

Research Article

Cultural Biases and Psychedelic Experiences: Western Scientific Perspectives about Amazonian Mestizo Therapeutic Traditions

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Abstract

This article aims to analyze how Western researchers can be influenced by their epistemic and ethical foundations, which are also expressed through a culturally shared idea of therapy, and how this influence can significantly hinder the understanding of a different cultural reality and its resources in terms of knowledge and practices. While examining a collection of research cases in the field of psychedelic therapy, the present paper focuses on the obstacles created by ethical and epistemic conflicts in the mind of researchers with Western scientific training and their consequent difficulty in exploring the situations induced by psychedelic substances in a context of articulation and integration between their therapeutic know-how and that of a spiritual hundreds-year-old psychedelic tradition like Amazonian mestizo vegetalismo. Such obstacles may offer a chance to increase awareness of the cultural bias and limitations of the scientific gaze and highlight the importance of therapeutic and research contexts in which declared independence, neutrality and effectiveness of human alert thinking as undebatable ethical and epistemic value are under discussion.

Keywords

Psychedelic therapy; Amazonian teacher plants; criticality; apprenticeship; neoshamanism; ayahuasca; free energy principle



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1. Introduction

Contact between knowledge of different cultures can be problematic by elements hindering mutual understanding. This issue seems to be increasingly emerging in the scientific debate regarding the therapeutic use of psychedelics.

Therapeutic interventions always require patients to surrender to the will of those recognized as worthy of trust, along with activators of latent or explicit processes of deconstruction/construction of behaviors and beliefs, such as the placebo/nocebo effect, hypnosis, psychotherapy or psychiatric drugs. The state of health or disease is always inevitably connected to these processes. This phenomenon therefore encompasses the use of psychedelics in several contexts because these are often integrated into a complexity of transmitted behaviors and beliefs. Modern Western scientific-naturalist culture builds its own vision of reality like any other cultural tradition through these processes.

A vision of the human being that fails to maintain these preconceptions firmly ends up idealizing a condition of impossible absence of exposure of the individuals to events that, to some extent, are manipulative during a therapeutic process as well as during any other process of transmission of meaning. The ethical commitment and expertise of those who transmit these meanings within a shared cultural framework are the only guarantees available to the recipient.

In the first decades of the twenty-first century, researchers interested in evaluating the ethical, therapeutic and epistemic aspects associated with using psychedelic substances are multiplying. Substances manifesting activity on the psyche by modifying the state of consciousness are frequently defined as psychedelics or hallucinogenics. The latter is a term preferred in the psychiatric field and is generally associated with an epistemic invalidation of the perception of reality induced by such substances. On the other hand, the term psychedelics dates back to the 1950's. Although this term was sometimes associated with the counter-culture, it is currently used in the academic and scientific language. Today we can find multiple research studies to evaluate the neurobiological and therapeutic effects of the use of psychedelics and also the ethical and epistemic consequences necessarily linked to them [1-7].

However, as the present article will attempt to demonstrate, such evaluation is limited/problematic because the use of psychedelic substances within specific cultural settings is embedded in meaning systems that Western scientific culture does not accept. This prevents researchers from evaluating the efficacy of the traditional use of psychedelics.

As Foucault, Althusser, Lacan and more recently Žižek, and Byung-Chul Han affirm [8-12], the subjective thought of any culture depends, in a constitutive way, on structures and dynamics of meaning that precede and make it up. The Western scientific investigator might encounter a deep structural obstacle in the psychedelics research field.

1.1 Purpose of the Present Study

The present work intends to highlight how research is influenced by the cultural foundations of the researchers, above all ethical and epistemic, which are also expressed through their idea of therapy and how this influence can significantly hinder the understanding of a different cultural

reality and the resource in terms of knowledge and skills that this can offer. A collection of research cases is then examined which reveal a shared interpretation, apparently unaffected by prejudices, based on cultural foundations typical of modern Western scientific culture. This examination shows how the generalization of some fundamental principles of the researcher's culture is an obstacle to the understanding and recognition of cultural knowledge, such as that of the traditional Amazonian medicine still widespread in large regions of Peru and denominated by various authors with the term of *vegetalismo* [13-16]. The latter is characterized by the belief in the existence of an invisible world where the law of noncontradiction is not always respected and inhabited by powerful invisible personal agents that deeply influence human existence. Such belief is also based on psychedelic experiences and is transmitted from generation to generation with the authoritative role of the former to the latter. Cultures that traditionally use psychedelic substances share such characteristics, which seems unacceptable from the Western scientific point of view.

The present article assumes that openness towards such antithetical aspects to modern scientific knowledge production could provide important insights for critique and enrichment in ethical, therapeutic and epistemic terms.

2. Materials and Methods

In order to achieve the purposes of this research, this paper will present a critical interdisciplinary review of some issues examined within several previous research works. As Carhart-Harris and Goodwin affirm [1], plant-based psychedelics have been used for healing for hundreds if not thousands of years. However, scientific studies, including an interdisciplinary comparison between Western know-how and cultures that traditionally use psychedelics, are very rare despite this awareness. So far, only a few did it.

Some of such rare studies [5, 17, 18], in the more general intentions of the authors, lead to "*outline a framework to navigate the delicate terrain of psychedelic knowing*" [5], and take as one of their cases studies the small therapeutic community of Takiwasi, located in the Peruvian Amazon. Takiwasi is an NGO rehabilitating substance use disorder and integrating Western scientific with Amazonian traditional *vegetalista* medicines. In 2018 I had the chance to interview psychotherapists and healers at Takiwasi and examine in detail the many studies that external researchers, especially anthropologists and psychologists, have conducted about this unique therapeutic community.

Therefore, in order to face the broader issue of the present work, in the next section I take the articles above [5, 17, 18] as a point of reference and primary source of data and models for my examination, of two main purposes:

- to examine how they face the issue of outlining "*a framework to navigate the delicate terrain of psychedelic knowing*" and develop a form of apprenticeship in psychedelic therapy.
- to examine how such researchers evaluate and employ the resources offered to their investigation by a spiritual psychedelic tradition like the *vegetalista* one;

Therefore, in coherence with these two essential purposes, I take as second and third literary sources of data and model:

- some fundamental academic research [1-3, 6, 7, 19-26] on neuroscience that deals with the processes that make up the different kinds of human mental processes and at the same time tries to evaluate the epistemic, ethical and therapeutic resources offered to Western science by the various kinds of experiences induced by psychedelic substances.

- some academic research focused on the mestizo *vegetalista* therapeutic tradition of the Peruvian Amazon [13-15, 27-33] and on the therapeutic community Takiwasi [14, 34-41].

Therefore, the present article is based on my analysis, reprocessing, interpretation and integration of data and models from such literary sources. The first source is the most developed, because it allows us to examine in detail some meaningful specific examples of how much Western researchers can be influenced by their cultural background and assumptions, above all ethical and epistemic, and how this fact can influence their idea of therapy. Such aspects are treated in detail in the discussion and conclusion sections.

3. Results

3.1 Data and Models

Before developing the results and discussion sections, I propose Figure 1 and Table 1 as useful basic diagrams to represent the main aspects of the presented topics.

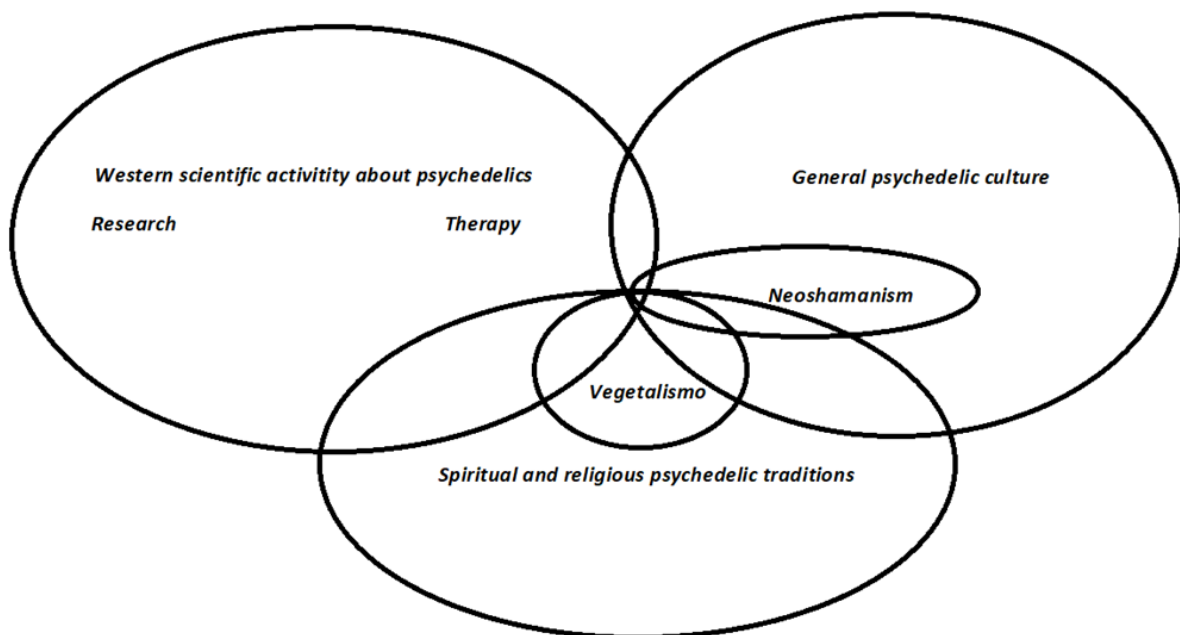


Figure 1 The three principal types of psychedelic cultures and the two subtypes that are specifically treated in the present work.

Table 1 Comparison of some specific characteristics of the types and subtypes showed in Figure 1.

