

The cognitive-psychological study of Ayahuasca

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Summary

This is a brief, overall exposition of my work on the ayahuasca experience. This work constitutes a pioneering project investigating the brew from a cognitive-psychological perspective. Taking a phenomenological approach, I systematically chart the various aspects of the special state of mind ayahuasca produces and analyze them in cognitive terms. Here, I make the principled case for the cognitive-psychological study of ayahuasca (as contrasted from the perspectives of either the natural sciences or of anthropology) and focus on two specific topics. The first concerns the inter-personal commonalities encountered in the contents of ayahuasca visions; the second deals with effects pertaining to the system of consciousness.

In this paper I report on a research project with which I have been engaged for almost two decades and which concerns the cognitive psychological study of ayahuasca. The orientation of my work is phenomenological and it involves a systematic investigation of all the various facets of the ayahuasca experience. Partial reports pertaining to this project have appeared in Shanon (1997, 1998a, 1998b, 2001,2002a and 2003a); a comprehensive presentation appears in my monograph *The Antipodes of the Mind* (Shanon. 2002). After the publication of the book I have further worked on a critical analysis of the notion of hallucination (Shanon, 2003b), on the implications of the study of the ayahuasca experience for the investigation of human consciousness at large (Shanon, 2003c), as well as on the episemological issues raised by noesis experienced with the brew (Shanon, 2010).

The cognitive-psychological study of ayahuasca

I myself arrived to ayahuasca by chance, as a curious traveller. I am a cognitive psychologist and a philosopher of psychology with a special interest in the phenomenology of human (ordinary) consciousness. Before encountering ayahuasca I had neither special acquaintance nor special interest in either South American cultures or altered states of consciousness. In 1991 a series of chance encounters led me to an Amazonian community in the Brazilian state of Acre; it was there that I first partook of ayahuasca.

In my first ayahuasca sessions I saw wonderful arabesques, serpents and menacing dragons, an enchanted forest full of animals and birds, both naturalistic and phantasmagoric, a panorama of human history and a marvellous city with palaces of gold and precious stones. I also experienced deep religious feelings and had various philosophical insights. The latter had to do with the human

predicament, the relationship between nature and culture, the meaning of history and evolution, the relationship between human faculties of knowledge and the ultimate truths of the universe, ethics and divine providence. Last but not least, I felt I had undergone what seemed to me the equivalent of a deep psychoanalytical examination. Overall, the experiences generated a deep appreciation of the wonder of being, coupled with euphoric gratitude and feelings of love of nature and my fellow human beings.

Returning to my own world, I immersed myself in reading whatever I could about ayahuasca. To my amazement, I discovered that the things I had seen in my visions were of the same types reported by indigenous persons. I was very puzzled. How come I, with a totally different personal and cultural background, saw images similar to those Indians see? Here, I felt, was a new manifestation of what might be the universals of the human mind¹.

Studying the literature, I further found out that practically all the scientific research on ayahuasca fell into two categories. The first is that of the natural sciences -- botany and ethnobotany, pharmacology, biochemistry and brain physiology. The second category is that of the social sciences -- notably anthropology. The disciplines of the first category set themselves to determine the identity of the plants of which ayahuasca is made, analyze the active chemical constituents in them, and discover the pharmacological action these generate and the physiological effects they produce in human beings. Anthropologists, in their turn, study how ayahuasca is used in various ethnic groups and relate this to various other facets of the cultures at hand - social structure, mythologies, music, religious beliefs, art and artifacts.

By my view, the real puzzles associated with this brew pertain neither to the brain nor to culture but rather to the human psyche. Ayahuasca is intriguing because of the extraordinary subjective experiences it generates in people. As such, the study of ayahuasca belongs first and foremost to the domain of psychology, and more specifically cognitive psychology. My own research program is a pioneering scientific effort to study the ayahuasca experience from a cognitive-psychological perspective. This work is grounded in the appraisal that the alliance of ayahuasca research and the study of mind is twofold. On the one hand, cognitive psychology presents a new, and, to my mind, most pertinent perspective for the study of ayahuasca. On the other hand, ayahuasca, with the unusual phenomena it generates, opens new vistas for the study of mind in general and of human consciousness in particular. Furthermore, studying ayahuasca from a cognitive-psychological perspective can shed light on phenomena that are within the province of other scientific disciplines, notably philosophy.

