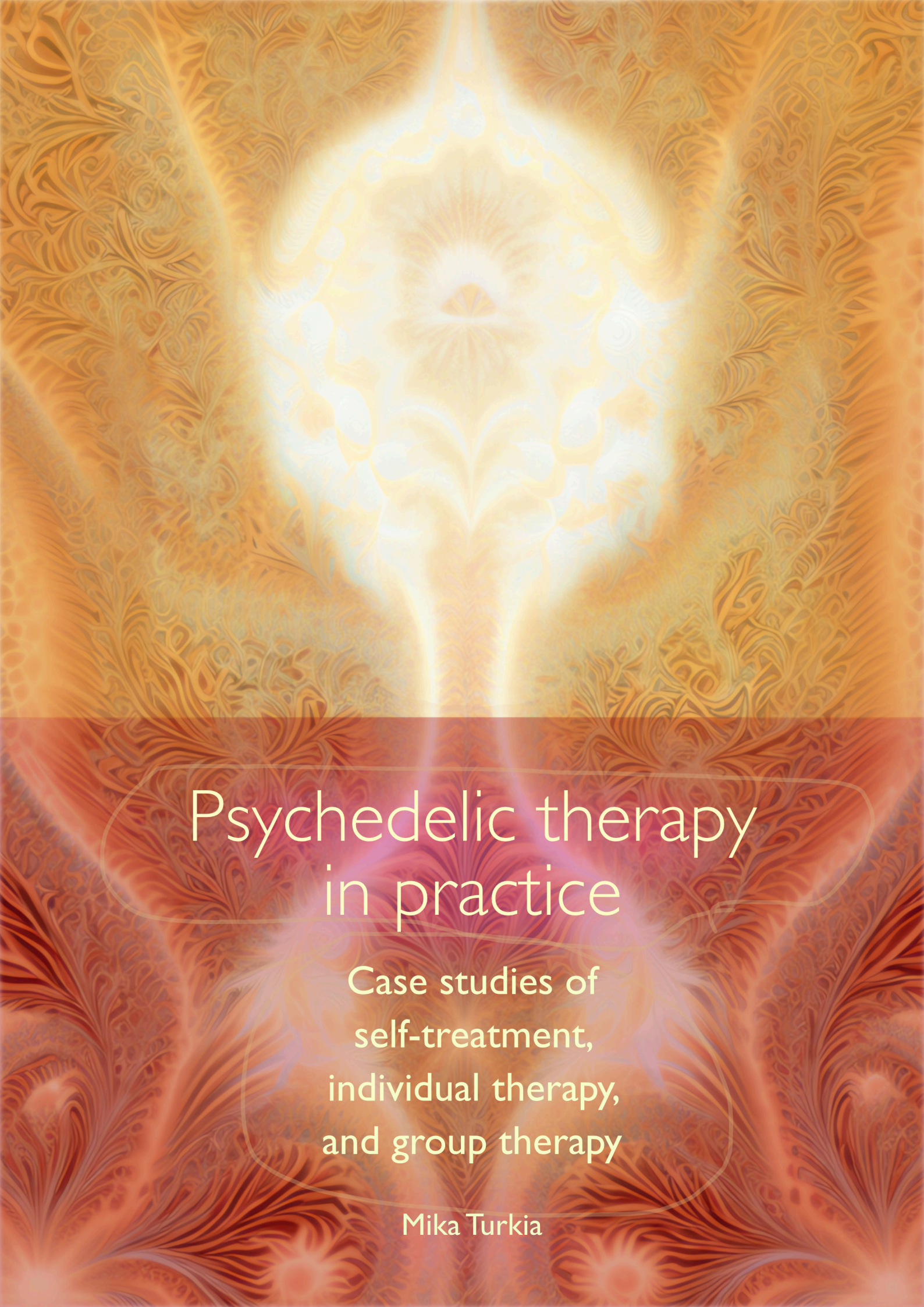
Psychedelic therapy
in practice
Case studies of
self-treatment,
individual therapy,
and group therapy
Mika Turkia

Psychedelic therapy in practice

Case studies of self-treatment, individual therapy, and group therapy

Abbreviations

The following abbreviations are used in this book:

