

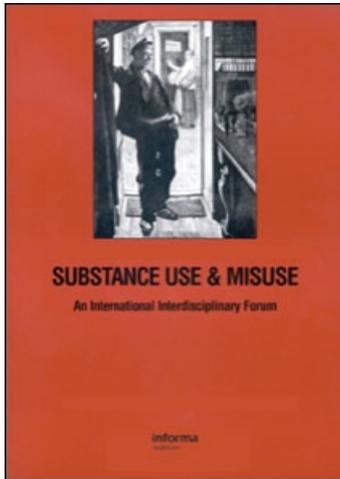
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On: 22 October 2009

Access details: Access Details: [subscription number 916144473]

Publisher Informa Healthcare

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Substance Use & Misuse

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title-content=t713597302>

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Online Publication Date: 01 September 2009

To cite this Article Reynaud-Maurupt, Catherine, Cadet-Taïrou, Agnès and Zoll, Anne(2009)'The Contemporary Uses of Hallucinogenic Plants and Mushrooms: A Qualitative Exploratory Study Carried Out in France',*Substance Use & Misuse*,44:11,1519 — 1552

To link to this Article: DOI: 10.3109/10826080802490170

URL: <http://dx.doi.org/10.3109/10826080802490170>

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Contemporary Uses of Natural Hallucinogens

The Contemporary Uses of Hallucinogenic Plants and Mushrooms: A Qualitative Exploratory Study Carried Out in France

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This qualitative research implemented in France between 2004 and 2007 is based on 30 in-depth interviews carried out with individuals who consumed hallucinogenic plants or mushrooms at least six times during the year preceding the interview. The interviews were recorded, retranscribed, and an analysis of their content applied for the textual data. The study focuses on drug users and the meanings they attach to their drug use. These meanings involve three different representations of the drugs: "enchanted plants," "disorientation plants," and "visionary plants."

Keywords hallucinogenic mushrooms; hallucinogenic plants; qualitative study; contemporary practices; representations of substances; meanings associated with use; poly-drug use

Introduction

A study carried out in the United States in the 1990s showed that this decade was marked by an increase (followed by stabilization) in the use of major hallucinogens (whether synthetic or natural), particularly among teenagers (Golub, Johnson, Sifaneck, Chesluk, and Parker, 2001). However, this study also revealed the existence of a link between the use of these

The authors would particularly like to thank the professionals of the OFDT-TREND network for their participation in the collection of this data: Emmanuelle Hoareau (GRVS, Nice), Robert Vaudour (GRVS), Saloua Chaker (Graphiti, Toulouse), Anne Cécile Rahis (Centre d'Etudes et d'Information sur les Dépendances, CEID, Bordeaux), Guillaume Poulingue (Centre d'Information et de Recherche sur les Drogues et les Dépendances, CIRDD, Rennes), and Catherine Miachon (Centre Jean Bergeret, Lyon). This study was financed by the OFDT.

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hallucinogens and that of other drugs (ecstasy, cocaine, amphetamines, or even heroin), showing that quantitatively this increase does not point to the existence of “separate” epidemics (Golub et al., 2001). The longitudinal study of a cohort of young people carried out during the same decade (1990s) in Great Britain also revealed this general trend toward poly-drug use, and the existence of a “pick and mix” culture (Parker, Aldridge, and Measham, 1998; Parker and Measham, 1994). Among the respondents ($n = 700$), approximately 10% had consumed hallucinogenic mushrooms during their life (Parker, Aldridge, and Measham, 1998). Against this backdrop of poly-drug use across Europe as a whole, we have witnessed an increase in the consumption of hallucinogenic mushrooms (EMCDDA, 2006). In France, a survey carried out among 17-year-old youngsters during the Defence Call-up Preparation Days in 2005 ($n = 30,000$) revealed that experimentation with hallucinogenic mushrooms during the interviewee’s lifetime (3.7% overall and 5.2% for boys alone) is more frequent than for ecstasy (3.5% overall and 4.2% for boys alone) (Legleye, Beck, Spilka, and Le Nezet, 2007).

Concerning the use of hallucinogenic plants and mushrooms, the ethnographic work carried out in France (Bello, Toufik, Gandhilon, and Evrard, 2005; Cadet-Taïrou, Gandhilon, Toufik, and Evrard, 2007;) highlighted the diversification of the substances consumed. In addition to the hallucinogenic mushrooms generally picked in Europe in autumn, we also find an increasing use of imported mushrooms given nicknames by users based on their geographical origin (including “Mexican mushrooms,” “Hawaiian mushrooms,” “Amazonian mushrooms,” etc.). In addition to the use of plants such as datura (which was blamed for several deaths in France during the 1990s) or Ipomoea (the seeds of which contain lysergic acid amide (LSA)), we are also witnessing the circulation of so-called “exotic” plants (which do not grow natively in Europe) such as salvia, ayahuasca, iboga, or cactuses such as peyotl and san pedro, or other substances containing LSA such as the seeds of the Hawaiian baby woodrose. Although seeds containing LSA or datura always appear to have been consumed by small groups of drug users, their usage has apparently increased over recent years, in line with the widening range of mushrooms and plants used. Additionally, for the last 5 or 6 years now, the French field professionals have encountered an increasing number of cases in which salvia is used (Bello, Toufik, Gandhilon, & Giraudon, 2002).

It is not possible to categorically state that the increase in the use of hallucinogens and in poly-drug use is related to the growth of the techno/party scene witnessed during the 1990s. The consumption scenarios are generally varied and those who consume the substances during festive events may have already been introduced to them in other environments (Golub et al., 2001). However, it should be noted that prevalence estimates in Europe concerning the consumption of hallucinogenic substances among persons visiting this festive environment are particularly high. In a survey carried out in 1998 among visitors to techno parties ($n = 3,500$), the consumption of major hallucinogens (whether synthetic or natural) at least once during the person’s lifetime was 67% in Amsterdam (Netherlands), 42% in Berlin (Germany), 56% in Madrid (Spain), 49% in Prague (Czech Republic), 21% in Rome (Italy), 35% in Vienna (Austria), and 54% in Zurich (Switzerland) (Tossman, Boldt, and Tensil, 2001). In France, a recent study also focused on the techno/party scene, and was carried out using an ethnographically structured sampling plan in five urban centers ($n = 1,500$). According to the findings, those persons having consumed hallucinogenic mushrooms at least once during their lifetime accounted for 55% of the interviewees, and those who consumed such substances during the last 30 days totaled 12% (Reynaud-Maurupt, Chaker, Claverie, et al., 2007).

All of these results make it possible to confidently argue that the growth in the techno/party scene may have influenced the rise in the use of hallucinogens, and more

generally the increase in multiple-drug consumption. However, it is important not to neglect the influence of other factors. In particular, a study carried out in the United States between 1997 and 1999 involving a sample group of teenagers ($n = 500$) revealed the existence of a link between spirituality and the use of hallucinogens (Sussman, Skara, Rodriguez, and Pokhrel, 2006). Additionally, across the whole American continent, the use of ayahuasca for religious purposes has become increasingly visible over recent years. We should mention the growth of the cult of Santo Daime in Brazil or the Uniao Do Vegetal Church, which is a syncretic religion in which the consumption of ayahuasca replaces the Eucharist (Dobkin de Rios and Grob, 2005). Moreover, the recent fascination for shamanism or neo-shamanism being witnessed in a number of Western countries should also be stressed. The consumption of hallucinogenic plants alongside a *shaman* is intended to open up the follower/user's mind to ancestral knowledge and to unleash all the benefits of traditional medicine. A study carried out among participants at a retreat in Amazonia showed that these people should not be qualified as "drug tourists," as they were explicitly seeking spiritual fulfillment, chiefly characterized by a wish to achieve self-fulfillment through contact with a sacred natural environment (Winkelman, 2005). Finally, we should not forget the latent influence of the psychedelic scene which swept the United States during the 1960s before making its mark on Europe, and which encouraged the use of lysergic acid diethylamide (LSD) in addition to that of natural hallucinogens. The psychedelic wave was based on ideological marginality and self-knowledge through the use of LSD and it also encouraged the idea of a return to the mystical practices of the American Indians, thanks to the use of natural hallucinogens (chiefly hallucinogenic mushrooms and peyotl). Although it is not possible to establish any direct link with the psychedelic movement, datura intoxication was noted in the United States from the 1960s onwards (Keeler and Kane, 1967). Over the last 30 years, Western neo-shamanism has been based on an interest in traditional medicines and amateur anthropology. Carlos Castaneda's work has a central role to play as an established reference to those subscribing to this ideology (Castaneda, 1985).

Whether we are dealing with the consumption for recreational purposes, poly-drug use behavior patterns, usage for religious or mystical purposes, or pseudo-therapeutic uses, the risks related to these practices are nonnegligible, as the substances used increase the risk of involuntary submission, in particular the use of powerful products such as ayahuasca (Pépin and Duffort, 2004). Further, we have no valid scientific information concerning the long-term consequences of the regular use of hallucinogens (Halpern and Pope, 2003). Finally, we should be concerned about the consequences of pseudo-psychotherapy faced with the fear and panic which hallucinations can generate (Deshayes, 2002).

Our study is based on this multifaceted backdrop of the increasing use of natural hallucinogens. It seeks not only to qualitatively describe the practices inherent in these hallucinogenic mushrooms and plants (excluding cannabis), but also to better understand what motivates the people who take them, seeking to envisage their practices from a multidisciplinary point of view, i.e., considering all plants and mushrooms together, while at the same time taking care not to obscure any of the specific features of the practices associated with each type of plant or mushroom. Prior to this survey, the prevailing hypothesis used in order to explain the rise in the consumption of natural hallucinogens was that of the growth of "ecological" consumption as a reaction to the spiraling availability of synthetic drugs and the fears they engender for personal health. Our survey shows that the practices and motivations of the users concerned do not match this theory. Instead, such practices should be seen as part of a wider context of generalized poly-drug use as described above, and to a lesser extent as a result of mystical and esoteric pursuits.

Methods

This study is based on 30 in-depth interviews carried out with regular users of hallucinogenic plants and mushrooms in 2004 and 2005. The interviews were carried out by coordinators and survey assistants from the French Monitoring Centre for Drugs and Drug Addiction's (*Observatoire français des drogues et des toxicomanies*) "Recent Trends and New Drugs" surveillance network and by the first author. This monitoring system combines field observation from nine urban sites, whose coordinators carry out qualitative data collection based on ethnographic observations, focus groups, in-depth questionnaires filled out by risk reduction services and health services, and quantitative data collection.

For this study, seven people carried out the surveys using the networks belonging to the "emerging trends" unit in order to meet drug users, and employed a small-scale "snowball" strategy to meet other users via this initial batch. The 30 interviews were obtained from six urban sites: Toulouse, Rennes, Lyon, Marseille, Nice, and Bordeaux.

The inclusion criterion for the study was whether the person concerned had consumed hallucinogenic plants or mushrooms at least six times during the year preceding the interview date. Applying this criterion made it possible to obtain information directly from those people with experience of the subject, and to discover more about the motivations of active users on the survey date. On the other hand, this criterion limits the scope of the study, as naturally this excluded those people who have stopped using the substances concerned and who could have explained their reasons for stopping, not to mention the occasional users who are probably motivated by different reasons than those taking the substances regularly.

The data was gathered based on an interview guide, itself organized based on a biographical and themed approach. The interviews were retranscribed in full and an analysis by content theme was applied to the textual data. Finally, an interpretive analysis based on a typological approach made it possible to examine the diversity of "meanings" associated with drug use from the viewpoint of the drug users themselves.

This qualitative study does not seek to be representative, but is instead intended to highlight the diversity of practices and motivations found among users of natural hallucinogens.

Results

Eighteen men and 12 women were interviewed for the survey. The average age of the group was 25. The demographic and social characteristics of the respondents are shown in Table 1. The use of psychoactive substances apart from that of hallucinogenic plants and mushrooms during the 12 months preceding the interview made it possible to distinguish three subgroups:

- The "poly-abusers"¹ group included 22 people: this group consumed numerous substances in addition to natural hallucinogens (alcohol, cannabis, LSD, ecstasy, cocaine, amphetamines, and in certain cases heroin) at various frequencies according to the individuals concerned (at least several times in the year gone by and often several times per month). The average age of the group was 23.
- The "hedonists" group included three people. These occasionally consumed cocaine in addition to natural hallucinogens (plus alcohol and cannabis). The average age of the group was 35.

¹The journal's style utilizes the category *substance abuse* as a diagnostic category. Substances are used or misused; living organisms are and can be *abused*. Editor's note.