Guided by the appraisal that one can study the psychology of ayahuasca only when one has acquired substantial firsthand acquaintance of the brew and its effects, before embarking upon my scientific investigation I had subjected myself to extensive personal experimentation². I have partaken of ayahuasca in various locales and settings throughout Brazil, Peru, Colombia and Ecuador: in indigenous rituals, healing sessions held by mestizo healers, ceremonies of Brazilian

¹ I am not claiming that I saw the exact things that indigenous people see, but that the content items I saw pertained to the same semantic categories reported in the anthropological literature.

² Would anyone imagine writing about music without ever having heard any?

syncretic sects that use ayahuasca in their religious services, small groups of individual persons outside any institutional settings, and alone. By now, I have partaken of the brew more than 150 times. I have also interviewed about 350 individuals about their experiences with ayahuasca. My informants included Amerindian shamans and other indigenous persons, members of all Brazilian syncretic religious groups using ayahuasca, foreign (that is, non-South American) persons partaking of the brew for the first time, and highly experienced independent drinkers. The corpus of data I have collected is the largest, and most systematic, even collected with ayahuasca. With this corpus at hand, I have developed a conceptual framework and methodology by which to categorize the data at hand.

Thus, my work, and the monograph that summarizes it, consists of a comprehensive phenomenological charting of the various facets of the special state of mind induced by ayahuasca and a cognitive psychological analysis thereof. The title I have this book is *The Antipodes of the Mind*, a phrase taken from Aldous Huxley's *Heaven and Hell* (Huxley, 1956), which is an essay written following the experiences this famous British author had with mescaline. Huxley underlines the theoretical import of substance induced altered states of consciousness, and employing a geographical metaphor he observes that these states reveal hidden territories of the mind, to which he refers by the term in question.

The phenomenological aspects surveyed in my book include the general ambience and sentiments that ayahuasca induces, the various visualizations experienced with open and with closed eyes, non-visual perceptual effects, ideations and noetic experiences, the modifications of consciousness (notably, transformations in personal identity, changes in one's sense of reality and connectedness to the world, and altered temporality), and last but not least, religious and mystical experiences. On the basis of the empirical data I have collected, for each of these aspects, I review the various pertinent phenomena and attempt to define the ordered relationships between them and the cognitive principles that govern them. Taken in unison, the analyses of the different aspects depict a distinct state of mind. Furthermore, when the different reports of many individuals are inspected together and analyzed in terms of their types, a coherent cognitive picture emerges whereby the various experiences that people have appear as the various manifestations of a well-ordered system governed by well-defined cognitive principles. Also examined in my book deals with patterns that are less immediate and, in some cases, more abstract. These include higher order relations between phenomena, the sequential orders, variations and dependencies associated with contextual, and the dynamics that governs the progression of events during the course of the ayahuasca inebriation.

Below I highlight two topics which are, I find, of special interest to the cognitive psychologist - inter-personal commonalities in ayahuasca visions, and patterns pertaining to human consciousness.

Inter-personal commonalities

Ayahuasca visions manifest marked inter-personal commonalities. Such commonalities have already been pointed out in the early literature on ayahuasca (see Harner, 1973; Naranjo, 1973,

1987) but my research is the first ever to establish them systematically across different subject populations and employing quantitative analysis. The results of this analysis are clear: While in each ayahuasca session, each individual will have different experiences (both relative to other sessions of this individual, and in comparison to the experiences other individuals will have in the same session), the inspection of a large number of reports furnished by many individuals coming from different personal and socio-cultural backgrounds reveals that some content categories are especially prevalent in ayahuasca visions. Anthropologists (see the references just cited) have marked the great prevalence of serpents and great cats (both clearly associated with the forest), and indeed, these are also most prominent in my corpus. Yet, also very common are temples and palaces (always marvellous), works of art and objects of magic, mythological and supernatural beings (especially, beings of light), and scenes from ancient civilizations (with ancient Egypt and pre-Colombian civilizations being the most commonly reported). For data and statistical analyses the reader is referred to the appendix of Shanon (2002b) as well as Shanon (2003a).

