice to their patients*." We suggest conducting longitudinal studies to verify in the long term whether there are any undesirable consequences, as we have demonstrated exist in relation to non-tantric practices, and—if they exist—to avoid or counteract those effects.

We also suggest that the term "meditation" in the scientific community be reserved exclusively to refer to the reflective act of the mind and be replaced in future studies by "practices" or "techniques of...". And, as evidenced by this study, we recommend that future studies focus on the only four existing tantric practices: "Self-Generation as a Deity," "Rig-pa," "g-tummo," and "Openness."

Appendix 2 – Methodological Difficulties

In addition to the issue mentioned regarding the attempt to compare practices with different forms and objectives, there is another obstacle: in the academic world, tantra is generally understood as an exotic and impractical form of sex without ejaculation, which is why these practices are systematically dismissed from scientific interest (Gómez, 2017).

Another obstacle to conducting scientific studies lies in the following:

a) Although there is a large number of tantric scriptures, they have not yet been formally organised or systematised.

b) Due to the esoteric and initiatory nature of the tradition[4], many practitioners do not disclose real information or sources of their knowledge.

[4] Buddhism has essentially two branches: **exoteric**, intended for the general population, such as Theravada or Mahayana Buddhism, and **esoteric**, reserved only for rulers, such as Vajrayana—Tantra. Additionally, in India, Tantrism also has two forms. One is exoteric, mystical-magical, consisting of fables invented by "tantric gurus" to protect themselves and gain power, fear, and awe from people (Basu, 2016). The other is esoteric, reserved only for members of the Kaula clan and tantric Buddhist monks, as well as the rulers who protected them (Acri, 2016).

c) Buddhist tantric practice is classified as a secret practice. One method of maintaining this secrecy is that tantric initiation from a master is required before receiving instructions on the actual practice, and during the initiation procedure, the student must take tantric vows that commit them to such secrecy (Akira, 1993).

This is why, in the academic world, little is known about the details of techniques like g-tummo, for example. Monasteries that maintain these practices are quite rare and are mainly located in the remote Chinese provinces of Qinghai and Sichuan (Evans-Wentz, 2002). Even at the Tantric University of Gyuto—exiled in Dharamsala—the secrets of tantric practice are no longer transmitted, and only the exoteric aspect of Tantrism is offered to the public.

In the documentary The Labyrinth of Tibet: The Path of Tantra, His Holiness the XIV Dalai Lama says: "*You can no longer learn tantra in the East; to learn it, you must travel to America.*" However, those who wish to study it still insist on seeking it from "gurus" with suprahuman powers in India.

Tantrism, both in India and Tibet, was reserved exclusively for the ruling class, which is why it was not available to the West until the 1960s. From tantra, only magical fantasies and feats, which "tantrics" claimed to perform, reached the West (Chhaya, 2009), or the writings of Avalon, whom these "gurus" deceived, igniting the fantasies of the British writer (Gómez, 2017).

When the original texts—Pancha Tantra, Hevajra Tantra, Guhyasamaja Tantra, Kularnava Tantra, and other unclassified texts—were studied by the Western academic world, the philosophical and social implications of these texts were revealed. Today, it is practically impossible to find schools of tantra. A few years ago, starting in the

1980s, His Holiness the Dalai Lama conducted personal and private initiations into Tibetan Buddhist Tantra. He decided to remove the seals of a technique that allowed Tibetan rulers to lull and exploit the people and which motivated Mao—a practitioner of tantra, according to his personal physician and the Dalai Lama himself—to expel them from Tibet and liberate the peasants from religious oppression (Chhaya, 2009).

Shortly afterward, motivated by two assassination attempts on his life and due to his political struggle with China over the sovereignty of Tibet, he was forced to retract and continue maintaining Tantrism as a secret knowledge, limiting himself to offering "tantric fantasies." We only had a small window of time to penetrate this knowledge reserved for rulers.

Thus, the fact that tantra was believed to be a strange form of sexual practice and that the only four esoteric tantric exercises were unknown made it difficult to conduct sufficient clinical trials.