Table 1
Demographic and social characteristics of the sample group ($n = 30$)

Variables	$N = 30$	% for info only
Men	18	60
Women	12	40
Single	21	70
Living as part of a stable couple but not living together	4	13
Living as part of a couple under the same roof	5	17
Children	3	10
Personal accommodation	11	37
Personal accommodation (joint occupancy)	8	27
Personal accommodation loaned free of charge	2	6
Living with parents	3	10
Living in a squat	4	13
Other accommodation ^a	2	6
Students (currently in higher education)	5	17
Employed	10	33
Inactive	15	50
<i>Qualifications acquired among the nonstudents ($n = 25$)</i>		
Left education before the baccalaureate	14	56
Baccalaureate (A-level/high school diploma)	6	24
Higher education qualifications	5	20
Average age	25 y.o. (minimum 18 to maximum 39 y.o.)	

^aTwo people were atypical where accommodation is concerned: Mary is a backpacker who travels around the world and who stays with friends or family when she is in France. Julie divides her time between France and Amazonia; she also has a home in Amazonia and lives in a truck when she is in France.

- The “purists” group included 5 people. This group consumed only hallucinogenic plants or mushrooms (plus alcohol and cannabis). Their average age was 28.

The main psychoactive substances consumed during the interviewee’s lifetime are shown in Table 2. All the people interviewed had already consumed hallucinogenic mushrooms during their lifetime, chiefly mushrooms picked in Europe and “Mexican mushrooms.” Among those interviewed, mushrooms were first taken at the age between 14 and 22, but more frequently at 18–20 years of age. The youngest, aged under 25, chiefly used imported mushrooms, particularly during the year preceding the interview. The only person who had never consumed mushrooms picked in Europe was also one of the youngest interviewees. “*We tend to eat Mexicans, not the sort that grow under cowpats!*” (Anna, 19 years of age, secondary school pupil). As she sees it, the mushrooms “which grow under the cowpats” are those picked out in the fields, i.e., the common hallucinogenic mushrooms found in Europe.

Almost all the interviewees (28/30) had also experimented with one or several hallucinogenic plants. The age at which these were first taken tends to lie in a wider band than

Table 2
Main substances experimented with during the interviewee's lifetime ($n = 30$)

Psychoactive substances	$N = 30$	% for info only
Alcohol	30	100
Cannabis	30	100
Ecstasy	30	100
LSD	30	100
Stimulants (cocaine or amphetamines)	30	100
Opioids (heroin or morphine)	24	80
Ketamin	9	30
Benzodiazepines (high dose) ^a	6	20
<i>Hallucinogenic mushrooms</i>	30	100
European hallucinogenic mushrooms (except fly agaric)	29	97
Fly agaric	3	10
Imported mushrooms (Mexican, Hawaiian, etc.)	22	73
<i>Hallucinogenic plants</i>	28	93
Datura	13	43
Salvia (leaves or extracts)	13	43
Seeds containing LSA	9	30
Peyotl, san pedro	9	30
"Organic DMT," yopo	7	23
Ayahuasca	4	13
Iboga	1	3
<i>Other notable substances declared^a</i>		
Synthesized dimethyltryptamine (DMT)	2	6
Alpha-methyltryptamine (AMT)	2	6
Foxy methoxy (5MeO-DIPT)	1	3
Methamphetamines (Ice)	1	3
2,5-dimethoxy-4-iodophenethylamine (2CI)	1	3

^aThese are spontaneous usage declarations put forward during the interviews, and consequently the proportions noted for the usage of these substances during the user's lifetime are at least equal to the figures mentioned.

that for the first exposure to mushrooms (between 15 and 27 years old). Datura and salvia are the plants most often experimented with (see Table 2).

The Use of Hallucinogenic Plants and Mushrooms Among the Interviewees

Usage Frequency. Hallucinogenic mushrooms are usually consumed on a regular basis. For these particular substances, the term "regular usage" includes several chronic or cyclical usage frequencies, over the month or year: every year in autumn (after the "harvest"); or between 6 and 12 times a year (the mushrooms have been prepared for storage or imported mushrooms are involved); or once or twice a month (the domestic cultivation of imported mushrooms results in a new crop growing every fortnight or so).

Yopo, "organic DMT," iboga, salvia, and seeds containing LSA are usually consumed once or twice only, "just to taste it," or "just for a try." The low level of availability is often cited as the reason for which the use of these substances does not continue, in addition to the

opportunistic nature of the use of such substances, with no particular effort being made to seek out the product. For example, when we asked Maya (a 22-year-old teaching assistant) if she had taken salvia again recently, she replied, "No. I haven't seen her since. She hasn't been back to see me." However, a minority of people reported a somewhat more chronic use of seeds containing LSA, salvia, and organic DMT. In their cases, these products were used several times a month.

Datura is often tried only once: this was the case with 8 people out of the 13 who had experimented with it. In this case, it is not the availability of the substance which is most often cited as the reason for stopping its use, but rather the fear of repeating the experience. "Datura? I only tried it once! With something like that, for three days you're completely out of it . . . You completely lose the plot. I don't like it very much, it's a bit too rough for me!" (Quentin, 35 years old, unemployed); "I took datura, and it really shook me up, I can tell you" (Léna, 24 years old, unemployed); "Datura . . . I dabbled with it, but it really scared the hell out of me! You're completely off your head! With the rest of the stuff you're off your head as well, but that stuff is really something . . . I don't like it. In fact, if you really want to know, I took a shot of Rabla² afterwards to calm myself down!" (Etienne, 25 years old, electrician). Among the five people who had taken it several times, two did not want to take it again: Ludovic (18 years old, unemployed) took it three times and realized that each time the hallucinations were "gloomy," and that he had narrowly missed having a serious accident³; Anthony (22 years old, unemployed) had taken it intensively, and even daily. He had stopped using it a year prior to the interview, after the shock experienced when one of his friends was killed after being knocked down on the road while under the influence of datura. Consequently, of the 13 "experimenters" only 3 people were active users of datura on the date of the interview (Christian, 25 years old, unemployed; Yann, 26 years old, unemployed; and Martin, 20 years old, unemployed).

Ayahuasca had been consumed three to four times, except by Julie (27 years old, an employee working in the field of plant health for a pharmaceutical laboratory), who had taken it around 15 times during the last three years. The cactuses (peyotl and san pedro) are generally experimented with once or several times during the user's lifetime: "In any case, finding some is no easy matter" (Anthony), except for someone who grows his own from cuttings (Gaëtan, 25 years old, engineering student, and one of his friends, Max, 25 years old, salesperson in a pet shop). Only one person had experimented with iboga, and that too just once (Etienne).

The Storage and Administration of Hallucinogenic Mushrooms. The mushrooms are often eaten raw, dried, or fresh, or prepared as a herb tea. The tea is generally the preferred method, but this is reserved for special evenings in private rather than consumption in a party environment as it requires prior preparation. Those who pick the mushrooms usually dry them themselves with the aim of storing them and consuming them later in the year. The mushrooms can be stored in alcohol or honey. Those using the latter conservation method explain that it is necessary to steep the mushrooms (200–500 for mushrooms picked in Europe) for 3 months in 1 kg of honey in order to obtain "mushy honey." They can also be steeped in all kinds of alcohol, making it possible to obtain "mushy punch" or cocktails such as mushroom vodka, mushroom whisky, or mushroom pastis.⁴ "We keep them for future

²Rabla: French slang for heroin.

³During a datura-taking session, Ludovic saved a friend from jumping out of a fifth floor window. The friend was not suicidal, but simply wished to take a "shortcut," having completely forgotten about gravity.

⁴The pastis and ricard mentioned just after the quote from Clothilde are aniseed-flavored drinks.

evening sessions” (Nathalie, 25 years old, student teacher); “*They need to be completely dry and dehydrated but I really do mean very very very dry, dipped in any liquid, whether water or alcohol. And as I told you a minute ago, in just 3 or 4 hours the mushrooms have got their old shape back again, the liquid turns yellow and your magic potion is ready to drink! I’m telling you, I make that using rum. You put three or 400 really dry psilos⁵ in a bottle of rum, you drain off a little rum, and I’m telling you there in 3 hours the rum is completely yellow. The mushrooms have swollen up again and you’ve got some really good stuff waiting to go*” (Patrice, 35 years old, technical manager in a print works); “*Sometimes it’s ricard, sometimes it’s rum, sometimes whisky. It’s usually rum though. So for the next time (the next organized evening) we’re up for Guarana-rum-mushies*” (Clothilde, 23 years old, unemployed).

The dosage of local mushrooms taken by the interviewees ranged from 25 to 400 mushrooms consumed during a single session, i.e., in a night, during which the dose may be taken in several stages, especially if it exceeds around 100 (one person had once taken 750 mushrooms in a single night). Everyone agreed that a “normal” dose would be approximately 30–40 mushrooms. Most maintain this dosage over time, and even those who decide to increase their dosage rarely exceed 100. The dosage levels for Mexican mushrooms are between 4 and 10 mushrooms, which tend to be eaten raw and estimated at approximately 3 g when dry. The dosages for Hawaiian mushrooms are usually estimated at less than 1 g. “*I remember that at the beginning, I used to cut a Hawaiian mushroom in four. I would take a quarter and that gave me the same effect as around 50 medium quality psilos*” (Karim, 34 years old, unemployed).

The Administration of Hallucinogenic Plants. Datura is prepared as a tea, or the seeds are simply swallowed. The herb tea can be prepared using all parts of the plant (including the roots, stems, leaves, and flowers), but ideally this should be made using the seeds that are found in the pods. This is supposed to be “*the only way to mix in the right proportions to get a high with datura*” (Ludovic). The dose is said to be one pod for two, with a pod including roughly between two and four seeds. The dosages naturally vary from one part of the plant to another, and no particular “measurement” is really mentioned concerning the use of stems or roots. More rarely, the datura can be prepared as a decoction, or steeped in alcohol. For its part, salvia (whether leaves or extracts) are consumed by means of a bong,⁶ or in a small pipe which is delivered with a product when purchased by mail order. It can also be chewed. One person mentioned having consumed salvia cakes. The substance is consumed in several stages as the effects are short-lived. The dosage where grammage is concerned is rarely stated, with the interviewees mentioning above all that the leaves are consumed in extracts. Additionally, the extracts can be distinguished in terms of the effects they produce, such as “ $\times 5$ ” or “ $\times 10$.”⁷

Seeds containing LSA are swallowed, as using the seeds for the preparation of herb teas has been reported and/or found to be ineffective. The reported dosages vary between 5 and 15 seeds (Hawaiian baby woodrose).⁸

⁵Psilos: French slang referring to European hallucinogenic mushrooms.

⁶A bong is a water pipe with a wide bowl and a wide mouthpiece. The content is referred to as the “*douille*” in French (which roughly equates to the *payload*).

⁷Salvia extract generally comprises salvia leaves which have been marinated in pure salvinorin. It is sold in vials.

⁸Although the dosages of Hawaiian Baby Woodrow are assessed at approximately five seeds (and up to 15 seeds among the persons interviewed), the doses of Morning Glory (Ipomoea) are between 150 and 200 seeds in order to get a similar effect.

The san pedro and the peyotl are consumed as herb teas, as decoctions, or cooked in order to make a “dough” which is then rolled into balls, or sliced and marinated in lemon before being swallowed. They can also simply be dried before being swallowed. Certain interviewees reported having smoked the cactus.

Ayahuasca is consumed as a decoction. The administration of this substance generally involves prior preparation by the consumer. Normally, a strict vegetarian diet for several days before taking the substance is observed (no red meat, no cheese, fruit and vegetables in small quantities). This is the only hallucinogenic herb for which such physical preparation is required. Each user stressed the need for such preparations, although none really raised the question of the dosage of the herb involved when preparing the decoction.

The yopo is molded before being sniffed. The substance referred to as “organic DMT” is smoked as a joint. The only person who consumed iboga described a powder (probably grated bark) which had been prepared so that it could be rolled into a ball and chewed.

Mixing Hallucinogenic Substances. The combination of hallucinogenic mushrooms and plants with other substances is frequently mentioned. This can involve a mixture of natural substances, as reported by Axel (22 years old, unemployed) who once experimented by taking two doses of mushrooms (“*a dose of Hawaiian mushrooms and a dose of Mexican mushrooms*”); but usually the natural substances are mixed with synthetic substances, clearly demonstrating that the quest for a better high often takes precedence over the wish to consume “ecological drugs.” “*When I take mushies like that at parties [techno events] I’ve already been drinking before the fun starts, and had a smoke as well, and it goes on like that throughout the evening. And when I get there, I’m on the lookout for a few E’s [ecstasy], some trips [LSD], some mushies, whatever’s going, and it’s taken right there and then, roughly at the same time or else we say to ourselves ‘we’ll take that, we’ll take the mushies now and an E later in the evening*” (Bénédicte, 18 years old, unemployed); “[*And what do you take with the Mexican mushies?*] Usually speed [amphetamines] , or E’s, or something like that. The last time it was booze, trips and speed. [*With mushies?*] Yes” (Anna).

