

# Consumption of Ayahuasca by Children and Pregnant Women: Medical Controversies and Religious Perspectives†

Beatriz Caiuby Labate, Ph.D.\*

**Abstract**—In 2010, the Brazilian Government agency responsible for drug-related issues formulated official Resolutions that categorized the consumption of ayahuasca by pregnant women and children in the Santo Daime and União do Vegetal ayahuasca-based religions as an “exercise of parental rights.” Although ayahuasca groups do enjoy a relative degree of social legitimacy and formal legal recognition in Brazil, the participation of pregnant women and children nevertheless continues to provoke heated discussion. This article raises the main issues involved in the public debate over this subject. In the first part, a diverse group of biomedical and health specialists was consulted, and their opinions were briefly analyzed. In the second, a full interview with a follower of one branch of Santo Daime, mother of four children who took ayahuasca during all her pregnancies, and whose children all drink ayahuasca, is presented. Her interview reveals important cultural parameters of ayahuasca consumption. The article explores common themes and contradictions found between the biomedical, anthropological, and ayahuasca-users’ discourses. It raises central issues regarding the limits of freedom of religion and the state’s right to interfere in family matters. The following analysis also has implications regarding the role of science in influencing policy decisions on drug use.

**Keywords**—ayahuasca, pregnancy, risks, Santo Daime, teenagers, União do Vegetal

Ayahuasca, also known as daime, hoasca, or vegetal, is a psychoactive mixture made from the Amazonian plants *Banisteriopsis caapi* and *Psychotria viridis* and contains dimethyltryptamine (DMT), a controlled substance subject to international drug laws. The brew is used in religious and shamanic rituals by Amazonian indigenous groups as well as by urban religions based in Brazil, notably Santo Daime and União do Vegetal (UDV) (for a discussion of

the concept of ayahuasca religions, see Labate, MacRae & Goulart 2010; for a broader reference on this phenomenon see Labate, Rose & Santos 2009; Goulart 2004; Labate & Araújo 2004; MacRae 1992). A cover article from the Brazilian magazine *Isto É*, which is the third-highest selling weekly magazine in Brazil, recently reignited a heated discussion about the consumption of ayahuasca by pregnant women and children. The article, entitled “A Encruzilhada do Daime” (a play on words that means both “the Daime crossroads” and “the Daime deadlock”), claims that “the use of ayahuasca by pregnant women is dangerous . . . it is believed that it can provoke neurological alterations in the fetus . . . and for the same reason should not be consumed by children” (Gomes 2010: 73). The journalist credits these claims to two psychiatrists, Dartiu Xavier da Silveira and

†This article was translated from the Portuguese by Glenn H. Shepard Jr., and revised by Clancy Cavnar.

\*Anthropologist, Research Associate at the Institute of Medical Psychology at Heidelberg University, Member of the Collaborative Research Center (SFB 619) “Ritual Dynamics - Socio-Cultural Processes from a Historical and Culturally Comparative Perspective” and researcher at the Interdisciplinary Group for Psychoactive Studies (NEIP).

Please address correspondence and reprint requests to Beatriz Caiuby Labate; email: blabate@bialabate.net.

Jaime Hallak. At about the same time, National Geographic aired a series called *Taboo* of which one episode, entitled "Narcotics" (Valenti 2010), included a segment filmed at the Santo Daime religious community of Centro Eclético da Flor de Lótus Iluminado (CEFLI [The Eclectic Center of the Illuminated Lotus Flower]) in the Brazilian state of Acre. The fifteen-minute segment emphasized the consumption of ayahuasca by infants and children, repeatedly showing close-ups and scenes of this activity. It is apparent that even if the ayahuasca religions currently enjoy a relative degree of social legitimacy and actual formal legal recognition in Brazil, the participation of pregnant women, children and adolescents continues to dominate public debate and is frequently used to question the validity of the use of ayahuasca in general (Labate 2005).

Very little is known about this subject. From the human sciences literature, there are only a few mentions of ayahuasca use by pregnant women and children: one short personal anecdote about ayahuasca use during childbirth published in the appendix of Vera Fróes Fernandes's (1986) seminal book on Santo Daime; an interview with a professional midwife from the Céu do Mapiá community, the headquarters of one branch of Santo Daime religion in the Amazon interior (Monteiro 2004); and a brief reference to the frequency with which youths of different ages are permitted to consume ayahuasca in the União do Vegetal church. According to the latter source, children less than twelve may participate in no more than five rituals per year; from twelve to fourteen years of age, they are allowed to consume once a month; from fourteen to eighteen, twice a month; and over eighteen, they may become full members of the church. (Soares & Moura In press). From the biomedical point of view, only one study is known. This focused on 40 adolescents from UDV, and their results were published in a special edition of the *Journal of Psychoactive Drugs*, "Ayahuasca in Cross-Cultural Perspective," edited by Marlene Dobkin de Rios and Charles Grob in 2005. The editors' introduction mentions the use of ayahuasca by pregnant women (Dobkin de Rios & Grob 2005a: 119) but no further information was given.

The current article raises the main issues involved in the public debate over ayahuasca use by pregnant women and minors in Brazil. The controversies surrounding this aspect of ayahuasca use highlight the conflicting discourses between anthropologists, the biomedical field, media, ayahuasca users and leaders of other religious denominations. This article presents a history of the regulation of the use of ayahuasca for pregnant woman and children in Brazil, and references relevant biomedical and social science research, as well as native religious perspectives. It serves as an anthropological comment on the topic, pointing out the contradictions and continuities between the different perspectives, and the difficulty in establishing a dialogue between them. First, a diverse group of biomedical and health specialists was consulted, and their opinions are presented.