2C-B	4-bromo-2,5-dimethoxyphenethylamine
2C-x	psychedelic phenethylamines (e.g., 2C-B)
2C-T-x	psychedelic phenethylamines (e.g., 2C-T-7)
2-FDCK	2-fluorodeschloroketamine
5-HT_{1A} receptor	a subtype of serotonin (5-HT) receptors
5-HT_{2A} receptor	a subtype of serotonin (5-HT) receptors
5-MeO-DMT	5-methoxy-N,N-dimethyltryptamine
5-MeO-xxT	psychedelic tryptamines (e.g., 5-MeO-DMT)
ACE	adverse childhood experience
ADD	attention deficit disorder
ADHD	attention-deficit hyperactivity disorder
BDI	Beck Depression Index
C-PTSD	complex post-traumatic stress disorder
CNS	central nervous system
COEX	systems of condensed experience; a set of similar experiences clustered on the first one
DMT	N,N-dimethyltryptamine
DOC	2,5-dimethoxy-4-chloroamphetamine
DOx	substituted amphetamines (e.g., 2,5-Dimethoxy-4-methylamphetamine; DOM)
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
DXM	dextromethorphan
ECT	electroconvulsive therapy
EEG	electroencephalography, electroencephalogram
GABA	γ-aminobutyric acid
GDP	gross domestic product
HSP	highly sensitive person
ICD-10	International Classification of Diseases, 10th Revision
ICD-11	International Classification of Diseases, 11th Revision
IFS	Internal Family Systems therapy
LSD	lysergic acid diethylamide
MAOI	monoamine oxidase inhibitor
MAPS	Multidisciplinary Association for Psychedelic Studies
MDD	major depressive disorder
MDMA	3,4-methylenedioxymethamphetamine
MXE	methoxetamine
MÅDRS	Montgomery–Åsberg Depression Rating Scale
NBOM	substituted phenethylamines (e.g., 25E-NBOMe)
NGO	non-governmental organization
PTSD	post-traumatic stress disorder
RCT	randomized controlled clinical trials
rTMS	repetitive transcranial magnetic stimulation
SNRI	serotonin–norepinephrine reuptake inhibitor
SSRI	selective serotonin reuptake inhibitor
tDCS	transcranial direct current stimulation
THC	tetrahydrocannabinol
TRD	treatment-resistant depression
TRE	Trauma Release Exercises
UdV	União do Vegetal

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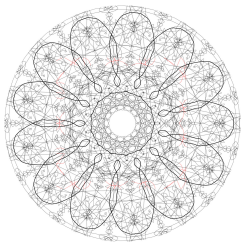

'I want people who have been in similar situations to hear my story.
I was looking for people who would say, 'I had this too!'
But I didn't have anyone to talk to. I felt lonely and conflicted.
It would matter a lot to me if people began to share these stories.' *

'Even when we do small work for twenty people,
we have the potential to impact millions of people.'

'From your heart, for all of us.'

* Chapter 8.

Contents

1 Introduction

Psychedelics could be described as a 'technology of connection': connecting to yourself, your body, other people, society, and nature. As a somewhat complex phenomenon, psychedelics may be seen as positioned at the intersection of art, religion, and various fields of science, including medicine, psychology, anthropology, and many others. Psychedelics have been approached as a tool for achieving some purpose or as a sacrament. Their traditional use is thought to have originated hundreds of years ago.

Indigenous cultures typically approach their psychedelic plant medicines from a more religious point of view. Recently, in Western societies, an increasing interest in using psychedelics for healing emotional trauma, depression, and similar issues has emerged. Millions of people worldwide use psychedelics to enhance problem-solving skills, foster creativity, or gain new insights into their lives.

Currently, many misunderstandings about the nature of psychedelics still prevail. Lack of knowledge prevents the world from benefiting from the full potential of these medicines.

This compilation focuses on success stories—cases of courage, innovation, and the application of knowledge and power in overcoming illness and suffering. It features fourteen ethnographic case studies that describe how people were able to alleviate or overcome serious issues including alcoholism, severe anxiety and depression, suicidal behavior, and psychotic disorders caused by ignorance, neglect, violence, war, and sexual abuse.

The approach is retrospective, i.e., based on interviews conducted after the healing process was over and the main outcome had been achieved. Many of these successes may have been due to exceptional skill, the right timing, and perhaps luck. They may not be reproducible, nor were they random occurrences. In any case, this compilation is not a manual, recommendation, or guideline; it is for informational purposes only. Yet, it is also a tribute to the possibility of healing.

The chapters were originally made available as preprints on ResearchGate, later also on PhilPeople and PsyArXiv. The chapters are published in their original form. Some of the discussion and analysis may appear outdated or incomplete. Nevertheless, the essence—the case descriptions—may be timeless.