When mushrooms are consumed, they are often accompanied by alcohol and/or cannabis. “*I’ve never taken mushrooms without having drunk alcohol or smoked cannabis, that’s for sure. On the other hand, I’ve never combined mushies with other products such as trips, coke or whatever. But I’ve with alcohol or cannabis . . . Every time, yeah*” (Lucien, 39 years old, decorator); “*With mushrooms? Yes, alcohol. Alcohol and spliffs*” (Patrice); “*Cannabis and alcohol. Yeah, almost always (. . .) Yeah I don’t think I’ve ever really taken just mushies. It was usually combined at least with alcohol or spliffs. And sometimes . . . I don’t know . . . with speed [amphetamines] maybe, or coke. Yeah . . . No I’ve never really experienced the effects of mushies on their own*” (Maya).

Although natural hallucinogens can be distinguished in terms of plants on the one hand and mushrooms on the other, it is the mushrooms which are most often combined with synthetic substances. This is more rarely the case with plants, with the exception of unplanned mixtures, which most often involve organic DMT and salvia leaves. This is explained by the short-lived effects of these products, which encourage people to mix them, particularly in festive environments. Users generally report taking the drugs just once, as a “highpoint” to the evening, a mini “event within an event,” when they have already consumed a longer-lasting product (ecstasy, LSD, or amphetamines), it being much rarer to find sessions devoted exclusively to these products (DMT, salvia) during which they are taken at recurring stages. The festive environment is also put forward as the main reason for mixing the substances. “*To tell you the truth, I would have liked to have had some DMT to*

try outside. Because it's always when you've already taken other prods [products] before, like at parties, and you've already taken some C [cocaine] or an E [ecstasy], or loads of stuff, like mushrooms, and you smoke DMT on top of all that. I would have liked to have seen what DMT is like if you take it on its own, natural like. You don't fast, but you stay off other drugs" (Léna). However, mixing drugs can also be planned, with the aim of obtaining a particular effect. The best way to get the desired effect through mixing drugs is a matter of empirically acquired skills: "I have already taken Es [ecstasy] and acid [LSD] together and I knew that they went well, so I thought that Es and mushies would go well together, yeah" (Sarah, 26 years old, sales assistant in a bakery).

The mixtures mentioned above are virtually simultaneous, in other words all the products are practically consumed at the same time. The mixtures can also be successive, i.e., the user waits to come down from a product taken earlier before taking the next one, to get through the weekend, based on the "relay" principle, or to round off a drug-taking session by taking calming substances following the consumption of stimulants. "One effect simply replaces another (. . .) It's more a case of here I've got some mushies . . . Now I've had my high with the mushies and I'm starting to come down and I feel a bit tired and that. I've got another 24 hours. And then your mate has a ball of speed [amphetamines] and away you go again . . . You take the speed just as you're coming down off the mushies and you're high again, so obviously it's one thing replacing another" (Nicolas, 19 years old, first year sociology student). "In general, to come down nicely I always try to have a bit of hero or pot at hand" (Etienne).

Other plants (datura, ayahuasca potion, san pedro, peyotl, etc.) are usually taken without any other product. Users mentioned health precautions as the main grounds, but also (in the case of ayahuasca and the cactuses containing mescaline) a wish to avoid changing the nature of the desired hallucinations. These plants are rarely taken during festive evenings. Nevertheless, this can happen: the only person who consumed iboga had experimented with it at a festive event and had already consumed several other substances at the time the drug was taken. Mixtures are reported with datura but these remain rare. The "separate" status of these plants is also due to the level of risk attributed to them, these being expressed chiefly by the personal and collective representations associated with each herb. It can also be due to the type of effects that the users are expecting, related to exactly what they are looking for when using the drugs (please see the part describing the Typology of Reasons for Use).

The Effects That Users Experience. All natural hallucinogens have their own specific effects in addition to the common effects which may be classified in several major categories. These categories enable us to better understand the variety of reality-distorting effects which these substances generate. We can distinguish between stimulating effects, euphoric, or calming effects, those which facilitate meditation or reflection, those which disturb the senses, in addition to the unsettling and "dark" effects. To these main effects, the so-called "uncomfortable" side effects should also be added which are not necessarily bad experiences, but rather ones that may adversely affect the sensation of the effects being sought, including diarrhea or vomiting. Each herb or mushroom can generate each type of effect or only a selection of these, stimulating the user, bringing on bouts of laughter or peacefulness, surprising the user with unexpected perceptions, or leading to morbid thoughts and anxiety (a "bad trip"). All of these various types of effects have been mentioned for virtually every plant or mushroom consumed, although certain substances are more particularly associated with one type of effect than another. This is the case with mushrooms, which are generally associated with euphoria, although sometimes blamed for bringing on a "bad trip," or datura which is generally associated with dark effects, but

which can nevertheless lead to moments of pleasure. The following paragraphs describe only the main hallucinogenic effects, these being the sensory disruption effects, the unsettling effects, and the dark effects.

Sensory disruption effects are the first real symptoms of a genuine hallucinogenic effect and are the effects most often sought. They are frequently related to euphoric effects as often they bring about such effects by helping to spread hilarity throughout the group taking the substances. "We laughed! We really laughed! Things were moving, and we were splitting our sides laughing! (...) in the truck, everything was moving, the trees, the road, everything ... It was this that was making us laugh" (Anthony, talking about local mushrooms). "When I looked in the mirror, I saw a really old version of myself, it was hilarious! (...) I just knew that I was going to start seeing things. We were all laughing, and afterwards we could see fireworks in the car, and the trees were moving; it was so funny!" (Anna, talking about Mexican mushrooms). These effects distort the user's sense of vision (objects, colors, movement) but also his sense of sound or his interactions (generally with people experiencing the same effects). "I had the impression that I was sinking into the ground, I dunno, I could see the ground moving" (Christian, talking about local mushrooms); "I could smell everything, smells of every kind, from everything around me; my sense of smell was a thousand times better. And I couldn't stop (laughing). I was telling them to stop walking because they were crushing the plants, aromatic plants and I couldn't take any more, all I could taste was the plants" (Sonia, 22 years old, unemployed, talking about the mushroom variety *Psilocybe cubensis*⁹). "A hallucination is above all else a visual block. Like for example, I was walking in the street and looking at something that had attracted my attention. I froze for a minute, and I felt that I was moving. For example, I could see a tree moving gently, its branches getting bigger. I could see them getting longer, the branches" (Karim, discussing Mexican and Hawaiian mushrooms). These sensory disturbances usually generate euphoria, but also a sense of wonder. "Everything was beautiful ... Everything beautiful in nature ... you could see it ... It was awesome! A colour that you naturally like, would be simply bursting before your eyes all around you, yeah ... It was so bright!" (Patrice, talking about local mushrooms).

Unsettling effects are those states that the user desires while at the same time fearing them, the sort of effects which will surprise or astonish you, and which can bring about a reaction of hilarity or stupefaction either at the time the effect occurs or after the drug-taking session, when stories are being told. What all natural hallucinogens have in common is their ability to produce this type of effect. "I hadn't finished taking the hit [smoking the content of the bong's bowl], and my body started swelling up like crazy! (Laughing). It was like two hands drew my mouth into a smile and just as if ... as if I was a screw thread being unthreaded just like that, rising up (...), and I rose up 10 metres above everyone else. I was unscrewed, my body was going ... it was moving in all directions but I wasn't actually moving at all" (Clothilde, talking about salvia); "The visual hallucinations are impressive, because you can even see your mate's head with the neck going up like that, as it re-attaches to his head, it's really something else" (Fabien, 26 years old, organizational manager for a works committee, talking about Mexican mushrooms). Many unsettling effects are mentioned when talking about datura, such as talking alone to imaginary people or objects or inanimate items such as walls or trees. The ultimate expression of unsettling

⁹Sonia is the only person among those interviewed to refer to the mushrooms which she consumed by their scientific name. *Psilocybe cubensis* (Earle) Singer grow in Mexico, Cuba, Guatemala, Bolivia, the United States (Alabama, Florida, Louisiana, Mississippi, Texas), Belize, Costa Rica, Trinidad, Peru, Brazil, Colombia, the Dominican Republic and in Puerto Rico, as well as in the French overseas *départements* (Guiana, Guadeloupe, Martinique).

effects can be seen in the notion of “borderline states.” “By taking just a bit every day, every day, every day . . . It was OK during the day, when we were begging together . . . We’d be laughing together. But when the evening arrived all it took was a little alcohol after the evening and it really kicked off . . . I mean you start talking to yourself, and even though your friends are nearby you’re really alone. I was running after my dog, but he wasn’t there, loads of stuff like that . . .” (Anthony, talking about datura); “You do the maddest things, but . . . you do them, you do them all right. For example, if you’re going upstairs, you’ll go up without any problem, not like someone who’s stoned, but you won’t be aware of the fact that you’re going upstairs, you won’t know why you’re doing it or where you’re going (. . .) it’s just like you’re possessed, it’s like you’re out of your own body, on the sidelines, and while all of this is going on someone is taking control of your body and is doing things with it without you knowing (he bursts out laughing) . . . You say words that don’t mean anything, in an unknown language . . .” (Gaëtan, talking about datura); “They’re a great experience, the visions, talking to trees and all that . . . Pffff!! Once I started fighting with a bush, not seriously, just messing about” (Yann, discussing datura). Finally, the loss of control and the onset of extreme conditions are also part of the unsettling effects sought. This eventually becomes something of a game, as the user seeks temporary psychotic experiences. “Along with my mates, I was turned into an animal, a prairie animal as we were walking in the forest, and just like animals we climbed up trees (. . .) we had no choice” (Jérémy, 18 years old, unemployed, discussing Amazonian mushrooms); “I entered my friends’ bodies, I was them, I was really them yeah, I was there. There were three of them, and I was in all three bodies at the same time and I can think like them all at the same time, I was no longer me, and I could see myself through their eyes” (Jérémy, talking about the effects of salvia extract); “It was really weird, I was with three friends and all of a sudden I found myself on a huge plain, with three mountains in front of me and the three mountains were the three heads of my friends. It was really really weird” (Sarah, talking about salvia extract); “Yeah, yeah . . . It was good. I could see myself from below, I could see my silhouette all black (. . .) and that caused me to panic a bit, it gave the impression that I was dead, I don’t know, I had the slight impression of being in a coffin, I could just see my silhouette up above me, and I couldn’t stop laughing” (Axel, talking about salvia extract).

“Dark” effects are gloomy or morbid effects or feelings of panic, which are particularly associated with datura but also with other substances (including powerful mushrooms, salvia, and ayahuasca). Datura is generally presented as a herb that generates visions causing anguish and panic. The visions generally involve the darker aspects of the person’s personal history or use popular mythology to bring these fears to life including black cats, crows, etc. “Crows aren’t good. I’ve had this type of vision three times now (. . .) it’s really dark and gloomy, but clear at the same time. It’s dangerous but also clear” (Ludovic, talking about datura); “As I didn’t know this herb, and I didn’t really know myself, the hallucinations were really . . . really gloomy. I saw monsters (. . .) the tree turned into a monster or into my father . . . When it comes down to it lots of things are related to you personally. I suppose you could call it a battle against myself (. . .) My father turned into a monster! I saw myself, but a younger version of myself. And then a much older version . . . but I couldn’t recognise myself any more (Karim, talking about datura); “You see black cats or other black animals passing by . . . But you turn your head and there’s nothing there” (Quentin, discussing datura).

Sources of Supply. These are of utmost importance, as they are different from the sources of supply for other drugs. The drug traffic chain does not use the same networks as those used for other substances such as heroin, ecstasy, or cannabis. There are no real

organized networks, but rather direct supply or a supply chain usually involving only a single intermediary between yourself and the source. There chiefly exist two major sources and a third (lesser) supply when it comes to obtaining natural hallucinogens.

The leading major supply source is purchasing via the Internet or from someone who himself has obtained the substances via the Internet (or been given the drugs free by the latter). This can involve a production phase, as it is possible to purchase kits over the Internet to grow the substances yourself, which is most common where imported mushrooms are concerned. Seeds containing LSA are also purchased over the Internet as is salvia (as leaves or extracts).

The second major source of supply is hand-picking, or buying the substances from someone who has picked them, or getting them free of charge from the latter. This second source chiefly concerns mushrooms picked in France, and datura. The practice of sowing salvia cuttings with the aim of picking them later also exists, but is infrequently reported.