By way of comparison, I have also examined dreams - my own and those reported in Freud (1900/1953). The content items encountered in the two types of visual phenomena, ayahuasca visions and dreams, are very different from one another. Very common in dreams, but not in visions, are members of one's family, autobiographical events, seemingly non-significant details such as phone numbers or particular words uttered a day or two prior to the dream. Further, dreams tend to reflect individuals' personal concerns, wishes and conflicts in a way that visions do not. Also typical of dreams are patterns that defy logic; in contrast, ayahuasca visions strike people in their remarkable clarity and coherence.

The themes of ayahuasca visions manifest marked interpersonal commonalities too. As I use the term, themes are the topics of visions that are sufficiently rich in semantic content. Simple apparitions of single content items (e.g., a jaguar) do not allow for a thematic analysis, only evolved scenes do. The most frequent themes have to do with the human predicament and the meaning of human life, human history and cultural creation, the structure of the physical world, the phenomenon of life, the Divine, and last but not least, health and healing. The ideas and reflections entertained during the course of the inebriation manifest inter-personal commonalities as well (see Shanon, 1998b, 2002b). Especially interesting are ideations pertaining to philosophy and metaphysics. These fall into a well-defined pattern and together they cohere into what has been referred to as the "perennial philosophy" (see Aldous Huxley, 1944). Ideas that are especially recurrent are that consciousness is primary and that everything that exists is inter-connected.

The inter-personal commonalities encountered in the phenomenology of the ayahuasca experience are most intriguing: They point to cognitive universals pertaining not to form (as universals of syntax, logic or categorization are) but to content. How are we to explain these universals? In my book I devote a good part of two chapters to this issue. Here, let me confine myself to a very brief commentary. Essentially, I avoid two positions which are the more common ones. On the one hand, there is the position shared by most of my fellows in the ayahuasca quest, be they Amerindian or Western - the paranormal one. By this position, what is seen in the visions is the reflection of other realities that do, in fact, exist. For instance, the seeing of scenes in ancient civilizations is conceived in terms of time travel or past lives. Perhaps for a fault of my being stubborn and scientific closed-minded, I do not subscribe to such views. On the other hand, there

is the psychological adherence to explanation by reference to the unconscious. In this case, what is seen in the visions will be regarded as the bringing to the fore (dis-covering) what is normally hidden in the depths of our psyche. For reasons independent of my research on ayahuasca, I do not endorse explanations in terms of underlying non-conscious mental representations. The reasons here are technical and I cannot go into them here; for a full exposition to my general (non-orthodox) view on cognition, which dispenses psychological explanations based on the postulation of underlying mental representations, readers are referred to Shanon (1993, 2002b). Further, the marked difference between visions and dreams (which are viewed as manifestation of the unconscious as well) also holds against this second position. The option I adopt is a creativist one: I propose that with ayahuasca the human mind is endowed with tremendous power of creativity (for similar, although significantly different, approach, see Merkur, 1998; see also the model of metaphor proposed in Shanon, 1992). Under the ayahuasca inebriation, the mind may create what in reality it has taken people generations and immense collaborative effort to create, namely, culture. The common elements are due to the fact that the creation of culture is intrinsic to being human. It is only that in real life only few of us reach the creative level necessary for the accomplishment. I would say that just as bees are designed to produce honey, members of *homo sapiens* are designed to create cities, palaces, and art. Admittedly, this account does not cover all there is to ayahuasca visions. In fact, as far as I am concerned, the mystery remains.

Closing, let me recount the occasion in which the creativist line of thinking first came to my mind. It was during a vision, which, incidentally, was not one of the strongest I have had with ayahuasca. I was presented with an exhibition presenting what appeared to be an entire, unknown culture. On display were the various creations of this culture - works of art, utensils, instruments. On the one hand, the items seen resembled nothing that I had ever seen in my life or in books; on the other hand, they all cohered into one unified style. I was thinking to myself: "If this is not real (as my friends in the session would say), if my mind is creating all this, then the human mind must be much more amazing, much more mysterious than standardly assumed by psychologists. Indeed, if my mind is creating all this," my thinking went on, "then cognitive psychologists just know nothing about the mind." This belief is still with me.

