

Article

Traditional Indigenous Medicine: An Assessment of Experiences in Expanded States of Consciousness

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Abstract

This paper is based on more than three decades' worth of practical work, research and teaching in clinical psychology, as well as research into Traditional Indigenous Medicine (TIM) in South America. Firstly, it provides a comprehensive review of the main findings from a number of different research projects and poses new empirical possibilities, and addresses the need to delve deeper into a first and third person investigative process. Secondly, the paper reports on a preliminary research to assess to what extent participant experience expanded states of consciousness from the diets and ingestion of plants in an indigenous context. This is done using a questionnaire called VEEC (Validación de Experiencias en Estados de Consciencia – Validation of Experiences in States of Consciousness), a newly devised instrument specifically for this purpose. Future lines of research are also put forward, for the proper introduction of TIM into professional medical practice.

Keywords: Indigenous medicine, expanded state, consciousness, VEEC, diets, plants.

1. Introduction

It is indisputable that in our recent past LSD has had a significant scientific impact as well as its social and political repercussions. Its discovery appears to have been serendipity, as after the historical experiments with ergotamine, LSD 25 appeared in the lab. The lysergic acid amide was later found to exist in ololiuqui, a Mexican plant (Hofmann, 2013), thus showing the permeability of the barrier between nature and chemistry. There has been an infamous emergence of other laboratory-created substances (Shulguin, 1988) (Shulguin and Shulguin 1991, 1997). After the avalanche of applications with LSD in trials and self-testing came psycholytic therapy and psychedelic therapy. Humphry Osmond was relatively successful in the treatment of alcoholics (Grof, 1994) (Grof and Halifax, 1997).

Another contribution worth mentioning is that of Ludwig and Levine (1965), who conducted a study comparing different brief treatment techniques. They found “hypnodelic therapy”, which combines LSD, hypnosis, and psychotherapy to be the most effective. Richard Yensen (1999) and Donna Dryer have thirty years' experience[i] in this field. Negative aspects were marked by LSD identification and psychomimetics on one hand, and uncontrolled usage on the other. The CIA also performed some unethical psychiatric research (Grof, 1994). We will develop this further below. Shamanism is central to that development (Winkelman, 2021).

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Findings and some contradictions

Are plants and their chemical structure the same thing?

This is one of the pointless matters to be considered. It is assumed that A. Hofmann and R.G. Wasson argued during that famous evening in the Sierra Mazateca with María Sabina, summed up as: “María Sabina had said that the pills lacked the “spirit” of the mushrooms.” (Hofmann, 2013) The dose was increased, and after that, the *curandera* (“healer”) said that the pills had the same power as the mushrooms. This was a confirmation from the most competent authority and constituted the ultimate test (Hofmann, 2013). Hofmann (2013) combined chemistry with ancestral knowledge and opened the psychonautic portal. For my part, and with all due respect, after almost four decades of research in the indigenous world, and twenty years’ work with the Mazatecs, I must say that I do not believe María Sabina’s assessment of mushrooms and pills; I consider it to be a forced affirmation on her part so as not to snub Hofmann and Wasson (Almendro, 2018, 2008, 2000). The *niños santos* continued – alive and well!

Throughout the Sierra Mazateca there are *curanderos* who use *puro derrumbre*, *san isidro*, and *pajaritos* mushrooms in their practices, out in isolated cabins. Many of them are completely unknown (Incháustegui, 1994; Miranda, 1997).

In fact, it is true that after chemical identification came the lament: “But from the time the foreigners arrived, looking for God, the holy children lost their purity (Estrada, 1989). Hofmann’s lament: “The profanation of the mushroom cult did not cease with our scientific research. Publications about the “magic mushrooms” unleashed an invasion of hippies and drug seekers on the Mazatec country, many of whom behaved badly, some even criminally.” (Hofmann, 2013). And finally came Wasson’s lament along similar lines (Estrada, 1989).

Biochemistry and/or Spirituality. Some fundamental findings of the present radical moment

States of consciousness stretch far back into the long history of human beings. They have molded us and formed a part of our evolutionary process, enshrouded with mystery. We are in a psychedelic age in which states of consciousness emerge whose nature remains unknown due to its ambivalent effects; and, possibly, due to our limited experience of them.

For us, the word “spirituality” represents a *state of consciousness* that opens up the possibilities for experiencing the transcendent and ultimate meaning of life. Spirituality leads to discoveries, in both the personal and collective sense, and even to developing one’s utmost potential. What is more, it is our desire for spirituality to show us the possibilities for evolution in our destabilized consumer societies.

More recently, Walter Panhke began his famous Good Friday Experiment, which took place in 1962. Doblin (1991) interviewed 19 of these 20 participants twenty-five years later and concluded that all of them had been influenced positively by Panhke’s experiments.

The research continued at Johns Hopkins University in Maryland and widened under Stanislav Grof, a Czech psychiatrist with great experience from administering thousands of doses of LSD, a substance considered to be an ‘amplifier of consciousness’ and therefore something similar to a telescope in astronomy or a microscope in biology. I remember a comment he once made to me

in California, that one day he was caught up in the spirit after taking LSD in a communist country. Observations from LSD Research served as a good catapult for researchers (Grof and Halifax, 1997).

As progress advanced in psychedelic research, some resistance was overcome, especially that coming from not only the anonymous DEA (Drug Enforcement Administration), FDA (Food and Drug Administration) and NIDA (National Institute of Drug Abuse), but also from baneful sensationalist propaganda. Thus, empirical validation and dollars opened some doors little by little. Phase 1 represents the first experiments on healthy participants; Phase 2 constitutes the initial studies with patients; and Phase 3 is when the safety and effectiveness of the treatment is already established. As of today, Johns Hopkins has begun Phase 3 trials administering psilocybin to patients in terminal stages of cancer.

Some important organizations have been created, such as MAPS (Multidisciplinary Association for Psychedelic Studies), founded by Rick Doblin and considered to be a pioneer in expanding research despite the political barriers in place. Another is the Heffter Institute. There are others in Europe, such as the Beckley Foundation, Amanda Feilding and Ben Sessa in England; and in Switzerland there is Peter Gasser and Franz Wollenweider etc. It remains our opinion, however, that few researchers have been trained within the teachings of shamans and their thousands of years of experience with plants, techniques, and complex situations, all of which require years of profound transformation.

In the laboratory

David Nichols is one of the greatest experts in psychedelic investigation, a business that has been growing for three decades and in which the idea largely perseveres that these substances offer highly useful properties that can benefit health. Nichols moved on from working in conventional chemistry to entering fully into the field of psychedelics, and he now relies on more than forty years of experience. His work consists of obtaining molecules by modifying the chemical structures of the substances to pursue his interest in how psychedelics are related to brain receptors and their possible arrangements. To this end, he generates computational designs to discover analogs of LSD and MDMA while also testing tests them on animals. The 5-HT receptors play a decisive role in his research on serotonin and dopamine.