<i>Type of culture</i>	<i>Who takes the psychedelics in the therapeutic context</i>	<i>Who takes the psychedelics to obtain knowledge</i>	<i>Conceptions on the functioning of psychedelics</i>	<i>Conceptions on illness</i>
WS	the patient	nobody	they cause changes of physiological processes and thoughts through biochemical agents that alter ordinary consciousness	The causes of illness are natural and can be detected with the scientific method
SRT	the healer	anybody through a specific training	they give access to knowledge through entities provided with will that are invisible in the ordinary waking life and can enter the subject's body	The causes of illness are often supernatural entities endowed with will
V (Sub. of SRT)	the healer	anybody through a specific training	they give access to knowledge through entities (master plants) provided with will that enter the subject's body	The causes of illness are often supernatural entities endowed with will
G	potentially anybody	potentially anybody without a specific training	they induce experiences and visions	many different conceptions about illness and death
NS (Sub. of G and SRT)	potentially anybody	potentially anybody without a specific training	they induce spiritual experiences and visions through the relation with entities or energies	many different conceptions about illness and death

Legend WS: Western scientific psychedelic activities; SRT: spiritual and religious psychedelic traditions; V: vegetalismo; G: general psychedelic culture; NS: neo-shamanism; V is considered a subtype (Sub.) of SRT, NS a subtype of G and SRT.

Figure 1 presents the 3 wider types of psychedelic culture that exist today. These are: popular psychedelic culture, spiritual and religious psychedelic traditions, and Western scientific research on psychedelics. Connected to these we find two subtypes, *vegetalismo* and neo-shamanism, employed as specific exemplary cases for the present research.

In Table 1, the three types and two subtypes of psychedelic culture are described in order to present the major features that make them different and the reasons why *vegetalismo* are labeled as a subtype of “spiritual and religious psychedelic traditions” and neo-shamanism is labeled as a subtype of “general psychedelic culture” and “spiritual and religious psychedelic traditions”.

Particularly, I consider it essential to focus on the differences between WS and SRT. In fact, contrary to what characterizes Western scientific research on psychedelics, in the specific therapeutic context of most spiritual and religious psychedelic traditions we usually find that the healer, and not the patient, is the one that takes the psychedelics; also, the knowledge comes through the ingestion of psychedelic substances and it may often express what Western thought labels as logical contradictions; additionally, according to most spiritual and religious psychedelic traditions, some entities provided with will enter the subject’s body and manifest authority on the subject’s will; a disease is often seen as a consequence of the contact with such entities that want to cause illness or death.

These essential characteristics are in the background of the results section, which focuses on examining the three data sources and models I have cited above. These characteristics will become prominent in the following discussion section, in which I propose a critical re-elaboration of what was previously presented.

3.2 The Value of Psychedelic Experience for Western Science

Classic psychedelics are a group of drugs classified as entheogens (a word derived from ancient Greek and meaning “god within”). They refer to substances that, when ingested, provoke an altered state of consciousness considered to have spiritual or existential significance. Some have a long history and wide diffusion of use in medicinal and religious cultural contexts.

They exist in natural sources and chemically synthesized forms. The most widely known classic psychedelics belong to three main chemical classes: indoleamines (among whom psilocybin and DMT, often referred to as tryptamine), phenylalkylamines (among whom mescaline), and semisynthetic ergolines (LSD).

Classic psychedelics cause strong perceptive and cognitive effects that include reframing the relationship of the self with the world and an altered perception of time and space, a sense of transcendence, clarity and insight, a positive emotional state and an increased sense of unity. Some specifically intense psychedelic experiences that cause a fundamental alteration of self, have been characterized and termed as mystical-type, peak experience, Ego dissolution.

Ego dissolution has been described in many ways: a breakdown of one’s sense of self, the disintegration of boundaries between oneself and the world, and a compromised sense of an integrated and distinct identity. Stanislav Grof described Ego dissolution as “*an ecstatic state, characterized by the loss of boundaries between the subjective and the objective world, with ensuing feelings of unity with other people, nature, the entire Universe, and God*” [25].

Even though Ego dissolution overlaps with other descriptions of the psychedelic experience, such as the aforementioned mystical-type experiences or peak experiences, and remains somewhat mixed up with other expressions of the psychedelic experience, such phenomenon may represent a measurable construct [26]. Moreover, evidence suggests that therapeutic outcomes can be linked to its manifesting.

Today's revival of interest in Western science toward psychedelic substances has grown thanks to the legitimation that Karl Friston's "free energy principle" (FEP) is receiving from the scientific community and to the developments of the possibility to integrate such a model with that of the "anarchic brain" proposed by Carhart-Harris et al. [19]. This has resulted in numerous researches on the therapeutic effects of psychedelics. Using such integration of the two models, Carhart-Harris and Friston have proposed a third model, REBUS (relaxed beliefs under psychedelics) [6], explaining how psychedelic substances can have therapeutic effects.

FEP is closely related to hierarchical predictive coding, a mechanistic account of how the brain processes information that now represents the predominant neurobiological and computational framework for describing all psychological phenomena. FEP and hierarchical predictive coding affirm the tendency of living organisms to minimize entropy. Among human beings - Carhart-Harris and Friston affirm [6] - this tendency can lead to maladaptive beliefs that are resistant to change, but, according to their REBUS model, psychedelics may contribute to weakening and even dissolving such beliefs because they prevent the ordinary neural process of hierarchical predictive coding from minimizing entropy.

REBUS model is supported not only by computational data and models, but also by some considerations on neuroanatomy, neurophysiology and the neural architecture of the brain [1, 2]. A very relevant explicit corollary of FEP and hierarchical predictive coding, that should have a great epistemic and ontological consequence, is that, according to such models, the problem of veridicality of any belief is always dependent on the possibility of such belief to exist, because the perceptual world is the product of the predictive coding. Therefore, what works adaptively becomes true and nobody can have more than beliefs about the causes of the sensory stimuli, what Friston calls "the hidden causes of the world".

3.3 How to Discern "Aha" Insight from "Woo" "Spiritual Bypassing"

A big problem for Western scientists seems to be that the new beliefs induced by psychedelics, frequently show "magical" or religious characteristics when described by the users. The experience of something that escapes a rationalistic explanation is a specific effect of psychedelics. About such experience, Carhart-Harris and Friston point out the following: *"Psychedelics have an interesting history of association with pseudoscience and supernatural belief. One interpretation of this is that a strong psychedelic experience can cause such an ontological shock that the experiencer feels compelled to reach for some kind of explanation, however tenuous or fantastical, to close an epistemic gap that the experience has opened up for them"* [6].

The two scientists call this *"pseudoscience and supernatural belief"* with the slang word "woo", underlining that the free energy principle *"maintains that there is no absolute truth that is knowable absolutely-there is only evidence for a set of plausible hypotheses. In other words, the best beliefs or models are simply those with the greatest evidence or minimum free energy. In essence, the free-energy principle works to approximate reality through invoking, testing, revising, and optimizing models"* [6].

Therefore *"magical, religious, and delusional beliefs or interpretations may be considered psychologically real"*. These beliefs are *"common in situations of uncertainty"* and *"can serve a psychological function"*. However, Carhart-Harris and Friston affirm that these beliefs often have to be labeled as expressions of a *"spiritual bypassing"*, that for Western scientific therapists seems

necessary to be correctly managed [6]: *“The phenomenon of spiritual bypassing is relevant in this work. This refers to an ontology in which individuals receive so much (potential) information, rapidly, without sufficient time to properly integrate or assimilate it. In experiencing such information overload, the psychedelic initiate may reach for bizarre beliefs or poorly understood platitudes, in an effort to explain away his/her felt uncertainty-in a similar way as may occur in the incipient phase of a psychotic disorder. Spiritual bypassing may be understood as an escapist defense, dressed up as a spiritual awakening.”*

The two authors propose that *“tenuous magical explanations can then be challenged appropriately (although not during the experience itself-as to do so would be inappropriate) in the skeptical, self-correcting fashion that is intrinsic to the scientific method”*, in order to avoid *“logical fallacies, dogmatism, absolutism, and an emotional and existential instability”*. Moreover, they affirm that combining psychedelic therapy with a *“secular wisdom teaching”*, like *“nonreligious Buddhism”* or Jungian *“depth psychology”* may have value in this regard and help *“to ground psychedelic science and medicine, while inoculating against evangelism.”* Then, they cite meditative Buddhism and Jungian thought, pointing out that the former induces and the latter promotes insight, a process that they consider very positive and seems to be facilitated by psychedelics.

Carhart-Harris and Friston cite several first-hand references of insight experienced under psychedelics, collected by various authors: *“I was being reminded of things I already knew”*; *“I was learning without being taught”*; *“There had been, I felt, an opening of the heart”*; *“Patrick described an epiphany having to do with simplicity: ‘...I was convinced in that moment I had figured it all out... It was right there in front of me... love... the only thing that mattered’”*; *“Like google earth; I had zoomed out”*. Insights - they say - *“emerge typically spontaneously, “out of the blue,” as simple, elegant solutions”* to some problems, with the characteristics of *“relevant “aha” or “eureka” experiences”*. Differently from *“spiritual bypassing”*, which is considered *“woo”*, a false solution, *“escapist defense, dressed up as a spiritual awakening”*, true insights instead are *“aha” experiences, “simple, elegant” solutions*.

As shown in the above examples, Carhart Harris and Friston describe true psychedelic insights as very convincing experiences, but also as experiences that can be framed in a sort of scientific process of investigation where insights reveal to be crystal-clear solutions of what in their mind could be described like a scientific problem: *“It is widely recognized in literature on creativity that insight often occurs as part of a process, the initial phase of which involves an intention or plan, e.g., to discover something new. One heuristic for doing this is to relax one’s confidence in one’s prior assumptions (i.e., high-level priors), and, in so doing, promote an open, inquiring state of mind. This approach is essentially epistemic in nature, i.e., it is a behavioral strategy intended for learning, under the assumption that there is something to be learnt, i.e., there is some expected uncertainty”*.

According to them, it *“has long been assumed, and also recently demonstrated, that approaching a psychedelic session with a clear therapeutic intention is conducive to subsequent positive mental health outcomes”*. However, about Ego dissolution, many researchers [3] show the dependence of lasting therapeutic outcomes upon the spiritual, mystical or personally meaningful quality of the experience. These results seem to lead research in different directions.