Note that only specialists directly involved in research on ayahuasca and its uses and effects were interviewed, which resulted in a very select group. The field of debate on psychoactive substances is broad and very polarized, so more diverse and more extreme opinions certainly exist. However, it was possible to identify a variety of perspectives inside this field. Following this is an attempt to briefly analyze these discourses and predict possible outcomes for policy making which result from these approaches.

In the second part, given the paucity of published ethnographic information on this aspect of ayahuasca use, the full text of an interview with a follower of one branch of Santo Daime is provided. I have chosen to interview one person at length, rather than provide several briefer interviews of less depth. This person is of particular interest because she is both a professional involved in perinatal activities and also has had profound personal experiences with ayahuasca herself. In this interview some of the cultural parameters of the use of ayahuasca by pregnant woman and children in the context of Santo Daime are revealed.

Those interviewed for this study were informed of the purpose of this anthropological study and consented to be interviewed and quoted by name. One subject asked to be quoted anonymously.

### REGULATION OF THE USE OF AYAHUASCA BY PREGNANT WOMAN AND CHILDREN

During the mid-1980s, the ritual and religious use of ayahuasca was regulated in Brazil through a process of negotiations between the government, scientists and representatives of ayahuasca-using groups. This process has gone through various stages since then and continues to develop (MacRae 2010, 2008, 1992; Labate 2005). At the broadest level, what was at stake here was a dispute between laws concerning the use of controlled substances, such as the DMT found in ayahuasca, and the right to religious freedom. In contemporary Brazil, the latter has trumped the former. Until 2004, the legal right of children and pregnant women to use ayahuasca was nevertheless uncertain.

In 2004, Resolution No. 5 of *Conselho Nacional de Políticas sobre Drogas* (CONAD, [National Council on Policies about Drugs]), the government agency responsible for drug-related issues, drawing on the article 1.634 of the Brazilian Civil Code, interpreted the right of pregnant women and children to consume ayahuasca as falling under the domain of the "exercise of parental rights." Parental rights are, "a parent's rights to make all decisions concerning his or her child, including the right to determine the child's care and custody, the right to educate and discipline the child, and the right to control the child's earnings and property" (Garner 2004: 1146). However, it is important to remember the state's right to interfere in cases of abuse or noncompliance with legal responsibilities, which balances parental authority.

The CONAD 2004 Resolution also cites article 14 of the *Convenção Sobre os Direitos da Criança* (Convention on the Rights of Children), ratified by Brazil and promulgated by Decree No. 99.710 on November 21, 1990. Resolution 5 was supported by the *Parecer da Câmara de Assessoramento Técnico-Científico Sobre o Uso Religioso da Ayahuasca* (Report of the Technical and Scientific Advisory Board about the Religious Use of Ayahuasca), a report produced about three months before by experts to provide CONAD with scientific, scholarly, and technical advice for the elaboration of its future ayahuasca policies (Câmara de Assessoramento Técnico-Científico 2004). This text further cites the *Estatuto da Criança e do Adolescente* [Statute of Children and Adolescents], Law No. 8.069, 13 July, 1990, which includes freedom of religious belief and practice in its interpretation of the rights of children and adolescents (Article 16, III; also Article 58).

In 2010, CONAD Resolution No. 1 reaffirmed and strongly consolidated this decision as follows (CONAD 2010):

#### IV.VIII – USE OF AYAHUASCA BY MINORS AND PREGNANT WOMEN

46. Keeping in mind the lack of sufficient scientific evidence and that Ayahuasca has been used for centuries and has not shown damaging health effects, and considering the terms of CONAD Resolution 05/04, the use of Ayahuasca by minors under 18 (eighteen) years old is left up to the deliberation of the parents or legal guardians, within the domain of adequate exercise of parental rights (article 1634 of the Civil Code); and with reference to pregnant women, they themselves assume the responsibility for deciding the degree of their participation, always attentive to protecting the development and personality structure of their underage and unborn children.

### BIOMEDICAL STUDIES

I have found no mention of biomedical research on the effects of ayahuasca use on pregnant women or unborn fetuses. On a prior version of the official website of the União do Vegetal (2007), the following information was provided concerning a research project underway called *Efeitos da Hoasca na Gestação* (Effects of Ayahuasca during Pregnancy):

With the goal of studying the effects of ayahuasca tea on pregnancy and the development of children born to mothers who used ayahuasca during pregnancy, a group of health professionals from UDV's Medical-Scientific Department (DEMEC) carried out a retrospective pilot study in the city of Fortaleza, Ceará. Using interviews, questionnaires and tests, they attempted to identify the occurrence of obstetric pathologies in such pregnancies, and evaluate the neuropsychological development of children born to such pregnancies. The results require critical methodological evaluation and statistical study sufficient for publication. [author's translation from Portuguese]

It was not possible to obtain further information about the progress of this research, however, and the notice has since been removed from the UDV website.

Only one published study on young consumers of ayahuasca is known. It was carried out by an international consortium of researchers who evaluated 40 adolescents from UDV in three different cities in Brazil, and compared them with a matched control group of 40 non-ayahuasca using adolescents (da Silveira et al. 2005; Dobkin de Rios & Grob 2005a, 2005b; Dobkin de Rios et al. 2005; Doering-Silveira et al. 2005a, 2005b). Overall, the UDV adolescents showed similar results to the control group on most neuropsychological and psychiatric tests applied. One of the researchers, Dartiu Xavier da Silveira, a psychiatrist at the Programa de Atendimento e Orientação a Dependentes (PROAD [Program for Orientation and Assistance to Dependents]) of the Universidade Federal de São Paulo (UNIFESP [Federal University of São Paulo]), was quoted in the polemical Brazilian magazine piece mentioned in the introduction. In an email sent to the author on February 21, 2010, when asked about his thoughts concerning the consumption of ayahuasca by children and pregnant women, he responded,