The most infrequently used source of supply is purchasing in another country (consumption may also take place there) or purchasing the substances from someone who has brought them back from another country (or been offered them free of charge by the latter): this can be the case for imported mushrooms which are brought back from the Netherlands (or consumed directly in that country), for salvia which can be brought back from Spain, or more rarely mushrooms or plants from Central or South America. In the latter case, small quantities are usually brought back for "one off" consumption by the person bringing the substances back, or by his friends.

However, it should be stressed that the increasing use of hallucinogenic mushrooms in the "techno party" environment is currently bringing about an increase in the organized sales of these mushrooms at festive events.

Typology of Reasons for Use

Identifying the underlying "meanings" underpinning the use of natural hallucinogens makes it possible to better explore the diversity of administration methods and the reasons motivating the users of these drugs. These meanings also go a long way in influencing the choice of drugs used and the consumption patterns. A typology has been drawn up using a classification system based on the meaning attached to the consumption of the drug and the representations of the various substances concerned. It remains relevant for each of the various stages in the drug user's drug consumption "career," i.e., it identifies the meanings associated with the use of hallucinogenic plants and mushrooms at the time the interview took place, but when various meanings have existed during the user's "career," the past meanings always correspond to one or other of the types shown. Just like any other typological exercise, the identification of the meanings associated with drug use should not be seen as being "set in stone." Firstly, various types of meanings associated with drug use may follow from one another during the drug user's lifetime, but secondly (for a small minority of those interviewed), various meanings can also coexist simultaneously, each taking precedence at different times according to the social circle in which the drug user consumes the products, the background to the drug use, and the substances consumed.

This typology system distinguishes between seven different ways of giving meaning to the use of hallucinogenic plants and mushrooms. This analysis also reveals three types of representation for natural hallucinogens, among which the seven types of meaning

associated with their use are to be found. We can distinguish between “enchancing plants,” “disorientation plants,” and “visionary plants.”¹⁰

Users of “Enchancing Plants”. “Enchancing plants” are those which transform everyday interactions, events, and objects into marvelous interactions, events, and objects, giving them (as if “by magic”) the ability to heighten the user’s sense of euphoria and passion. Relationships with others are more loving, parties and celebrations are happier and livelier, while nature itself is more beautiful. In short, the “enchancing plants” enhance the user’s emotions, improve the surrounding atmosphere, and encourage exuberance. Two types of meaning are associated with this representation, these being social and festive emulation in addition to the attempts to “commune” with nature.

Social and Festive Emulation. The main aim of consumption is to modify the users interaction with members of the group by encouraging stimulation, collective excitation, and hilarity: “*Dancing, laughing, having a great time (. . .) enjoying this state of mega-fun, because that’s what it was, mega-fun, just non-stop laughter!*” (Martin); “*I don’t need that to have fun, but it’s certainly true that I have more fun when I take it*” (Sabine, 20 years old, educational assistant); “*As for the festive part, I don’t know, I guess that would be going to a party, going wild with the music, or going wild with friends . . . there you go! In an atmosphere where everyone’s there to have fun, it’s not a case of everyone getting miserable over in their own little corner (. . .) I like the effect it brings on . . . it lifts you up, you’re chatty, you’re really into it and you don’t wanna go to sleep, yeah . . . you’re really motivated in as far as you can stay awake for ages, with the pogo¹¹ it’s the same, you’re like really cool! You’re really sociable, and I like that*” (Anna).

The aim is also to bolster the feeling of belonging to a group, as the substance is taken by the whole group, “*among friends*”. “*It’s just one of those things, you share it with all your mates, or it’s just not possible*” (Maya); “*It’s something to be shared*” (Nicolas); “*There’s no point doing it alone*” (Christian). Stimulation, collective excitement, and hilarity are sufficient for the drug consumption session to be considered a success. If changes in visual perception also occur (referred to as “mini hallucinations”), above all these play the role of enhancing interaction. Communication throughout the session also encourages the occurrence of identical altered perceptions, which further strengthen the group’s collective bond. “*I only do it as part of a group . . . This is not a drug which I would take alone to have fun on my own, so we do it together. What’s really great is that you can have shared experiences and sensations when you’re part of a group, which is amazing in itself, but hallucinations that everyone can see but which aren’t there despite the fact that there are five of you in the room is really something else*” (Fabien).

Collective consumption is also seen as an antidote against introspection and helps to prolong the effects the users’ are seeking: “*(Being part of a group) is reassuring, and being part a group means that we talk about what we see. We discuss everything that happens and who knows, maybe that prevents you from thinking about yourself (. . . Thinking about myself when taking mushrooms) is something I don’t want to experience at all, and maybe one of the best ways to avoid experiencing this is to stay as a group*” (Fabien); “*I would*

¹⁰The plants and mushrooms belong to two different kingdoms, these being the plant and fungus kingdoms respectively. The expressions “enchancing plants,” “disorientation plants,” and “visionary plants” are used to refer to the representations of enchancing plants and enchancing mushrooms, the representations of disorientation plants and mushrooms, and to visionary plants and mushrooms. To avoid the text becoming excessively heavy, in this paragraph these expressions will be accompanied by speech marks to show that they also refer to the use of mushrooms.

¹¹A dance associated with punk music, in which dancers deliberately push and shove one another.

never even think of making an infusion or eating 30 mushies all on my own. Or of taking anything else for that matter" (Lucien); "It's not the kind of product that would interest me when I'm alone, it's like a trip [LSD], I wouldn't go and take that alone either" (Olivier, 30 years old, musician).

The occasions on which these substances are taken are generally private evenings or festive events. Some of the individuals in such a group of users consume only during autumn in private evenings. On the other hand, those who attend festive events consume them all year round. The favorite products are chiefly mushrooms picked in Europe, imported mushrooms, and seeds containing LSA.

Communion With Nature. In this case, consumption is seen by the user as a festive, collective means of enhancing the beauty of the world and especially of nature, the key aim of which is to modify one's perception of the environment. Hallucinations are sought in their own right, chiefly for the purpose of enhancing nature, of promoting a feeling of oneness with it, and experiencing a form of exultation. "You know, when you go walking on the hillside and suddenly you see the mountain and between the mountain peak and the sky you see a fluorescent blue ribbon with a glowing blue aura, just like the Knights of the Zodiac have around their armour, and you see all that lighting up before you it's just amazing (. . .) You see a plant and it's simply beautiful, whereas if you hadn't taken that, if you came back the next day you just find it ordinary. But with this stuff, you hallucinate and everything looks incredible (. . .) We start taking san pedro at around 5.00 PM. We know that it takes around 3 hours to get high and that the sun sets at 8.00 PM, and that 8.00 PM you're on a real high as you watch the sun going down with the clouds, the beautiful clouds which change shape, with the red sunset, but I really do mean bright red . . . The colours are drastically altered, you see things that resemble a kaleidoscope. It's just great, it really is brilliant" (Max).

The drugs are either taken as a group or in pairs, and usually in a natural setting. "We always try to take it in different places; we never take it at home in fact, or in day-to-day settings (. . .). We go out into the countryside, to somewhere we really like, somewhere nice to look at, and we take the drug there, to experience a magical reality (. . .). That way, you're completely cut off from the industrial environment, and from the town you know . . . You have the impression that you're back in the Stone Age, and that you've got your own little life here on the hillside, where you don't need anything, here among the plants . . ." (Max); "When I talk about nature, I mean a little corner of Mother Nature herself, just you and your mates. At a party [a techno party], there are loads of people and lots of noise. Out in the countryside is my thing, somewhere natural. But that's just me . . . but I can understand that people like to go wild like that at a party. But I prefer nature, and a quiet setting . . ." (Sarah); "I don't like it when there are too many people when taking mushies . . . I'm not too keen on taking mushies at parties. It's no big deal, I just think it's a waste, you've got no time to take it all in (. . . the best is . . .) in a small group, alongside a stream, with a fire" (Axel).

Taking drugs with the aim of enhancing the surrounding environment is also reported in urban settings, always outdoors, and particularly among those living in squats and taking their drugs "with friends off the street" (Benoît, 22 years old, unemployed). Imported mushrooms are the favorite hallucinogenic product or (less frequently) the san pedro cactus or mushrooms picked in Europe. These substances are consumed all year round, but most often during warmer weather to guarantee favorable climatic conditions.

Users of "Disorientation Plants". The term "disorientation plants" ("*plantes d'égarement*" in French) is borrowed from Patrick Prado (Prado, 2004). This term refers to the capacity

of natural hallucinogens to physically alter the user's perception of reality in physical surroundings that are nevertheless familiar to him.¹² In our survey, the term "disorientation plants" also refers to their capacity to alter the user's perceptions psychologically too, during a static, dreamlike experience. The drugs are taken on a solitary basis. When taken in a group, they are still perceived as being solitary as there is no communication (or very little) between the people involved. In the latter case, they are side by side but not really together. Nevertheless, the fact that they are in a group can be important after the drugs have been taken: "*Afterwards, we talk about what we experienced and what effect it had on each of us*" (Christian).

Where their "careers" are concerned, the users generally began by taking natural hallucinogens in a festive environment, before discovering their value for these solo trips. The drugs are consumed at home (in squats for those living in squats) and sometimes outside in a natural setting or at a festive event if the product concerned has short-lived effects, as is the case with organic DMT for example. Apart from the latter product, the favorite substances are mushrooms picked in Europe (at a dosage level usually situated at somewhere between 100 and 400 mushrooms for a typical consumption session, or per night), imported mushrooms, and datura. Users also reported taking san pedro, peyotl, ayahuasca, and salvia for this purpose too.

A Means of Disconnecting With Reality, Involving a Passive Loss of Consciousness (in Order to Bring on a Dreamlike State). In this case, taking drugs is seen as the best way to bring on a dream, characterized by a feeling of well-being. The psychic activity (described as intense) takes the form of sleep or semi-unconsciousness: the person is passive and has often prepared himself for the onset of such a condition by ensuring that the time and place are right (e.g., sitting in an armchair at home). "*You've got your eyes closed and everything. These are internal hallucinations, I've seen all that before, I've had so many, but they still seem real yeah. You find yourself in a world of beauty, pleasure and warmth. It's really cool yeah! In my case, when I take three or four hundred I'm away, and I mean really away! (. . .) I stay at home. The aim is to get stoned, to get right off my head, but it's for the experience too, because this is something to be experienced to the limit, there's no denying that, it's definitely one hell of an experience (. . .). If you're going to take a lot, it's best to be on your own*" (Patrice, talking about local mushrooms); "*I love the sensation it brings on and everything. You're completely . . . I mean it really takes you to another world. You have the impression that it's whisking you away to another world than the one the people around you are in (. . .) I think it's not a very 'friendly' drug. As I said, it's not the sort of thing to take if you want to talk*" (Léna, talking about 'organic DMT'); "*In any case, this is something you need to take on your own, completely on your own, because the very presence of someone there can disturb you and stop you getting into your dreams . . . That's why I do it alone, yeah, in the dark*" (Gaëtan, talking about salvia).

¹²Documents compiled during the 1960s confirm the use of "Jilgré" in the Brittany region of north-western France (Prado, 2004). Jilgré is a cider in which datura seeds have been steeped. This is a "secret" practice, existing in the countryside and among agricultural workers (these being relatively old and speaking only the Breton dialect), and very much a male social custom. The "marked bottle" (the bottle marked with a cross which contained the datura) makes it possible to serve a final glass to some of the participants, and makes getting home more difficult by preventing the user from taking the road back to his house. Additionally, no visual hallucinations were ever reported during the survey (which led the author to conceptualize the notion of "disorientation plants"). Furthermore, the effects of the datura consumed by these Breton peasants was also characterized by the conception of a curved space, further reinforcing the feeling of disorientation experienced by the user.