References

Acri A. (2016) «Chapter 1. Introduction: Esoteric Buddhist Networks along the Maritime Silk Routes, 7th– 13th Century AD», in Esoteric Buddhism in Mediaeval Maritime Asia: Networks of Masters, Texts, Icons, Singapore: ISEAS Publishing, 2016, pp. 1–26.

Akira, Hirakawa (1993), Paul Groner, ed., History of Indian Buddhism, Translated by Paul Groner, Delhi: Motilal Banarsidass Publishers

Amihai I., Kozhevnikov M. (2014). Arousal vs. Relaxation: A Comparison of the Neurophysiological and Cognitive Correlates of Vajrayana and Theravada Meditative Practices. PLoS ONE, 9(7), e102990. http://doi.org/10.1371/journal.pone.0102990 https://www.ncbi.nlm.nih.gov/pubmed/25051268

Basu, R. L. (2016). ASPECTOS CIENTÍFICOS Y BENEFICIOSOS DEL CULTO TANTRICO. Revista Científica Arbitrada de la Fundación MenteClara| Tantra, 1(2), 26-49. http://fundacionmenteclara.org.ar/revista/index.php/RCA/article/view/15

Batista JC, Souza AL, Ferreira HA, Canova F, Grassi-Kassisse DM (2014). "Acute and Chronic Effects of Tantric Yoga Practice on Distress Index" in J Altern Complement Med. 2015 Nov;21(11):681-5. doi: 10.1089/acm.2014.0383. Epub 2015 Aug 6. http://www.ncbi.nlm.nih.gov/pubmed/26248115

Becerra, Gastón (2011). «Tantric buddhism in Buenos Aires: A case study of secular religiosity among young people.». The International Journal of Religion and Spirituality in Society. 1 (2), 97-102. http://ijn.cgpublisher.com/product/pub.200/prod.25

Benson H., Rosner B. A., Marzetta B. R., Klemchuk H. P. (1974) Decreased blood pressure in borderline hypertensive subjects who practiced meditation. Journal of Chronic Diseases. 1974;27(3):163–169. doi: 10.1016/0021-9681(74)90083-6.

Benson H., Lehmann J. W., Malhotra M. S., Goldman R. F., Hopkins J., Epstein M. D. (1982) Body temperature changes during the practice of g Tum-mo yoga. Nature. 1982;295(5846):234–236. doi: 10.1038/295234a0.

Benson H, Malhotra MS, Goldman RF, Jacobs GD, Hopkins PJ (1990) Three case reports of the metabolic and electroencephalographic changes during advanced Buddhist meditation techniques. Behavioral Medicine 16(2):90-5 • January 1990 DOI:10.1080/08964289.1990.9934596 http://www.ncbi.nlm.nih.gov/pubmed/2194593

Bhikkhu B. (2012) The Numerical Discourses of the Buddha: A Translation of the Anguttara Nikaya. Boston, Mass, USA: Wisdom Publications; 2012.

Bodhi B (2012) The numerical discourses of the Buddha: a translation of the Anguttara Nikaya. Boston, U.S.A.: Wisdom Publications. pp. 1287–1288 (IV.1410).

Brewer J. A., Worhunsky P. D., Gray J. R., Tang Y.-Y., Weber J., Kober H. (2011) Meditation experience is associated with differences in default mode network activity and connectivity. Proceedings of the National Academy of Sciences of the United States of America. 2011;108(50):20254–20259. doi: 10.1073/pnas.1112029108.

Britton, W. B., Lindahl, J. R., Cahn, B. R., Davis, J. H., & Goldman, R. E. (2014). Awakening is not a metaphor: the effects of Buddhist meditation practices on basic wakefulness. Annals of the New York Academy of Sciences, 1307(1), 64-81.

Buckner R. L., Andrews-Hanna J. R., Schacter D. L. (2008) The brain's default network: anatomy, function, and relevance to disease. Annals of the New York Academy of Sciences. 2008;1124:1–38. doi: 10.1196/annals.1440.011.

