

User perceptions of mental health consequences of hallucinogen use in self-identified spiritual contexts

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ABSTRACT

AIMS – The article aims to gain insight into the private worlds of users of hallucinogenic drugs in spiritual contexts, with a focus on the self-perceived mental health implications of their practices. This will help us understand the rationale behind and consequences of hallucinogenic drug use. **METHOD** – Respondents were recruited at several internet fora for individual email-mediated interviews (n = 5) or group interviews in public discussion threads (n = 11). They were predominantly males in their 30s or 40s with stable jobs and living conditions and extensive hallucinogen experience. **RESULTS** – Both positive and adverse consequences were assessed, and respondents emphasised the capacity of hallucinogenic drugs for healing and personal growth; even adverse experiences (“bad trips”) were regarded as valuable for these purposes. The dependence potential of these drugs was regarded as low because of an inherent self-regulatory mechanism whereby positive effects disappear with overuse. A minority of participants reported mental health problems that may result from their hallucinogen use, but the majority have experienced no significant adverse reactions after many years of use. This should be seen in light of the low frequency of their hallucinogen use. **CONCLUSION** – The study obtained evidence of a predominantly male group of mature users taking hallucinogens in carefully prepared sessions for the purpose of personal spiritual growth, acknowledging some risks but also several benefits from this practice.

KEYWORDS – hallucinogens, psychedelics, spirituality, dependence, adverse effects, qualitative, interview

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Introduction

Hallucinogens are a controversial group of drugs to which a broad range of conflicting health effects have been attributed.¹ They started out as promising candidates for psychiatric research in the late 1940s, and by 1965 over 2000 papers on the subject had been published (Sessa, 2005). Although methodologies were sometimes unpolished and results varied, lysergic acid diethylamide (LSD) therapy and similar techniques were applied to largely positive effect to a variety of psychological disorders. Particularly interesting were the

results on treatment of addictions, with brief psychedelic therapy sessions often leading to consistent long-term recovery from alcoholism (Abramson, 1967).

However, the widespread recreational use of these drugs in the 1960s resulted in a number of highly publicised adverse health reactions, and further research on the hallucinogen class of drugs was prohibited. This situation lasted until restrictions were gradually eased especially from the 1990s onwards, and the appearance of a landmark study in 2006 inves-

tigating the psychological and spiritual effects of psilocybin (the active ingredient of “magic mushrooms”) gave a new impetus to research in the field (Griffiths, Richards, McCann, & Jesse, 2006; Griffiths, Richards, Johnson, McCann, & Jesse, 2008; MacLean, Johnson, & Griffiths, 2011). In this study, thirty hallucinogen-naïve volunteers received psilocybin or methylphenidate hydrochloride as an active control in individual eight-hour sessions. Results were overwhelmingly positive, with participants returning high scores on a mysticism scale developed to assess primary mystical experiences, and with two-thirds furthermore scoring the psilocybin session as being among the top five most personally meaningful experiences of their lifetime. Since then a number of studies have taken place in what now appears to be a healthy field of scientific endeavour.

The present interview study explores how users of hallucinogens in spiritual contexts perceive the consequences of their drug use, and seeks to understand the reasons why people choose to engage with these very powerful drugs and what changes such use incurs for their lives.² This will allow us to see positive and adverse consequences in the light of usage patterns, and to understand how users themselves seek to minimise adverse conditions. Hellman (2012) has called for qualitative studies into the life worlds of drug users as an important means of customising solutions to recovery from such use, and in a broader sense such contextualised insight can serve to inform customised solutions to drug use on every societal level. Thus by providing in-depth perspectives on the mental health consequences of hallucinogen use this paper

aims to increase our understanding of the inherent complexity and ambiguity of these drugs, and thereby encourage more nuanced responses to their use.

Literature review

Clinical trials of hallucinogens in substance dependence are now once more being performed, although currently for the most part as pilot or proof-of-concept studies. Recently, such studies have suggested the value of psilocybin in treating nicotine dependence (Johnson, Garcia-Romeu, Cosimano, & Griffiths, 2014) and alcohol dependence (Bogenschutz et al., 2015), the value of ibogaine in the treatment of alcohol, cannabis, cocaine and crack dependence (Schenberg, de Castro Comis, Chaves, & da Silveira, 2014) and also the value of ayahuasca in treating alcohol, tobacco and cocaine dependence (Thomas, Lucas, Capler, Tupper, & Martin, 2013). None of the studies discovered any clinically significant adverse reactions to the hallucinogenic treatment.