No scientific studies have proven that ayahuasca is harmful during pregnancy. We can take other psychoactive substances as counter-examples. Alcohol, for example, we now know, is absolutely contraindicated during pregnancy, even in small quantities, for the risk of fetal alcohol syndrome. Despite this, we have reports of many people who drank alcohol during pregnancy and nothing happened to their children—which doesn't change our knowledge that something could have happened due to alcohol consumption. In the case of ayahuasca, we carried out research with adolescents in UDV and found no significant differences between them and a control group of nonconsumers of ayahuasca. However, more research is needed. Scientific rationality is very different from common sense. [author's translation from Portuguese]

Charles Grob, coauthor of this and other important studies on ayahuasca (Callaway & Grob 1998; Callaway et al. 2006, 1999, 1996, 1994; Grob et al. 1996; McKenna, Callaway & Grob 1998) was also consulted. Grob is professor of psychiatry and pediatrics at the medical school of the University of California, Los Angeles and director of the Division of Child and Adolescent Psychiatry at the Harbor UCLA-Medical Center. In an email sent to the author on February 19, 2010, he stated that,

Along with colleagues from the United States, Finland, and Brazil I conducted a series of biomedical-psychiatric research studies on the effects of hoasca in subjects who were members of the syncretic religion União do Vegetal. In 1993 we studied long-term adult members of the UDV and in 2001 we studied adolescents who came from families who were affiliated with the UDV. Our findings have been published in the mainstream psychiatric and neuroscience literatures. Our research investigation of the effects of hoasca on adolescents contrasted their psychological function with a matched non-hoasca using adolescent control population. In our study we found that these young people from UDV families, many of whom had been exposed in-utero to hoasca and who had been baptized as infants with a very small quantity of hoasca, were allowed to

participate in UDV religious ceremonies where hoasca is used as a psychoactive sacrament after reaching puberty. Participation in ceremonies and ingestion of hoasca by adolescents was entirely optional and left to the adolescent to decide. The results of our investigation revealed that the adolescents from UDV families who participated in hoasca ceremonies were in very good psychological health. In fact, the hoasca-exposed adolescents reported lower rates of alcohol and substance use than the non-hoasca exposed control adolescents as well as overall lower levels of anxiety. Their neuropsychological function was evaluated as normal. In conclusion, we detected no evidence that hoasca use had caused any injurious effects in adolescents from the UDV who had been exposed to hoasca.

Another researcher cited in the *Isto É* piece is Jaime Halak, a psychiatrist at the Departamento de Neurociências e Ciências do Comportamento (Department of Neurosciences and Behavioral Sciences) at the Faculdade de Medicina de Ribeirão Preto (Ribeirão Preto Medical Faculty in São Paulo state). His research team has studied the potential antidepressant effects of harmine, a beta-carboline alkaloid found in the ayahuasca brew, by injecting the substance into laboratory animals (Fortunato et al. 2009, 2010). In an email sent to the author on February 23, 2010, he expressed his view that:

... lacking any evidence about safety and/or risk, the consumption of ayahuasca should be avoided by pregnant women until safety evidence exists. I know of several groups who are carrying out studies of safety and toxicity to evaluate such aspects, but their evaluations are not yet complete, including those of our own group.

In an email sent to the author on February 26, 2010 biologist Rafael Guimarães dos Santos, who is carrying out doctoral research on the human pharmacology of ayahuasca at Hospital de la Santa Creu i Sant Pau (Hospital of the Holy Cross and Saint Paul) in Barcelona (Santos 2007; Santos & Strassman 2008; Santos et al. 2007; Santos, Moraes & Holanda 2006), stated his opinion:

I know of only one study carried out with adolescents of União do Vegetal. It demonstrates that there is no scientific evidence that ayahuasca use in this context by this religious group produces psychiatric, neuropsychological or substance abuse problems. Most of the adolescents in the study have been exposed to ayahuasca since the prenatal period and throughout childhood. In the case of Santo Daime and Barquinha (another Brazilian ayahuasca religion), there are no published studies. Thus, from a scientific perspective, the available information is limited. On the other hand, there is evidence that some of the beta-carbolines present in ayahuasca, for example harmine, show toxic effects in some preclinical studies. But we do not yet understand the implications of this for human consumption of ayahuasca. Personally, I believe that ayahuasca use by pregnant women and children should be extremely limited to small and infrequent doses. [author's translation from Portuguese]

In an email sent to the author on February 26, 2010, a German specialist in the pharmacology of psychoactive

substances who chose not to be identified by name in this article said:

After reviewing all of the pharmacological and clinical studies—more than 500 scientific publications over the past ten years—on DMT and 5-methoxy-DMT (a substance similar to DMT that is sometimes found in the ayahuasca mixture), it can be asserted that not a single study exists, either in animals or humans, that examines the teratogenic, embryotoxic or uterotonic effects of DMT or 5-MeO-DMT. So we know nothing about (potential) risks. However, we must realize that DMT is naturally present in the body, so it is very unlikely that it destroys parts of an organism, unless used in overdose. There is also no evidence of children with mutations or disabilities as a result of the mother's consumption of ayahuasca during pregnancy. What we do know is that psilocybin, a derivative of DMT, produces some minor chromosome aberrations (cf. Eberle & Leuner 1970), even when used in small doses (see also Pahnke et al. 1970; Grof 1980; Passie et al. 2008). But these mutations occur in doses equivalent to those which can be caused by aspirin or coffee, which are normally considered harmless even for pregnant women. However it is possible to imagine that this would present a risk to the baby only during labor and birthing, and not the pregnancy per se.