Let us not forget that more than thirty million people have had experiences with LSD, psilocybin, or mescaline. Nichols broadly monitors the history of psychedelics, acknowledging the advances of many other researchers and accepting that psilocybin is possibly the best therapeutic agent as he works to improve on a synthesis of it. His opinion is that the mechanisms of psychedelics operate by means of the agonist or partially agonist activity of the 5-HT_{2A} receptors.

The therapeutic potential would extend to treating anxiety, depression, autism, obsessive-compulsive neurosis, tobacco addiction, and alcoholism; to improving cognitive processes, tissue regeneration, and the immune system; and to supporting work with patients in terminal stages. However, Nichols cautions against the possibility of anomalous reactions, such as vasoconstriction caused by serotonin, seizures, headaches, nausea, flashbacks, agitation,

tachycardia, dysphoria and various others, depending on the substance – although prolonged use of LSD apparently results in a greater tolerance.

He concludes inconclusively on which is the main agent of healing after ingesting LSD or psilocybin whether it is neurochemical effects (brain network ‘resetting’) or a mystical experience – thus generating discussion of it. The genome awaits new research that is not unrelated to psychedelic research; and, of course, the challenge is enormous (Nichols, 2016; Nichols, Johnson, and Nichols, 2017)

The spread

Rick Doblin

Psychedelics have been embraced by people who we could say have dedicated their lives to normalizing them. One prominent person in this struggle is Rick Doblin, founder of MAPS (Multidisciplinary Association for Psychedelic Studies). Doblin’s studies in psychology and public policies have served him well in his arduous legal and social efforts to obtain permits.

He has also been a first-person researcher who, through some difficult experiences, entered the field of spirituality and transpersonal movements. He has been involved in both the defense and promotion of the legalization of MDMA, specifically for treating PTSD (Post Traumatic Stress Disorder),

One of his goals is for psychedelic research to return to Harvard University, about which he is thoroughly optimistic due to psilocybin having completed Phase 3 studies in terminal cancer patients in pursuit of FDA approval (Doblin, 1991; Mithoefer et al., 2011).

Roland Griffiths

Validating the spread. Griffiths’ investigations – he is currently a professor at John Hopkins University- are part of a complex design framework and based on the administration of psilocybin, which is found naturally in more than one hundred and eighty species of fungi. A fourteen-month follow-up period was completed, which ratified the changes generated by the experience, which were mainly positive in terms of attitudes toward emotions and social relationships (Griffiths et al., 2006). The investigation continued and, according to the conclusions, full mystical experiences were achieved (Griffiths et al., 2011) (Griffiths et al., 2008) (Griffiths, 2015).

William Richards

Since 1999, he has been researching psilocybin and co-authored early papers with his friend Walter Pahnke. Richards considers the context and setting to be fundamental, as he ponders the mystical awareness that opened within him following his personal experiences with LSD (as detailed in his book *Sacred Knowledge*), which he believes is a universal key the door to this kind of experience. Two thirds of the people who received high doses had mystical experiences through which they lost their fear of death. (Richards, 2015).

Amanda Feilding

Her work is devoted to supporting research projects with psychedelic substances in the field of neuroscience, and discovering their neurological mechanisms. She founded the Beckley Foundation for this purpose, based on various studies such as meditation, psychedelics, LSD and their relationship with creativity. She also studies depression, migraines (cluster headaches), Parkinson's, and Alzheimer's. She makes some interesting proposals in line with our research relating to accessing memory and focuses on the system known as the default mode network that also interests use (Almendro and López-Suárez, 2016). Feilding also argues that psychoactive experiences have existed since the beginning of civilization.

Robin Carhart-Harris

Like many others, Robin Carhart-Harris conducts his work at the Imperial College of London, investigating the effects of MDMA. Another line of research concerns the connection between psilocybin and depression (Carhart-Harris et al., 2011, Carhart-Harris et al., 2013, Carhart-Harris et al. 2014, Carhart-Harris et al., 2016). In Europe, in addition to the above, there are also investigations like those of Torsten Passie at the Hannover Medical School, (Passie et al., 2002).

Anomalous Experiences and Science

The difficulty in accepting abnormal experiences in the scientific context

The initial rejection of the scientific context of the anomalous phenomenon, based on linear thought, has buried anything that does not follow its laws. As a result, there was the emerging impact of the repressed; i.e. following the laws of chaos, the sub-order of conscience, the strange, maybe the endogenic, burst through the dominant order (Almendro and Weber, 2012). Today there are calls for the de-pathologization of these anomalous experiences, of emerging crises (Almendro, 2013), based on respect for the phenomenon that shows the subjective truth (Cardeña, Lynn and Krippner, 2014). These researchers report that this phenomenon has not been studied in the healthy population despite that James (1902, 1977) historically proposed it. As a result of this denial, these strange facts and experiences are largely unknown to science. Reducing them to pathology without understanding that the abnormal does not need to be pathological, is a further criticism (Cardeña et al., 2014). The real challenge arose when personalities of the caliber of Krippner and Achterberg (2014). The battle lines in defense of TIM were drawn much earlier (Achterberg, 1985). A renewed Transpersonal Psychology can open bridges to the indigenous tradition in the scientific community (MacDonald and Almendro, 2021).

Pharmacology and/or spirituality: Reflections on these challenges

Our reflections are based on having personally experienced the subtle psychedelic processes at a time when they were becoming widespread, having chosen to seek the sources of states of consciousness by pursuing TIMs – Traditional Indigenous Medicines – in their places of origin. This is a considered having have traveled for nearly forty years exploring the field. Given the current abuse of TIMs, especially in the case of ayahuasca, we respond to requests for information, provide warnings for travelers, and collaborate with some widely circulated publications (Almendro, 2018).

In addition to this we have completed studies on meditation and undertake professional work as clinical psychologists, all of which is described in this article.

Nature of the experience

It is essential to consider the *nature* of the experience both in the shamanic world with plants, and in a scientific framework with psychedelics.

This raises questions: Are shamanic traditions (TIM) and psychedelic experiences equivalent? Is there a conflict or encounter?

By way of conclusion about these conjectures, we propose the following:

Psychedelic experiences should be gathered in the first person and third person, as practiced by some researchers (Almendro and López, 2016; Richards, 2015)

Traditional Indigenous Medicine

This is a direct and sudden way of accessing knowledge and healing, based on strict diets, long stays in jungles and in solitude, and consuming numerous plants, some general and others specific to each person at a certain moment. Preparation requires years if one follows the traditional model and not that of the tourist.

However, whether it is in legal or underground laboratories, someone ‘plays dice with molecules’ while wholeness can be found in a plant, which is miles away from the reductionism that seeks to trigger a psychodynamic or mystic button, a magic bullet to an easy psychedelic experience within the parameters of Western comfort. If it is the chemical, the plant, that does everything, where is the human subject? Or is there something beyond subject and chemistry? Something which perhaps manifests itself as it wants, where it wants and to whom it wants? Could the natural or artificial molecule contain among its atoms a hidden ‘wisdom’ that may even be of a spiritual nature? And wherein lays the effect? Is it in the molecule or in the experience? Who serves whom?