While larger controlled trials are necessary to confirm these preliminary results, they are congruent with early findings on the therapeutic use of hallucinogens in the treatment of substance use disorders. A recent meta-analysis of single-dose LSD treatment of alcoholism in the 1960s revealed significant therapeutic effect at short (two to three months) and medium (six months) periods post-treatment, but no significant effect in the long term (twelve months) (Krebs & Johansen, 2012).

Recent research has also obtained preliminary evidence for the therapeutic effect of psilocybin (Grob et al., 2011) and LSD (Gasser et al., 2013) for anxiety in patients with life-threatening diseases. Both

studies discovered significant improvements without serious adverse reactions after one or two hallucinogenic sessions.

It is difficult to understand how a few doses of hallucinogenic substances could have such positive therapeutic effect, and some have suggested that the efficacy of hallucinogens in the treatment of substance abuse stems from their reliable capacity of delivering transformative “peak experiences” that are similar in some ways to religious epiphanies (Strassman, 1995). In a recent review article, Majić, Schmidt and Gallinat (2015) see evidence for therapeutic effect on both biological and experiential levels, suggesting that the specifically hallucinogenic aspect of these drugs cannot be ignored in their administration as treatment.

With the rise of modern brain imaging techniques it has become possible to obtain more specific knowledge of how hallucinogenic drugs act on the brain. It has been known for quite a while that the classic hallucinogens mescaline, psilocybin and LSD all work by an agonist or partial agonist action on the serotonin 5-HT_{2A} receptors (Iversen, Iversen, Bloom, & Roth, 2009; Nichols, 2004), but it has also been commonly assumed that they “enhance excitatory neurotransmission and overall brain activity” (Lee & Roth, 2012, p. 1821). Research by Carhart-Harris, Erritzoe, and collaborators (2012) challenges this assumption, finding that psilocybin caused “decreased activity and connectivity in the brain’s key connector hubs, enabling a state of unconstrained cognition” (p. 2138). Rather than causing the expected upsurge of possibly frivolous activity, psilocybin reduced activity in the default-mode network, which earlier research has identified

as implicated in a baseline mode of brain function (Raichle et al., 2001). It is worth mentioning that a relative deactivation of the default-mode network has also been discovered in experienced meditators both during the practice of meditation and in an ordinary resting state (Brewer et al., 2011).

Consistent with the finding by Carhart-Harris, Erritzoe et al. (2012) is the discovery that psilocybin can have a defocusing effect on semantic networks that leads to “an increased availability of remote associations and thereby may bring cognitive contents to mind that under normal circumstances remain non-activated” (Spitzer et al., 1996, pp. 1056–1057). Similarly, Petri et al. (2014) discovered significant augmentations to the brain’s correlational networks in the psilocybin state, which they described as “a less constrained and more intercommunicative mode of brain function” (p. 8). This defocusing and altered state of connectivity may serve to explain some of psilocybin’s beneficial effect on people with diagnoses of alcoholism or depression: their brains are normally “stuck in a rut” of narrow and repetitive cognitive loops, and the drugs serve to remove such self-limiting restrictions for a period of time, thus enabling new perspectives. Some brain regions are activated more strongly under psilocybin, however, and Carhart-Harris, Leech, and collaborators (2012) found that this applies in particular to visual and other sensory regions, which can explain subjectively experienced increases in the vividness of memories and may serve to facilitate autobiographical recollection in therapeutic sessions.

In recent years there has also appeared survey data on the users of hallucinogenic drugs outside of the laboratory. Carhart-

Harris and Nutt (2010) obtained 600 responses which described LSD and psilocybin as having a largely positive influence on the users' well-being. Reported benefits included alleviating depression, anxiety and insomnia, as well as "improved insight, perspective, self-understanding and acceptance, resolution of existential anxieties, help with mourning and a reduced fear of death, improved optimism, self-esteem and an increased sense of spirituality" (p. 291). A large majority affirmed that they had had a spiritual experience while under the influence of a hallucinogen, and also felt that these drugs enabled them to access their "unconscious mind". Minorities of 14% (LSD) and 12% (psilocybin) of respondents commented on adverse effects and health risks, which included paranoia, panic attacks, psychotic symptoms, anxiety, and depression. A roughly simultaneous study with 667 respondents sought to investigate the differences between users of psychedelic drugs, users of other drugs and nonusers, and found that "the use of psychedelic drugs with a purpose to enhance self-knowledge is less associated with problems, and correlates positively with coping and spirituality" (Móro, Simon, Bárd, & Rác, 2011, p. 188); it concludes with a call for further qualitative investigations into these effects.