A Means of Disconnecting With Reality, Involving an Active Loss of Consciousness (the User Moves and Travels Around). Natural hallucinogens can also be used as a means of altering the user's perception of his physical surroundings: the world around him is completely transformed, and he is lost in a world which is nevertheless familiar to him. Although a number of users reported similar experiences which have frightened them, those who highlight this meaning associated with use of the drugs were actively seeking such experiences, as it is these effects that enable them to take part in the "game." The game involves successfully entering and then getting back from a virtual world. "A quarter of an hour away from my house there's a path that we both used to walk every day for years. It takes no more than a quarter of an hour to walk it. On that day though, despite the fact that we never wandered off the path we took two hours to walk it, unless we ran. All this despite the fact that we never once left the path that we walked every day in just a quarter of an hour. So we climbed up the bank of chippings, and we were sucked up by the sky, and we waited to see which of us would fall to earth more slowly, and we got caught up in flying telephone wires and so on. It was brilliant" (Nicolas, talking about local mushrooms); "During the day, you can see colours and after nightfall, what's great too is that you have the feeling of . . . of being lost. I like going into the forests where there are huge trees, and where there are shadows and weird noises. You feel a little lost there" (Max, talking about san pedro). When brought on by datura, an altered perception of the physical surroundings is characterized in particular by the user's perception of space being curved, making it impossible for him to get "back to base." "And you're like . . . oh fuck! I've gone a bit overboard there! Once I was going down a street, and I thought this is weird! This street normally leads straight back to my house, but it looked all curved! (. . .) and suddenly I found that I had to follow my dog to get back home. I thought I was lost (. . .) and the street I could see was all woo woo woowo whereas normally it's straight!" (Yann, talking about datura).

It appears that it is above all the absurd nature of these experiences (in the original sense of the term, i.e., defying logic) that provides the attraction and encourages the user to voluntarily seek out an altered psychological and spatial experience. "It makes you laugh, yeah, when they tell you there's no one there despite the fact that you've been talking to someone for 10 minutes. Afterwards, people think you're mad!" (Christian).

Users of "Visionary Plants". Contrary to the perceptions of "plants" as being enchanting or disorientation-inducing, in as far as the users consider (at least after the drug taking session) that the changes brought on by these substances are merely illusions, this third category implies that the use of the substance actually makes it possible to access hidden truths, realities, or worlds, which are invisible without the aid of these "plants," which are then seen as a tool or vehicle, or even as a living being able to communicate, and possessing knowledge which it is happy to pass on to "initiates."

These "visionary plants" encourage endogenous knowledge through the development of greater self-awareness, but also make it possible to access exogenous realities, i.e., a mystical knowledge concerning another reality, one which is invisible to the common mortal.

The use of "visionary plants" is associated with three different types of "usage meanings." These involve specific belief systems which influence the way the effects are interpreted by the user. This is a state of mind in which the user wants to be free from the cognitive scientific and rationalist worldview so typical of our contemporary Western society. In the first case, the "plants" can be used as a vehicle to a parallel world. In the second case, the "plants" are taken in order to help the user see invisible creatures around us or gain

access to hidden knowledge, particularly concerning the creation and maintenance of the living world. This knowledge is “revealed,” i.e., the “plants” (which have the capacity to communicate) pass on such knowledge to the “initiate” with no need for the latter to learn it. In the third case, the “plants” are used as a psychotherapy tool. This third subgroup may appear to be very distinct from the first two, but in fact all of these categories share a belief in the visionary characteristics attributed to the “plants.” The various self-interpretation layers (representations, preconceptions) simply fall away: the user no longer thinks about what he is doing, but allows himself to be guided by the “herb” which reveals its true nature to him. It appears that in the first case, the perception of the “plant” is limited to the image of a vehicle. In the other two cases however, the “herb” is “personalized” in that it is seen as having intentions all on its own. The “herb” acts with the aim of revealing “The Truth” to the person having taken it. These meanings associated with drug use imply that the plants “communicate” and express themselves mystically. *“There’s the fact that it tells you that it’s a living creature, from your own planet, with which you can communicate. In short, it’s just as if it was telling you things, as if the herb was actually telling you things. On the other hand, if it’s LSD which is causing you to see things, it’s not the same, and you say to yourself ‘that’s all in my head,’ and that’s all there is to it, whereas with a herb, you say to yourself ‘these things are true to a certain extent (. . .) I see it as a religion.’ It involves a relationship based on respect . . . And I see them as something well . . . sacred. You know what I mean?”* (Gaëtan); *“It’s the herb which is in control”* (Julie).

It must be stressed that the representation of natural hallucinogens as “visionary plants” implies (for the users expressing them) meanings associated with the use of the plants, which they are keen to distinguish from the “recreational” use of psychoactive substances. The use of these “plants” is described as “work.” *“As I said earlier, I don’t take these drugs just for fun, just for amusement. Hallucinogenic drugs don’t impress me . . . I take it for mystical or spiritual research, and because I feel great afterwards, but at the time I certainly don’t find it funny”* (Julie); *“It’s a form of work, they [the Amazonian Indians] go as far as to call that ‘the work.’ They don’t call it a ‘getting stoned’ or anything like that. It’s work (. . .) It’s serious, and shouldn’t be taken lightly”* (Mary, 29 years old, unemployed).

Considering the users’ “careers,” all of those who viewed their drug use as involving the use of “visionary plants” had first passed via the other categories described above: all had started using the plants and mushrooms as “enchanted plants,” and subsequently possibly as “disorientation plants,” before reaching the stage of “visionary plants.” However, visionary usage means that during their drug “career” the drug users use the drug in two different ways: (1) either in an empirical manner, as is the case with Gaëtan whose hallucinations became so real in his eyes that they came to be seen as visions, and were subsequently sought in their own right, or (2) in a theoretical manner as was the case with Julie, who changed her perception of drug use after a great deal of reading and discussion with peers. The festive use of “enchanted plants” is replaced by the use of “visionary plants” as the user was already attracted by mystical issues before beginning use. There is no firm set of mystical beliefs at the outset, but the hallucinations eventually confirm the existence of another reality, one which is inaccessible to noninitiates.

Concerning the consumption scenario, the drugs are taken at home, out in the wild, or in a shamanic center in Peru’s high Amazonian region, as was the case for Julie and Mary. The drugs can be taken alone (especially those taken at home), but users can also be “alone” while part of the group: this is often the case when the substances are consumed in a natural setting, and is always the case in “personal development seminars” in South America. The favorite products are ayahuasca, san pedro, peyotl, salvia extracts, and, to a lesser extent, imported mushrooms in high dosages.

A Vehicle to a Parallel World. Only Jérémy clearly mentioned the use of plants as a vehicle to reach a parallel world, without referring to neo-shamanism. As he saw it, taking salvia extract is a means of reaching the true world, which he believes to be situated in a parallel dimension. “*You’re in another world with salvia, you really feel that you are somewhere else, in another world. It’s really It’s real, yeah, at least I think it’s real. I’d already dreamed about this place, I’d already thought about it when I was little. I knew it before I had even been there (. . .) It’s a journey to the other side, just like Beetle Juice, if you’ve seen Beetle Juice,¹³ he suddenly takes the train and finds himself on the other side, while this is just the same (. . .) it’s a journey by the spirit*” (Jérémy).

Apart from Jérémy, the attribution of this meaning to the use of these drugs is very characteristic of those subscribing to the neo-shamanic view of hallucinatory phenomena and of the living world. Consumption is viewed in exactly the same way, as a means to reach a world which is very real yet invisible, but in this case it is a sacred world peopled with godlike entities. However, in addition to the notion of being a “vehicle,” another common point exists with Jérémy’s view: the relationship with the afterlife (ghosts). Here, the theory goes even further, embracing ideas such as eternal life and the anguish of death in addition to life’s more painful episodes. “*These parallel worlds exist, but they can’t be seen as they really are with the naked eye, in our world. And in these parallel worlds there are spirits, some of which want to hurt you and others who want to help you and you can see your grandparents. Your ancestors are all there, you can see lots of people . . . I’m talking about entities, not physical people, and I think that through all of that it can help you to get through the difficulties you’re experiencing in life, and can help you to protect yourself, and spiritual protection is very important, it stops others from pulling you apart, it helps keep your life together, and you’ve always got something which you can hang on to, you’re far less afraid of death because you know that in any case there’s something afterwards and . . . And so on. I can’t really tell you any more, you’ll need to try it for yourself (she laughs). With what I’ve already told you, you must be saying to yourself ‘she’s mad’*” (Julie).

A Means of “Decoding” the Invisible World and of Accessing Hidden Knowledge. When “visionary plants” are used as a “decoder” (as a means of “making the invisible, visible”), we are no longer talking about being “transported” by the use of the drug as a vehicle, but rather of seeing the invisible beings surrounding us, the existence of which can be perceived only by initiates. These are small invisible beings or forms of energy that can only be observed with the aid of “visionary plants” which act as a looking glass. The “decoder” function also provides access to complex and hidden knowledge, which is said to be a mixture of ancestral knowledge (e.g., the “cosmic snake”) and contemporary science (the snake represented by a DNA string). It is in this way that such knowledge is communicated. It involves the user understanding the logic behind the creation of the world (interpreted from a neo-shamanic viewpoint), while at the same time heightening the mystic sensation. This is “automatic” knowledge, knowledge which is not gradually acquired but which is accessible as an instantly available source of wisdom.

In this particular respect, we find an “esoteric path” as represented by Mary and Julie who believe in the existence of a “hidden knowledge” which can only be passed on from

¹³“Beetle Juice” is a famous film by Tim Burton in which ghosts battle against the “evil humans.” You only need to say his name three times (Beetle Juice) to be whisked away to his world. The human heroes die a few minutes after the film begins (these are the good ghosts), and then the fun begins. The aim is to laugh about death, to laugh at death, and to live on even when you have died. Tim Burton has made something of an art form out of conveying this sort of concept—and we should note that this idea crops up in relation to salvia experiments. In a quote mentioned above, Axel states, “*I thought I was dead I had the impression of being in a coffin, (. . .) I couldn’t stop laughing.*”

the teacher to the disciple through the use of ayahuasca. There is also an “amateur” path as represented by Gaëtan and Martin who hold a similar view concerning psychoactive experiences among friends and the ideologies which promote this viewpoint. “*With the right mushrooms it’s more mystical, you’re taking a step toward the allies,¹⁴ and I see that as really, really entering another world, entering a natural world, the world you can’t see (. . .) As I see it, it’s completely normal. I see nature as not only being populated with humans . . . There are animals, humans, but also others, waveforms, forms of energy maybe, things which are not really physical, but you can’t really say ‘okay, that has such and such a shape,’ because it may only be an energy form. Undines are water currents . . . I just think it’s possible, yeah*” (Martin); “*To get a better understanding of what’s happening . . . Not necessarily things you can see with the naked eye, but things which exist all the same (. . .) I think it’s a great herb, not only to help you to give thought to yourself, but also to bring new knowledge. What I mean by that it is that with ayahuasca you’re using part of the brain that you don’t normally use! (. . .) If you’re into quantum physics, and I’m just giving you an example here, if you like quantum physics you’re going to get a sudden influx of new information. You don’t know where it’s come from. Has it perhaps come from our collective memory? Obviously, that can come from lots of places, but in any case it’s an influx of knowledge that you’ll get, and afterwards you can go and talk to a physicist, and tell him what you’ve seen and he’ll confirm that it’s correct!”¹⁵ (Julie); “*There’s knowledge like sacred geometry. You know, something like sacred geometry is no small matter (. . .) We talk about things which are material and immaterial. Things that you can’t see but which are there all the same. Energy and so on. And creation . . . And everything . . . As an example, there are lots of people who have seen . . . and I know because I saw it during my first trip . . . it’s the only thing I saw – I saw this snake*” (Mary).*

*A Psychotherapy Tool*¹⁶ All of those using “visionary plants” and referring to neo-shamanism mentioned a wish to achieve a better understanding of themselves, “*to fully explore myself*” in the words of Gaëtan. It was Julie who most fully developed this particular meaning of drug use. She particularly focused on her therapeutic goals, stressing that she took these plants “*with shamans, for treatment purposes.*” She hinted, without clearly saying so, that the problem being treated was a heroin addiction. This immediately puts her in more of a therapeutic framework than an analytical one (which would be a better description of the others’ positions). In this particular respect, ayahuasca offers three benefits: it enables the users to rapidly gain an understanding of themselves, this being an absolute truth which the plant only needs to reveal, and it makes it possible to evacuate psychological stress while at the same time it purges the body. Finally, it cleanses both the body and the spirit, clearing away pain, clearing away blockages caused by these pains, and cleaning away the psychological barriers that prevent the user from accessing the hidden truth. The anticipated effects are brought on not only by the drug itself, but also by the way in which the master of ceremonies organizes the session. This ceremony is considered as having an importance equal to that of the drug itself. “*It had a physical effect on my*

¹⁴The “allies” is the term used by Castaneda to refer to “invisible entities” (see Castaneda, 1985). As Castaneda saw it, there are three allies with whom it is possible to communicate in order to gain knowledge: *Mescalito*, accessed using peyotl, *Humito* (the “little smoke”), who can be found in psilocybe mushrooms, and finally the herb of the devil, who can be accessed via *Datura innoxia*.

¹⁵Narby’s book, *Cosmic serpent: DNA and the origins of knowledge*, develops this theme in detail. The plants are believed to have the capacity to reveal all scientific knowledge (“The Knowledge”), which is available in a “book” written on DNA strings and which the plants can reveal.