Initially, medical terminology was adopted as a frame of reference. In retrospect, another kind of approach would have been better, but there were no resources for a rewrite.

The author would like to thank everyone who participated in the process—above all, the interviewees. Unreasonable effort, suffering, and sacrifices were required to produce these studies; please give them the respect they deserve.

2 Underground small-group therapy of treatment-resistant depression and complex post-traumatic stress disorder (C-PTSD) with psilocybin

April 25, 2022

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Keywords: domestic violence, childhood sexual abuse, treatment-resistant depression, psilocybin, hypnotherapy

While a relatively large body of research exists on many aspects of psychedelic therapy, articles describing a complete, successful treatment process are rarely found. This article therefore presents a case of a woman in her early forties with early complex trauma due to domestic violence, sexual abuse and poverty in her childhood, resulting in approximately three decades of treatment resistant depression. Antidepressive medications did not alleviate her depression but resulted in adverse effects and an eventual discontinuation of the medications. Eventually the woman resorted to 'mixed-method' underground small-group sessions that utilized breathing exercises, cold exposure, physical exercises, music, and psilocybin mushrooms.

Psilocybin appeared to interrupt trauma-related dissociation, producing an 'anti-dissociative' effect, allowing the woman to re-experience, in a controlled setting, dissociated physical sensations produced by earlier overwhelming events. After a period of approximately 1.5 years, during which time she had six psilocybin sessions, either individually, in the small group, or with friends, she achieved a remission of her depression. A follow-up interview 2.5 years later indicated permanence of the result.

Information was acquired from semi-structured retrospective interviews with a total duration of approximately eight hours. This case study may facilitate an improved understanding of the requirements for and the process of alleviating or resolving treatment-resistant depression with psychedelics. Recent clinical trials have utilized one or two doses of psilocybin. This case illustrates the need for adopting a multi-dose strategy over an extended period of time in order to achieve remission.

2.1 Introduction

Psychedelic therapies for mental disorders are currently being intensively studied, with psilocybin perhaps having received the most attention. A systematic review and meta-analysis of clinical trials investigating psilocybin for depression and anxiety in the context of life-threatening diseases published in 2020 described the results as promising, indicating psilocybin's possible efficacy in conditions that are either resistant to conventional pharmacotherapy or for which pharmacologic treatment is not yet approved [1]. The review mentioned that due to its safety, psilocybin could be relevant for first-line treatment.

With regard to pharmacology and risks of psilocybin, it is non-addictive and has low toxicity [2]. According to a governmental assessment in the Netherlands, acute and chronic adverse effects of magic mushrooms are relatively infrequent and generally mild, its public health and public order effects are very limited, and that criminality related to the use, the production and trafficking of magic mushrooms is almost non-existent [3]. Lifetime prevalence of use in 12 EU countries was estimated to vary between less than 1% and 8%.

[1]: Vargas et al. 2020 DOI

[2]: Teixeira et al. 2022 DOI

[3]: Amsterdam et al. 2011 DOI

In a recent study, 19 (0.2%) of 9,233 past year magic mushroom users reported having sought emergency medical treatment (EMT) [4]. Eleven (58%) had simultaneously consumed cannabis, alcohol, cocaine, MDMA, ketamine or opioids. The rest of the incidents were mainly due to badly chosen environment, a wrong mindset before the session, or taking too much. The most common adverse reactions were anxiety/panic, paranoia/suspiciousness, and hallucinations. The only predictor of EMT incidents was younger age. Twelve of the incidents were resolved in less than six hours, all but one in 24 hours, and the last one in a week. The per-session risk estimate for EMT was 0.06% although 1.4% of 12,534 users (of which 9,233 responded to the EMT question) reported a diagnosis of psychosis and 2.6% a diagnosis of bipolar disorder.

[4]: Kopra et al. 2022 DOI

A typical duration of the effect of psilocybin is 3-4 hours [5]. It has been proposed that psychedelics mediate their treatment effects through the relaxation of (pathological) high-level beliefs [6]. It has also been noted that psilocybin-occasioned *mystical experiences* correlate with indicators of treatment efficacy [7]. These experiences may include, for example, experiences of sacredness of life, or experiences of *oneness* with nature and other people (temporary dissolution of 'ego structures', or self-transcendence); these may be seen as relaxation of high-level beliefs.