3.4 The Dreadful and Fragmented Face of Psychedelic Experience

The five dimensions of the altered states of consciousness scale (5D-ASC) [42] try to provide a way of measuring the subjective effects of psychedelics. Such scale includes three primary dimensions: oceanic boundlessness or positively felt ego dissolution, dread of or negatively felt ego dissolution, and visionary restructuralization or visual alterations and altered meaning of precepts. The other two secondary dimensions are the auditory alterations and the vigilance state. As shown in Figure 2, adapted from Hirschfeld and Schmidt [22], the different rate of subjective experience indicates that “visionary restructuralization or visual alterations and altered meaning of precepts” (independently from the ratio between weight of the body and dose of psilocybin assumed) seem to be the most frequent experiences, and about 25% of the sample refer to have lived a dreadful experience of Ego dissolution. Therefore, beyond the positive evaluation of the experience of insight and positive Ego dissolution (here described as “oceanic boundlessness”), from analyzing such data it seems evident and perhaps relevant that subjective experiences induced by psychedelics can be lived in many cases with negative emotions. Perhaps, it would be interesting to examine the rates of negative emotional experiences of dissociation and fragmentation of the self, lived by the subjects within a whole sample.

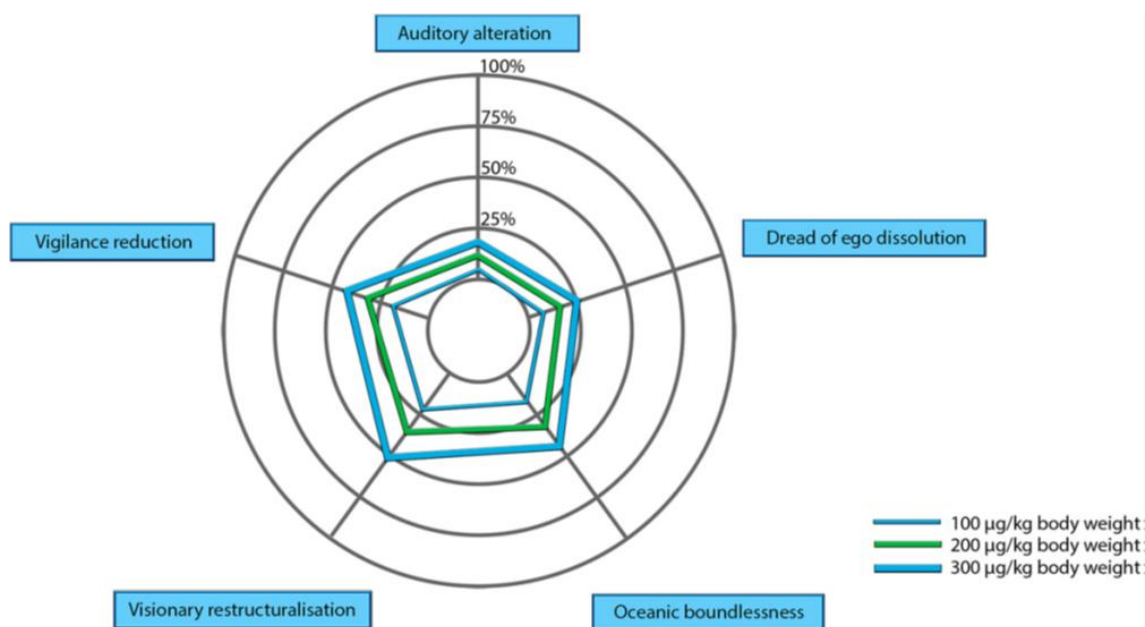


Figure 2 Rate of subjective effects of psychedelics in relation to the ratio between weight of the body and dose of psilocybin. Adapted from Hirschfeld and Schmidt [22].

3.5 Criticality

Criticality is a very interesting and useful conceptual model that can be connected to the REBUS model and Figure 2. Criticality is a phenomenon that refers to dynamics that take place when a system approaches a transition point between order and disorder. A dynamic system at such a level of energetic criticality displays maximal sensitivity to perturbations.

The entropic brain hypothesis of Carhart-Harris assumes that psychedelics bring the human brain closer to criticality, but also that the ordinary waking brain can be tuned closer to criticality and biases order over disorder, or preservation over adaptation. Carhart-Harris and Friston pose these

very interesting questions and considerations about criticality in the ordinary waking brain and the relation between criticality and optimality of the model produced by predictive coding: *“Are inequalities or asymmetries in the adult human brain’s functional architecture, such as high alpha power and high degree centrality of and metabolism in DMN¹ nodes, indicative of a top-heavy system that biases high-level models (such as the ego and its various beliefs and defenses) over data? Does this top heaviness render the adult human mind somewhat impervious to the fullness of information contained within lower levels of the system, such as the classically mammalian system (MacLean, 1990) that is the limbic system? Is this top heaviness especially exaggerated in certain psychopathologies such as depression, obsessive-compulsive disorder, and eating disorders? These are examples of disorders that may rest on particularly rigid high-level priors that dominate cognition and likely serve a defensive function.”*

3.6 Towards a Psychedelic Apprenticeship

In their research, Timmermann, Dupuis and Watts [5] point out that *“processes underlying conferral of meaning and truth in psychedelic experiences may act as a double-edged sword: while these may drive important therapeutic benefits, they also raise important considerations regarding the validation and mediation of knowledge gained during these experiences. Specifically, the ability of psychedelics to induce noetic feelings of revelation may enhance the significance and attribution of reality to specific beliefs, worldviews, and apparent memories which might exacerbate the risk of iatrogenic complications that other psychotherapeutic approaches have historically faced, such as false memory syndrome.”*

The authors of such research identify within the general phenomena called "neo-shamanism", "psychedelic therapy", and "psychedelic research" the three main contemporary cultural subjects equipped with purposes towards the use of psychedelic substances. The authors specify that *“the aims presented are not meant to be exhaustive, but simply illustrative”*.

Consequently, based on the *“three examples illustrating issues of validation and mediation in therapeutic, neo-shamanic and research contexts involving psychedelic use”* presented in the study, the researchers *“propose a pragmatic framework to attend to these challenges based on an ethical approach which considers the embeddedness of psychedelic experiences within larger historical and cultural contexts, their intersubjective character and the use of practices which we conceptualize here as forms of psychedelic apprenticeship. This notion of apprenticeship goes beyond current approaches of preparation and integration by stressing the central importance of validation practices based on empathic resonance by an experienced therapist or guide”* [5].

3.6.1 First Case

The first case presented by the authors is about a participant in a clinical trial with psilocybin. During the experience with the psychedelic the participant lived a confrontation with a cruel creature that represented one of his parents. The participant *“had an experience in which he felt himself to be an infant whose parent was attempting to smother him with a pillow: ‘It’s my mum. ... It feels like a pillow over me. No it couldn’t have been that. Did you really not want me that badly?’”* [5]. The seemingly biographical event presented issues regarding its uncertain concrete validity and

¹ Default mode network.

this fact had implications for the patient's therapeutic process, which required an extended integration therapy.

According to the patient the experience "*felt more real than the here and now*" [5]. After that, ten therapeutic integrative sessions focusing on the emerging contents were necessary. As the researchers testify, the participant reported that these integration sessions allowed him to reframe his experience in a new way. According to the authors these results attest to the validity of intersubjective mediation and integration in these contexts, which may have a significant role in therapeutic outcomes.

3.6.2 Second Case

The authors present the second case as "*revelation in a neo-shamanic context*" based on Dupuis' research in Takiwasi. The center is described as an example of "*the ritual use of ayahuasca as administered in the numerous neo-shamanic centres that have recently appeared on the edge of the Peruvian Amazon metropolitan areas in the context of the emergence of "shamanic tourism"*". Thus, they described the existence of Takiwasi as a mere consequence of shamanic tourism, and avoided mentioning that the institution is an NGO dedicated to rehabilitating drug addictions and research on traditional medicines. Instead, they focused their description only on the two-week seminar format offered to visitors for personal development.

The authors present a couple of testimonials from participants in the two-week seminars to show how "*participants usually report the perception of demonic evil beings, which they most often describe as fighting against protective entities such as spirits of nature (e.g., the spirit of ayahuasca) or entities of the Christian pantheon*" [5]. They argue that the experience lived by the participants in the ayahuasca sessions would be substantially shaped by the "epistemic authorities" of the center: "*In the sessions before and after the ayahuasca ceremonies, participants are introduced to the specific cosmovision of the centre, which combines neo-shamanic, psychotherapeutic, biomedical and folk Catholicism elements. Within this framework, the psychological suffering of participants is frequently understood as resulting from demonic influence or possession (i.e., "infestation")*" [5].

Therefore, the authors point out: "*The capacity of psychedelics to facilitate the appropriation of an etiological or cosmological theory by means of their tangible verification during the visionary experience acts indeed as a double-edged sword. This acts as a possible vector of therapeutic effectiveness, but also as a possible spring of religious conversion that remains largely implicit and unconscious, and which may consequently not be fully consented to. This case is an example in which heavily directed mediation processes suggest how deeply the ideology of a context may implicitly influence the psychedelic experience and its after-effects*" [5].

3.6.3 Third case: "Metaphysical" Revelations in Research Contexts

The third case by Timmermann et al. [5] corresponds to the brief description of a research already presented in a previous publication [4]. A group of patients had been given dimethyltryptamine (DMT) to study the possible occurrence of metaphysical revelations and the subsequent duration of the effects of these experiences on acquisition of beliefs. In the authors' opinion, this research indicates that psychedelics can easily induce what they define as "confusion" between "experience" and "representation". "*Experiencers' expectations (which are shaped by their specific cultural milieu), aided by language, may play a pivotal role in the recollection of an experience. Specifically,*

participants are mostly aware of things that are consistent with their representations and beliefs, and, in the process of recollection, the original experience may be deformed through the influence of these beliefs and representations” [5].

By analyzing the data collected in predominantly "secular" European ritual contexts in which psychedelics are used, the authors claim that experiences can "*alter beliefs regarding the nature of consciousness and reality*" and that their effects last at least 6 months. These are "*beliefs consistent with notions of the existence of separate realities, mind-body dualism and fatalistic determinism*". Furthermore, the researchers highlight how these outcomes appear to be facilitated by positive emotional synchrony, i.e., the experience of sharing feelings "*of positive affect*" with a group. According to the authors, these results highlight the role played by intersubjective factors and social attitudes in the change in worldview that takes place during psychedelic experiences.