Buksbazen J. D. (2002) Zen Meditation in Plain English. 1st. Boston, Mass, USA: Wisdom Publications; 2002.

Chhaya, M. (2009). Dalai Lama. Hombre, monje, místico. Grijalbo.

Chiesa A., Serretti A. (2009) Mindfulness-based stress reduction for stress management in healthy people: a review and meta-analysis. The Journal of Alternative and Complementary Medicine. 2009;15(5):593–600. doi: 10.1089/acm.2008.0495.

Corby J. C., Roth W. T., Zarcone V. P., Jr., Kopell B. S. (1978) Psychophysiological correlates of the practice of Tantric Yoga meditation. Archives of General Psychiatry. 1978;35(5):571–577. doi: 10.1001/archpsyc.1978.01770290053005.

El laberinto del Tíbet - El camino del Tantra. Una producción de Canal + TVE https://youtu.be/bxiGmmbT2-0

Evans-Wentz W. Y. Tibetan Yoga and Secret Doctorines. Varanisa, India: Pilgrims Publishing; 2002.

Fremantle, F. (1971). A Critical Study of the Guhyasamaja Tantra. London: University of London Library.

Gómez, O. R. (2016). Antonio de Montserrat–La Ruta de la Seda y los caminos secretos del Tantra. Revista Científica Arbitrada de la Fundación MenteClara| Tantra, 1(1), 5-20. http://fundacionmenteclara.org.ar/revista/index.php/RCA/article/view/8

Gómez, O. R. (2017). ANÁLISIS CRÍTICO DEL KULARNAVA TANTRA-PARTE 1-UN PRÓLOGO VICIADO DE SEXUALIDAD REPRIMIDA. Revista Científica Arbitrada de la Fundación MenteClara| Tantra, 2(1), 114-141. http://fundacionmenteclara.org.ar/revista/index.php/RCA/article/view/26

Holmes DS., (1984) Meditation and somatic arousal reduction. American Psychologist. 1984;39:1–10.

Kozhevnikov M, Elliott J, Shephard J, Gramann K (2013) Neurocognitive and Somatic Components of Temperature Increases during g-Tummo Meditation: Legend and Reality. PLoS ONE 8(3): e58244. doi:10.1371/journal.pone.0058244 http://www.ncbi.nlm.nih.gov/pubmed/23555572

Kutz I., Borysenko J. Z., Benson H. 1985 Meditation and psychotherapy: a rationale for the integration of dynamic psychotherapy, the relaxation response, and mindfulness meditation. The American Journal of Psychiatry. 1985;142(1):1–8. doi: 10.1176/ajp.142.1.1

Lutz, A., Greischar, L. L., Rawlings, N. B., Ricard, M., & Davidson, R. J. (2004). Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. Proceedings of the National Academy of Sciences of the United States of America, 101(46), 16369–16373. http://doi.org/10.1073/pnas.0407401101

Rinpoche T. U. As It Is. Vol. 2. Hong Kong: Ranjung Yeshe Publications; 1999.

Shiva, L. (VII d.C). Kularnava Tantra o Urdhvaamnaaya Tantra (Reimpresión del original conservado en el Rajshahi College en Sanskrit in Bengali typeset with Bengali Translation). (U. K. Das, Ed.) Calcuta, India: Ranjit Saha, NavBharat Publishers 1976.

Snellgrove, D. (2011). The Hevajra Tantra: A Critical Study. Orchid Press, ISBN 978-9745241282.

Telles S., Desiraju T. (1993) Autonomic changes in Brahmakumaris Raja yoga meditation. International Journal of Psychophysiology. 1993;15(2):147–152. doi: 10.1016/0167-8760(93)90072-W.

Travis, F. y Shear, J. (2010) "Focused attention, open monitoring and automatic self-transcending: Categories to organize meditations from Vedic, Buddhist and Chinese traditions" Consciousness and Cognition Volume 19, Issue 4, December 2010, Pages 1110-1118 https://doi.org/10.1016/j.concog.2010.01.007

Vishnu, S. (1910). Pancha Tantra- Hindi-. Bombay, India: Srivenketeshwar Steem Press.