In sum, we do not know much, but there is no documented evidence of a pregnant woman or child who has suffered any harm due to DMT/5-MeO-DMT. But we have to mention other aspects. There are many other substances present in ayahuasca preparations. These other substances, especially harmala alkaloids, have not been well studied to date. In reality, we don't know anything about all the substances present in these beverages. It could also be dangerous to a fetus if a pregnant woman consuming ayahuasca vomited or became extremely frightened. But again, it could also be true that the woman has very positive experiences. I would conclude by saying that it is not possible to assert that taking ayahuasca causes harm to children or pregnant women, because there is no evidence (either experimental or among actual mothers and children) on the matter. However we should be cautious. We need to have more research to provide definitive evidence.

A central theme in all of these commentaries is an oscillation between what might be called in common parlance viewing the glass as half empty or as half full, which is to say, the various researchers interpret the same fact in different ways. The two lines of reasoning might be summed up as follows: (1) There are no studies showing that ayahuasca use by pregnant women and children is innocuous, and (2) There are no studies proving it is harmful. Proponents of the former appear to assume that psychoactive substances are “guilty until proven innocent,” as it were, while the latter takes a more agnostic stance, suggesting it is up to scientists to do more research to determine these results.

The problem here involves linking scientific knowledge and practical action. Although most of those interviewed appear to assume that their research should provide a scientific basis for public policies, they stop short of expressing explicit political views. However, the news media, activists, judges, and politicians exploit both the “half empty” and “half full” opinions for a variety of purposes. The former ultimately lends ammunition, directly or indirectly, to those

who would like to see ayahuasca use, at least in certain circumstances, either prohibited, suspended or, at the very least, treated with extreme caution until more research can be done. The onus would appear to fall on the users themselves to prove that ayahuasca is not harmful. The more or less explicit implications of the other branch, the "half full" attitude, are that, in the absence of contrary evidence, use should continue to be permitted, albeit with caution, while more studies are carried out. Here, the onus would appear to fall on the state to provide solid evidence, whether from scientific studies or reports concerning problems among users, that use is harmful before any modification to the current, permissive regulation should be made. Despite the differences, both perspectives agree on the need for precaution and further study.

### RELIGIOUS PERSPECTIVES

Legal decisions regarding the use of ayahuasca are not only subject to the outcomes of biomedical discussions, they require an interdisciplinary approach which includes anthropological discussion and the perspectives of users themselves, among other possible points of view. Seeking to understand the context of ayahuasca use by pregnant mothers and children in Santo Daime, a series of interviews were conducted with Clarice Andreozzi through emails to the author between February 17 and March 4, 2010. Andreozzi is a 34-year-old biologist born in Brasília who is a practicing *doula*, a profession akin to midwifery dedicated to the emotional and physical management of pregnancy and childbirth. She belongs to the Céu do Planalto church in Brasília, part of the Igreja do Culto Eclético da Fluente Luz Universal Patrono Sebastião Mota de Melo (ICEFLU [Eclectic Church of Universal Flowing Light of Patron Sebastião Mota de Melo]), formerly the *Centro Eclético da Fluente Luz Universal Raimundo Irineu Serra* (CEFLURIS [Eclectic Center of Universal Flowing Light of Raimundo Irineu Serra]) tradition within Santo Daime. For her, ayahuasca consumption takes place within a profoundly meaningful network of belief and practice.

BCL: Could you tell me about your professional background?

CA: I graduated in biological sciences from the Universidade Católica de Brasília (Catholic University of Brasília). For my bachelor's thesis I analyzed the physiology of childbirth, a relatively new and little-explored field. I studied the hormones involved in labor, childbirth and the immediate post-partum phase, and the conditions necessary for childbirth to proceed normally. I practice as a doula and peri-natal educator. I did professional training in São Paulo with the 'Support Group for Active Maternity' (Grupo de Apoio à Maternidade Ativa [GAMA]). I work with pregnant women, give courses to prepare them for birthing, and accompany women during labor and childbirth.

BCL: And could you now tell me about your involvement with Santo Daime.

CA: I came to Santo Daime at thirteen years old; actually, it was just before my fourteenth birthday, which I celebrated at

the church during their commemoration of Saint Peter's day (June 28, 1989). My mother had been in the church about a year and so she took us; me and my sisters. For me, my identification with this church was totally innocent; it was all new to me. I went through lots of powerful, difficult moments ("passagens"), because, of course, I had no experience with psychoactives. But I never again left it. Santo Daime fascinated me, and continues to fascinate me.

BCL: In the context of Santo Daime, do pregnant women take Daime? What dose, and with what frequency? Is it customary to take Daime during labor and childbirth?

CA: Yes, women can take Daime during the whole period of pregnancy and also during labor. It is the woman's own choice, no one forces it on her. As is the case with children, pregnant women take a smaller dose than the adults. We usually give half the usual dose, but if they want less than that, they can drink less. They can participate in all the rituals as they wish, there is no restriction but also no obligation to participate, it is a personal decision. It is common for women members of the church to take Daime during labor. The beverage itself as well as the prayers are good for childbirth, they help the woman relax and maintain contractions. In some cases it can even increase the contractions, which is good, because they are natural and healthy contractions which allow her to experience the pregnancy and contact with the baby, to interiorize the experience more profoundly. The dose of Daime during childbirth is also small, and varies according to the duration and intensity of labor. We should remember that Mapiá, in Pauini, Amazonas, has a very strong tradition of childbirth with Daime, more so than in the cities. In the big cities, Daime is used less during childbirth and less for medicinal purposes more generally, because here we have access to public health services and pharmacies. But out in the forest people turn to Daime, for example when babies have colic or constipation; or when babies get colds they give them home-made syrup with a little Daime to clear the mucus.

BCL: Do children take Daime? From what age?