The field of qualitative studies remains however sparsely populated, and especially so with regard to hallucinogenic drugs, although some work on general drug use has implications also for users of hallucinogens. One important study in this regard is Aaslid's (2007) in-depth interviews with Norwegian drug users, through which she identified three usage patterns that she labelled experimental, recreational and prob-

lematic. In explicit disagreement with official narratives on illegal drug use, she emphasised the importance of distinguishing between these patterns of use, maintaining that neither experimental nor recreational users tended to end up as problem cases. Her perspective on distinct usage patterns is congruent with the findings of Kronbæk and Frank (2013), who interviewed adult cannabis users in Denmark and obtained evidence both of problematic and unproblematic use, with the latter taking a recreational form that did not interfere with social and economic life.

In attempting to comprehend the reasons behind drug use, qualitative analyses sometimes perceive motivations relating to ritual and, at least implicitly, to religion. Sande (2000) has argued that the use of alcohol among youth can be understood as a rite of passage into adulthood, and Gauthier (2004) interprets drug-fuelled rave parties as displaced religious festivals. Such displacement of religious sentiment is central also to Aaslid's (2008) understanding of intoxication as a celebration of subjectivity and inner experience serving as a countercultural defiance of the rigidity and mechanicalness of modern life: it is a turn from outward-looking materialism to the inward realm of the soul. Indeed, one of Aaslid's (2009, p. 93) informants described her drug use as an aspect of a "deep spiritual quest". In a similar vein, Sandberg and Tutenges (2015) interpret drug use as an encounter with the Djinn and dragons that live on the edges of our civilised worlds, outside the boundaries of sanity, reason, and other normative values. "The excessively intoxicated character is both an *anti-hero*, a loser incapable of doing anything right, and a *hero*, a Ni-

etzschean *Übermensch*, who has the nerve and fortitude to stand up to established norms and rules” (Tutenges & Rod 2009, p. 361; emphasis in original).

As is apparent from the above studies, the use of hallucinogenic drugs is predominantly related to positive effects at least by the users themselves. A minority of users also experienced various difficulties as a consequence of their drug use, however, which is a result corroborated by a number of anecdotal reports especially in news media; a review of clinical cases of post-LSD psychosis is provided in Abraham, Aldridge, and Gogia (1996). In terms of brain damage and other forms of physiological damage, a review of 1960s and 1970s research on long-term adverse consequences of hallucinogen use discovered no clear effects, although there were several reports of possible impairments that other studies failed to replicate. The review concluded that “the literature tentatively suggests that there are few, if any, long-term neurophysiological deficits attributable to hallucinogen use” (Halpern & Pope, 1999, p. 247). More recently, Nichols (2004) has maintained that “[t]here is no evidence that any of the hallucinogens, even the very powerful semisynthetic LSD, causes damage to any human body organ” (p. 134). It might however be noted that hallucinogenic compounds that include monoamine oxidase inhibitors (MAOI) – particularly ayahuasca – may interact dangerously with some other drugs and foods (dos Santos, 2013). Furthermore it is frequently a problem that illegally produced drugs obtained on the black market are fake or impure and sometimes contain toxic substances. While hallucinogenic drugs do seem to interact with dopaminergic

neurotransmission to some degree, thus potentially sharing dependence-forming mechanisms with drugs such as cocaine and amphetamine, “there is no evidence of a withdrawal syndrome, and users do not appear to develop dependence” (Iversen et al., 2009, p. 488).

The picture is somewhat less clear for adverse psychological effects. LSD has in some cases been found to induce both acute panic reactions and toxic psychoses (Iversen et al., 2009). Even with the very positive results reported by participants in the study by Griffiths et al. (2006), about one third of the participants nonetheless experienced periods of “significant fear” (p. 282). Psilocybin mushrooms have otherwise been found to result in “only few and relatively mild adverse effects” in the Netherlands (van Amsterdam, Opperhuizen, & van den Brink, 2011, p. 423), although the authors caution against occasional panic attacks and flashbacks. Participants in ayahuasca ceremonies under the auspices of the Santo Daime Church in Oregon (Halpern, Sherwood, Passie, Blackwell, & Ruttenber, 2008) and in Brazil (Bousso et al., 2012) scored significantly lower on psychopathology measures than control groups or the general population. A recent population study by Krebs and Johansen (2013) investigated a sample of 130,152 adults from a United States National Survey on Drug Use and Health (NSDUH) that was considered representative of the general adult population, and of which 21,967 (16.9%) reported any lifetime prevalence of psychedelic drug use. They found “no relation between lifetime use of psychedelics and any undesirable past year mental health outcomes, including serious psychological distress, mental health treatment [...], or

symptoms of panic disorder, major depressive episode, mania, social phobia, generalized anxiety disorder, agoraphobia, post-traumatic stress disorder, or non-affective psychosis” (p. 5). Indeed the effects tended toward the opposite, as psychedelic drug use correlated weakly with a low rate of mental health problems. The authors caution that these are effects at the population level, and may possibly mask adverse consequences for some individuals counterbalanced by benign effects on others. Finally, in a study of over 190,000 adults from the same NSDUH database, Hendricks, Thorne, Clark, Coombs, and Johnson (2015) found that the use of classic psychedelics was associated with reduced psychological distress and suicidality.