Finally, we believe that we cannot confuse spirituality with a fascination for the extraordinary or with ultra-sensory levels, -in the sense of addictively seeking an experience merely to have the experience: that is, experientialism, which we often find in some patients- nor should we exploit spiritual interests for the benefit of commercial interests, power interests or service to one’s self.

There are two key paths to highlight:

1. The psychedelic experience opens doors to healing and living well. Even though the result is only curative, it coincides with our findings in the Oxigeme process. What is resolved here is inheritance, the inherited mold. (Almendro, 2013; Almendro and Weber, 2012)
2. Meditative, mystical, shamanic experiences. Are they all the same? Although we cannot expand on this question, there is a discussion about whether there is similarity and convenience between meditative, psychedelic, and shamanic experience. There are opponents who claim that the psychedelic experience is comfortable and seeks speed in

the experience as opposed to the arduous meditative task. As for the shamanic experience carried out in their places of origin and with true shamans, we can find convergent paths with meditative processes (Almendro, 2018). The essence of the unfathomable discerned after crossing the underworld is difficult to express, perhaps the best words to represent it are those of Saint John of the Cross (1991): 'Leave without being noticed, and my house is already tranquil,... all science transcending'.

It should be mentioned that TIM has a spiritual, 'extra human' reality that, for the time being, is difficult to conform to the demands of science. However, that good science and TIMs will one day meet, a day for which respect will be essential. This is the ideal we strive for at Oxigeme. In the Oxigeme process, we focus on 'emptying' the memory, a key step in the meditative processes, creating a 'void' that will become "occupied" by Consciousness. We should bear in mind that *Smṛti* in the Eastern tradition means 'memory'. St. John of the Cross (1991) and Enomiya-Lasalle (1988) declare that memory must be destroyed. Thich Nhat Hanh (1999) teaches that deep meditation involves accessing the storehouse of the mind. And a summary of TIM is that one must be at peace with one's ancestors.

Perhaps we can find a good explanation in the teachings of Vivekananda (1986) or in mystics such as Saint Teresa (1979) and Miguel de Molinos (de Molinos, 1935). Perhaps it can be found in the Tibetan world, in Evans-Wentz (1958) or Alexandra David-Néel (2004), with or without substances. Changes take place, as has been demonstrated in some scientific investigations like that of Matthieu Ricard and Trinh Xuan Thuan, Buddhist monks who are disciples of the Dalai Lama (Ricard and Thuan, 2001). Also, we must keep in mind that for TIM, it is obvious that the setting is not exactly comfortable, due to the conditions of the jungle, the periods of solitude and dietary restrictions. The shamans argue that certain hard diets such as tobacco and emetic plants not only provide cleansing, but they strengthen character.

There are also those who propose that we should not fall into the trap of psychologizing and Westernizing TIM (Nathan Porath, 2013). There is even a theory that presents an alternative understanding of this phenomena that afford a form of microscopy through entoptic vision (of events within the eye) (Giraldo, 2018). Nor can we overlook the interaction of Western concepts with shamanic healing practices when interpreting them through the lens of altered states of consciousness (Sidky, 2009).

Will ayahuasca follow in the footsteps of the Mazatec mushrooms?

The Divine Plantations have come a long way, from Francisco Hernández (born 1515?-dead 1587) (1960, 1984) to Richard Evans Shultes (Shultes and Raffauf, 1992; Shultes and Hofmann, 1992). There are reports by the Jesuits from the 16th century, as well as tales of their powerful effects as described by Hernando Ruiz de Alarcón, and later in the 18th century (Naranjo, 1986). It is a tradition that draws us closer to the world of mysticism and art (Reichel Dolmatoff, 1975, 1978). Shultes and Raffauf (1992) revendicate the knowledge of the Indians based on communication with the "spirits"; and in addition, warn of the medical and industrial power of the chemical compounds present in these plants. Shultes and Hofmann (1992) trace the beta-

carbolines and express significant interest in the supernatural in plants, and their inexplicable and little-known effects, thus calling them Plants of the Gods.

As regards the chemical aspect, we should recall that *Banisteriopsis caapi* (ayahuasca) and *Psychotria viridis* (chacrana) are the Amazonian plants most commonly used by the natives. Furthermore, it turns out that *Banisteriopsis caapi* contains beta-carbolines with MAOI (Monoamine oxidase inhibitor) action, while *Psychotria viridis* contains the serotonergic agonist Dimethyltryptamine (DMT) which, in combination with MAOI alkaloids cause the visionary effect. The amazing thing is that the indigenous people found, among hundreds of thousands of plants, that this specific combination produced the visionary state of consciousness.

At psychological level, Dobkin de Rios (1972) established that ayahuasca can cause personal regeneration and maturity, i.e. first-person experience. But if the setting is not correct, the results can be destructive (Grob, 1994) (Dobkin de Rios; Grob, 1994). Some of today's most reputable authorities on TIM, such as Harner (1980) are clamoring for an anthropological study from the inside. Pablo Amaringo (Luna and Amaringo, 1991) states that the colors that came to him through ayahuasca are healing; an opinion he subsequently endorsed personally in an interview in 1992. For Jimmy Weiskopf, *Yagé* is "...a process of inner purification that is traumatic, multifaceted, and uniquely of and directed to the subject" (Weiskopf, 2005). For Ott (1996), the pharmactheon is the result of the 'chemical transfer' of laboratory plants, giving rise to Psychonautica. Walsh (1999, 2007), from the disciplines of consciousness, provides an academic view of shamanism, pondering its ongoing flowering and resulting controversy. Naranjo (2012) defends psychotherapeutic and spiritual shamanism.

Winkelman (2010) is rooted in the worship of symbols. He shows how shamanic practice causes parasympathetic dominance and the integration of information between the limbic system and deep cerebral structures with the frontal cortex and both hemispheres. Krippner and Winkelman (1983), Krippner (2007), Winkelman (2010), defend the Mazatec tradition, revealing the value of the structured neurological bases that allow the 'visionary' perceptive power. Shanon (2010) is submerged in paradox, as the reality of the – indigenous – spirits is reduced to archetypal images that may serve as an access route for Western culture. Adam J. Rock and Stanley Krippner mystify by demystification, and the paradox continues, as the Western interpretation of shamanism must be deconstructed (Rock and Krippner, 2011). Luna (1992) supports the idea that master plants can be used for healing, for singing, for dancing and for painting. And Artaud (1971) gives the example of his tortuous journey to the land of the Tarahumara 'between illumination and electroshock'.

Science and Ayahuasca

A potential encounter

According to Riba (2016), the individual variable component surpasses the main active ingredients in the substances used. Using what are known as neo-imaging techniques, Riba's group has observed that during the acute effects of ayahuasca, blood supply increases to the areas involved in cognitive control, cognition-emotion interaction, and in memory recall. When the control exerted 'from above' relaxes and excitability increases at in lower levels, the slightest activity, almost imperceptible under normal conditions, can rise to higher levels to become

perceptible (Riba, 2016). Once again it seems that the laws of an emerging chaos ‘take over’ in this type of experience (Almendro, 2012; Almendro and Weber, 2013; Almendro and López-Suárez, 2016)

Grob (1994) and Grob et al., (1996) developed pioneering research on the effectiveness of ayahuasca in Manaus in 1993, with the help of União Do Vegetal (UDV). In that project, at neuropsychological levels, this group responded better in overcoming abuse, self-destruction, violence, etc. Jordi Riba investigated pharmacological effects of DMT (Dimethyltryptamine) in humans, cardiovascular and neuroendocrine effects, biochemical, bioelectrical, and sanguineous mechanisms of action, etc., metabolic processes. In other research in Hungary it was shown that the effects of DMT are completely different from schizophrenia or psychosis (Riba, 2003).