3.7 An Apprenticeship to Understand Embeddedness of Mediation and Validation about Psychedelic Experiences

After having presented these three cases, the authors declare their purpose to outline what they call a "*framework to understand issues of mediation and validation*", that is the complex role played by intersubjective and social actors in mediating and validating insights lived by individuals within the private domain of psychedelic experience. These suggested strategies are "*fundamentally grounded in forms of apprenticeship, which aim to foster acts of becoming aware of users' own mental states.*" Beyond any evaluation of the ontological reality of subjective experience, the authors affirm their wish to outline (1) the "*subtle ways*" in which such processes of intersubjective mediation and validation may take place; (2) the "*role that guides and facilitators have in this regard*"; and (3) "*examples of practices and methodologies that may be useful in this process*".

Regarding the first aspect, the authors underline the importance that psychedelic experiences, usually subject to an exclusive first-person validation process, can be extended to a "*broader intersubjective milieu beyond the sphere of private experience.*" They take the research protocols as a model in which the individual places their vision of a phenomenon under scrutiny by a scientific community. On the one hand, they highlight the importance of comparison with other people. On the other hand, they underline how much psychedelic experiences are subject to processes of intersubjective mediation that go unnoticed by those who live the experience [5]. The authors underline the importance of intersubjective mediation and empathic resonance with the facilitator of the experience, pointing out that mediation takes place in the third and second person before, during and after the experience.

3.8 Specific Methodologies and Practices

Based on these reflections, the authors propose some specific methodologies and practices. The first is a detailed phenomenological inquiry using the micro-phenomenological interview (MPI) technique [5]. This technique, which consists of a disciplined approach to re-evoked and recollect past experiences through a second-person approach, is aimed at (1) stabilizing the attention of the individual; (2) promoting attention to turn from contents (what) to the processes (how) of experience; and (3) helping participants divert the focus from generic to specific dimensions of experiential structures [43]. The second methodology, defined as the accept-connect-embodiment approach (ACE) [44], evolved from the developments of the research on the use of psilocybin in the

treatment of depression, to which the first of the three examples proposed above referred. According to the authors, the model *“maps three key mechanisms of psychedelic therapy: acceptance of emotion, connection to meaning, and a level of processing that occurs in the whole body, rather than just in cognition”* [5]. This series of operations could allow the person to face "validation dilemmas" such as those frequently arising in psychedelics experiences.

The authors state that through this kind of process, *“experiencers will become acquainted with the dynamics of knowing and “letting go”, which appear to be so crucial not only for psychedelic experiences and psychotherapy processes, but also in the contemplative traditions which have inspired this notion of ethical know-how”* [5]. They also point out that their interest is not so much in discussing the *“actual ontological validity of such metaphysical insights”*, and they claim to *“see the value in a gentle, open space for participants to examine and revisit these insights in the post-session period. This is especially relevant considering that these changes in supernatural beliefs were significantly associated with increases in well-being up to 6 months after the retreat took place, further stressing pragmatic and ethical tensions—a double-edged sword”* [5].

3.9 Dupuis's Research on Takiwasi

The second case described by Timmermann, Dupuis and Watts derives from a previous study by Dupuis, that is very interesting to examine in detail for the present article.

Between 2011 and 2013 Dupuis conducted an in-depth research work of about 18 months in Takiwasi. During that time, he observed part of the rehabilitation process of patients diagnosed with substance abuse disorder and conducted interviews with 10 of them. He also participated in 4 seminars periodically organized by the center to make traditional Amazonian medicine known to external visitors and interviewed 30 participants (all French-speaking).

Dupuis presents Takiwasi as *“both an addiction treatment clinic and one of the most famous places in the region hosting Western travelers to “meet ayahuasca”* [17]. He states that since the foundation of the center *“the institution has developed a therapeutic device characterized by the reappropriation of elements of the indigenous pharmacopeia, such as emetic plants or ayahuasca. A team of doctors, psychologists and ritual specialists offers psychological support, medical follow-up and ritualized practices inspired by the Amazonian tradition, combining ritual and discursive elements from the region’s indigenous and metis shamanism, Catholicism and the New Age”* [17].

Dupuis reports that the therapeutic process for patients lasts nine months, and that Takiwasi also offers external visitors the opportunity to participate in those above "personal development seminars" lasting 2 weeks. Then he focuses his attention on these seminars and the characteristics of the participants, men and women aged between 20 and 60, coming *“from the middle and upper classes in the urban areas of French-speaking Europe and Latin America”* [17].

According to Dupuis, their choice to go to Takiwasi *“reflects a form of religiosity characteristic of Western modernity based on the accumulation of ‘spiritual experiences’ from various cultural backgrounds as well as on a modular, individual and irregular practice”* [17].

Dupuis focuses in particular on the following aspects:

- the power of suggestion exerted on the patients and visitors by the "local epistemic authorities";
- the state of “psychedelic-induced hyper-suggestibility”.

Before analyzing the case presented by Dupuis, it is necessary to present information about what he defines as neo-shamanism and about Takiwasi.

3.10 Vegetalismo and Neo-Shamanism

In the last centuries, as a consequence of Incaic and European colonization, in Peru many organic sets of Amazonian traditional indigenous rituals and beliefs have been dismembered and adapted to new social conditions, for instance to those induced by urbanization, with the results that in these cases they have survived essentially as forms of folk medicine and means to forecast future events, whose knowledge and practice are transmitted by individuals, from masters to apprentices. Therefore, it is legitimate to use the term tradition to define the complexes of rituals and beliefs that constitute this phenomenon, which is known in Amazonian anthropology as *vegetalismo* (Spanish and Portuguese word) or herbalist medicine [13]. These complexes are embodied and personified by the figure of the healer, popularly known as a *curandero*, but often ethnographically identified with the worldwide spread term of the shaman.

The healers who work essentially with plants are called *vegetalistas* (vegetalists or herbalist doctors) and the plants are collectively defined as *plantas maestras* (master plants or teacher plants), because they are known to have the ability to teach. The most important master plants are tobacco (*Nicotiana rustica*) and ayahuasca (*Banisteriopsis caapi*), but there are many more. Healers live in both urban and rural areas, often in the marginal forests surrounding the cities. Their healing power is considered to be transferred to them through the master plants and their spirits, known as *madres* (mothers). However, they are commonly believed to have their ultimate source in the will of the Christian God. Illness is conceived as caused by malicious animate agents - human or supernatural (demons) -, and healing is often associated with defense, expulsion of demons and counter-attack [13].

Placing the same label on phenomena such as *vegetalismo* and the many different contemporary blends of indigenous and Western psychotherapeutic elements is debatable. Timmermann et al., refers to Scuro & Rodd [45], claiming to use the label "*neoshamanic*" to refer to contexts that "*integrate indigenous practices and Western psychotherapeutic elements*" [5].

Scuro & Rodd [45] affirm: "*Neoshamanism is a set of discourses and practices involving the integration of indigenous (especially American) shamanic and psychotherapeutic techniques by people from urban, Western contexts. It has emerged, like other New Age modes of spirituality, in opposition to the materialism and positivism of European modernity and presents as central the idea of reconnecting panindigenous ancestral knowledge that people of the West had purportedly forgotten. It results in large measure from the circulation of literature on shamanism, altered states of consciousness (often, but not always, involving the use of psychoactive drugs), and the possibility of generating new psychotherapeutic modalities.*"

Vegetalismo has not emerged within the cultural frame Scuro & Rodd have outlined in their definition of "*neoshamanism*", because neither New Age opposition to materialism nor the purpose to reconnect different knowledge are at the roots of *vegetalismo*. The same researchers affirm [45] that there are a "*number of important differences between traditional and neo-shamanism*". They mark the differences between indigenous shamanism and forms of neo-shamanism. However, they do not consider the existence of a mestizo tradition like *vegetalismo*, a complex of knowledge and

practices that, although open to innovation and individualistic interpretation, is transmitted across the generations.

3.11 Takiwasi

In 1992, after several years of personal apprenticeship with indigenous and *vegetalista* healers of the Peruvian Amazon, French medical doctor Jacques Mabit founded Takiwasi, a small therapeutic community dedicated to the rehabilitation of drug addiction and research on traditional Amazonian medicine [14, 34-37]. According to the therapeutic protocol proposed by Mabit, using Amazonian sacred plants is seen as a concrete and effective option in treating drug addiction [37].

Takiwasi's therapeutic protocol is grounded on three axes: community life, Western scientific medicine/psychotherapy and what in such center is called traditional Amazonian medicine, corresponding to *vegetalista* therapeutic tradition. Plant extracts are used for many purposes and most of them have no psychedelic effect. Some plants, named *purgas* (purges) induce vomiting, while *plantas de contención* (containment plants) prepare the patients for the ayahuasca rituals, which are performed by drinking a decoction of *Banisteriopsis caapi* and *Psichotria viridis*. Such brew has strong psychoactive effects, that have been the object of research in neurobiological, clinical and health studies [46-50].

Every two or three months, patients also participate in a ritual *dieta*, that consists of an isolated retreat of several days in a little hut in the forest, maintaining strict dietary rules, and behavioral and sexual restrictions, with a daily ingestion of master plants delivered by a healer. All the patients of Takiwasi, in order to recover a state of health, have to face the same experiences that every *vegetalista* apprentice must go through to become a healer. They have to do several *dietas*, and *purgas* and participate weekly in ayahuasca ceremonies. This ritual work is constantly supported by psychotherapy and experience of daily community life.