While the above review indicates that hallucinogen use is not without psychological health risk, it does appear from aggregated data that the benign consequences in this regard outweigh the adverse consequences. This would seem to support the finding by Nutt, King, and Phillips (2010) that hallucinogens are, on a societal basis, the least harmful of all recreational drugs. As a variety of non-pharmacological variables have been found to play an important role in the effects at least of psilocybin (Studerus, Gamma, Kometer, & Vollenweider, 2012), it might be suggested that careful attention particularly to the setting of hallucinogen use could reduce anxiety reactions.

Method

Design

Users of hallucinogenic drugs in spiritual contexts were interviewed either individually or in groups about the mental health consequences of their use. All communi-

cation was internet-mediated, and participants were encouraged to interact with the interviewer via anonymised email addresses constructed specially for this purpose. Participants therefore had the option of remaining unidentifiable even to the author of the study, which served to minimise privacy concerns. Ethical approval was obtained from the Norwegian Social Science Data Services (reference 40281/3/KH). Kvale and Brinkmann’s (2009) seven stages of interviewing – thematisation, planning, interviewing, transcription, analysis, verification, and reporting – were used as a structural basis for the study.

Recruitment

Participants were recruited from three different internet fora – one Norwegian, one frequented mainly by Europeans, and one American – devoted to the sharing and discussion of hallucinogenic drug experiences, as well as one English-language forum concerned mainly with New Age-type spirituality. Because of the varying emphases and membership groups, this set of fora allowed for a broad selection of hallucinogen users. Criteria for selection were adulthood and current or past hallucinogen use in self-identified spiritual contexts. Participation was based on voluntary response to recruitment letters, and took the form of individual (n = 5) or group (n = 11) interviews according to participant preferences.

Basic demographic data were collected from participants in individual interviews and, where possible, from participants in group interviews. Participants in individual interviews were all in their 30s or 40s, and all male. Two were married with children, four held steady jobs in retailing,

education, music teaching and industrial services, and one was unemployed. All reported stable living conditions in Western European or North American countries, with backgrounds in Christian or secular families. Participants in group interviews did not for the most part wish to volunteer any information of this kind; about half indicated their age and gender, and these were all male and between the age of early 20s to middle 50s.

It should be noted that the recruitment process did not aim at obtaining a representative set of participants reflecting the general population of hallucinogen users. Participants were required to volunteer for participation in response to recruitment letters posted on the internet, and users with some enthusiasm for hallucinogens were probably more likely to self-select for the study; it is certainly the case that users living on the streets or confined to hospital wards or prisons did not have the opportunity to participate. In addition, every participant who indicated gender was male. The study should therefore be taken to reflect the “best practices” of a generally resourceful and predominantly male group of hallucinogen users.

Data collection

Interviews were conducted on a semi-structured basis, with the aim of obtaining a naturally flowing conversation relating to a number of specific research questions. Participants in group interviews respond to a more restricted line of questions pertaining mainly to one specific topic.

Typical questions used to guide the interview.

- Why do you use hallucinogenic drugs?

- Can you describe some hallucinogenic experiences that were important to you?
- How do you feel your hallucinogen use has influenced your life for better or worse?
- Have you ever felt that you were overdoing or abusing drugs?
- Have you ever experienced healing of physical or psychological issues as a result of using hallucinogenic drugs?

Transcription and analysis

As interviews took the form of written communication, no transcription from oral records into writing was necessary. The obtained data were analysed using thematic analysis and Kvale & Brinkmann’s (2009) procedure for meaning condensation. Themes were constructed on a basis of open-ended, exploratory and data-driven comparative analyses of interview responses pertaining to all major research questions.

Due to the sensitive nature of the information, conversations on public fora are paraphrased in this report rather than quoted directly; this is intended to make testimonies less transparent to internet search procedures. Two interviews were conducted in Norwegian and are reported in translation. Statements have been edited for brevity and relevance to specific topics.

Results

Drug use

Participants reported use of a variety of psychoactive drugs. Most commonly reported were the classic hallucinogens LSD and psilocybin (“magic mushrooms”), as well as cannabis, 3,4-methylenedioxy-methamphetamine (MDMA, also known as “empathy” and “ecstasy”), ayahuasca,

and N,N-dimethyltryptamine (DMT). Several participants also used a wide variety of more obscure drugs.