CA: Children do take Daime, but there is not a specific age to begin drinking the beverage, nor is it obligatory. It is a decision left entirely up to the parents. We have a doctrine, and for us, Daime has a whole lot of meaning, as you know. But every family has its own way of approaching this question. Some parents give Daime to their children, and others prefer not to. We respect the family life of everyone, and there is no requirement that parents give Daime to their children. Some parents give Daime to their newborn children right after birth, as a kind of baptism. In addition, we have a formal baptism ritual, which happens during the "hymnal" days (ritual sessions during which people wear white uniforms and sing and dance for many hours). There is a specific moment for baptism, when those responsible for the household or someone they delegate carries out the ceremony. It is a simple and quick ritual, in which the child is baptized with water, salt and Daime. During the baptism, everyone present utters the Lord's Prayer, "Hail Mary" and "Hail holy Queen." I think most Santo Daime followers baptize their children in this way, and some baptize them in the Catholic Church as well. During infancy and childhood, the parents give Daime to children only if they seem interested or ask to take it. Children generally take Daime during hymnal days or when there are specific sessions for children.

BCL: What are the children's sessions like? What is the dosage?

CA: The children's session is very brief, about an hour; we sing children's hymns, hymns about children. These are

easier to sing. For example, we have one called "Little Yellow Bird" :

Little yellow bird flying alone  
I have company night and day  
I have the sun and the stars and baby Jesus  
Baby Jesus lives in my heart  
He shines in the air I breathe  
Glitters in this vastness

Another children's hymn we sing a lot in Brasília is "One, Two, Three":

One, two, three  
Four, five, six  
Seven, eight, nine  
God is here  
He is peace, He is harmony  
He is the Lord  
Of sovereignty  
Now I ask for peace  
From my Lord Saint John  
Now I ask for a blessing  
From Father Sebastian

During these sessions we also tell Biblical stories. We teach the children to sing and play the rattle, and those who show talent are taught other instruments as well. We see this like a spiritual school, a catechism, where we teach our children the values of fraternity, justice, love and peace. The dose for children is small but increases as they grow. Babies take Daime by the drop, which we squeeze into their mouths with cotton balls. Infants of one to three years old drink just the dregs from the bottom of the glass, I doubt it's even one milliliter. The dose is increased as the child grows older. By thirteen or fourteen, youths can take as much as one-third the adult dose, if they want. If not, they can take less. In fact it's up to the children to indicate their interest in participating in the spiritual sessions.

BCL: Do you have children?

CA : Yes, I have four children, three sons and a daughter, ages five, thirteen, fourteen and sixteen. They were all raised within the Santo Daime doctrine. They all had the freedom to choose. They only go to the sessions and commune with Daime if they want. My children are excellent students, they get good grades and I've had no complaints from teachers about discipline, participation or any other problems. They are well behaved and sociable children. Of course they all have the usual problems that come with each different age, but that's normal.

BCL: Did you take Daime during childbirth? How was it?

CA: I took Daime during all my pregnancies and during childbirth. All of the births were normal, without complications. Daime gave me a full consciousness about my body and what was happening during such a special moment as childbirth. I was able to relax and experience the births in a very beautiful and positive manner. Despite the normal birthing pains, I felt comfortable and completely certain about what was happening, and felt a deep understanding about the meaning of birth and motherhood. All of the births went really well, but I'd like to tell you about the second one, since for almost the whole time I was in a Santo Daime session. It was on Saint Anthony's Day, we always celebrate the night before (12-13 June). I spent the night in a hymnal session, singing and dancing with everyone else. After the ritual was over, I

went into labor. It was a very fast and peaceful process, there was just barely enough time to get to the hospital.

BCL: Do you give Daime to your children?

CA : Yes, they all take it if they want. My daughter, the oldest, loves to take Daime, she almost takes it more than I do! She took it for the first time just five hours after being born, just a drop. Like I said before, because we believe that this protects the child. Sometimes, when we have a spiritual session on a weekday, I insist that she not participate, since the next day she has school, and I don't want her to be tired at school (sometimes the sessions go on until late). My eldest son also likes to go to the sessions, but he is very sensitive to the effects, so he takes very little Daime, less than 3 ml. He also took a few drops of Daime soon after being born. Because he is more sensitive, both I and he himself are especially careful that he not take too much. My thirteen-year old son doesn't like it and doesn't go often to the sessions, so I don't insist, and he only goes when he wants to. The five-year old, however, really likes to go. If I let him he would go all the time, but he's still too young, he only goes to hymnal sessions that take place during the day, and to the children's sessions. He also takes a very small dose, 2.5 ml at most. I've given it to him a few times when he had bad constipation, it cured the problem. Another time he was really agitated and couldn't sleep, so I gave him a little Daime and soon he calmed down and went to sleep.

BCL: How would you react to the following statement, "The use of ayahuasca by pregnant women is dangerous. It is thought that it can provoke neurological changes in the fetus. For the same reason it should not be taken by children"?

CA: I would ignore these assertions. It is a frivolous claim at the very least, with no scientific support or evidence. Daime gives women a profound experience of pregnancy and a strong contact with the baby in her womb [cf. Schaefer In press for a similar description by Huichol women about peyote use during pregnancy]. And children who take Daime are normal, healthy and intelligent. At this point there are many families who have used Daime in the church for several generations, and in general they are healthy, happy, prosperous and well-balanced. Daime is part of our religion, and people outside find it difficult to understand. Unfortunately, there is still a great deal of prejudice about our doctrine.

BCL: What do you think about the Brazilian government's legalization of ayahuasca use by children and pregnant women?

CA: It is fundamental. A hard fought and justly earned right, the right to religious freedom. Daime isn't just some hallucinogen. It is a profound part of our beliefs, our doctrine. It is only taken during our spiritual sessions. The person who takes Daime believes in its spiritual power, believes in the benefits it brings. For Santo Daime practitioners, it is a sacrament, that's why we say "commune with Daime" (*comungar Daime*). To deny or prohibit its use would be arbitrary at the very least.