Moreover, the center organizes periodic seminars to make traditional Amazonian medicine known to external visitors and promote scientific research about the validity of its therapeutic methods. Many researchers have visited Takiwasi and studied its protocol [14, 17, 34-36, 38, 51, 52] to collect data and propose interpretations about its alleged efficacy in treating addiction. The results of a recent pilot study [52], based on the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI), show that, from pre- to post-treatment, Takiwasi patients have significant reductions in scores of anxiety (from 20.8 to 11.6, $p < 0.002$) and depression (from 18.7 to 7.5, $p < 0.001$), and higher scores of quality of life ($p < 0.001$) and spirituality ($p < 0.001$) upon discharge, which correlated with their reduction in scores of anxiety and depression. In another study [50], based on repeated observational measures applied throughout treatment, statistically significant and clinically positive changes were found across all repeated measures, with changes that appeared early in the treatment and were maintained over time. Moreover, significant improvements were found in the general neuropsychological functioning of the patients.

3.12 Adrien's Case

Back to Dupuis's study, the case of one subject, Adrien, examined at Takiwasi and thoroughly described by the researcher, "*shows that the psychedelic ritual leads to the progressive emergence of experiences whose very content - as well as the interpretation they are subject to - are shaped by the explicit (discourses) and implicit (ritual actions) suggestions of the local epistemic authorities.*

The state of hypersuggestibility induced by psychedelics seems to play a key role here. As we could see, Adrien's psychedelic experience is indeed progressively shaped by social interactions, and in particular by the suggestions of people perceived as epistemic authorities."

Adrien is a young Frenchman of just over 20 who arrives in Takiwasi to participate in one of the seminars offered by the center. During the first ayahuasca ceremony, Adrien experiences unpleasant sensations, which he describes the following day during the integration group with the other participants in the seminar led by the center's therapists. Along with physical sensations, Adrien says he felt a sense of distrust towards Mabit; in particular, he describes the discomfort caused by a medal that the French doctor had given him before the ceremony. It is a medal with the effigy of Saint Benedict, who according to Mabit helps people defend themselves from demons. Adrien says he felt the medal was a burden, as if it was exerting a block on him, and then he saw a diabolical figure in Mabit, who officiated the ritual.

Mabit interprets Adrien's experience as the manifestation of a "parasitic" presence, i.e., an influence exerted on the young man by a demon. The cold felt by Adrien during the ceremony would have been caused by fear of the healer's action and it would not have been a real fear of the young man but of the demon that had parasitized him. Mabit says he does not know the exact nature of this "infestation", and encourages the young man to discover it through what will happen in following experiences.

As Dupuis recounts, immediately after the ritual session with ayahuasca, Adrien manifests strong doubts regarding Mabit's interpretation, consistent with what the young man perceived during the experience. The young man felt distrust and fear towards the doctor healer. Indeed, during the interview with Dupuis, Adrien negatively evaluates the interpretation proposed by Mabit, whom he considers paranoid and suspicious: *"The more you believe in demons, the more you attract them. The more you are in protection, the more you attract evil. (.) Finally, it's only suppositions, I don't know, a kind of paranoia(.) I've seen some people, who are specialists; they love demons, they always feel possessed, so they are necessarily possessed! (.) It's also good to say "you're possessed," it means that there's work to be done, and money to be earned!"*

As Dupuis recounts, despite these very negative evaluations expressed immediately after the integration group regarding the hypothesis of the infestation formulated by Mabit, Adrien does not completely exclude this possibility, and according to the researcher *"seems to occupy an ambivalent position, oscillating between doubt and adherence. If at first he seems very critical, we can see that he does not reject the existence of demonic entities or acts of witchcraft. He thus seems to oscillate in an undecidable way about the diagnosis that has been proposed to him, which is revealed by his joke at the beginning of our interview: "Yes, I'm ok to discuss with you a bit. I mean knowing that I am possessed. So what I am saying is a projection of my demons (laughs)!"*

According to Dupuis, *"The interactions with the ritual specialist, by describing part of Adrien's experience of reality as the result of "parasitic" beings influence, is here a driving force. The infestation diagnosis, at first received with circumspection by Adrien, provokes indeed, in a dynamic evoking a form of "epistemic gaslighting", a process of (self)-doubt and epistemic destabilization, eventually leading the participant to verify in an embodied fashion the belief system proposed by the ritual authority."*

A few days after the interview given to Dupuis, Adrien participates in a second ritual session with ayahuasca and then participates in a four-day *dieta*. Returning from the *dieta*, he gives a second interview to Dupuis, declaring that he has completely freed himself from doubts about Mabit's

interpretation. He says that he finally freed himself from the evil spirits that haunted him and succeeded thanks to the help of other spirits that had manifested to him. He claims to have understood that the infestation had come from a past intake of hallucinogenic mushrooms containing psilocybin. At the end of the seminar Adrien declares that he has recognized the validity of the interpretation offered to him by Mabit after the first ayahuasca ceremony and therefore the effectiveness of the exploration journey with traditional Amazonian medicine in which he participated.

According to Dupuis, if *“the ritual experience is initially lived by the participant as a confusing one, the latter is then progressively shaped by the reverberating interplay of the participants’ accounts of his experiences and the comments of the ritual specialists, who gradually inscribe it in the local belief system.”*

Dupuis focuses on what he defined in a previous article as the *“socialization of hallucinations”* [17] and believes it to be a dynamic involved in Adrien's case: *“Involvement in ritual and discursive interactions implies an education of attention and associative learning that progressively shapes the inferences governing the apprehension of the psychedelic experience. The participant learns to spot the signs of culturally postulated entities’ presence first in the ritual context, then in his past and daily life. It is this concrete and tangible verification through the psychedelic ritual experience that finally leads Adrien to adhere to the local belief system. I claim consequently that the state of hypersuggestibility induced by psychedelics, by enhancing the susceptibility to the influence of external interpretations of one’s experiences, is a driving force in the socialization of hallucinations dynamic, and thus in the dynamics of transmission of beliefs, which, as we have seen, is here conditioned on the experiential verification of the object of belief.”*

4. Discussion

4.1 Western Researchers’ Evaluation of Psychedelic Experience and Efficacy of The Possible Therapeutic Choices

The following discussion examines how, in the case of beliefs related to psychedelic experiences and their therapeutic effects, Western researchers can approach the problem of evaluating such beliefs and the subsequent effectiveness of this therapeutic option.

As previously examined, the generative model at the base of predictive coding and the free energy principle is not constrained to veridicality in the common sense of the word. Rather than faithfully reconstructing the world, perception is geared towards driving actions that preserve the physiological integrity of the organism: *“In other words, we do not perceive the world (and self) as it is, but as it is useful to do so”* [53].

Friston affirms that the brain is a phantastic organ, *“from Greek phantastikos, the ability to create mental images”* [54]. The same can be said of any generic *“belief”*, in the sense of statistic-based prediction about the world (and the self). The *“phantastic organ”*, that is the brain, seems to work in many guises, and in evolutionary terms one needs centuries and millennia to know whether some *phantastic creations* would be *“right”* or *“wrong”*, *“true”* or *“false”* according to such adaptive meaning. Therefore, from this point of view, the *Arutam* supernatural being that the Jivaro people want to meet when they ritually take ayahuasca, should be considered statistically more veridical than a model like predictive coding, if what works well and lasts should be considered true; it should be the logic consequence of the applied predictive coding and free energy principle.

In the therapeutic context, Carhart-Harris and Friston affirm that some psychedelic experiences can *“be viewed with equanimity if it appears to mediate positive therapeutic outcomes, even if the apparent insight is founded on dubious (e.g., supernatural) assumptions”*. But who knows the outcome of the therapeutic process before its conclusion? It is quite a problem for an apprentice, because in this case the time of the process is not that of natural selection, nor the therapist can know the outcome before the end of the therapy.

It is therefore very difficult to understand why, according to Carhart-Harris and Friston, some beliefs should be fitter than others to get a good outcome, for instance those that have *“skeptical fashion”*, the characteristics of *“secular wisdom teaching”* *“nonreligious Buddhism”* or Jungian *“depth psychology”* and not those of *“magical, religious, and delusional beliefs”*, or why they should have *“to ground psychedelic science and medicine”* and to contrast *“evangelism”*. Why does the slang word *woo* have to refer to supernatural beliefs, to what Carhart-Harris and Friston call *“pseudoscience,”* and not to science and even (why not?) to the free energy principle? And why does it have to refer to *“evangelism”* and not to *“nonreligious Buddhism”*?

About Christianity, it is evident and very interesting to note the fact that Carhart-Harris and Friston [6] manifest through their words an explicit bias against such religion, and religions in general. The same Carl Gustav Jung might disagree with their bias, given his strong interest in religion in the second part of his life. It seems necessary to find some scientific reason to prefer *“nonreligious Buddhism”* to *“evangelism”*, because such a choice could affect therapy and the patient’s life.

4.2 The Underestimated Authority of The Old and Its Apparent Irrationality

It is evident that the *“examples of institutional aims for a psychedelic session”* stated by Timmermann et al. and examined earlier [5] do not consider the existence of religious and spiritual traditions that are completely or partly grounded on psychedelic experiences, and whose existence is not linked to the criteria that Scuro and Rodd have proposed for neo-shamanism.

Religious and spiritual psychedelic traditions do not show any necessary *“opposition to the materialism and positivism of European modernity”* [45], and do not necessarily present *“as central the idea of reconnecting pan indigenous ancestral knowledge that people of the West had purportedly forgotten”* [45] and did not result *“in large measure from the circulation of literature on shamanism, altered states of consciousness (often, but not always, involving the use of psychoactive drugs), and the possibility of generating new psychotherapeutic modalities”* [45].

Timmermann et al. [5] explicitly avoid because some human cultures, such as in the case of Peruvian Amazonian *vegetalismo*, have been using psychedelic substances for many decades, or centuries and are rooted in traditions that have used them for thousands of years, therefore they already have the “know-how” that Western researchers are looking for.

The description by Carhart-Harris and Friston [6], Dupuis [18] and Timmermann et al. [5] do not consider, or in any case underestimate, these aspects. The modern Western scientific civilization presents characteristics of profound difference from the culture in which the Amazonian *vegetalismo* tradition and other spiritual and religious psychedelic traditions are widespread. Therefore, the dialogue, articulation and integration between these cultures requires a very complex process fraught with difficulties, which has not yet occurred. Takiwasi, with its 30 years of clinical experience, has long testified to the possibility of this dialogue-articulation-integration

between Western science and hundreds-year-old psychedelic tradition. With the concept of articulation, different from that of integration, I refer to the process of coexistence and relation of two or more interpretations, beliefs, and cultural models, side by side. This process teaches us that several different beliefs and ways of life can be true and build their ethical values.