I prefer ayahuasca and kambo, without forgetting psilocybin, LSA and the teacher San Pedro (ID1).

Many had passed through a period of excessive drug use in their youth, but were currently more careful with their use of hallucinogens. Most regarded about one trip per month as an acceptable frequency, although some were more restrictive. One participant quit all hallucinogens several years ago; all others were current users. None reported current usage of opiates or psychostimulants such as amphetamine and cocaine, but several had past experience with such drugs.

In the beginning I would use DMT at least once a week. Now 9 years into this I don't have to go so often (ID15).

I use MDMA 3–4 times a year and psilocybin mushrooms every autumn after a few days of picking – after a few trips one is satisfied till next year. LSD once a year or maybe a few times if I can get it, mescaline once or twice. 2-CB 4–5 times a year on its own or with MDMA. At times I have a trip or two a month (ID17).

Most respondents were very careful about the setting for their hallucinogen session. Several have had experiences that turned bad because of a poor choice of setting, and emphasised in particular the need for a safe social environment consisting of people they know and trust. A common theme

especially for those participants who described their past usage patterns as excessive was that they used hallucinogens at parties. While some said they still enjoyed an occasional party, most preferred the company of close friends or solitude when using hallucinogenic drugs. Drug sessions took place in people's homes or in nature.

Mostly I do mushrooms with a close friend who I have shared many experiences with, so we don't have to worry about each other when the trip peaks. Sometimes with a few beginners, but this is not my preference (ID12).

Before I would sometimes be at parties, but now I'm almost always alone – in my home, or in nature (ID9).

Hallucinogenic drug sessions were not taken lightly. Some prepared their sessions weeks or even months in advance. Practical details were described as important, but so were the emotions and state of mind that one enters the session with. For this reason, many participants reported a cultivation of positive mind-states in the period leading up to the trip. This emphasis on set and setting has been part of the hallucinogen subculture since the 1960s, and respondents often spoke about these matters with an almost pedagogical overtone: it appeared important to them to make others understand that careful preparations are vital for a successful trip.

I usually plan my sessions in advance. I pick a day and make sure I am free that day and the next day. The best mood for hallucinogenic exploration is to be relaxed and to have a clear mind.

Make sure you do not have all kinds of worries on your mind. Also make sure that your physical surroundings reflect this calm state of mind. So not only clean out the junk in your head, but also the junk in your room where you are going to have your session (ID8).

Drug sessions are a kind of spiritual festival that I spend much time and energy preparing for, and afterwards contemplating and interpreting. I use especially the last week before the session to practise meditation and be extra attentive to my dreams, sorting out my life, taking it easy. Actually my whole life is a preparation for the next session – I try to be good, positive, helpful to others, avoiding negativity. By cultivating positive feelings in my daily life I make myself ready for a good session. For the session itself I set up a magic circle of protection, play some of my favourite music, burn incense. Sometimes reading spiritual literature is good to get in the mood (ID9).

I often get this feeling 1–3 months before the trip that “on that day I am going to trip, and I will take this much of this hallucinogen”. I’ve noticed that the times for my trips are usually when there has been a big change in my life – for example when I broke up with my boyfriend, or when I came back home after a long trip abroad (ID10).

Varieties of spiritual experience

Participants reported a wide range of spiritual experiences in their hallucinogenic drug sessions. Some rare sessions were described as truly transformative, with

overwhelming emotions and a long-term impact on behaviour:

I experienced what we call ego death, an experience of my true self or soul. “Me” in its purest form, clear from all influence, learning and thought. I was who I always have been and always will be (ID12).

I was overwhelmed with a series of very deep psychedelic experiences, and was totally at a loss as to what I was supposed to do with all I had received. At that point words began to form deep in my mind feeling like a message coming from outside myself as if the mushroom or nature was speaking directly to me. The message was: “Lead, be an example to others....” I broke down and cried like a baby, it was so beautiful I was completely overwhelmed with emotion. I will remember this for the rest of my life (ID15).

Other important sessions brought insight and understanding, and many supplied inner visions of strange events or worlds:

It is like to climb the mountain or contemplate heaven, and there you have the wisdom of the universe before your eyes... (ID1).

I perceive a “more real” level of reality underlying what we normally think of as “the” reality (ID9).

I came into a world of brilliant colours and shapes, and insect-like, very strange beings (ID12).