Riba presents other controversies regarding the action of harmine, harmaline, from the B-carboline group, establishing that it is DMT that is responsible for causing visions in ayahuasca, rather than harmine (Riba, 2003). Harmine and harmaline doubtlessly remain as MAO inhibitors (Riba, 2003). Key findings include that detectable levels of plasma DMT are obtained alongside different psychedelic effects. On the topic of establishing a topographic map, Riba et al., (2002) postulate that ayahuasca causes significant central effects, and that like other stimulants such as amphetamine, methylphenidate, and serotonin liberators such as fenfluramine.

The pioneer Claudio Naranjo, in *The Healing Journey* (Naranjo 1973), was already defending the promising effects of MDMA and MDA, harmaline and ibogaine, in penetrating into the being, feelings and capacity for attention. For Naranjo, harmaline is a purer visual hallucinogen than other substances, and key in the archetypical world (Naranjo, 2012). He also alludes to the experience caused by harmaline with DMT as being different to DMT alone; and even suggests that harmaline alone may have psychedelic, if not hallucinogenic effects, among others (Naranjo, 2012) (Almendro, 2019b, 2022).

Bouso et al., (2012), in a wide-ranging study on personality, psychopathology, life attitudes and neurological performance in ayahuasca rituals – based on previous studies – developed a research project, again in Brazil, in syncretic churches. They saw that consumers of ayahuasca obtained significant scores in the Self-Transcendence test, without denying adherence to contextual doctrine.

Fábregas, González, and Fondevila (2010) completed research on addiction and alcohol dependence, also in the context of the Brazilian churches. They obtained positive results for the cessation of drug-taking by members of those churches.

On the subject of ayahuasca, toxicity and use limitations (In ayahuasca, Toxicidad y Limitaciones de Uso [ii]) (Mabit, 1999, 2016; Dubbini, Mabit, and Politi, 2020), Jacques Mabit sets forth a bold relationship between ayahuasca and toxicity. He maintains that the essence lies in the ability to conduct sessions by previously well-trained people. His latest paper from the 2016 conference in Brazil, “Coca and ayahuasca, the same fate?” affirming that the misuse of ayahuasca has resulted from the need for psychedelic images as a bias inherent in Western culture. The pathological cause would arise from profanity of the sacred. This is what happened previously with the coca leaf, and will also happen with ayahuasca. Giove (1996, 2012), responsible for research in Takiwasi, developed a scientific framework for the treatment of

addicts primarily found on the street and caught up in cocaine pasta base. Íkaros – indigenous chants – according to Giove (1992a, 1992b), allow the conscience to expand and open the ancestral memory.

Ayahuasca has positive healing properties in hepatic conditions, the effects of Parkinson's disease, and supporting the immune system without causing dependency (Giove, 1992a). Hoffmann, Keppel, Yatra and Silveira Barbosa (2001), regarding measurements with EEG, obtained conclusive results in terms of opening up the sub-consciousness and the memory. Thomas, Lucas, Rielle, Tupper and Martin (2013), in therapy with ayahuasca for addictions, recognize that the statistically significant results show a drop in alcohol, tobacco and cocaine use.

The globalization of ayahuasca is a recurring topic at present, according to Tupper (2008), and it is aligned with the internationalization of ayahuasca promoted by Labate and Jungaberle (Eds. 2001) and the ethnic boom. Tupper considers that a new policy should be established for the decriminalization of the plant. Some researchers have resolved their own addiction issues upon entering the world of ayahuasca, such as Graham Hancock[iii]. One notable example is Marc Lewis, a neuro-scientist in Toronto, who expresses the cycle of desire from his own perspective [iv].

Research topics have now spread to the shamanic chants in Siberian *tuvan*, (Matrenitsky and Friedman, 2012), with statistically measured changes; and the connection between ayahuasca and cancer in research proposals is delicate and exciting. Schenberg (2013) presents a complex process relating to the stimulation of sigma 1 receptors and their involvement in cancer treatment. It is also important for Spanish-American universities to concentrate on research into the indigenous medicine alongside which they live. An example of this is the thesis by Ahumada Lira (2015), along the same lines as Maturana, exploring how the biological basis for molecular autopoiesis results in the emergence of a world moving from crisis to a new framework of connection.

Presser-Velder (2012) indicates that there are mutual benefits between indigenous medicine and modern psychotherapy. Zuluaga (1997), stresses that indigenous knowledge includes a battery of plants with greater efficacy than has been taken into account until now. Zuluaga and Amaya (1991) present the expiatory-purgative activity of indigenous healing. In his thesis on ethnomedicine he expresses ignorance of medicinal plants in clinical practice in Western medicine (Zuluaga, 2015). González Mariscal (2012) delves deeper into the indigenous reality in Mexico and into the fact that all illnesses are caused by the interference of a negative spiritual body. Apud (2013) develops ideas design guidelines, Uruguay. Frecska, Saba, Móré, Vargha and Luna (2012) states that when ayahuasca ceremonies are repeated, they have rather original effects.

In a recent thesis it has been shown that in deep states of meditation there is gamma activity in the brain. This means that states perceived as 'deeper' are characterized by greater activity of faster waves (above all at gamma frequency, and with less intensity at beta 2 level) in parieto-occipital areas, and less activity in occipital theta and alpha 2 waves and frontal beta 1 waves. Furthermore, the states of greatest distraction (lower questionnaire scores, or closer to distraction) are characterized by drops in gamma/beta 2 in posterior areas, and greater activity in

theta and beta 1 waves in the aforementioned regions (López, 2016) (Almendro and López-Suárez, 2016).

We are doubtlessly at a promising point in the science of states of consciousness, in which studies are returning to first hand experiences for the researchers, followed by taking the position of third person or outside observer to guard against bias in the confluence of the two perspectives. Fernando Mendive, a biochemist at the Takiwasi center, expresses that more than 65 % of patients with major depression fail to respond to standard pharmacological treatment (Trivedi, Hollander, Nutt, and Blier (2008). So further research to better understand the underlying mechanisms can be developed. Hopefully, an interest in ayahuasca in biomedical science is emerging, and this could be recognized as an opportunity to explore beyond the borders of the paradigm, and reclaim 'disregarded concepts' brought by Amazonian indigenous medicine (Nunes et al., 2016; Osório et al., 2015; Sanches et al 2016; Thomas et al., 2013; Trivedi et al., 2008).