Human consciousness

The great intellectual import of the study of the ayahuasca experience, along with other non-ordinary states of mind, is that it offers the grounds for a broader and deeper comprehension of the phenomenon of consciousness. The non-ordinary states present hosts of observations and empirical data that could not have been obtained with only the ordinary state of mind. Consequently, the study of such states affords a better theoretical comprehension of human consciousness at large. The locus classicus for this insight are the following lines of William James (written following his personal experimentation with the psychoactive substance NO (the laughter gaz):

Our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus and at a touch they are there in all their completeness, definite types of mentality which

probably somewhere have their field of application and adaptation. No account of the universe in its totality can be final which leaves these other forms of consciousness quite disregarded. (1929: 378-379).

These lines are famous and they are quoted often, but not so often cited are the two sentences that introduce them:

Some years ago I myself made some observations on [the basis of a personal] nitrous oxide intoxication.... One conclusion was forced upon my mind at that time, and my impression of its truth has ever since remained unshaken. It is that ...

Half a century later Aldous Huxley (1956) with his non-academic study of mescaline wrote the following:

Like the earth of a hundred years ago, our mind still has its darkest Africas, its unmapped Borneos and Amazonian basins. In relation to the fauna of these regions we are not yet zoologists, we are mere naturalists and collectors of the specimen ... Like the giraffe and the duck-billed platypus, the creatures inhabiting these remoter regions of the mind are exceedingly improbable. Nevertheless they exist, they are facts of observation; and as such, they cannot be ignored by anyone who is honestly trying to understand the world in which we live. (p. 71)

A man consists of what I may call an Old World of personal consciousness and, beyond a dividing sea, a series of New Worlds - the not too distant Virginias and Carolinas of the personal subconscious and the vegetative soul; the Far West of the collective unconscious ... ; and, across another, vaster ocean, at the antipodes of everyday consciousness, the world of Visionary Experience. (p. 72)

My own work is guided by the preliminary observations of these two intellectual giants.

As argued in Shanon (2003c, 2008), on my view, consciousness is a system defining human subjective internal experiences, selfhood and personal identity, the rapport to the world, and the meaningfulness with which all these are invested. The system comprises of a series of parameters that may receive different values. In the ordinary state of consciousness, the parameters has a certain set of values, in other states of consciousness the values are different. Normally, we are not aware of the potential variation of the values in question. This is so because the system of consciousness is all the time with us (or rather, we are all the time within it). The situation is analogous to that encountered with eye glasses. A person (like myself) who carried glasses all during his/her waking hours and for many years becomes oblivious to the very existence of the glasses on his/her nose and is not cognizant of the parameters defining these glasses. However, were the lenses painted, were the focus and/or eccentricity of the lenses to be changed, then the fact that the glasses do, in fact, have certain colouring, diopter and eccentricity will become apparent. Similarly with consciousness, only that in this case the situation is more radical - glasses can be taken off, consciousness not. Here is the great theoretical import of non-ordinary states of consciousness: In them, the values of the parameters of the system consciousness are altered, and with this, the very definition of the parameters surfaces up.

The non-ordinary states of consciousness also enable us to discern as distinct variants that in the ordinary state of consciousness are not distinguished as such. A geometrical analogy will be useful here. Two tri-dimensional bodies may be illuminated in such a way that the shadows that

they project on the two-dimensional planes are identical. From the two-dimensional perspective it is not possible to appreciate that the two bodies are different; only the third-dimensional point of view allows for such discerning appreciation.