## CONCLUDING REMARKS

This article has explored some of the common themes and contradictions found between various discourses, including those of scientists and ayahuasca users, surrounding consumption of ayahuasca by children and pregnant women. The anthropological literature has described the ritual and religious contexts and detailed the behavioral, dietary and

ethical prescriptions expected of practitioners of religious groups such as Santo Daime and União do Vegetal (Goulart 2004; Labate 2004; MacRae 1992). The existing literature has also pointed to the strict controls surrounding access to the beverage, particularly in terms of dosage and frequency. In the context of these religions, dosage is generally determined by age, weight, gender and experience within the group, as well as according to specific health and psychological conditions gleaned through ongoing evaluation and observation of participants within and outside the ritual setting (Labate 2009; MacRae 1992). The interview with Clarice Andreozzi highlights how the same factors come to play in the use of ayahuasca by children and pregnant women in the Santo Daime tradition. Ayahuasca use is not free or loose; rather, it takes place within specified ritual, cultural and religious parameters that provide strong control mechanisms.

The CONAD resolutions that govern the use of ayahuasca in Brazil for both adults and children resulted from a dialog between biomedical, social science and native perspectives. It recognizes, among other things, that users have important and valuable empirical knowledge about ayahuasca through accumulated use and experience. The most recent CONAD resolution, while respecting the practices and knowledge of ayahuasca religions, also calls for further research on these and other aspects of ayahuasca use (CONAD 2010). Building on the preliminary studies mentioned here (da Silveira et al. 2005; Dobkin de Rios & Grob 2005a, b; Dobkin de Rios et al. 2005; Doering-Silveira et al. 2005a, b), more research of an interdisciplinary nature is required to evaluate short-term and long-term cognitive effects of ayahuasca use in children. Studies of pregnant women and children could be done using research designs similar to that which were used to study teenagers in the UDV. Controlled-matched cohort studies of UDV or Santo Daime children could be done as they grow up within the religions. These studies would ideally have a developmental focus, taking into account the duration and frequency with which the children and their pregnant mothers participated in the rituals. It would also be helpful to distinguish between the findings seen in adult members of UDV and Santo Daime and those in other ayahuasca-using contexts who started consuming ayahuasca and attending rituals at different periods (i.e. *in utero*, infancy, childhood, adolescence, adulthood), focusing on central stages of neurodevelopment. Finally, experimental research could be done in which ayahuasca is administered in shamanic, religious or therapeutic contexts or to other populations without previous experience with ayahuasca and the harms and benefits could be evaluated. These studies on children and pregnant woman would have to be approved by university ethical review committees; in

any case, this research would involve great ethical, legal, methodological and funding challenges.

Important avenues for more social science research include studying how the consumption of ayahuasca by pregnant woman and children is important for building religious and cultural identity within these groups, and also how the religious minority status of ayahuasca users comes to play out in the definition and expression this identity. Researchers in the field of anthropology of science should examine how biomedical research is constructed, and look at how doctors, judges, journalists and religious leaders translate the rodent physiology to human physiology and use rodent data to estimate human health risks. It is also important to do an "ethnography of power" to understand how different social agents mediate access to and influence the formulation of public policies on the use of ayahuasca. It is of special relevance to study how biomedical discourses tend to receive greater weight in public debates than other discourses, such as those in the social sciences and religion, and also to analyze biomedical science's role in the context of legal cases involving the use this substance.

Furthermore, social science research should compare the use of ayahuasca by children and pregnant woman with the use of other substances such as alcohol and tobacco, where the ill effects for pregnant women, fetuses and children have been clearly documented, and where laws and public health campaigns have been designed to limit, if not prohibit outright, their consumption among certain categories of people. This, in turn, raises the broader issue of the legal, historical and moral roots of the prohibitionist laws and educational campaigns that hope to "save our children from drugs." This article has been limited to a few cases related to several of these discourses. Future research should extend the range of social agents and those with differing perspectives seen as stakeholders in the current debate.

The case of ayahuasca, as we have seen, raises important questions about the rights of religious minorities, and how these rights fit within the questions concerning controlled substances more generally. On one side, there are the parental rights to determine what constitutes appropriate upbringing of children, which would include religion, education, and the consumption of foods, medicines and psychoactive drugs. On the other side are those that claim children have the right not to receive religious indoctrination or certain psychoactive drugs. These decisions should be based on extending both our empirical, social and biomedical knowledge on the subject, as well as broader philosophical and ethical reflections on human rights. I hope to have called attention to the richness of this field of inquiry that remains so unexplored.