Two reflections

The first reflection addresses a meeting between indigenous knowledge and science. Neuroimaging techniques reveal that ayahuasca causes a modification of the transfer of information between neuronal areas, and therefore an alteration in the hierarchy of control. We can detect a correlation between this alteration in neuronal patterns already established in the individual, and the eruption of an emerging chaos caused by experience (Riba, 2016; Almendro 2013; Almendro and López-Suárez, 2016).

The second reflection shows concern about possible conflicts arising from economic interests, personal status, or even socio-political position. Furthermore, there is concern about episodes of accidents and deaths with ayahuasca. This matter is part of a warning issued in our clinical practice (Almendro, 2018), and in international media (Almendro, 2019a). We are concerned that we may be looking at the destruction of the thousands of years old indigenous heritage, under the mistrust of socio-political powers.

We do not know if the advice given by master curanderos will have the success it deserves.

2. Method

Participants

The sample consists of two groups. All the participants were explained the procedure for taking measurements, and all gave their informed consent. Group 1, consisting of 16 Spanish s participants (N=16) with 8 men and 8 women aged between 34 and 48 (M=41.06 and DT=6.26), who completed the VEEC questionnaire in addition to a set of tests (see tools), after following a seven-day diet of chiwawaco (fortifying plant), no salt and no sugar, with frugal meals, cleansing with rustic tobacco and two ayahuasca experiences in a traditional territory (Asheninka line) in the Peruvian Amazon. Group 2 consisted of 49 participants of a range of nationalities (N=49), 31 men and 18 women aged between 16 and 75. (M=41.54 and DT=11.55) who only completed the VEEC questionnaire and did not follow the diet.

The Group 1 sample participants (N=16) are all Spanish. The Group 2 sample participants (N=49) are from several different countries (Table 1). All participants in Group 2 have previously consumed ayahuasca. The greatest proportion are Spanish, -bearing in mind that these sixteen participants are not the same individuals as those (N=16) in Group 1- (32.7 %), and also includes nationalities such as Peru (20.4 %), Argentina (12.2 %), the US (12.2 %) or Mexico (6.1 %), and some others with a smaller proportion of participants. This range of nationalities gives the sample a multicultural dimension.

Table 1. Country of origin of participants in Group 2 (N=49)

* from different locations (1 from Oklahoma, 1 from Oregon, 2 from Miami and 2 from New York).

Countries	n	%
Spain	16	32.7
Peru	10	20.4
Argentina	6	12.2
USA	*6	12.2
Mexico	3	6.1
Germany	2	4.1
Colombia	2	4.1
Brazil	2	4.1
Switzerland	1	2
Italy	1	2
Venezuela	1	2
TOTAL	49	100

Tools

- VEEC (*Validación de Experiencias en Estados de Consciencia* – Validation of Experiences in Altered States of Consciousness); 36 items on the 5-point Likert scale, designed by Almendro in 2015 and currently under the validation process. It is a tool consisting of 36 items on a 5-point Likert scale (1 = “This phrase bears no relation to me”; 5= “This phrase adequately describes my experience and opinion”), the overall objective of which is to assess different aspects of a certain experience. On one hand, the tool allows the phenomenological characterization of the state of consciousness during the experience; on the other, it measures the impact that the experience has had on the subject in relation to the development of self-perception, changes affecting one’s

personal history, and transformations in environmental perception. The questionnaire measures these aspects during and after the experience.

Our hypothesis is that there are 5 sub-factors: content of the experience, effects on daily life, emotional response to the experience, reconciliation with the family and spirituality.

- The Ryff Scales of Psychological Wellbeing (Ryff, 1989), in its Spanish version (Díaz et al., 1989), containing 29 items on a 5-point Likert scale with 6 sub-factors: self-perception, positive relationships, autonomy, environmental control, personal growth and purpose in life. The internal consistency of the 6 sub-scales (Cronbach's alpha) varies between 0.68 and 0.83.
- The SA-45 (Symptom Assessment-45 Questionnaire) (Davison et al., 1997), with 45 items on a 5-point Likert scale. This is a reduced version of the SCL-90 (Symptom Checklist-90) (Derogatis and Fitzpatrick, 2004). The Spanish version used was by Sandín et al., (2008) with the 9 sub-scales depression, hostility, interpersonal sensitivity, somatization, anxiety, psychoticism, obsessive compulsion, phobic anxiety, and paranoid ideation. The internal consistency (Cronbach's alpha) of this tool is 0.95, ranging from 0.63 to 0.85 on the 9 sub-scales.
- The Openness to Experience sub-scale from NEO-FFI (NEO Five-Factor Personality Inventory), consisting of 12 items on a 5-point Likert scale. The reduced version of the Personality Inventory was used (Costa and McCrae, 1992), the Spanish adaptation by Manga et al., (2004). The inventory comprises 60 items on a 5-point Likert scale, and examines 5 key personality traits: Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness. The Openness to experience sub-scale has an internal consistency (Cronbach's alpha) of 0.76.
- The "Cognitive" sub-scale from the Expressions of Spirituality Inventory-Revised, ESI-R, MacDonald, 2000. The Spanish adaptation is by López, Jódar and MacDonald (2017). It consists of 6 items on a 5-point Likert scale, with a Cronbach's alpha of 0.97 for the cognitive sub-scale.
- Scale of Body Connection, SBC. The Spanish version was used (Quezada-Berumen et al., 2014) of the original scale (Price and Thompson, 2007). The SBC consists of 20 items on a Likert scale and has a bi-factor structure made up of the dimension of corporal consciousness and corporal disassociation, with an internal consistency (Cronbach's alpha) of 0.86 and 0.62, respectively.

Objectives

1. To conduct a preliminary analysis of the results obtained on the VEEC and of the effects of ingesting ayahuasca in terms of the different aspects measured by the questionnaire, as they are described above, specifically in regard to how the evolution of self-perception, changes affecting personal history, and to the transformation of the environmental perception.
2. To complete an introductory correlational analysis as a first approximation between the VEEC scores and those obtained using the other tools in the answers given by Group 1.

Research hypotheses

1. High scores will be found among the VEEC items for both groups, which would indicate that the experiences were intense and had a strong impact on the participants.
2. Significant correlations are expected with the corresponding sign between the VEEC scores and those obtained among the remaining instruments used.

Procedure

Sample: two groups

All participants were explained the procedure for taking measurements, and they all gave their informed consent. It is important to remember that remote location in the depths of the jungle can have some significant limitations and difficulties.

1 –Group 1 (consisting solely of a sample of 16 Spanish participants). Measurements taken from participants who have followed a diet of seven days ingesting the plant known as shihuahuaco (*dipteryx micrantha*), which according to indigenous tradition gives extraordinary strength and health; frugal meals without salt or sugar, tobacco cleansing by oral consumption of rustic nicotine; and two experiences with ayahuasca, in a traditional Ashaninka location in the Peruvian Amazon.

The participants in Group 1 (N=16) were recruited in August 2016. The data analysis sample (Table 4) are Spaniards meeting the criteria of having completed the VEEC survey in August 2016 (alongside the battery of questionnaires under the tools section, and who are part of the Spanish population validation process to which VEEC is applied). A descriptive analysis is included (Tables 2 and 3).