As we have seen, Dupuis and Timmermann et al. [5] underline the risks of manipulation linked to the hyper-suggestibility induced by psychedelics and to the "socialization of hallucinations" that would take place within "neo-shamanic" practices. With this last adjective, they circumscribe under the same label the trained and expert healers of *vegetalista* tradition and the improvised charlatans who operate in Iquitos, Pucallpa, Tarapoto and other Amazonian cities, economically exploiting the recent phenomenon of ayahuasca tourism, and which, according to various authors [29, 30] are impoverishing and disqualifying hundreds-year-old traditional medicine, putting its very survival at risk. As previously considered, in their study Carhart-Harris and Friston express negative opinions about Christianity and religions in general. It is important to understand the reasons grounding this attitude: they appear epistemic and ethical. One is related to the fact that, starting from the scientific revolution of the '700, Western science has intellectually fought against the Christian religious epistemic authority. Western researchers are culturally instructed to refuse the authority of their forefather's Christian religion.

The second reason is linked to the fact that for the mestizo *vegetalista* tradition, as well as for all the indigenous Amazonian and other religious psychedelic traditions, the true reality is what one perceives in a dream or with the ingestion of psychotropic plants [13-16, 35, 55], therefore in a state of consciousness that is not alert. On the other hand, Western psychotherapy translates dreamlike and psychedelic experiences into logically coherent terms with reference to a physical world in which the principle of non-contradiction applies, considered to be the "true" one. If taken seriously, this difference is so strong as to hinder dialogue between Western and Amazonian civilizations, including any other civilization that considers the logical contradictory process as real. The bias expressed by Carhart-Harris and Friston against Christianity and religions in general could partly be a consequence of this same motivation. This bias has a lot of consequences, also when it does not affect the relation with religious traditions.

For instance, in their study Timmermann et al. [5] raise the problem of the subject's validation of the psychedelic experience and end up examining it in the light of its translation in terms of conscious thought. Both phenomenological microanalysis and the ACE technique aim to deconstruct the psychedelic experience by employing alert thinking. In Western thought, this choice has a solid epistemic basis: in fact, the conscious thinker is considered free by choice, precisely by exercising this thought potential.

The same seems to happen when Carhart-Harris and Friston try to individuate criteria to discern good and healthy insights from experiences that hide spiritual bypassing [6]. The two researchers meditate on privileging criteria of alert thinking or signs that suggest the individual's positive emotions.

This is not the case in traditional Amazonian shamanism, in which knowledge is believed to be acquired by ingesting master plants in a ritual context. According to traditional Amazonian shamanism, watchful thought, considered a source of truth in Western society, is, on the contrary, considered to potentially hide the action of a parasitic presence that infests the person. Within such watchful thought and form of reality, one cannot detect the parasitic presences that cause several forms of illness. Watchful thought is very useful in many activities, such as killing prey without

missing the target, but not detecting facts that are believed to happen in the invisible world. Their mutual differences emerge when the two very different visions of Western scientific research/medicine and some traditional psychedelic religions are articulated.

Then, a third profound difference emerges at an epistemic level, linked to the first two, because in the religious psychedelic traditions, as in the non-psychedelic Christian religion, the existence of threatening entities, which we can define as "demons", is affirmed; linked to this is the existence of ritual practices, even exorcist ones, considered to be necessary to free people from these threats, often activated by human intentions. According to some *vegetalista* practitioners, for instance, the conscious subject who believes themselves free could instead be inhabited by these perturbatory parasitic presences, that she/he cannot detect within the watchful state. In order to free themselves they must recognize their presence, finally entrusting themselves to an authority that frees them. These are the Amerindian and mestizo variants of a complex of beliefs and ritual practices of almost planetary diffusion in cultures that have remained on the margins of modern globalized culture; in the Western world they are defined with the general label of witchcraft and demonic possession [56-62]. Exorcism is the Christian ritual that allows people to be freed from possession. This idea of traditional Amazonian shamanism and of Christianity is opposed by Dupuis and, in a more marginal way, by Timmermann et al.

In these cases, like in that of Carhart Harris and Friston, a cultural bias against Christian beliefs makes itself very clear. This attitude expresses not only the rejection of a logically contradictory and emotionally perturbatory thought, but also of a form of authority that Western scientific thought has been historically and culturally trained to fight. These three factors are together present and active.

4.3 The Critical Triangle

The presence of elements such as perturbing negative emotions, experiences and entities that impose their authority on the subject's conscious will, and logical contradictions that prevent from maintaining a rational stance, create a condition of epistemic and ethical conflict in the consciousness of the researcher. These three factors are linked together in action, and can cause misunderstandings. Therefore, I propose to place them at the vertexes of an ideal "critical triangle" (Figure 3) that could be considered a leading framework to interpret such misunderstandings. The word "critical" explicitly refers to the phenomenon of criticality.

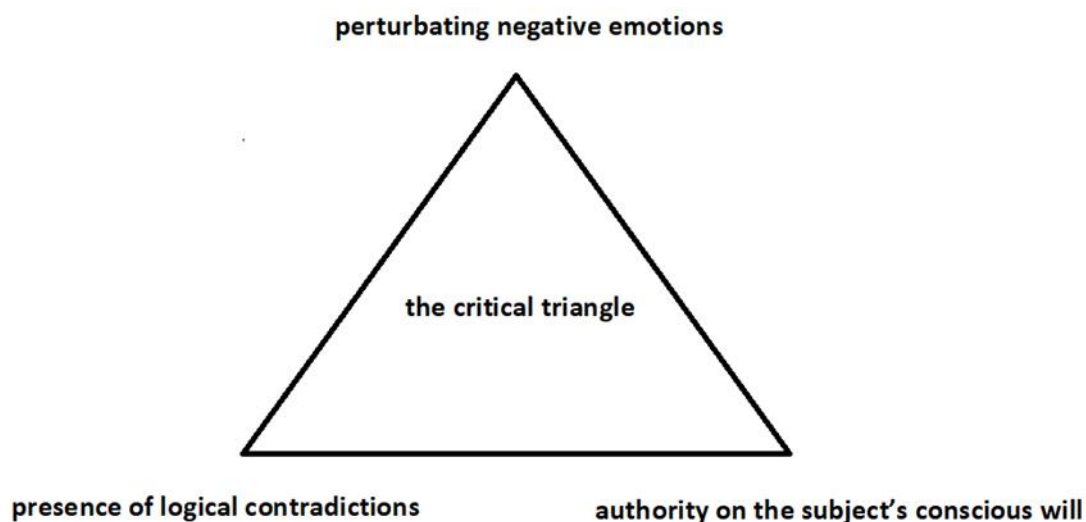


Figure 3 The critical triangle.

As examined above, criticality is an energetic level of a dynamic complex system that manifests at the boundary between order and disorder and makes the system particularly sensitive to perturbation. According to Carhart-Harris and Friston, a waking brain can be tuned closer or more distant from criticality to preserve its dynamic stability. As briefly mentioned earlier, the two researchers question the relation between criticality and the optimality of the model that the waking brain generates through predictive coding to produce consciousness of the self and the world.

In my opinion, the waking brain, to tune its level of criticality without excessive perturbations, has to generate a dynamic semiotic and emotional complex, able to cope with the three disturbing factors that I have located at the vertexes of the “critical triangle”. It is a universal human task that any individual of any given culture carries out in a specific way.

The three factors work together but detecting their specific individual action can be useful. Their relevance and strong connection are due to the characteristics of the Freudian so-called “primary process”² of the human brain, its apparent illogicality, its power on the subject’s will, and its potential perturbing emotional effect. Therefore, I think the evidence of such factors within the ordinary waking speech could be considered markers of the emergence of a primary process thought and a measure of the individual or cultural waking level of criticality. In my opinion, the researchers’ misunderstandings could be caused by the different optimal belief models and levels of criticality between their culture and those of the *vegetalista* and in general spiritual traditions.

Several examples taken from the examined context of articulation between Western scientific and *vegetalista* therapeutic traditions can be useful to show the action of these three factors. In order to detect the presence of such factors I use the letters A, B and C (A for perturbating negative emotions, B for authorities on the subject’s will, and C for absence of logical control). It is necessary to consider that factor C is almost always present inside any religious discourse, that contains ordinary transgressions to the principle of not contradiction.

² A synthetic definition of the Freudian “primary process” thinking [7] is the following: “Characteristics of the system unconscious, the id and primary process thinking: i.e. a primitive, ‘magical’ or animistic style of thinking, characterized neurophysiologically by ‘free’ movement of energy. One can think of primary process thinking in evolutionary terms as a ‘protoconsciousness’.”

4.3.1 First Example

Dupuis [17] affirms that the theory adopted by Takiwasi therapists and especially by Jacques Mabit “*highlights the increasing use of the Catholic doctrinal (B, C) body and the ecclesial institution (B), which has progressively influenced the form and function of the practices proposed by Takiwasi. The ayahuasca ritual is now characterized by the use of exorcism (B, C) prayer, the crucifix (A, B, C), holy water (B, C), and the mobilization of the main figures of the Catholic pantheon (B; C). If the integration of elements of popular Catholicism (B, C) is a classic component of the metis shamanism (B, C) of Amazonia, the central place given here to the motif of demonic possession (A, B, C), the functions of exorcism (A, B, C) and evangelization (B, C) attributed to the use of ayahuasca, as well as the attachment of these practices to the ecclesiastical institution (B) and to Catholic demonology (A, B, C) are more original. The evolution of Takiwasi brings now the institution closer to the charismatic (B, C), evangelist (B, C), and Pentecostal movements (B, C) which are widely spread in Latin America. In this sense, Takiwasi offers an exemplary case of contemporary cultural recompositions of so-called “shamanic” practices (C) centred on the use of ayahuasca that are currently emerging in the Amazon.*” I consider it a misunderstanding to compare Takiwasi to “*charismatic, evangelist, and Pentecostal movements which are widely spread in Latin America*”, because they have nothing in common.