## REFERENCES

- Callaway, J.C. & Grob, C.S. 1998. Ayahuasca preparations and serotonin reuptake inhibitors: A potential combination for severe adverse interactions. *Journal of Psychoactive Drugs* 30 (4): 367-69.
- Callaway, J.C.; Grob, C.S.; McKenna, D.J.; Nichols, D.E.; Shulgin, A. & Tupper, K.W. 2006. A demand for clarity regarding a case report on the ingestion of 5-methoxy-N,N-dimethyltryptamine (5-MeO-DMT) in an ayahuasca preparation. *Journal of Analytical Toxicology* 30 (6): 406-07.
- Callaway, J.C.; McKenna, D.J.; Grob, C.S.; Brito, G.S.; Raymond, L.P.; Poland, R.E.; Andrade, E.N.; Andrade, E.O. & Mash, D.C. 1999. Pharmacokinetics of Hoasca alkaloids in healthy humans. *Journal of Ethnopharmacology* 65 (3): 243-56.
- Callaway, J.C.; Raymond, L.P.; Hearn, W.L.; McKenna, D.J.; Grob, C.S.; Brito, G.S. & Mash, D.C. 1996. Quantification of N,N-dimethyltryptamine and harmala alkaloids in human plasma after oral dosing with Ayahuasca. *Journal of Analytical Toxicology* 20 (6): 492-97.
- Callaway, J.C.; Airaksinen, M.M.; McKenna, D.J.; Brito, G. & Grob, C.S. 1994. Platelet serotonin uptake sites increased in drinkers of ayahuasca. *Psychopharmacology* 116 (3): 385-87.
- Câmara de Assessoramento Técnico-Científico sobre o Uso Religioso da Ayahuasca. 2004. *Parecer da Câmara de Assessoramento Técnico-Científico sobre o Uso Religioso da Ayahuasca* [Report of the Technical and Scientific Advisory Board about the Religious Use of Ayahuasca]. Brasília. Available at [http://www.bialabate.net/pdf/texts/parecer\\_catc.pdf](http://www.bialabate.net/pdf/texts/parecer_catc.pdf)
- Conselho Nacional de Políticas sobre Drogas (CONAD). 2010. *Resolução n. 01* [Resolution no. 01]. Available at [http://www.bialabate.net/wp-content/uploads/2008/08/Resolucao-Conad\\_1\\_25\\_01\\_2010.pdf](http://www.bialabate.net/wp-content/uploads/2008/08/Resolucao-Conad_1_25_01_2010.pdf); In English: [http://www.bialabate.net/wp-content/uploads/2008/08/Resolution\\_1\\_CONAD\\_25\\_Jan\\_2010.pdf](http://www.bialabate.net/wp-content/uploads/2008/08/Resolution_1_CONAD_25_Jan_2010.pdf)
- CONAD. 2004. *Resolução n. 05* [Resolution no. 05]. Available at [http://www.bialabate.net/pdf/texts/resolucao\\_05.pdf](http://www.bialabate.net/pdf/texts/resolucao_05.pdf); In English: [http://www.bialabate.net/wp-content/uploads/2008/08/Resolution\\_5\\_Conad\\_November\\_2004.pdf](http://www.bialabate.net/wp-content/uploads/2008/08/Resolution_5_Conad_November_2004.pdf)
- Da Silva, D.X.; Grob, C.S.; Dobkin de Rios, M.; Lopez E.; Alonso, L.K.; Tacla, C. & Doering-Silveira, E. 2005. Ayahuasca in adolescence: A preliminary psychiatric assessment. *Journal of Psychoactive Drugs* 37 (2): 129-33.
- Dobkin de Rios, M. & Grob, C.S. (Eds.) 2005a. Ayahuasca: Cross-cultural perspectives. *Journal of Psychoactive Drugs* 37 (2).
- Dobkin de Rios, M. & Grob, C.S. 2005b. Interview with Jeffrey Bronfman, Representative Mestre for the União do Vegetal Church in the United States. *Journal of Psychoactive Drugs* 37 (2): 189-91.
- Dobkin de Rios, M.; Grob, C.S.; Lopez, E.; Da Silva, D.X.; Alonso, L.K. & Doering-Silveira, E. 2005. Ayahuasca in adolescence: Qualitative results. *Journal of Psychoactive Drugs* 37 (2): 135-39.
- Doering-Silveira, E.; Lopez, E.; Grob, C.S.; Dobkin de Rios, M.; Alonso, L.K.; Tacla, C.; Shirakawa, I.; Bertolucci, P.H. & Da Silva, D.X. 2005a. Ayahuasca in adolescence: A neuropsychological assessment. *Journal of Psychoactive Drugs* 37 (2): 123-28.
- Doering-Silveira, E.; Grob, C.S.; Dobkin de Rios, M.; Lopez, E.; Alonso, L.K.; Tacla, C. & Da Silva, D.X. 2005b. Report on psychoactive drug use among adolescents using ayahuasca within a religious context. *Journal of Psychoactive Drugs* 37 (2): 141-44.
- Eberle, P. & Leuner, H. 1970. Chromosome defects in patients treated with Psilocybine. *Humangenetik* 9 (4): 281-85.
- Fortunato, J.J.; Réus, G.Z.; Kirsch, T.R.; Stringari, R.B.; Fries, G.R.; Kapczinski, F.; Hallak, J.E.; Zuardi, A.W.; Crippa, J.A. & Quevedo, J. 2010. Effects of  $\beta$ -carboline harmine on behavioral and physiological parameters observed in the chronic mild stress model: Further evidence of antidepressant properties. *Brain Research Bulletin* 81 (4-5): 491-96.
- Fortunato, J.J.; Réus, G.Z.; Kirsch, T.R.; Stringari, R.B.; Stertz, L.K.F.; Pinto, J.P.; Hallak, J.E.; Zuardi, A.W.; Crippa, J.A. & Quevedo, J. 2009. Acute harmine administration induces antidepressant-like effects and increases BDNF levels in the rat hippocampus. *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 33 (8): 1425-30.
- Froes V.F. 1986. *História do Povo Jurdamidam: Introdução à Cultura do Santo Daime* [History of the People of Juramidam: Introduction to the culture of Santo Daime]. Manaus: Suframa.
- Garner, B.A. (Ed.) 2004. *Black's Law Dictionary: Eighth Ed.* Eagan, MN: Thomson West.
- Gomes, H. 2010. A encruzilhada do Daime. [The crossroads of Daime] *Revista Isto É* Feb. 5. Available at [http://www.istoe.com.br/reportagens/48304\\_A+ENCRUZILHADA+DO+DAIME+PARTE+1?pathImagens=&path=&actualArea=internalPage](http://www.istoe.com.br/reportagens/48304_A+ENCRUZILHADA+DO+DAIME+PARTE+1?pathImagens=&path=&actualArea=internalPage)
- Goulart, S.L. 2004. Contrastes e continuidades em uma tradição Amazônica: As religiões da ayahuasca [Contrasts and continuities in an Amazonian tradition: The ayahuasca religions]. PhD diss., Universidade Estadual de Campinas. Campinas, Brazil.
- Grob, C.S.; McKenna, D.J.; Callaway, J.C.; Brito, G.S.; Neves, E.S.; Oberlander, G.; Saide, O.L.; Labigalini, E.; Tacla, C.; Miranda, C.T.; Strassman, R.J. & Boone, K.B. 1996. Human psychopharmacology of hoasca, a plant hallucinogen used in ritual context in Brazil. *Journal of Nervous and Mental Disease* (2): 86-94.
- Grof, S. 1980. The effects of LSD on chromosomes, genetic mutation, fetal development and malignancy. In: S. Grof (Ed.) *LSD Psychotherapy*. Pomona, CA: Hunter House.
- Labate, B.C. 2009. As Encruzilhadas da imprensa: Uma análise da reportagem de capa da Isto É sobre a ayahuasca [The crossroads of the press: Analysis of the cover story of Isto É magazine about ayahuasca]. *R@U - Revista de Antropologia Social dos Alunos do PPGAS-USFCar* 1 (2): 105-15.
- Labate, B.C. 2005. Dimensões legais, éticas e políticas da expansão do consumo da ayahuasca [Legal, ethical, and political dimensions of the expansion of the consumption of ayahuasca]. In: B.C. Labate & S.L. Goulart (Eds.) *O Uso Ritual das Plantas de Poder*. Campinas, Brazil: Mercado de Letras.
- Labate, B.C. 2004. A Reinvenção do uso da ayahuasca nos centros urbanos. Campinas, Brazil: Mercado de Letras.
- Labate, B.C. & Araújo, W. S. (Eds.) 2004. *Uso Ritual da Ayahuasca*. Campinas, Brazil: Mercado de Letras.
- Labate, B.C.; MacRae, E. & Goulart, S. 2010. Brazilian ayahuasca religions in perspective. In: B.C. Labate & E. MacRae (Eds.) *Ayahuasca, Ritual and Religion in Brazil*. Equinox: London.
- Labate, B.C.; Rose, I.S. & Santos, R.G. 2009. *Ayahuasca Religions: A Comprehensive Bibliography and Critical Essays*. Santa Cruz CA: MAPS.
- MacRae, E. 2010. The development of Brazilian public policies on the religious use of ayahuasca. In: B.C. Labate & E. MacRae (Eds.) *Ayahuasca, Ritual and Religion in Brazil*. London: Equinox.
- MacRae, E. A. 2008. Elaboração das políticas públicas brasileiras em relação ao uso religioso da ayahuasca [The development of Brazilian public policies on the religious use of ayahuasca]. In: B.C. Labate; S. Goulart; M. Fiore; E. MacRae & H. Carneiro (Eds.) *Drogas e Cultura: Novas Perspectivas*. Salvador, Brazil: Edufba.
- MacRae, E. 1992. *Guiado pela lua: Xamanismo e uso ritual da ayahuasca no culto do Santo Daime* [Guided by the moon: Shamanism and the ritual use of ayahuasca in the Santo Daime religion in Brazil]. São Paulo, Brazil: Brasiliense. Available at <http://www.neip.info/downloads/edward/ebook.htm>
- McKenna, D.J.; Callaway, J.C. & Grob, C.S. 1998. The scientific investigation of ayahuasca: A review of past and current research. *Heffter Review of Psychedelic Research* 1: 65-77.
- Monteiro, A.N. 2004. *Entrevista com a Parteira Madrinha Cristina* [Interview with midwife Madrinha Cristina]. Available at <http://www.bialabate.net/news/consumo-da-ayahuasca-por-gravidas>
- Pahnke, W.N.; Kurland, A.A.; Unger, S.; Savage, C. & Grof, S. 1970. The experimental use of psychedelic (LSD) psychotherapy. *Journal of the American Medical Association* 212 (11): 1856-63.
- Passie, T.; Halpern, J.H.; Stichtenoth, D.O.; Emrich, H.M. & Hintzen, A. 2008. The pharmacology of lysergic acid diethylamide: A review. *CNS Neuroscience & Therapeutics* 14: 295-314.
- Santos, R.G. 2007. Ayahuasca: Neuroquímica e farmacologia [Ayahuasca: Neurochemistry and pharmacology]. *SMAD - Revista Eletrônica Saúde Mental Álcool e Drogas* 3: (1).