¹⁶None of the users interviewed had used iboga for pseudo-therapeutic purposes. Etienne, who was the only one to have consumed it, did so during a festive event simply to “try it.”

body, yeah. What I mean by that is that you suffer so much psychological trauma that this has an impact on your body, so the two are closely linked. But I know that there are many things which are not at all psychological, but which can harm your body, caused by psychological blockages but you don't know where they come from, and it's exactly these things that you get rid of during an ayahuasca session, and afterwards you're clean (...) It's basically a cleansing and purifying herb, a herb made to clean you out, and according to the words and the songs used, it'll either make you vomit or bring you peace ... That's how it's designed, what that means is that the person who'll be singing won't just be singing any way they feel ... their work is specially designed ... , they do their work in such a way that you have periods where you reject something and periods where you are at peace, followed by periods where you start rejecting again, and periods of rest (...) I suppose you could call ayahuasca, a high speed psychoanalysis session (...) instead of doing 10 years' worth of psychotherapy, you do one year's worth of ayahuasca" (Julie).

Analysis of the Meanings Associated With the Use of Natural Hallucinogens

The Contemporary Connection Between Festive Use and Mystical Use Thanks to the Positive Image of Ayahuasca. This qualitative and exploratory study into the contemporary use of natural hallucinogens above all illustrates the strong relationship between their current distribution and the multiple use scenarios as perceived by consumers, such as festive practices. Most of the persons interviewed praised the qualities of natural products and yet were happy to use either natural or synthetic substances, or even a combination of the two. A minority of the interviewees now only use hallucinogenic plants (on the day of the interview) for visionary and mystical uses. Above all, their situation clearly demonstrates the relationship between spirituality and the use of hallucinogenic substances (Sussman et al., 2006). However, our study also qualitatively demonstrates the link between festive and mystical uses. Among our samples, all of those persons using "visionary plants" began by using natural hallucinogens for festive purposes and arrived at the "mystical meaning" only at a later stage. Our study is not intended to guarantee representativeness, and consequently this does not mean that no one begins using these substances for visionary purposes, but this information nevertheless enables us to arrive at a reasonable hypothesis concerning the transition of a certain number of the "festive" drug users to a more "mystical" consumption scenario. This hypothesis is backed up by an anecdote: when Mary took ayahuasca in a shamanic center in Peru's high Amazonian region, she had already taken it before, during a techno event in Central America. She explained how the Santo Daïme devotees arrived at the event sites with ayahuasca potions, with the aim of introducing the participants to this in order to "recruit" them, and how hundreds of young people present at the site took advantage of this opportunity to experience this product for the first time. This was the starting point of Mary's relationship with plants possessing "teaching" properties.

The growth in the use of ayahuasca by Westerners as a visionary plant has given it a positive image. It is probably the same with other traditional plants, the use of which is currently growing outside their usual context, such as iboga. Indeed, the interviews with users of natural hallucinogens has highlighted a "risk scale" ranging from mushrooms picked in Europe and seeds containing LSA (the lowest risk products) up to datura (considered as having the highest "risk level"). Paradoxically, ayahuasca is absent from this risk scale and appears above all to be a product that generates curiosity among young consumers of

hallucinogenic substances, who have not yet experienced this product.¹⁷ Despite everything said about datura, it has to be said that those people who have not consumed ayahuasca know of none or very few of their peers who have experimented with this substance. On the other hand, a number of beliefs circulate concerning this drug, similar to those which grew up around LSD from the 1960s onwards, mainly when it comes to “widening perception” and “gaining a fuller understanding of the world.” *“At the moment (smiling), I am reading the ‘Cosmic serpent’ (. . .) and it’s really played on my mind. I haven’t finished yet though... I’m almost finished and it’s completely changed the way I look at things. In fact, I’d really like to try ayahuasca (. . .) This is because I don’t identify with . . . well, the creation of the world and the creation of humans, and of life, by a . . . I can’t identify with all of that, in all of the religions, I don’t believe it. Things like that god created Adam and Eve. You see what I mean? I’d be a lot more . . . you know . . . The fact that I’ve read this book now, I’d be more . . . not rational because it stops you from seeing certain things if you’re rational or too rational, and in all religions, in every case you always find that dual serpent there. And what I say to myself is . . . I say to myself in fact it’s completely possible. Let’s just say that I have a preference for that particular version”* (Sonia). Thus, the image of ayahuasca shares no common points with that of datura. People report that they “would like to try it” and reading books can encourage people to experiment, particularly reading a book which has replaced Castaneda (1985) as the new work of reference associated with the use of natural drugs among young Westerners today: *Cosmic Serpent*, by Jérémy Narby (1999).

Meanings Associated With the Use of Natural Hallucinogens, and Partially Applicable to the Use of Synthetic Substances. The meanings associated with the use of natural hallucinogens described based on the typology (Please see the part describing the Typology of Reasons for Use) do not appear to be restricted to the use of these substances. Festive uses aimed at stimulating euphoria and a feeling of belonging to a group (“enchanted plants”) also accurately describe the meaning generally attributed to the use of ecstasy or cocaine. Usage aimed at generating a communion with nature (“enchanted plants”), encouraging meditation, or having a psychotherapeutic purpose (“visionary plants”) also typify the meaning behind the use of LSD (in the 1950s, the psychotherapeutic potential of LSD was explored before such practices were made illegal). Usage carried out with the aim of losing consciousness and bringing on a dreamlike state (“disorientation plants”) also applies to the use of ketamin (Jansen, 2001; Reynaud-Maurupt, Bello, Toufik, Akoka, 2007). Finally, “disorientation” uses in the physical world (including unconscious travel, and possibly a loss of anterograde memory) can also describe the effects of high dosage benzodiazepines.

Another special characteristic common to natural and synthetic hallucinogens is the fact that the meanings attributed to usage practices only partially correspond to the usage frequency categories. Consequently, the meanings associated with the use of ecstasy, LSD, and natural hallucinogens which highlight festive stimulation or the quest for oneness with nature are generally described as hedonistic meanings. However, for a majority of the persons interviewed who attributed such meanings to their drug use, hedonistic usage does

¹⁷The violent effects of ayahuasca lead to comparisons being drawn with datura in terms of the risks encountered. However, no deaths related to an overdose of ayahuasca have so far been recorded, which is unfortunately not the case with datura. However, although the use of ayahuasca increases in certain drug user groups, and particularly in cases of “unsupervised” drug consumption sessions, at the very least ayahuasca is likely to bring about the same kinds of accidents as those witnessed with datura (for example, jumping out of a window, crossing the road without looking first, etc.).

not involve controlling consumption frequency, and drug consumption sessions for each of the various products together tend to follow one another in quick succession. At the same time, the meanings associated with the use of ketamin, benzodiazepines at high doses, and natural hallucinogens which highlight the “disorientation” effect of the substances are often described as practices used by “stoners” (those simply looking to “get off their heads”), which implies a lack of control over the usage frequency. However, this is not the case with a number of people who use natural hallucinogens, and who associate such means with the use of these products.

This leaves those meanings associated with the use of visionary plants, which are difficult to classify with the use of synthetic substances, but which can nevertheless possibly be categorized in this way, as the meanings associated with their use are based on a worldview and on a view of hallucinatory events, as well as on the substances themselves. A good example of this can be seen with Jérémy, who uses “visionary plants,” while developing his own interpretation. For many years now, anthropologists have considered that sociocultural contexts and therefore collective cognitive frameworks have an influence on the way in which hallucinatory trips tend to develop, by amplifying and facilitating the latent messages specific to each culture (Levi-Strauss, 1997).¹⁸

The information provided by those people encountered and the informal interviews carried out bear witness to the fact that these methods of giving meaning to the use of hallucinogenic plants and mushrooms are very much a minority aspect (although gaining ground fast). However, they remain marginal when compared to the festive use of these substances. These methods of giving meaning to drug use are based on a neo-shamanic worldview, i.e., an ideology which seeks to rehabilitate and reintroduce the role of shamanism as a means of interpreting the world and natural phenomena, which uses arguments claimed to be directly derived from modern-day science in order to do so. Belief in this neo-shamanic message leads to differing experimentation with these substances among those already using them for festive reasons, and provides the user with an arsenal of arguments justifying such use. The user is no longer simply partying, but is using “psychotechniques.” These involve believing beforehand or being persuaded subsequently that the hallucinations witnessed are in fact visions, and that the plants have a capacity to provide the user with knowledge. Consequently, neo-shamanism is a very real sociocultural phenomenon in which the community of drug users draws upon works by Castaneda (1985) and Narby (1999). Neo-shamanism is based on a worldview that involves the use of natural hallucinogens in order to become an “initiate,” which also uses the effects of these substances to justify the said worldview and to recruit others. The influence of the use of natural hallucinogens by Westerners seeking to gain access to this perceptual universe occurs both before and after subscribing to this philosophy. This ideology also helps to support the idea that natural hallucinogens can be used during psychotherapy and as part of personal development

¹⁸For example, the research into ethnomycology initially reported by Wasson (1957) concerning traditional societies in Eurasia reveal that taking *Amanita muscaria* (fly agaric) resulted in peaceful and benevolent behavior among the Siberian Koriak population. However, it may well have been this same *Amanita*, and therefore the same alkaloids, which are said to have been associated with the phenomenon of *berserk fury* among the Vikings, which gave the warrior access to murderous and suicidal levels of aggression (Levi-Strauss, 1973). Levi-Strauss moreover stressed that the differences in behavior between the Koriak and the Vikings following the consumption of these mushrooms led Wasson to question the opinions of several Scandinavian scientists who considered that it was *Amanita muscaria* which was taken by both populations. Levi-Strauss tended to subscribe to the view that the same substance was involved in both cases, but that the differing social and cultural references of these two groups could reasonably explain the major differences in the effects experienced.

projects, based on the belief that problems of the body and mind can be treated in tandem by these substances, which contribute long-lost ancestral knowledge. Here, we are talking about a return to the very origins of traditional methods, which have been “updated” to include the use of a terminology designed to give them a more modern image, based among other things on the influence of so-called alternative medicines. This can be confidently stated without making any judgment about the effectiveness of this paradigm, but based simply on an anthropological interpretation of social factors.¹⁹ In France in particular, pseudo-therapeutic sessions have been organized to help wean users off heroin, during which volunteers took iboga, a powerful hallucinogen used in traditional Gabonese esoteric practices. The French Health Products Safety Agency (*Agence française de sécurité sanitaire des produits de santé*) launched an inquiry following the death of a course member during the summer of 2006, and iboga was added to the narcotics list in March 2007. A lack of experienced iboga users has limited the scope of our survey, and a specific investigation into the pseudo-therapeutic use of this substance is vital if we are to achieve a comprehensive understanding of the contemporary use of natural hallucinogens in the West.