Wu S. D., Lo P. C. Inward-attention meditation increases parasympathetic activity: a study based on heart rate variability. Biomedical Research. 2008;29(5):245–250. doi:10.2220/biomedres.29.245. http://www.ncbi.nlm.nih.gov/pubmed/18997439

Yeshe Thubten Introduction to Tantra: A Vision of Totality. Wisdom Publications, 1987

Zeidan F., Martucci K. T., Kraft R., McHaffie J. G., Coghill R. C. (2014) Neural correlates of mindfulness meditation-related anxiety relief. Scandinavica. 2014;9:751–759.

Suggested bibliography

Brefczynski-Lewis J.A., Lutz A., Schaefer H.S., Levinson D.B., Davidson R.J. (2007). Neural correlates of attentional expertise in long-term meditation practitioners. Proceedings of the National Academy of Sciences, USA, 104, 11483–11488

Brooks, D. R. (1992). Auspicious Wisdom: The Texts and Traditions of Srividya Sakta Tantrism in South India. State Universisy New York Press, ISBN 9780791411469.

Chiesa, A., & Serretti, A. (2010). A systematic review of neurobiological and clinical features of mindfulness meditations. Psychological Medicine, 40(8), 1239-1252. doi:10.1017/S0033291709991747 https://www.ncbi.nlm.nih.gov/pubmed/19941676

Dalai Lama & HOPKINS, J. (1994). El tantra de Kalachakra: rito de iniciación. Alicante: Dharma.

de Mora Vaquerizo, J. M. (1988). Tantrismo Hindú y Proteico. Universidad Nacional Autónoma de México.

Derryberry D., Rothbart MK., (1988) Arousal, affect, and attention as components of temperament. Journal of personality and social psychology. 1988;55:958–66.

Gilpin R. The use of Theravāda Buddhist practices and perspectives in mindfulness-based cognitive therapy. Contemporary Buddhism. 2008;9(2):227–251. doi: 10.1080/14639940802556560.

Gómez, O. R. (2008). Manual de Tantra... desde el tantra a la Tecnología del deseo. Buenos Aires, Argentina: MenteClara. http://tantra.org.ar/biblioteca/index.php/Biblioteca/article/view/1

Gómez, O. R. (2013). El tantrismo dentro de la Compañía de Jesús. Tantra: del Tíbet al Vaticano hoy. Biblioteca| Repositorio (Open access)| Escuela de Tantra en España, 58. http://tantra.org.es/revista/index.php/Biblioteca/article/view/22

Glasenapp, H. v. (1999). Jainism: An Indian Religion of Salvation. Motilal Banarsidass Publ, ISBN 9788120813762.

Gyatrul R., 1996 Generating the deity. Ithaca, New York, U.S.A.: Snow Lion. 100 p.

Harper K. A., Brown R. L., editors. The Roots of Tantra. New York, NY, USA: State University of New York Press; 2002.

Jain S., Shapiro S. L., Swanick S., et al. (2007) A randomized controlled trial of mindfulness meditation versus relaxation training: effects on distress, positive states of mind, rumination, and distraction. Annals of Behavioral Medicine. 2007;33(1):11–21. doi: 10.1207/s15324796abm3301_2.

Jevning, R., R. K. Wallace, and M. Beidebach. (1992) The physiology of meditation: a review. A wakeful hypometabolic integrated response. Neurosci. Biobehav. Rev. 16: 415–424, 1992.

Posner, M. I., DiGirolamo, G. J. & Fernandez-Duque, D. (1997) Conscious. Cognit. 6, 267-290. https://www.ncbi.nlm.nih.gov/pubmed/9245457

Young J. D.-E., Taylor E. (1998) Meditation as a voluntary hypometabolic state of biological estivation. News in Physiological Sciences. 1998;13(3):149–153 http://physiologyonline.physiology.org/content/13/3/149.long

Wilson, H. H. (1826). Analytical Account of the Pancha Tantra, Illustrated with Occasional Translations. Transactions of the Royal Asiatic Society of Great Britain and Ireland, 1(2), 155-200.

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