- Santos, R.G. & Strassman, R.J. 2008. Ayahuasca and psychosis (eLetter). *British Journal of Psychiatry* (online), December 3. Available at <http://bjp.rcpsych.org/cgi/eletters/190/1/81-a#22556>.
- Santos, R.G.; Moraes, C.C. & Holanda, A. 2006. Ayahuasca e redução do uso abusivo de psicoativos: Eficácia terapêutica? [Ayahuasca and the reduction of the abuse of psychoactives: Efficient therapy?] *Psicologia: Teoria e Pesquisa* 22 (3): 363-70.
- Santos, R.G.; Landeira-Fernandez, J.; Strassman, R.J.; Motta, V. & Cruz, A.P.M. 2007. Effects of ayahuasca on psychometric measures of anxiety, panic-like and hopelessness in Santo Daime members. *Journal of Ethnopharmacology* 112 (3): 507-13.
- Schaefer, S.B. In press. Peyote and meaning. In: E. Cardena & M. Winkelman (Eds.) *Altering Consciousness*. Santa Barbara: ABC-CLIO.
- Soares, E. & Moura, C. In press. Development and organizational goals of the União do Vegetal as Brazilian and international religious group. In: B.C. Labate & H. Jungaberle (Eds.) *The Internationalization of Ayahuasca*. Göttingen, Germany: Hogrefe.
- União do Vegetal. 2007. *Efeitos da Hoasca na Gestação* [The effects of hoasca during pregnancy]. Retrieved June 27, 2007 from [www.udv.org.br](http://www.udv.org.br).
- Valenti, C. (Executive Producer). 2010. *Narcotics. Taboo* February 3, 2010. Washington, DC: National Geographic.

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