Discussion

The Mystical Bases of the Contemporary Use of “Visionary Plants” and the Varying Experiences of Its Devotees

Ideologies attributing a mystical meaning to the use of natural hallucinogens are very much the minority, although the process by which these perceptions of the use of natural hallucinogenic substances spread certainly merits attention, leading us to focus in particular on the rhetoric on which the spread of such an ideology is based among the community of drug users. The generations of drug users who are now moving on to near-mystical practices following prior consumption of the drugs in a festive environment have been influenced by Castaneda (1985), who introduced contemporary Western society to the idea that visionary plants exist (including the use of peyotl and datura). However, according to Patrick Deshayes, a certain misunderstanding has been cobbled together through the *Teachings of Don Juan*. As he sees it, there is no serious link between Amazonian shamanic thought systems and the ideology of young Westerners, claiming to be inspired by Castaneda (Deshayes, 2002) and simply expressing a desire to achieve a “communion with nature.” In our research, a number of those interviewed referred to Castaneda, and the work by Narby (1999). The author of this latter book is occasionally described as “the modern-day Castaneda.” However, among the interviewees, those referring to Castaneda and Narby are not the same as those simply seeking to “commune with nature,” or when they “commune with nature” and refer to Narby, it is only to state that they would like to experiment with other means of consuming natural hallucinogens. An ideology based on “visionary plants” and their supposed abilities can be found among those who have undergone shamanic initiation or have attempted to follow its principles while alone. Their explanations often include phrases, concepts, and examples taken from Narby’s book. Narby wrote this work

¹⁹“We are no longer treating people with herbs, but are instead practicing ‘phytotherapy.’ We no longer cure a person with a ‘laying-on of hands’ but by prescribing a ‘magnetic treatment.’ It is no longer a question of good or evil spirits but rather of ‘positive’ or ‘negative’ vibrations. The witch doctor becomes a dowser, the seer a parapsychologist, and the bonesetter a chiropractor” (Laplantine, 1994).

based on a paradox: anthropologists describe the thought systems of traditional Amerindian societies while seeking an underlying logic to explain these systems and the representations supporting this logic. At the same time, they reject the ideology of the *shamans* out of hand, who invariably explain that their botanical knowledge is “revealed” to them by ayahuasca. This refusal to countenance an alternative viewpoint is the result of a simple cultural divide: in Western thought systems, the very idea of a “natural message” is a contradiction in itself (Levi-Strauss, 1997), whereas the *shamans* believe that “plants talk to you.” Based on this viewpoint, Narby (who shares with Castaneda the kind of narrative effectiveness which largely assured the success of the latter) describes the coincidences between the accounts given by the *shamans*, their mythology, and contemporary knowledge of molecular biology. He lists the similarities between DNA strings and “cosmic snakes,” and puts forward the view that “animated essences” or “spirits” made of pure light are in fact biophoton emissions from DNA, which provide a means of communication with plant species. As he argues it, the living world communicates using the light sources and can reveal the all-embracing knowledge recorded in the DNA strings, the knowledge which can only be accessed by means of an altered state of consciousness brought about by certain substances such as ayahuasca. In this respect, he goes even further than Castaneda, as he is seeking a means of reconciling healing practices and primitive knowledge with contemporary science. However, he completely shares with him the “eco-religious” standpoint of which Deshayes (2002) accused Castaneda. The basis of J  r  my Narby’s influence upon a small but apparently increasing minority of drug users can easily be described. His book satisfies their craving for spirituality in an age and in a Western society which are often agnostic or atheist, which can be understood as a “religion with no god” other than nature and Mother Earth herself. He also offers a response to their ecological concerns, by describing the environment as being worthy of respect, and in doing so discrediting Western social systems that use living matter as nothing more than a raw material. He puts forward an animist viewpoint aimed at a small but clearly increasing number of drug users. He also offers a response to the quest for more positive feminine figures (which should be understood as a modern notion with its origins in ancestral pre-Christian traditions), and a desire for equality between the sexes. Female figures enjoy greater legitimacy, breaking free of the straitjacket imposed upon them by Judeo-Christian religion, with the “sinner” Eve and the subservient role of women on the one hand, contrasting with “Mother Earth” and “Mother Nature” in shamanism on the other (ayahuasca is often referred to as “the mother” and tobacco as “the father”). It also corresponds to a wish to reconcile contemporary science and mysticism, with the link between the two having been eroded significantly over recent centuries where the major religions are concerned. Finally, he removes the stigma of drug consumption, as ayahuasca users are not “drug takers” but rather “initiates.” This last assertion is simply an observation and does not signify that neo-shamanism encourages unabashed drug consumption. Far from it in fact. However, this observation certainly gives a cause for thought as several user profiles emerge among those subscribing to this ideology and their experiences vary significantly.

The first experience that we should mention is that of a drug addict (Julie) who now uses only ayahuasca as part of a “shamanic therapy.” She gives the impression that she is in a transitional phase which will eventually lead her out of drug use altogether. Even though she has remained in this phase for a long while now, she states that she feels fine and that she has found a job. The second experience is that of Mary: following her introduction to ayahuasca by the Santo Daime cult during a festive event, Mary was introduced to an “American anthropologist” who put her in touch with a shamanic center which he knew of, in order to “spiritualize” her experience of ayahuasca. While she was completely under the

spell of the drug's effects, the so-called anthropologist took advantage of her submissive state to rape her repeatedly. Mary's case demonstrates that the financial gain generated by these personal development courses has led to malicious individuals taking advantage of the situations of extreme vulnerability in which the drug users find themselves when the effects occur. Those involved in the social field, who believe in the success of personal development courses or shamanic initiation treatments, would be well advised to draw up an ad hoc list in order to avoid abuse of all kinds. The third experience (Gaëtan and Martin) poses rather more of a problem when it comes to defining usage: while also described as "neo-shamanism" by users themselves, the practice of carrying out "shamanism at home" by those using "visionary plants" on a solo basis could not be defined as "neo-shamanism" because of the lack of an experienced "guide" in the form of the shaman. Additionally, in such cases it appears that the risks of physical or psychological accidents are much higher due to the absence of a sober "sitter" able to keep an eye on the person while he or she is "tripping." The risk of future deaths similar to those witnessed with the use of datura (people leaping out of windows or suffering other accidents) is very real.

The Role of the Internet or the Extreme Ease of Distributing Drugs and Information of All Kinds

To round off, we should also stress to what extent the contemporary use of natural hallucinogens is influenced by its close links with the Internet. All those who had consumed salvia or organic DMT had purchased it over the Internet or had obtained it from someone else who had bought it over the Internet. Imported mushrooms are usually purchased directly or from someone who has bought them beforehand over the Internet or grown them from spores purchased on the Internet. Seeds containing LSA are also purchased over the Internet. These supply methods make drug use somewhat commonplace in the minds of the younger generations. Illegal psychoactive substances can be purchased easily, paid for by credit card and received by post. What's more, the Internet is not limited to only supplying drugs. It can also supply information, just like any other information circulating on the web which is of extremely variable quality. Official drug prevention sites and the websites of drug users' associations, which are particularly focused on peer education, can be found alongside sales sites of a purely commercial nature. These sales sites express their goal of "widening consciousness at a planetary level" or personal home pages.

Consequently, in addition to distributing drugs by selling these products over the web, the Internet also encourages both experimentation and risk limitation thanks to the risk reduction advice provided. For several years now, warnings from specialists have appeared in scientific literature concerning the impact of the Internet on the usage practices of psychoactive substances. By using the Internet, potential users of hallucinogens can sidestep traditional sources of information concerning these substances and learn (in great detail) how to obtain, prepare, and consume numerous substances with a nonassessable level of risk (Halpern and Pope, 2001). Combining both incitation and harm reduction, the Internet today stands as a symbol of the ambivalence of drug use. When you are addressing your messages not to novices but to individuals who are already involved in experimentation, or who are even regular users and who also have "good reasons" (as they see it) to continue such practices, you cannot really expect messages aimed at reducing the risk of the harm caused by drugs and their effects to gain a fair hearing, unless you also admit the benefits that users gain from such practices. This is what has made peer education so successful, and which almost certainly explains the success of the Internet among users.

The web constitutes a “virtual” point of contact, with which judgments and stigmatization are no longer problems.

On this particular point, the use of salvia features a number of characteristics which make it a model case: its distribution as a recreational drug is recent, and it is usually purchased over the Internet. The sales sites offer a number of powerful products (including $\times 5$ and $\times 10$ extracts) while at the same time circulating advice to reduce the harm related to its use (among other things, there exists a “salvia user’s guide” which has been translated into several languages). Finally and above all, its use is not banned in France, which results in the users of psychoactive substances taking greater risks in carrying cannabis than in purchasing salvia. The fact that the use and production of salvia is not forbidden is interpreted by users as more of an authorization than a legal loophole. This paradox (i.e., cannabis banned and salvia authorized) also contributes in their eyes to discrediting the official drug prevention and repression message, as “Seer’s Sage” is recognized by most users and scientists as a powerful natural hallucinogenic substance. In addition to the extremely recent phenomenon of this product being sold (and harm reduction advice being provided) over the Internet, we should also add that salvia produces effects which give cause for concern regarding its distribution potential in the coming years. The extracts are particularly favored for their ability to bring on out-of-body experiences (Bücheler, Gleiter, Schworer, and Gaertner, 2005). The quest for this sensation, so characteristic of the use of ketamin (Jansen, 2001; Reynaud-Maurupt, Bello, Toufik, & Akoka, 2007), could provide a fertile recruiting ground where salvia is concerned, as ketamin remains tarnished by its image as a veterinary anesthetic, thus limiting its use.

The distribution of such substances via the Internet consequently demonstrates the ambivalence of the use of psychoactive substances. The Internet makes these drugs available, informing users of the effects they can expect and look for, while at the same time warning them of the risks of harm related to such use. In view of the ideological basis underlying this contemporary phenomenon, the public health authorities and organizations can be concerned, or on the contrary may feel that the sources of information effectively reduce the harm incurred. The observation which can be made in all cases is that the websites concerned may replace the processes of “initiation” and the transmission of knowledge by peers. The younger generations now accustomed to carrying out web searches can easily distinguish between a website which, although ideologically slanted, offers well thought-out and well-argued content, or over-the-top personal home pages. It is more difficult to make distinguish a website produced by amateurs, but which seeks to present itself as scientific, as the incorrect information may then be well hidden among a wealth of reliable information. In the case of salvia, numerous sources of information on the web offer a combination of esoteric advice, pragmatic warnings, and instructions for using this herb. The consumer may take this subtle promotion to be hard fact derived from science, and consequently to underestimate the risks for his health, whether known or unknown (Bücheler et al., 2005).²⁰ Without empirical research focusing on this subject, it is particularly difficult to determine whether or not these sales and information sites have encouraged experimentation among novices, or if only experienced users make use of them. If the second scenario applies, and if datura users had used the Internet in the past just as salvia users do today, experimentation could have been avoided, not to mention the numerous accidents.

²⁰As highlighted in Bücheler’s article, the influence of regular salvia use on driving abilities or the use of professional equipment has not been explored. The interaction between salvia, alcohol, or other psychoactive substances has not been explored. Salvia tolerance is still currently debated, bearing in mind that this is the only hallucinogen known in the world which attaches itself to the brain’s opioid receptors, responsible for the phenomenon of craving experienced with heroin or morphine use.

Conclusion

The contemporary uses of natural hallucinogens actually differ very little from the use of synthetic substances, as the substances are often used indifferently or even combined, as long as they produce the right effects. Consequently, these practices should generally be viewed within the context of poly-drug use perceived by users as a recreational practice. The motivations for the drug users become clearer according to their representation of natural hallucinogens; these can be used as enchanting substances, as substances to bring about a feeling of disorientation, or as visionary substances. This latter representation type is still a minority view, but is currently gaining ground throughout the community of drug users: a minority subscribes to it, while another is curious and ready to “go all the way.” In particular, the survey highlights the connection between festive and mystical practices, with a number of users “defecting” from the former to the latter. The research also makes it possible to highlight the risks associated with the use of these substances (such as the risks of accidents or involuntary submission). Finally, it reveals the specific relationships existing between the recent growth in the use of natural hallucinogens and the Internet, which contributes both to promoting experimentation and to reducing the harm incurred.

Declaration of Interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the article.

RÉSUMÉ

Les usages contemporains des plantes et des champignons hallucinogènes : une étude qualitative exploratoire conduite en France

Cette recherche qualitative conduite en France entre 2004 et 2007 s'appuie sur trente entretiens approfondis menés avec des personnes qui ont consommé au moins six fois des plantes ou des champignons hallucinogènes au cours de l'année qui a précédé l'entretien. Les entretiens ont été enregistrés, retranscrits et une analyse de contenu a été appliquée sur les données textuelles. L'étude s'intéresse aux pratiques des consommateurs et aux significations qu'ils investissent dans l'usage. Ces significations se rattachent à trois types de représentations des substances : on distingue les “plantes enchantées,” les “plantes d'égarement,” et les “plantes visionnaires.” L'Observatoire français des drogues et des toxicomanies est financeur de l'étude.

RESUMEN

Los usos contemporáneos de plantas y setas alucinógenas: una investigación cualitativa exploratoria realizada en Francia

Esta investigación cualitativa, llevada a cabo en Francia entre 2004 y 2007, se basa en treinta entrevistas realizadas en profundidad con personas que han consumido al menos seis veces plantas o setas alucinógenas durante el año anterior. Las entrevistas se grabaron y se transcribieron, aplicándose posteriormente un análisis de contenido a los datos textuales. El estudio se interesa por las prácticas de los consumidores y por las sensaciones que

obtienen del uso de dichas plantas. Tales sensaciones están en relación con tres tipos de representaciones de las sustancias: hay que distinguir entre “plantas mágicas,” “plantas que aturden” y “plantas visionarias.” El estudio está financiado por el Observatorio Francés de Drogas y Drogodependencias.