It is important to note that the plants in the diets we work with are of maximum purity, and the key to ensuring this is working with indigenous people who we have known for several decades. This is the foundation of our work; we never work with strangers. However, there are still fashionable tourist circuits teeming with improvised shamans.

The plants used in the diets – such as shihuahuaco (*Dipteryx Micrantha*) – are cooked for twenty-four hours. The participants ingest one liter over seven days and eat frugally without taking salt, sugar, or alcohol. The eighth day is for rest, and serves as a bridge for returning to the world outside the jungle. The diet is *cortada* (finished) with a puff of tobacco and some salt administered by the healer.

The Amazonian ayahuasca experience involves ingesting the ayahuasca plant (*Banisteriopsis caapi*) with chacruna (*Psychotria viridis*). The dose administered by our healer is of maximum purity, and each cup contains 30 milliliters. Various scientific studies have already affirmed that *Banisteriopsis caapi* is the plant that allows the DMT effects of *Psychotria viridis* to occur. It is the "chemical" key. However, the indigenous people consider ayahuasca to be the key ingredient. To them, it is the "shamanic" key. It is the plant that grants access to the highest states of the indigenous liturgy, but only after extensive preparation. Chacruna is what makes it possible to read these messages.

Given our experience, we prefer to work with an Ashaninka indigenous person who is legitimized by his own traditions and whom we have known for almost thirty years. He has received recognition from his father and other master healers. This type of fundamental transmission of knowledge also occurs in other ethnic groups, such as the Cocama, although there are some differences. In the case we that we know of, transmission was made by the shaman's grandfather. We found it interesting that all of the Shipibo-Conibo children receive this transmission in order to become shamans (Almendro, 2018).

2. Group 2. The participants in Group 2 (N=49) were recruited in three stages: November - December 2015 (N=37), August 2016 (N=5), and February 2017 (N=7). These participants are of a range of nationalities (Table 1), meeting the criteria of having completed the VEEC survey in one of the three periods indicated above. A descriptive analysis is also included for information purposes (Tables 2 and 3).

The participants were initially contacted verbally, all of them being familiar with the Oxígame process, founded by Manuel Almendro in 1984 (Oxígame, 2014). Oxígame is both a process and a school of psychology and psychotherapy, drawing on four decades of experience in the integration of traditional psychology, indigenous medicine, and Zen meditation. *Chaos theories* and *dissipative processes* are of particular relevance as a bridge to explaining different *states of consciousness*. (Almendro, 2013; Almendro and Weber, 2012; Almendro and López-Suárez, 2016)

Participants in a personal self-awareness process taking place in the Amazon were also contacted. Informed consent was sought from both groups in the sample, and participants completed the questionnaires the day after the conscience expanding experiences (completion of seven-day diet and taking ayahuasca for Group 1; taking ayahuasca for Group 2).

All participants were informed that the questionnaires would be the subject of study and data analysis for research relating to the Oxígame process, and that their anonymity and confidentiality would be respected at all times.

Statistical analysis

The analysis was performed in two stages. Firstly, a descriptive analysis was performed on the 36 points on the VEEC survey with their average scores and typical deviation for each one in Group 1 and Group 2 (Table 2). This also includes the percentage of people responding to each point, depending on these hypothetical factors on VEEC in each of the groups, Group 1 (N=16) and Group 2 (N=49) (Table 3). Secondly, and only for Group 1 (N=16), a correlational study was performed, calculating the Spearman's correlation coefficient (non-parametric test) between the scores obtained from the tools used.

Table 2. Average and typical deviation for the 36 points on the VEEC survey, for Group 1 (N=16) and Group 2 (N=49).

Item	Group 1 Average (N=16)	Group 1 Typical Deviation (N=16)	Group 2 Average (N=49)	Group 2 Typical Deviation (N=49)
1. I have had this experience	4.50	0.61	4.45	0.93
2. It had an effect on me	4.75	0.43	4.47	0.97
3. Something or somebody communicated with me	4.50	1.06	4.27	1.01
4. I received instructions	4.25	1.20	3.83	1.31
5. I was told secrets	3.50	1.62	3.41	1.40
6. It changed my life	4.50	0.71	4.25	0.95
7. These visions and experiences were from another universe	4.50	0.73	3.79	1.43
8. There were figures of strange animals	4.25	1.20	3.63	1.52
9. There were strange human figures	3.81	1.51	3.51	1.63
10. There were strange non-human figures	3.94	1.52	3.65	1.38
11. There were strange devilish figures and I felt bad	3.81	1.13	3.02	1.70
12. There were angelic figures and I felt good	4.06	1.25	3.94	1.39
13. I felt scared and feared for my safety	3.00	1.46	2.82	1.44
14. I felt scared and it has helped me to learn	4.44	1.06	4.00	1.36
15. I find that these experiences have helped me to do better	4.81	0.39	4.59	0.70
16. I have found solutions to my deep, specific problems	4.38	1.11	4.08	1.21
17. Many of my fears have disappeared	4.06	1.14	3.80	1.26
18. These experiences will help my family dynamic	4.50	0.71	4.18	1.17
19. Now I understand and forgive my parents	4.13	1.36	4.12	1.15

20. I have a better understanding of my genealogical path	4.31	1.21	4.00	1.29
21. I feel more conscientious, a better person	4.56	0.70	4.41	0.90
22. I understand better my path in life and the meaning of my existence	4.38	0.93	4.29	1.09
23. I feel more responsible	4.63	0.60	4.06	1.08
24. I understand my professional path better	4.25	1.20	4.00	1.23
25. I understand that honesty and respect for others is key in life	4.75	0.56	4.65	0.74
26. I have traveled through inconceivable worlds	4.25	1.20	4.02	1.36
27. Now I know that everything that exists has a divine connection	4.50	0.61	4.53	0.97
28. I understand that my path is spiritual and conscious	4.69	0.58	4.47	0.97
29. My experience was Christian and Shamanic	4.75	0.56	3.71	1.60
30. My experience was Buddhist and Shamanic	3.13	1.69	2.57	1.67
31. My experience was Mystical without connotations	3.19	1.59	3.57	1.65
32. I went beyond my conscience and my personal self	4.38	0.93	4.40	0.86
33. I became one with the cosmos	3.75	1.44	3.76	1.35
34. Praying and/or meditation are important in life	4.88	0.33	4.65	0.66
35. Now I can better face my difficulties in life	4.56	0.61	4.29	1.14
36. I have responded to all these phrases honestly	4.94	0.24	4.94	0.24

Valid N (as per list)

Table 3: *Score obtained from a Likert-type scale with values 1 – 5, where 1 = “This phrase has nothing to do with me” and 5 = “this phrase adequately describes my opinion” for Group 1 (N=16) and for Group 2 (N=49).