Meditation helps me get into a visionary state when I am on mushrooms. I was trying to get into this state and I saw my spine turn into a tree. I became very calm. I felt my muscles relax and I felt very peaceful and in balance. This experience made me practise meditation even more because I wanted to have such calmness in everyday life (ID8).

Spiritual experiences were also connected to feelings of love and friendship:

Mushrooms make me feel more empathic and more understanding of the feelings and motivations of others. (ID8)

I took MDMA with some good friends, and we lay closely together in a bed. There was a moment when we all realised that the love and warmth we felt for each other was real, and that we had chosen each other for this interaction. We are all very good friends today, 12–13 years later (ID17).

Positive consequences

Respondents described a number of positive consequences of hallucinogen use for their lives. Many saw themselves as having changed for the better because of the new perspectives the hallucinogen experiences have afforded them. Some had taken up more healthy and ethical lifestyles that may include regular spiritual practice. They spoke of growth and self-development, of dealing with fears and of renewing their self-respect.

Hallucinogens have helped me to see the wonder in life, and I have felt renewed energy in my overall attitude and my studies. I feel very grateful for my family and for all those close to me. Life is good! (ID16).

One of the things these journeys have provided me with is a very deep level of self-introspection. I learned how to be with myself on a profound level and to understand myself in ways I never thought possible. This insight spreads outward like ripples in a pond: insight into the self becomes insight into other people which becomes insight into nature and the world. It has eventually become an integral piece of a larger spiritual journey of self-improvement and growth (ID15).

I stopped drinking and smoking, and still do not drink and smoke. I started doing more workouts and eating more healthy food. The mushrooms made me feel more in tune with my body and that's why I started living a more healthy life (ID8).

I now lead a full, healthy and meditative life, and still use hallucinogens (ID14).

Mushrooms helped me to start seeing things "as they really are", and to know myself. I feel more at one with the universe, the world and nature, and live more in the present. In connection with my increased feeling of oneness with nature I have also become more conscious of what I eat, particularly in relation to animal ethics (ID12).

Hallucinogens have made me a calmer, more pleasant and more empathic human being (ID17).

Indeed, for some people these changes to their lives were the main purpose of engaging with hallucinogenic drugs:

The time after the trip is the most important. It is more important than the time you spend tripping. Once you understand how the hallucinogens work, you will realise that the best time to make changes in your life is right after the trip. And then you just have to keep doing things in a new way. If you trip too often and change nothing, it is pointless (ID10).

It is sometimes hard to integrate these experiences, because they are so other-worldly. Still they do have some clear implications for ordinary life. When you experience limitless, divine love then that says something about how you would like to live your life – although it's not so easy to express that love in the everyday world (ID9).

Among the most important changes to the participants' lifestyles was the breaking out of addictions or habitual use of various substances.

Thanks to ayahuasca I've stopped drinking every day, and thanks to kambo and LSA I stopped smoking (ID1).

Recently I decided to take a much-needed break from cannabis, which I attribute mostly to my use of hallucinogens (ID16).

With DMT and psilocybin there is, aside from the psychological "cleansing", a concrete physical feeling that accompanies spiritually transformative experiences. It feels like a menthol sensation all over my body. When I get this feeling, it is always accompanied by a major healing of my body and mind. For example, after a breakthrough dose of smoked DMT, I was no longer addicted to Klonopin (ID20).

Hallucinogens were also experienced as a major contribution to the healing of other psychological and somatic illness:

I have been struggling with chronic fatigue syndrome and fibromyalgia since my mid-twenties, for about fifteen years, to eventually end up in bed for five years. I lost everything: my career, many friends and my family. I only got better three years ago thanks to kambo and pharmahuasca [an ayahuasca variation]. The symptoms included low grade fevers that disappeared completely after few treatments; chronic sore throat and sinus congestion that are mostly gone; sleep problems that are significantly reduced; generalised body pain that is completely gone, and blurry vision and fog that are gone. I have tried almost all alternative methods over many years, but none gave me close to the success as did pharmahuasca (ID18).

While none of the participants claimed to understand exactly how this healing effect takes place, they indicated two possible healing mechanisms: one physiological, and one related to the experience itself of intense joy and spiritual connection.

DMT and psilocybin are the reason I stopped taking antidepressants. The medication attaches itself to the same receptors as DMT does, so I skipped a dose deliberately in order to take DMT unaffected by it. The next night I did the same thing, and by the third day I no longer felt the need to take antidepressants, and haven't since. The problems have never returned. I started to feel like a human being again, and with semi-regular DMT and psilocybin use, both my opiate and alcohol abuse rapidly declined and vanished. It was more than just transformative on a personal level – there must also have been a physiological effect (ID14).