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Glossary

Ayahuasca: This term refers both to a giant creeper from the Amazonian region, *Banisteriopsis caapi* (Spruce ex Griseb) C.V. Morton, from the Malpighiaceae family, and a ritual drink with hallucinogenic properties prepared using the bark from the branches and trunk of this tree or similar varieties such as *Banisteriopsis inebrians* C.V. Morton. This bark can also be reduced to a powder and sniffed. The preparation method for the potion varies according to the Indian tribes concerned, among whom it is also known as Caapi or Yage. Steeping or decoctions are preferred, resulting in a drink more highly charged with active ingredients. These are the β -carbolines, indolic alkaloids derived from harmane (harmine, harmalin, harmalol, etc.), the proportion of the various alkaloids being related to the age of the plant. Most often however, various plants other

than those owing their hallucinogenic activity to alkaloids derived from harmane are used in order to prepare ayahuasca potions. Sometimes these may be plants containing tropane alkaloids similar to *Datura*. In general, these are the plants containing DMT and its derivatives such as *Anadenanthera peregrina* (L.) Speg or *Psychotria viridis* Ruiz and Pavon, which modify and strengthen the effect of the *Banisteriopsis*. The main result is the synergy between various alkaloids: the β -carbolines are MAO_A inhibitors (IMAO_A), protecting DMT and its derivatives from destruction, thereby enabling these tryptamines to deploy their full power, even if taken orally, by increasing the duration and intensity of their effects.

Datura or Jimsonweed: Throughout the world, there exist many varieties of Solanaceae of the *Datura* genus, whether wild, cultivated or ornamental. In France, the variety whose leaves and seeds are consumed for their hallucinogenic properties is *Datura stramonium* L. or Jimsonweed. Originally from the Middle East, this herbaceous annual plant measuring 50 cm to 1 m in height is naturalized presently. *Datura* usually grows among ruins or on uncultivated land. Its leaves are large, oval-shaped and clearly divided into pointed, unequal lobes. Its large, solitary flowers feature a wrinkled tubular corolla, which is white in color. They produce an oval-shaped capsular fruit covered with prominent thorns, hence the name “Thorn-Apple” occasionally given to the Jimsonweed. This fruit contains large numbers of reticulate, kidney-shaped seeds which are black when reaching maturity, and particularly rich in active ingredients, especially prior to maturity when they are of yellowish-white color.

Like other varieties of indigenous solanaceae, belladonna, henbane and mandrake (plants with a rich history where legends and superstitions are concerned), the Jimsonweed owes its effects to tropane alkaloids, hyoscyamine/atropine and scopolamine, parasymphatholytics and active ingredients working on the central nervous system. The dried plant contains 0.2%–0.6% of total alkaloids including a high level of scopolamine, unlike belladonna and henbane. High doses of atropine can bring on a state of major excitation, including agitation, convulsions, hallucinations, mental confusion, and violent delirium. In contrast to the “furious” effects of “atrophic delirium,” scopolamine generates hallucinogenic effects continuing for several hours. Its action on the central nervous system is sedative, depressive, hypnotic, memory-impairing, and (at high dosages) it can impair intellectual faculties. Jimsonweed is therefore first and foremost an “incapacitating narcotic drug.”

Lethal doses for adults are estimated at 10–12 g of seeds (i.e., 40–60 mg of scopolamine) although deaths caused by *datura* consumption are more often a result of life-threatening actions caused by the psychiatric problems rather than cardio-respiratory comas. The powerful hallucinations can give the user the impression that he is a bird, that he can fly or that he can walk on water, with all the obvious risks of falling from windows or drowning.

Hallucinogenic Mushrooms: The active ingredients of the main hallucinogenic mushrooms consumed throughout the world are indolic alkaloids, and chiefly psilocine (4-hydroxy-N,N-diméthyltryptamine) and its phosphate ester, psilocybin. The latter is quantitatively higher in the mushroom, but once ingested it undergoes dephosphorylation via the esterases of the digestive mucosa and is converted into psilocin, which is the true pharmacologically active agent. The vast majority of hallucinogenic mushrooms come from the Americas, and along with the European species it can be reasonably estimated that a maximum of 150 species exist. At the global level, this figure probably rises to around 180 species (Courtecuisse and Devaux, 2004). The European drug-users consume both the locally grown and imported species.

The main European hallucinogenic mushrooms are *Psilocybe semilanceata* (Fr.) Kummer and *Panaeolus cinctulus* (Bolt.) Saccardo. These grow in clusters, are small and mostly brown in color. The hallucinations occur after the user has swallowed 5–15 g of mushrooms, corresponding to 4–25 mg of psilocybine. The same effects can be obtained by consuming just 1 mg of psilocybine intravenously. Fatal intoxications directly caused by swallowing hallucinogenic mushrooms are very rare, with less than five cases being published during the last 50 years (Courtecuisse and Devaux, 2004). The main imported mushrooms consumed in Europe for their hallucinogenic properties are named by the users according to their country of origin. These are referred to as “Mexican mushrooms” and “Hawaiian mushrooms.” We also find other mushrooms, considered by the users as being more rare and difficult to obtain, referred to as “Amazonian mushrooms” or “Cuban mushrooms.” However, these nicknames do not correspond to any established, scientifically identified variety.

Iboga: Tabernanthe iboga Baill is a perennial, bushy shrub, 1–1.5 m in height, belonging to the Apocynaceae family. It grows wild in the undergrowth of Western Africa’s equatorial forests, but is often cultivated near homes as a magical plant. Iboga is traditionally used during the rites of passage, and reserved for initiation ceremonies, particularly in Gabon among the Mitsogho (the Bwiti cult). Iboga contains around a dozen indole alkaloids, particularly in its root bark, including ibogaine, the main active ingredient which can reach a level of 6%. The grated roots are slowly chewed or consumed as a drink after steeping. At low dosage levels (10–100 mg), ibogaine is a stimulant and boosts the body’s resistance to fatigue, a characteristic used by the African hunters. At higher doses (200–400 mg), ibogaine leads to vomiting, a state of intoxication, stupor and torpor before the appearance of powerful hallucinations, which are often anxiety-provoking and can lead the user committing suicide. Ibogaine has been recommended for the treatment of morphine and cocaine addictions, but at non-toxic dosage levels. However, the extensive work carried out, in particular during the 1980s and 1990s, revealed no therapeutic value. On the contrary it noted the misuse of this substance by certain groups (French Health Products Safety Agency—*Agence française de sécurité sanitaire des produits de santé*). Internationally, around 10 deaths have so far been reported. Iboga, ibogaine, and its isomers were added to Appendix IV of the narcotics list in France via the order dated March 12, 2007.

“Organic DMT” and Yopo: The term DMT refers to the abbreviation for N,N-dimethyltryptamine, tryptamine possessing hallucinogenic characteristics, of which the 4-hydroxyl derivatives psilocin and psilocybin are also the active alkaloids in hallucinogenic mushrooms (please refer to paragraph on Hallucinogenic Mushrooms). DMT is easily obtained through synthesis, but it is present in its natural state in varying quantities, either alone or accompanied by its derivatives 5-hydroxyl (bufotenin) or 5-Omethyl, in a large number of plants and even in some animals, e.g., the secretions of certain American toads. A particular feature of DMT, just like serotonin which possesses a similar structure (5-hydroxytryptamine), is that it can be deactivated by an enzyme, monoamine oxidase (MAO_A), when taken orally. In order to be active, vegetal drugs containing DMT must be inhaled in the form of powder, or smoked, injected or taken orally, and must be added to other plants that inhibit the effect of these enzymes (IMAO) as is the case with ayahuasca potion.

Among the individuals interviewed for the study, several had smoked a substance referred to as “organic DMT” or “natural DMT” without ever knowing from which plant this DMT was derived. They describe a smokeable resin, but with this data alone it is not possible to determine which plant (or plants) the users actually consumed.

Among the very large number of plants containing DMT and its derivatives, we should mention the Rubiaceae such as *Psychotria viridis* Ruiz and Pavon, the Mimosaceae such as *Mimosa hostilis* Benth, the Fabaceae such as *Acacia phlebophylla* H.B. Will., *Acacia longifolia* (Andrew) Willd, and in particular *Anadenanthera peregrina* (L.) Speg. A 10–15 m tree growing in various parts of South America, its seeds (which resemble flat, brown beans) are reduced to a powder in order to be sniffed. According to the region in question, this powder and the herb are referred to as Yopo or Cohoba. This DMT-containing drug, which is rich in 5MeO-DMT (a particularly active derivative), provokes occasionally violent digestive reactions including nausea, vomiting and even diarrhea, followed by intense but brief hallucinations which are first and foremost extremely visual (including bright colors and animals, etc.). A bout of excessive agitation is followed by introspection, depression, and hypnotic effects.

Peyotl and San Pedro: Peyotl, *Lophophora williamsii* (Lemaire (ex Salm-Dyck)) Coulter, and san pedro, *Trichocereus pachanoi* Britton and Rose, are Cactaceae belonging to two different genera but which share the same main psychoactive ingredient: mescaline. Compared to LSD, mescaline is not considered as a particularly powerful hallucinogen: the active dose of mescaline is around 200–500 mg (that of LSD is around 10–15 μ g). Mescaline, a derivative of phenethylamine, is accompanied in peyotl and san pedro by a large number of other alkaloids based around the same skeleton or derived from tetrahydroisoquinoline.

Peyotl is known as “*the plant which reveals wonders before your eyes*” because the kaleidoscopic hallucinations brought on by mescaline are chiefly visual in nature, including distorted shapes, color intensification and synaesthesia. Peyotl is a small spine-free cactus, which grows in Mexico and in the south-west of the United States. It is traditionally harvested by certain Indian tribes involving a complex religious ceremony which dates back to more than 2,000 years. Only the top part is used, which is fleshy, globular, blue-green in color, measuring 2–7 cm high and 4–12 cm in diameter (Kintz, 2004). It is consumed in the form of dried slices (Mescal buttons) that contain up to 6% mescaline.

San pedro has a much lower active alkaloid content (0.3%–1% of mescaline in the dried form of the drug). Nevertheless, it is often considered as a better source of mescaline as this is a very large cactus reaching up to 3 m in height, fast growing, and producing many branches.

Salvia: Originating from Southern Mexico where it is traditionally used for its divination and psychoactive properties, *Salvia divinorum* Epling and Jativa is one of the many species of the *Salvia* genus of the Lamiaceae family. A perennial herb that grows via vegetative propagation, it measures 50–150 cm in height. Its leaves resemble the leaves of peppermint, generally used in the food industry. Its small trumpet-shaped flowers, which grow in clusters, are whitish in color with a pale purple calyx.

The psychoactive substance contained in salvia is known as salvinorin A. Salvinorin A is a diterpene, i.e., a non-nitrogenous substance, unlike the alkaloids that form the active ingredients of all other currently known hallucinogenic plants (excluding cannabis). The speed, intensity, and duration of the hallucinogenic effects are dependent upon the usage method, which also has an influence on the quantities administered as salvinorin is badly absorbed in the digestive tract. When smoked, a dose of 200–1,000 μ g of salvinorin A (i.e., 0.2–0.5 g of dried leaves) is sufficient to produce intense but brief hallucinations, while 2–6 g of chewed dried leaves are necessary to produce the same effects. These effects, which are described as being very different from those of other hallucinogenic drugs, range from slight distortion to terrifying, traumatic and highly disturbing visions.

Curiously, salvinorin A does not act upon the same brain receptors as other hallucinogens, which attach to the serotonin receptors. On the contrary, this is the only known hallucinogenic substance, which attaches itself to a kappa opioid receptor. Consequently, it is possible to reduce or even completely alleviate its effects through the administration of Narcan[®], as is the case with heroin overdoses (Scheffler and Roth, 2003; Prisinzano, 2005).

Seeds Containing LSA: LSA is the hallucinogenic substance present in certain species of plants belonging first and foremost to the Convolvulaceae family. LSA (lysergic acid amide, the basic structure of ergot alkaloids) is a natural alkaloid very similar to LSD, which is its semi-synthesized N,N-diethyl derivative. LSA therefore produces an effect similar to that of LSD but which is far less powerful. A hallucinogenic dosage of LSA is approximately 2 mg while that of LSD is 10–15 μg . (However, the dose of LSD which a drug user administers to himself would generally be between 50–250 μg .) The Convolvulaceae whose seeds contain LSA are chiefly creepers originating from (or naturalized in) Mexico, Central America, and South America commonly referred to as Morning Glory, Ipomoea or Woodrose. The name “Morning Glory” applies in particular to the Convolvulaceae of the *Ipomoea* genus (*Ipomoea violacea* L., *Ipomoea purpurea* (L.) Roth, etc.). The name Woodrose (Hawaiian Baby Woodrose) applies to *Argyrea nervosa* Bojer. The gardeners refer to the latter as the “Silver creeper,” and it should not be confused with another Convolvulaceae of the *Merremia* genus (Hawaiian Woodrose) whose seeds do not contain LSA. There is also another plant belonging to the *Ipomoea* genus referred to as Volubilis or Blue bindweed, which some people consider to be the *Ipomoea indica* Merr species and others the *Ipomoea tricolor* Cav, etc.

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