No researcher, among the many that have performed research at Takiwasi, has suggested a similar idea, apart from Dupuis. Takiwasi is not comparable to a religious movement. Their therapists, healers and workers do not share a common belief and, consequently, cannot make any form of religious proselytism; several are not of Christian faith and some are even atheists. Evangelist churches reject indigenous traditions, and syncretism and explicitly forbid psychedelic ritual experiences [50]. The Catholic faith at Takiwasi represents only an option available to patients. It should not be confused with the Christian elements integrated inside Amazonian *vegetalista* rituals such as the ayahuasca ceremony.

As pointed out by O’Shaughnessy [14] “*From a religious perspective, Takiwasi is oriented towards Christianity. There is a Catholic priest on site who is available for consultation, and within Takiwasi he also conducts masses and Christian rites. However, while ayahuasca and traditional medicines sessions are infused with Christian symbolism, they remain separated from the practice of the Catholic faith.*” The therapeutic use of plants remains independent from any religious doctrine: “*As distinct from the syncretic approaches of the major Brazilian ayahuasca religions, the therapeutic use of plants in Takiwasi remains separated from religious rites or doctrine. Even though Takiwasi’s curanderos adopt the kinds of Christian symbolism often found in traditional mestizo vegetalismo (along with Christian faith), the treatment itself is arranged to accommodate religious pluralism. For patients then, the treatment can become decoupled from Christianity due to the partitioning out of traditional religious practices (e.g., meditation or mass) from traditional plant-healing practices (e.g., ayahuasca sessions). This separation enables patients to participate in the treatment while following their own spiritual path-which may or may not coincide with Christianity*” [14].

Christianism, exorcism and the hypothesis of infestation or possession by external entities are practiced and proposed in Takiwasi as possibilities endowed with epistemic, ethical and therapeutic validity, but not as the only option made available to patients. Therapeutic work in the second and third person, also through techniques similar to those presented by Timmermann et al., is one of the foundations of Takiwasi’s therapeutic protocol. Nevertheless, the hypothesis of infestation is

the one that is most seriously taken into consideration as it is typical of mestizo *vegetalismo* and is an essential element of efficacy in Takiwasi's treatment of drug addiction [14].

4.3.2 Second Example

In his interpretation of Adrien's case, Dupuis refers to a phenomenon he defines as the "socialization of hallucinations", on which he focused his attention in a previous work [17]. According to Dupuis *"the hallucinogenic experience in Takiwasi is the object of a narrative elaboration (A, B, C) which inscribes it in the "language game" of the social group. We argued here that these narrative reconstructions and the social interactions that frame the hallucinogenic experience, by educating the participant's attention (A, B, C) and affecting the categorization procedures (A, B, C) of perceptions, further structure the way of organizing and interpreting the hallucinations. The symbolic knowledge (A, B, C) acquired by the participants, the iconographic elements (A, B, C) surrounding the visionary experience, as well as verbal and ritual interactions appear to be the main operators of a "socialization of hallucinations." This dynamic finally seems to be able, by shaping the participants' attention, emotions, and expectations, to formalize the very content of the visual and auditory imageries. By producing a community of experience, hallucinogenic rituals are thus powerful vectors of cultural transmission and affiliation to the social group"* [17].

These considerations by Dupuis, where the three factors are in the background, are entirely acceptable. However, as already examined, he evaluates this form of socialization of hallucination in a negative term, raising even ethical problems. Why? Patients and visitors of Takiwasi are informed that what is defined as "traditional Amazonian medicine" is employed within the institution. Therefore, their experience is exposed to a structured sociocultural process, albeit different from Western medicine. The latter, which flanks the former one in Takiwasi, models patients' experience based on a different structure. When Mabit tells Adrien that the unpleasant experiences encountered by the young man during the ayahuasca ritual were caused by an "infestation", he is referring to a model of traditional Amazonian medicine widespread in the region where Takiwasi is located. Adrien, like Dupuis, has been informed on his arrival at Takiwasi that his experiences would be subject to a double "socialization of hallucinations": the *vegetalista* and the Western scientific ones.

If Mabit had interpreted Adrien's sensations as expressions of distrust of the paternal authority projected onto the figure of the officiant, rather than as a form of infestation, he would have employed an interpretative model of Western psychology, a Western form of *"socialization of hallucination"*.

Carhart Harris and Friston, as previously considered, reveal a similar bias, when, in order to avoid what is defined as "spiritual bypassing" (B, C), they affirm that *"tenuous magical explanations"* (C) can be *"challenged appropriately (although not during the experience itself-as to do so would be inappropriate) in the skeptical, self-correcting fashion that is intrinsic to the scientific method"*. The latter proposal appears to be a form of "socialization of hallucination" like the former. Therefore, it is inexplicable why one practice (skeptical elaboration as any form of psychotherapy) is considered epistemically and ethically correct and the other (eventual magical explanation proposed or accepted by the healer) is incorrect.

Every society, through a process of inculturation, educates the attention and perceptions of the subjects, accustoming them to constructing stereotyped interpretative categories. Anthropology, sociology, and psychology have been aware of this phenomenon for at least a century.

4.3.3 Third Example

As examined earlier, Dupuis raises the problem of an incorrect “socialization of hallucination” regarding the model of infestation in Takiwasi (A, B, C) considered precisely based on the case of Adrien. As it happens, this case testifies to the reaction of distrust and rejection experienced by the young person towards the presumed experience of increased suggestibility and of the process of socialization of the hallucination, suggested by Mabit. Therefore, it indicates the possibility of independence between the subject’s primary suggestion and its emotional reaction. In Adrien's case, the process of socialization of hallucination appears to have been hampered by the experience of taking the psychedelics. Indeed, from the story it seems possible to hypothesize that the high suggestibility may have induced an amplification of Adrien's reaction of distrust towards a character who embodies authority (B).

The emergence of this reaction can be a precious phenomenon in a therapeutic context such as that of Takiwasi, given that some people with substance abuse disorder can harbor hostility and distrust towards the father figure and society. The intensified reaction can bring to light elements of the subject's life that can be extremely useful for therapy. The phenomenon seems to refute Dupuis's hypothesis according to which the hyper-suggestibility induced by psychedelics acts as a facilitating factor of uncritical processes of socialization. On the contrary, the case seems to reveal the emergence of critical and complex personal emotional factors, hence a process of enrichment of the subject's experience about their relationship with society and the figures who embody its structure. The fact that Adrien finally resolved his dilemma of validating Mabit's interpretation during a second ceremony with ayahuasca followed by a period of isolation in the forest seems to confirm a process of this kind.

Dupuis’s consideration is deceptive, because he warns that the psychedelic experience cannot be described adequately with the model of brainwashing and that the belief transmission dynamic in the context of “socialization of hallucination” is “*extremely labile, woven of reflexivity and ambivalence*”, but at the end of his examination he does not consider the complexity of Adrien’s dilemma and remains convinced of an idea that has weak elements of validation: “*It is this concrete and tangible verification through the psychedelic ritual experience that finally leads Adrien to adhere to the local belief system (A, B, C). I claim consequently that the state of hypersuggestibility (B) induced by psychedelics, by enhancing the susceptibility to the influence (B) of external interpretations of one’s experiences, is a driving force in the socialization of hallucinations dynamic, and thus in the dynamics of transmission of beliefs, which, as we have seen, is here conditioned on the experiential verification of the object of belief.*”

Dupuis declares himself convinced that Adrien's final adhesion to Mabit's diagnosis depends on the process of socialization of hallucinations built up by Takiwasi’s therapeutic team. I think there is little objection to this fact in general terms but there are no elements to support that this determined the specific final decision of the young man. On the contrary, Dupuis starts from this hypothesis and links it to the data on hyper-suggestibility induced by psychedelics to raise the issue of the ethical validity of the use of the substances mentioned above. He seems to fail to consider

that in the first ayahuasca ritual the state of hypothetical hyper-suggestibility induced a second emotional reaction of distrust towards the therapist and rejection of his hypothesis. Dupuis speaks of doubt and uncertainty in which Adrien would find himself after the first ritual session with ayahuasca. Therefore, the action of the psychedelic can cause an adverse secondary reaction concerning the primary impressions possibly induced in the person during the ritual.

There is no possibility of affirming that without the intake of the psychedelic in a ritual context and the interpretation of the "epistemic authority", the subject would have reacted in the same way or differently. What the researcher affirmed regarding the role of the psychedelic as a facilitator of the inculturation process is not supported by any observation, at least about the case of Adrien. If we accept the hypothesis that the psychedelic increases primary suggestibility, not only is there no data regarding secondary reactions to suggestions, but the case of Adrien indicates that these can be adverse. Therefore, the high suggestibility induced by the psychedelic, in the conditions created in Takiwasi, seems to hinder, rather than facilitate, the "socialization of the hallucination". The case of Adrien seems to indicate that the decisive factor in determining the quality of the subject's reaction, whether adverse or favorable to the interpretation of the social group, is the subject's idiographic personality, their way of reacting to the suggestion and the specific idiographic characteristics of the sociocultural context in which it takes place. Hence, the case of Adrien, contrary to what was stated by Dupuis, seems to indicate that concerning a generalized process of socialization, in certain specific contexts the psychedelic can act as an intensifier of the processes of self-determination and personal subjectivation concerning social pressure.

4.4 The Impossible Neutrality and The Contrast Between Different Representations

The process of socialization of hallucinations highlighted by Dupuis is bound to operate within any social context in which psychedelics are used and also outside the use of psychedelics. There are no social contexts the subject can be presumed to enjoy a neutrality concerning this phenomenon. The contexts of psychedelic therapy and research act as structures for the socialization of hallucinations. The only possibility available to overcome this difficulty is to train the individual to deal with different structures of socialization of hallucination. This happens when people can be offered different representations of their own experiences. The three factors of the "critical triangle" are part of the human condition, but it is a cultural choice to represent them explicitly or to hide them, to accept or refuse them.