VEEC Survey	Percentage of participants by response					
	Group 1 (N=16)	Group 2 (N=49)	Group 1 (N=16)	Group 2 (N=49)	Group 1 (N=16)	Group 2 (N=49)
	1-2*	1-2*	3*	3*	4-5*	4-5*
Content of the experience						
2. It had an effect on me	0.00	6.12	0.00	10.20	100.00	83.67
3. Something or somebody communicated with me	6.25	2.04	6.25	20.41	87.50	77.55
4. I received instructions	12.50	16.33	6.25	18.37	81.25	65.31
5. I was told secrets	31.25	28.57	18.75	20.41	50.00	51.02
7. These visions and experiences were from another universe	0.00	20.41	12.50	18.37	87.50	61.22
8. There were figures of strange animals	0.00	24.49	12.50	14.29	87.50	61.22
9. There were strange human figures	25.00	32.65	12.50	12.24	62.50	55.10
10. There were strange non-human figures	18.75	22.45	6.25	24.49	75.00	53.06
26. I have traveled through inconceivable worlds	18.75	16.33	6.25	18.37	75.00	65.31
Effects on daily life						
6. It changed my life	0.00	4.08	12.50	16.33	87.50	79.59
15. I find that these experiences have helped me to do better	0.00	2.04	0.00	6.12	100.00	91.84
16. I have found solutions to my deep, specific problems	6.25	8.16	12.50	18.37	81.25	73.47
17. Many of my fears have disappeared	6.25	16.33	25.00	20.41	68.75	63.27
21. I feel more conscientious, a better person	0.00	6.12	12.50	4.08	87.50	89.80
22. I understand better my path in life and the meaning of my existence	6.25	8.16	12.50	32.65	81.25	59.18

23. I feel more responsible	0.00	8.16	6.25	18.37	93.75	73.47
24. I understand my professional path better	12.50	10.20	6.25	14.29	81.25	75.51
25. I understand that honesty and respect for others is key in life	0.00	2.04	6.25	6.12	93.75	91.84
35. Now I can better face my difficulties in life	0.00	12.24	6.25	4.08	93.75	83.67
Emotional response to the experience						
11. There were strange devilish figures and I felt bad	6.25	44.90	37.50	12.24	56.25	42.86
12. There were angelic figures and I felt good	12.50	14.29	18.75	12.24	68.75	73.47
13. I felt scared and feared for my safety	43.75	44.90	18.75	18.37	37.50	36.73
14. I felt scared and it has helped me to learn	6.25	16.33	6.25	12.24	87.50	71.43
Item. Reconciliation with family						
18. These experiences will help my family dynamic	0.00	10.20	12.50	14.29	87.50	75.51
19. Now I understand and forgive my parents	12.50	10.20	12.50	14.29	75.00	75.51
20. I have a better understanding of my genealogical path	12.50	14.29	12.50	14.29	75.00	71.43
Spirituality						
27. Now I know that everything that exists has a divine connection	0.00	8.16	6.25	4.08	93.75	87.76
28. I understand that my path is spiritual and conscious	0.00	6.12	6.25	10.20	93.75	83.67
29. My experience was Christian and Shamanic	0.00	26.53	6.25	6.12	93.75	67.35
30. My experience was Buddhist and Shamanic	37.50	55.10	18.75	12.24	43.75	32.65
31. My experience was Mystical without connotations	37.50	30.61	12.50	8.16	50.00	61.22

32. I went beyond my conscience and my personal self	6.25	2.04	12.50	14.29	81.25	83.67
33. I became one with the cosmos	31.25	14.29	6.25	24.49	62.50	61.22
34. Praying and/or meditation are important in life	0.00	0.00	6.25	12.24	93.75	87.76

These analyses were completed using the program SPSS v.20.

3. Results

The descriptive analysis of average and typical deviation for each of the VEEC points (Table 2) refer to both groups separately, Group 1 (N=16) and Group 2 (N=49). The VEEC survey was completed in November-December 2015, August 2016 and February 2017.

As an initial approach to an assessment on the meaning of an experience in relation to participant responses to the VEEC survey (Table 3), we can say that in Group 1 (N=16), participants considered that the experience was important and had a significant impact; 100 % of participants considered that the experience *“has had an effect on me”* and 80 % - 99 % expressed that *“something of somebody communicated with me”*, *“I received instructions”*, *“these visions and experiences belonged to another universe,”* *“there were strange animal figures”*, *“I felt scared and it has helped me to learn,”* *“these experiences will help my family dynamic,”* *“now I know that everything that exists has a divine connection,”* *“I understand that my path is spiritual and conscious,”* *“my experience was Christian and Shamanic,”* *“I went beyond my conscience and my personal self”* and *“praying and/or meditation are important in life”*

As regards the specific factor “Effects on daily life”, a similar pattern can be seen, where practically all the subjects expressed that the experience had a significant impact. 100 % of participants considered that the experience *“[has] helped me to do better”* and 80 - 99 % expressed that *“it has changed my life,”* *“I feel more conscientious and a better person,”* *“I understand better my path in life and the meaning of my existence,”* *“I understand that honesty and respect for others is key in life,”* and *“now I can better face my difficulties in life”* (Table 3).

In these two paragraphs, we may find a direct relationship between consciousness (awareness) and the possible consequences of healing: an encounter with the meaning of life, which is in itself enormously positive. In addition, good relationships with others are highly important.

In Group 2 (N=49), almost all participants – 87.67 % – stated that the experience had had a major impact on their lives, with percentages similar to those obtained for Group 1 (Table 3). Between 80 and 99 % of participants believed that *“it had an impact on me,”* *“now I know that everything that exists has a divine connection,”* *“I understand my path is spiritual and conscious,”* *“my experience was Christian and Shamanic,”* *“I went beyond my conscience and my personal self”* and *“praying and/or meditation are important in life.”*

As regards the specific factor “Effects on daily life”, 80 - 99 % of Group 2 participants expressed that, “*it has changed my life,*” “*I feel more conscientious and a better person,*” “*I understand that honesty and respect for others is key in life*” and “*now I can better face my difficulties in life*” (Table 3).

Collective consciousness (social awareness) has been shown to be a key part of healing.

The correlations between variables (Table 4) refer to **Group 1** (N=16); the 16 Spanish participants who completed all the tools in August 2016. These were the participants who followed the Shiwawaco diet, and underwent tobacco cleansing before taking ayahuasca.

Table 4. The correlations between variables refer to **Group 1** (N=16)

** Correlation is significant at 0.01 (bilateral).

* Correlation is significant at 0.05 (bilateral).

	Cognitive sub-scale from Expression of Spirituality Inventory – Revised (ESI-R)	Sub-scale on openness to experience from the Personality Inventory (NEO-FFI)	Ryff scale of psychological wellbeing	Symptom assessment survey (SA-45)	Body awareness dimension from the Body Connection (SBC)	Bodily Disassociation dimension from the Scale of Body Connection (SBC)	Validation of Experiences in Altered States of Consciousness (VEEC)
Cognitive sub-scale from Expression of Spirituality Inventory – Revised (ESI-R)	1.000	-.011	.700**	-.304	.773**	-.656**	.803**
- Sub-scale on openness to experience from the Personality Inventory (NEO-FFI)	-.011	1.000	-.159	.332	-.008	.228	-.023
- Ryff scale of psychological wellbeing	.700**	-.159	1.000	-.646**	.694**	-.661**	.492
- Symptom assessment survey (SA-45)	-.304	.332	-.646**	1.000	-.381	.421	-.177

- Body awareness dimension from the Scale of Body Connection (SBC)	.773**	-.008	.694**	-.381	1.000	-.781**	.731**
- Bodily Disassociation dimension from the Scale of Body Connection (SBC)	-.656**	.228	-.661**	.421	-.781**	1.000	-.543*
- Validation of Experiences in Altered States of Consciousness (VEEC)	.803**	-.023	.492	-.177	.731**	-.543*	1.000

The results show the Spearman correlations (non-parametric tests), between the variables.