By way of example, let me consider the relationship between a person and the mental material that passes through his/her mind. Generally, it is taken for granted that the mental material passing through the mind of a person *P* is of that person. The relationship is two-fold. On the one hand, the mentations in question take place within *P*'s mind (as William James pointed on in Chapter IX of his *Principles* (James, 1890/1950), thoughts do not exist outside of the minds of individual human beings). On the other hand, *P* is the agent who generates these mentations. Thus, the mentations pertain to the subject in two senses: They are *subjective* and thus experienced and detected only by the person in whose mind they take place, and they are the objects of the mental activity of the human *subject* who is their agent. With ayahuasca, these two aspects may be separated, and with them the two senses of subjectivity. In particular, people may feel that mentations taking place in the subjective province of their own minds are not the products of their own generation; in other words, subjects do not experience themselves as the authors of the mentations at hand. The visions experienced with ayahuasca are precisely of this nature. Drinkers of the brew experience these visions individually but at the same time they feel that unlike thoughts or memories, these visions are not the products of their own mental activity. *Inter alia*, this peculiar feeling is due to the otherworldliness of what is seen in the visions and to their contents being so unrelated to anything that the individual in question could conceive on his/her own (see again the vision of the exhibition narrated above). For similar distinctions in the context of psychopathology, the reader is referred to Radden (1996, 1998) and Graham and Stephens (1994).

Another distinction revealed by the state of mind induced by ayahuasca pertains to time. Normally, the temporal loci of the perceiver and what he/she perceives are the same: If at 14:10 *P* is looking through the window gazing at a tree, the tree is there at 14:00 too. With ayahuasca this relationship, which appears to be tautological, need not necessarily hold. Drinkers report experiencing themselves being at the present and inspecting before them (as in a film) scenes that take place at other times, most often -in the past (e.g., in ancient Egypt)³.

Yet another distinction pertains to the status of the world one perceives and in which one acts. Normally, things we perceive are associated with a certain degree of reality. On occasion, a diminished degree of reality is experienced - dreams are the paradigmatic case of this. Likewise, regular perception is associated with a certain degree of acuity as well as with a certain level of meaningfulness. With ayahuasca, it is very common for people to experience the objects of their perception to appear more real, be sensed more acutely and/or be invested with more meaning than ordinarily they are. It is as if a valve has been turned and increased the values of the settings defining the parameters at hand.

But the contribution of the study of the ayahuasca experience and other non-ordinary states of mind transcends insights as those underlined with the foregoing observations. Taking a broader and a more general outlook, all the seemingly non-standard patterns encountered with such states attest basic, inherent structural features of the system of consciousness. I would declare the following. None of the seemingly peculiar patterns of the ayahuasca experience could come to be

³ What I am talking about are experiences; by no means am I alluding to any super natural time travel taking place.

without there being, on a more fundamental level, a property of mind to which it corresponds. In the course of our ordinary life the properties in question might fail to gain actual manifestation, but the manifestations revealed in non-ordinary states could not at all be had the underlying, more fundamental potentiality not been structurally ingrained in the build up of the psyche.

Guided by this basic assessment, I have checked all the patterns encountered in the phenomenological space associated with the experiences hundreds of persons have had with ayahuasca. Detailed inspection and further conceptualization of these have led me to be engaged in the development of a *general theory of human consciousness*, that is - a theory encompassing both the ordinary and the non-ordinary of consciousness. The theory sets itself to specify the parameters governing the system of consciousness, the values they may take, and the dynamics by which these may change in different contexts and in time. It turns out that once the multifaceted phenomenology of consciousness is inspected within an abstract, analytical framework various striking and totally unexpected patterns are manifest. Specifically, it appears that taken in unison, the various states of consciousness cohere into a system exhibiting internal logic and remarkable aesthetics. This indicates that the varieties of states are not merely a collection of phenomena that human beings may experience, but that in themselves, they reveal some inherent, fundamental principles of the psyche. For further exposition, the reader is referred to Shanon (2008); this is also the topic of a monograph on which is now in process of being written.

Extentions

My work is primarily psychological but as pointed out above, the study of ayahuasca also raises intriguing philosophical questions. These pertain to ontology and epistemology as well as aesthetics, ethics, theology and metaphysics. Such broader philosophical and intellectual issues are discussed towards the end of my *The Antipodes of the Mind* as well as in Shanon (2010).

While I myself have studied non-ordinary states of mind only in the context of ayahuasca, states induced by other psychotropic substances and in other contexts, with or without psychotropic substances, should also be subject to systematic cognitive psychological investigation. The conceptual distinctions and the methodological guidelines offered in my work on ayahuasca can be readily applied in such analogous studies.

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