I believe it has something to do with the serotonin that is released, but also with how positive the experience is, and with that feeling of total freedom from worry that one can experience and carry into daily life. It is also helpful to have shared a moment of complete joy with close friends (ID17).

Adverse consequences

One of the potential dangers of using hallucinogenic drugs is that one can have difficult, scary and perhaps damaging experiences. Many participants had been through such “bad trips”, but most of these tended to think of them as difficult learning experiences that have valuable long-term impact:

I have had challenging experiences and I learnt a lot from them. Not only did I learn how to avoid mistakes that can lead to a bad trip, but most of all I start-

ed to know more about myself. When you have a hard time on hallucinogens it can feel like you are dying, and when you think you are dying you may discover aspects of yourself that you never paid attention to. You discover what is important in your life. For me a successful mushroom experience is one where I say to myself: “this is so intense, why do I do this to myself. I am never going to do this again.” Of course I always do it again at some point (ID8).

It should be noted however that some of these learning experiences were experienced as truly hellish, causing difficulties for several years. This is one reason why users of hallucinogenic drugs advised that sessions are carefully prepared, as described above. When bad situations did arise, many participants attempted to deal with them through the use of various spiritual techniques such as deep breathing, meditation and chanting:

How do I deal with bad trips? With calmness, with breathing, with the knowledge that they are already exceeded situations (ID1).

Accept what you get. Observe it. Good or bad, whatever it is. Have you got negative emotions? Observe them. How do they feel? Take them as tools to learn something. Be grateful for every difficult trip because they are the ones that teach you the most (ID10).

Several participants acknowledged a potential for overdoing hallucinogens, and some cautioned against the spiritual and psychological consequences of overuse:

Possible consequences of overdoing hallucinogens are to feel the ego spiritualised, omnipotent, or enlightened, or to go crazy, or live in fear. Such overuse doesn't destroy egoism but rather increases it (ID1).

Many also pointed out that there is something of a fail-safe mechanism in the use of hallucinogens, as the positive drug effects tend to diminish with repeated use. Hallucinogens are for this reason subject to a natural self-regulation that counteracts long-term abuse:

I was tripping on LSD 4–5 times a week for 3–4 months. What happened was that I lost the trips – I no longer got into the psychedelic mind state (ID10).

It is possible to develop a kind of dependency, but MDMA is very self-regulating in that if you take it more than a few days in a row, it simply doesn't work like it used to. For this reason use tends to limit itself, which is one of the reasons why I think MDMA is among the safest drugs of all (ID17).

Probably the greatest danger with hallucinogen use is that it could lead to lasting mental health problems. While several participants reported temporary experiences of mental chaos and confusion while under the effect of hallucinogens – something that might be termed a “bad trip” – only a few described long-term consequences of this kind.

Ayahuasca was beautiful to me. Opened my mind – but led to mental disorders. I had trouble closing down

my third eye and staying grounded when I came down from it (ID2).

One respondent ended up in a short-term psychiatric ward with what his doctors thought was a toxic psychosis. He accepted that he sometimes had difficulties with remaining grounded, but was agnostic as to whether this is because he has a mental illness or if it is simply a natural but unfortunate consequence of his shamanistic practice:

If I were a member of a more open-minded culture, where the ancient art of Shamanism is accepted, I would probably have been congratulated for becoming the tribe's latest Shaman. If I had this experience whilst living with people who are highly experienced with altered states-of-consciousness, then the outcome may well have been quite different, and I would probably not have ended up a prisoner of the system (ID5).

Discussion

We have explored how some users of hallucinogenic drugs describe the characteristics of, reasons behind and consequences of their drug use. What has emerged is a picture of mature males with stable homes and jobs using hallucinogens in occasional, well-prepared spiritual settings for the purpose of gaining insight into themselves and their worlds. Some have a past of quite unrestrained drug use at parties, but have since moved away from excessive use. We see here evidence of a learning curve or career for hallucinogen users, starting with youthful experimentation and ending with more conscious, moderate and carefully

planned use as an integrated aspect of a stable adult life. The respondents' descriptions of intoxication in spiritual terms is unsurprising since such a context was presented as a criterion for participation, but does suffice to demonstrate that spiritually-inclined hallucinogen users do exist and are available to researchers. Whether the usage pattern here reported can be termed "recreational" in line with Aaslid's (2007) terminology is perhaps debatable, but it certainly seems well removed from what she labels a "problematic" pattern of use. Several participants describe their intoxication experiences as journeys or other cognates of adventure, thus framing their drug use in mythological terms reminiscent of "the hero's journey" or "the journey to the underworld". These archetypal terms support the perceived transformative potential of these practices, and is understood by researchers such as Aaslid (2007) and Sandberg and Tutenges (2015) to reveal an important motivation for drug use: in an otherwise sanitised and commoditised modern world, drugs may be the last remaining resort for would-be explorers of wild and unknown lands.