The Ryff psychological wellbeing variable shows a positive correlation with the cognitive sub-scale from the Expressions of Spirituality Inventory (ESI) (.700), and with the bodily connection variable from the Scale of Body Connection (SBC) (.694); there is a negative connection with the Symptomatic Assessment SA-45 (-.646) and with the bodily disassociation dimension of the Scale of Body Connection (-.661).

The bodily connection variable of the Scale of Body Connection (SBC) shows a positive correlation with the cognitive sub-scale of the Expressions of Spirituality Inventory (.773), and with the Ryff scale of psychological wellbeing (0.694), and a negative correlation with the corporal disassociation variable from the Scale of Body Connection (SBC) (-.781).

The bodily disassociation variable from the Scale of Body Connection (SBC) has a negative correlation with the cognitive sub-scale of the Expressions of Spirituality Inventory (ESI) (-.656).

The Validation of Experiences in Altered States of Consciousness (VEEC) shows a positive correlation with the cognitive sub-scale of the Expressions of Spirituality Inventory (ESI) (.803) and with the bodily connection variable of the Scale of Body Connection (SBC) (.731); it shows a negative correlation with the bodily disassociation dimension from the Scale of Body Connection SBC (-.543).

The cognitive sub-scale of the Expressions of Spirituality Inventory (ESI) has a negative correlation with the bodily disassociation dimension from the Scale of Body Connection (SBC) (-.656).

The openness to experience dimension from the five-factor personality inventory NEO-FFI does not have any correlation with the other tools used.

From this data we can establish the following:

Regarding the first of the proposed hypotheses (described in the Methods section above), the hypothesis is confirmed, as the participants obtained high scores in the VEEC variables. In line with the responses to the VEEC survey after the experience (Table 3), both Group 1 (N=16) and Group 2 (N=49) appear to suggest that the experience was positive, and that the participants' subjective assessment is that there were significant effects on daily life. However, we would need to work with a larger subject group in order to reaffirm this conclusion. It would also be preferable to recruit two sample groups of a similar size in order to ascertain the relevance of following the diet of *chiwawaco*, frugal meals free of salt and sugar and cleansing with rustic tobacco for seven days prior to taking ayahuasca, as was the case of Group 1 (N=16) in this study, but not by Group 2 (N=49).

Our second hypothesis, is also confirmed, as there are significant correlations obtained along the foreseeable trend between the VEEC variables and the other tools used.

The paper reviews the process of introducing TIM into the Western medical context, warning of potential risks and discussing possible applications for clinical practice and healthcare in general. From this perspective, we believe it is necessary to use a more thorough approach to the complex world of TIM. We believe that future lines of research should be structured into two sections:

1. Firstly, psychometric tools are needed in order to allow the measurement and analysis of experiences occurring in procedures using TIM. The preliminary results of the VEEC survey constitute the first step for the development of validated tools in the context of TIM. A limitation of this study is precisely that, as the authors are still working toward to full validation of the survey. For this purpose, the necessary sample is being recruited in order to draw conclusions regarding the factorial structure of the VEEC survey for to be use in future research projects.
2. Secondly, we suggest a broader framework of intervention. Based on this initial validation, and after more than three decades of research into TIM and clinical practice, we are now in a position to widen the scope of our work as we have already achieved early success in other studies. The goal is to research new treatments including existential and emotional conditions, depression and psychological processes in general, -with the exception of psychosis and schizophrenia-, along the same lines as the Oxigeme process, using psychological integration and TIM for disorders such as addiction. This could also apply to other pathologies that are spreading at an alarming rate, such as cancer, stroke, and rare diseases; in our experience a patient's psychological background may play a significant role in the development of these conditions.

This framework of intervention would consist of two cycles:

1. OXIGEME Protocol for integration into the current major psychology faculties. Treatments based on psychological and corporal processes involving externalization of inheritance, based on *dissipative processes* as already researched in the form of fractals, dissipative routes, and protective armor. The deeper study of psychological trauma. Medication techniques and mindfulness, among others. (Almendro 2012; Almendro and Weber 2013; Almendro and López-Suarez 2016; Horrillo, 2020) Symptoms give rise to *fractals* – complex behavior patterns at physical, emotional, mental and energy level. These *fractals* give rise to *dissipative routes* and *armor*, and can harbor *traumas*. A *core attractor* is at the center of each plate of *armor*. The armor is a metaphorical *spaghetti junction of behavior patterns*, tangled with innumerable *routes of events*. These *routes* interact with the *spaghetti junction of behavior patterns* inherited through everyday life, and therapeutic process seeks to identify this whole set-up. Phenomenologically speaking, the *chaotic vortices* bring with them a type of *riverbed* that is present in nature and therefore present in Physics. This *riverbed* shows how space can kickstart one's transformation process. A similar pattern would apply for fluid elements: black holes, water, and wind, but also for psychoenergetic processes. *Disorder* leads us to *order* (Almendro 2012; Almendro and Weber 2013; Almendro and López 2016).
2. Immersion in TIM. Diets, plant-based treatments, and techniques. These techniques include:
 - a) Cleansing using plants such as Madonna lily, Rosa Sisa, Huancavi/Yawarpanga, Tobacco. States of isolation. Progressive psychotherapeutic exercises, continuously monitored by therapists. External cleansing with appropriate plants: pine-nuts, rue, etc.
 - B) Taking of ayahuasca, guided by a *curandero* known to us for over thirty years.
 - C) Medical monitoring at a field hospital.

4. Conclusions

Finally, we believe that our proposed ideas can be of use to healthcare professionals interested in our line of work. It may constitute a broadening of personal and professional outlooks, both psychological and medical. This proposal has been drawn up to obtain financial aid, infrastructural support, cooperation, and collaboration from those with extensive clinical experience. The scientific methodology used will be thorough and will strictly observe the legal framework of the countries where it is used, as well as all international conventions for this type of activity. We would therefore like to invite healthcare professionals to take part in this research, with a view to completing the necessary empirical validations and see whether the established goals have been achieved. And just as there are promising advances in Mindfulness in relation to pain and even cancer (Poletti et al.), we believe that the correct use of indigenous medicine can be added to the core of researchers in the new science of states of consciousness.

We have proven in our practice that *expanded states of consciousness* can result in significant progress in what we know as *quality of life*. We are seeking support for setting up a research center for this type of work, either in the Amazon or in another county. This would help us to learn more and find out more about this entire indigenous legacy, currently in danger of extinction.

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