In a culture like the modern Western one, diagnosing a possible demonic infestation creates a conflict in epistemic and ethical terms far beyond the psychedelic-induced hyper-suggestibility. Demons - says the Western scientist - does not exist. Therefore, the psychedelic experience raises an ethical and epistemic conflict in the mind of the Western scientifically trained researcher and makes it difficult to explore more fully its consequences.

The situations induced by psychedelics and more generally by states of consciousness different from that of vigilance can reveal the existence of threatening presences and the necessity to cope with them. The traditional Amazonian mestizo shamanic culture, as well as the religious ones in general, is populated by diabolical presences whose existence is completely denied by contemporary Western culture. The description made by Dupuis of Adrien's case is so detailed as to allow us to identify the researcher's rejection of the infestation hypothesis and therefore the rejection that the young man could have freely accepted this hypothesis without any decisive

influence from the "socialization of hallucinations". This is a rejection of a very well-established know-how of socialization on the use of psychedelics, which seems to be based on quite evident cultural misunderstandings. Western scientific culture explicitly refuses and/or hides the three factors of the critical triangle. Inducing perturbing emotions and imposing authoritative will are ethically incorrect actions. Producing logical violation is epistemically incorrect.

At this point we need to ask ourselves whether a culture can consider itself capable of respecting the individual freedom of human subjects and protecting them from perturbing emotions. I believe that the answer must be sought in the space of a specific individual decision concerning the various interpretations that culture allows for those who are part of it. Every culture builds a horizon of limitation of individual freedom. In their article Timmermann et al. do not explain in detail what they mean specifically by "ethical tensions" between animistic and supernatural understanding of mental illness/consciousness from the perspective of "neo-shamanism", and the biographical understanding of mental illness and mechanical understanding of consciousness from that of "psychedelic therapy and research". The ethical tensions aroused by the animistic or supernatural understanding of disease/awareness vis-à-vis the Western scientific view are also epistemic. I think it is essential to try to understand what they consist of. I suggest that the critical triangle proposed above could help to carry out this difficult task.

The Western scientific researcher cannot be ethically and epistemically neutral towards the subject who undergoes the research, because they insert the subject into a social network of meanings, which constructs a reality. Psychedelic therapy and psychedelic research are, like shamanism and any spiritual and religious psychedelic tradition, agents of socialization of hallucinations. Western civilization is led to idealize a condition of independence of the subject from the social construction, based on a great trust placed in the capacity of the conscious, alert mind to perceive and organize the data of reality. It fails to see that this is a cultural choice with no epistemic or ethical superiority over others.

The scientific researcher feels many ethical tensions towards neo-shamanism due to their presumption of epistemic and ethical neutrality. They consider their activity free from influence and perturbation towards the subjects with whom they build their research. At the same time, they recognize the presence of these influences in neo-shamanism. It is a presumption or an objective of neutrality that Western civilization promotes as a model in declaring the independence of the subject as its fundamental value. It constructs its social idea of independence of the subject and pursues it as if it were an absolute value, effectively inducing this idea in the person.

The Western psychedelic therapist/researcher or the "nonreligious" Buddhist wise man evoked by Carhart Harris and Friston can influence the subject as much as the shaman or the evangelic priest, perhaps even more. Nevertheless, in carrying out their activity they are convinced that they abide by the ethical criteria of respect for individual freedom, because these criteria are the most shared within their culture. For example, Dupuis may have influenced Adrien's ideas perhaps even more than Mabit, given that he lingered in a prolonged conversation with the young man. Yet, he does not seem to give any weight to this fact, because the conversation took place according to the canons of what in Western society is considered an ordinary conversation between "peers". However, this condition of apparent equality may have had an intense influence on Adrien. As stated by Timmermann et al., empathic resonance is an important facilitator of socialization of hallucinations.

By being trained to believe that in the state of alert consciousness or apparent free insight the person is free to choose, Western researchers are concerned with how this state of consciousness is weakened or modified. Once this condition has been overcome, and the subject has become alert again, the therapists/researchers then try to submit the representation of experience to the examination of waking consciousness, in the first possibly second and third person. They try to give reasonableness and therefore an ethical sense to the experience. The state of consciousness that allows us to distinguish perceptive experiences from representations for the Western researcher is an absolute, epistemic and ethical point of reference. According to the epistemic construction of the scientific method, perceptual data and their processing are the foundation for reaching the truth and therefore for questioning a principle of authority external to the individual conscience. The subject must be able to perceive, but overall to order abstractly, the perceptual data. Also, apparent spontaneous insight, considered very precious by Carhart-Harris and Friston, should be discerned from “spiritual bypassing” through its coherence with a cultural ideal of logical order, clarity, freedom and emotional stability, which seem to be the exact reverse of the three factors of the “critical triangle” but are the other face of the same coin.

Vegetalistas’ way of facing the “critical triangle” is very different. The shaman allows the plant to come into contact with the subject. However, it is the plant that illogically teaches, emotionally perturbs the subject and dictates its conditions to the conscious will of the subject. What happens to the person during the experience is a form of teaching that sometimes occurs in a non-alert state of consciousness. However, an emetic plant can also teach using its ability to emotionally perturb the subject without producing psychedelic effects. Even when the subject is alert, the master plant teaches a difficult way to think of and express, through an alert conscience and verbal language. The plant teaches by imposing a condition on the subject. The shaman sanctions this fact. What puts the Western researcher in conflict with Amazonian shamanism is the whole complex of the three factors of the “critical triangle”, and above all the principle of authority that this culture, based on the action of the plant, declares concerning the presumed freedom of the individual. The plant teaches, the shaman helps decipher the teaching, and the subject receives the teaching in a way that does not meet the requirements of scientifically judged "rational" thinking, which puts the subject in the apparent condition of reasoning and deciding. The subject is given the freedom to adopt an attitude of acceptance or rejection of the teaching received. An attitude that can be observed in Dupuis's account of Adrien's case is to concentrate the rejection of teaching in a figure who embodies authority.

Adrien's case is exemplary in laying bare what Western civilization does not want to see, namely the fact of being shaped by an unrecognized principle of authority, which could be defined as a false freedom concerning social conditioning. In the shaman's interpretation, this is a parasitic presence, as it is not recognized in the individual's personality. Mabit highlights the presence of this extraneous power to the subject and warns Adrien that his refusal is an expression of a parasitic presence or infestation. At this point Adrien has to decide between different representations of his own experience. What creates doubt in him is, on the one hand, the action of the plant, which questions the power of decision of the subject in a state of alert consciousness, on the other hand, the shaman, who underlines and reinforces this questioning, stating that the vigilant subject is not master in his own house, and even stating that the product of his “rational” critical thought would be the consequence of an "infestation". This process calls into question two fundamental principles of Western thought:

- the freedom of choice that derives from the possibility of rationally ordering perceptions by the subject in the state of alert consciousness;
- the consequent social respect for this form of individual freedom.

Shamanism shows the falsehood of both these assumptions. It does not do it in a "gentle" way because it confronts the subject with the concrete reality of this emotionally perturbing situation.

It is good to remember that we are fully socializing hallucinations in exercising scientific thought, and that Western thought is not neutral, just as shamanic thought is not. However, unlike the latter it thinks it is. Therefore, the shamanic hypothesis of the infestation radically undermines the researcher's thought because it makes them realize something they should already know. It confronts them with their contradiction, and unmasks it without giving it a solution. The psychedelic substance and the shamanic culture highlight the limits of the restricted naturalism of Western scientific thought, revealing that autonomous processes can move the subject concerning their conscious control, and those of the unconditional validity of a "gentle" approach with respect to them. The shamanic tradition, custodian of a centuries-old know-how regarding the use of psychedelics, is not a "contemplative" tradition and does not always have a "gentle touch". It can be argued that no "contemplative" tradition has an exclusively gentle touch if thoroughly studied and practiced. Furthermore, the gentle attitude can be very effectively manipulative and deceptive, precisely because it hides the fact that there is always a principle of authority external to the conscious will of the subjects, with which they must measure themselves. Lacan, perhaps more than any other Western thinker, together with Althusser, Foucault, Žižek and Byung-Chul Han³, have focused and affirmed the great importance of this subjective existential task, outside of any relation with psychedelic experience. They have questioned in-depth (and still are) the relation and a strong implication between the assumed conscious alert individual and the hidden unconscious structure from which their existence depends. They have denounced how much a false idea of freedom of the conscious will would lead to building a very effective structure of repression and even slavery. Therefore, their thought can give useful suggestions to connect the psychedelic therapy issue with a more general critical reflection on the ethical and epistemic ground of the actual Western globalized society.

5. Conclusions

This article intended to warn against cultural misunderstandings regarding the know-how on using psychedelics, which should be carefully considered. The most evident one is underestimating the value of centuries-old spiritual and religious traditions such as that of Amazonian mestizo *vegetalismo*, which must not be confused with the emerging phenomenon of improvised shamanism oriented to the economic demands of tourism. Traditional shamanism presents dissonant values concerning those of modern Western civilization; hence Western scientific research must learn to focus on its misunderstanding concerning these values, starting from the recognition of its non-neutrality and its own being an unaware agent of unrecognized "parasitic" and illogical forms of socially conditioned interpretation of reality.

The proposals that come from psychedelic therapy and research, such as those indicated by Timmermann, Dupuis and Watts, should be considered as being in a valuable complementary

³ Althusser and Foucault were among the major philosophical inspirers of Lacan's thought, while Žižek and Byung-Chul Han are perhaps among Lacan's major disciples.

relationship with those proposed by traditional mestizo shamanism and every spiritual and religious psychedelic tradition. This contribution cannot free the researcher/therapist from placing themselves in socially structured forms of interpretation of reality. However, it can help them to see this aspect better and therefore to understand more deeply the specific character of their presumption of neutrality and ethical superiority concerning other cultures. The experience of any context in which the know-how of different cultures is placed in a collaborative relationship, can teach a lot in this sense.

5.1 Limitations

The contents of this work represent a critical interdisciplinary review, with reinterpretation and integration, of previous data and models, that is widely speculative, given the complexity, the depth and the breadth of the topic.

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The author did all the research work of this study.

Competing Interests

The authors have declared that no competing interests exist.

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