Like most people, the participants carry with them a variety of mental health issues, and they use hallucinogens partly in order to work on themselves and perhaps heal these personal problems. From their perspective, hallucinogen use has resulted in a broad range of positive personality and lifestyle changes, including a newfound or strengthened interest in spiritual ideas and practices. They confirm the possibility of temporary adverse effects such as acute panic reactions (van Amsterdam et al., 2011), but are generally not afraid to encounter problematic psychological ma-

terial in their drug sessions. Indeed, they often regard such sessions as challenging and valuable learning experiences. We can probably understand their openness to the value of "bad trips" in terms of their maturity: most participants now have long experience with hallucinogens and have learnt to deal with and profit from challenging situations. This knowledge also includes how to plan their drug sessions so as to minimise problems.

Because hallucinogenic drugs tend to lose their most valued effects with over-intensive use, participants regard the dependence potential of these drugs as fairly slight, which supports earlier research on the low dependence-forming potential of hallucinogens (Iversen et al., 2009). On the other hand, they claim that their use of hallucinogens has facilitated the breaking out of habitual use of other drugs. The promising effects of hallucinogens especially on substance dependence that is indicated both by older research from the 1960s and several recent clinical trials (Bogenschutz et al., 2015; Johnson et al., 2014; Schenberg et al., 2014; Thomas et al., 2013) are thus corroborated by the participants of this study, who furthermore perceive both biological and transformative-experiential aspects to these healing processes.

As in the study by Carhart-Harris and Nutt (2010), participants generally report a broad range of health benefits from their hallucinogen use, although with a minority of 10–15% having incurred significant adverse mental health effects. Two of sixteen participants have experienced serious mental health problems that may result from their drug use, although one of these maintains that the real problem is that the psychiatric establishment tends to

misdiagnose spiritual or shamanic experiences as psychotic. Based on the information received in the interviews, there is no easy way to explain why their trajectories diverge from those of the majority. It might however be significant that both were recruited from a web forum devoted primarily to the discussion of New Age spirituality rather than hallucinogen use.

With their narratives of difficulty and hospitalisation, these two participants remind us that hallucinogen use can never be considered a safe practice. Described commonly as a journey into the unknown, a hallucinogen session seems to involve frequent confrontations with dragons and other denizens of the dark, and it should not surprise us that not everybody will emerge unscathed from such encounters. Yet as the majority of the participants in this study have insisted, such adventures have a number of positive consequences as well, even if they are at times overly intense; indeed, for experienced and adaptable adventurers, these challenging confrontations might be the most valuable of all.

We cannot generalise from these results, and must remember that the narratives here have emerged from predominantly male respondents who self-selected for participation. It would not be surprising if their motivation was based in large part on an enthusiasm for hallucinogen use. The aim of qualitative research is in any case not to be generalisable, but to obtain insight into individual experiences (Wright et al., 2015). As far as the interview reports are broadly congruent with more representative studies, which here seems to be the case, a probable relation to

a broader segment of the population is indicated. Thus the qualitative study can be used to contextualise and deepen the more representative but less intensive findings provided by quantitative survey data and similar methodologies.

The strength of qualitative studies is therefore to provide thick descriptions of participant life worlds that allows us to understand more clearly why and through what mechanisms given effects take place. Thus we have gained from this study a perspective on why hallucinogen addiction is not a significant problem, and we have learnt to understand bad trips as learning experiences. We have seen an outline of a hallucinogen career path and at least a perceived relation between hallucinogen-induced spiritual experiences, changes in personality and lifestyle, and the healing of long-standing health issues.

In sum, this study has obtained evidence of a group of hallucinogen users that rarely feature in the news media. While their reports are not representative of hallucinogen users in general, they do exemplify an important segment of such users that is otherwise largely invisible in Western societies – in Fuller's (2000, p. 7) terminology, a "religious underground". It should probably be worthwhile to obtain further insight into this clandestine spiritual subculture that most Western societies have outlawed without first taking the effort to understand.

Declaration of interest None.

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NOTES

- 1 I wish to thank Geir Scott Brunborg, Håkan RYDVIK and two anonymous reviewers for helpful suggestions on how to improve this article.
- 2 The precise meaning of the term “spiritual” is left for the respondents to decide; they have tended to employ it broadly for

communion with deities and nature, for obtaining insights into themselves and their worlds, and for certain forms of personal development related especially to an increased capacity for empathy and love in interpersonal relations.

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