[5]: Passie et al. 2002 DOI

[6]: Carhart-Harris 2018 DOI

[7]: Griffiths et al. 2017 DOI

First known mention of psilocybin use occurs in a 1598 document describing the religious rituals of Aztecs in Mexico [8]. In Western countries, therapeutic use of psilocybin begun in the 1960s [8]. In Europe, psilocybin was used as an agent to help activate unconscious material, i.e. re-create subconscious conflicts and memories in order to make them accessible to psychotherapy. The therapeutic effect was considered to result from long-term processing of this material, not from the pharmacological effect of psilocybin.

[8]: Passie 2005

[8]: Passie 2005

In the 1960s, psilocybin was utilized in individual psychotherapy and various types of group therapies [8, 9]. In the 2000s, psilocybin therapy has been studied for treatment-resistant depression [10, 11], alcohol dependency [12], as well as for nicotine dependency, cancer-related anxiety, and obsessive compulsive disorder [13].

[8]: Passie 2005

[9]: Trope et al. 2019 DOI

[10]: Roseman et al. 2018 DOI

[11]: Carhart-Harris et al. 2017 DOI

[12]: Bogenschutz et al. 2015 DOI

[13]: dos Santos et al. 2016 URL DOI

In 2015, ten-patient proof-of-concept study about psilocybin for alcohol dependence indicated that abstinence increased significantly following psilocybin administration ($p<0.05$) and the gains were largely maintained in a nine-month follow-up [12]. In 2020, 24-patient study with one session utilizing 20 mg of psilocybin and a second session utilizing 30 mg of psilocybin, combined with eleven hours of supportive psychotherapy, resulted in a remission of 13 participants (54%) in an one-month follow-up [14]. In 2021, a 233-patient, randomized, controlled, double-blind phase IIb trial about psilocybin for treatment-resistant depression indicated that in a three-month follow-up, approximately a quarter of patients in a high-dose psilocybin group achieved remission, in comparison to approximately one tenth in low-dose and control groups (NCT03775200) [15].

[12]: Bogenschutz et al. 2015 DOI

[14]: Davis et al. 2021 DOI

[15]: COMPASS Pathways 2021 URL

This case study illustrates the treatment of both alcohol dependence and treatment-resistant depression, both of which originated from and appeared as symptoms of complex post-traumatic stress disorder (C-PTSD). The details of this case have been acquired from two semi-structured retrospective interviews with a total duration of approximately

four hours conducted in November 2019. Two follow-up interviews with a total duration of approximately four hours were arranged in March-April 2022. As the patient's contacts with the healthcare system had been sparse and somewhat superficial, as there was no indication of a need for differential diagnosis, and as medical records from past decades were not available online, they were not acquired for this study.

2.2 Case description

A middle-class woman in her early forties had been exposed to a threat of domestic violence since very early childhood. In addition there had been some sexual abuse. Her childhood had been dominated by an unpredictable, violent father that she described as 'narcissistic'. Her mother and older siblings had been targets of the father's raging violence. She was significantly younger than her siblings and had adopted a strategy of attempting to please her father and avoid his attention by being 'nice and invisible' (sometimes called a 'fawn response' [16]). The older siblings displayed more opposition towards the father.

[16]: Walker 2013 URL

The violence had an intergenerational origin. Her father's background could be described as upper class. Regardless, she described her grandmother (her father's mother) as 'cruel and sadistic'. Her father and his siblings had been exposed to daily, 'blind', 'raging' violence that had occasionally appeared as life-threatening. Her father had been the oldest child. She described that the grandmother had acted extremely violently towards the children even in the presence of friends and guests who had ignored the violence. As an example, the grandmother had once kicked the father's sister hard and thrown her forcefully against a wall during a party, without any of the guests interfering.

Her father developed a 'grandiose self' in order to compensate for feelings of inadequacy. He was a workaholic who prioritized his work above everything else including the needs of his family and children. He adopted the behavioral pattern of raging violence while his social environment adopted the pattern of ignoring the obvious domestic violence. She described that the father and the grandmother had been 'experts at manipulating people'. She described a case in which her mother had 'maybe appeared too happy' or had 'received too much attention from guests' at a party. The father had subsequently hit the mother in the face in front of the guests. As the mother had been lying on the floor barely conscious, one of the guests had told her to get up in order to avoid 'spoiling the party for no reason'.

Her father also repeated a relationship pattern of being extremely charming at first, yet later destroying his partner's already deficient self-confidence with verbal abuse, proceeding to physical violence later. She said that her mother had been 'already crushed' by the time she was born. The mother had eventually attempted to find psychotherapy for the father. Instead of agreeing to try to help the father, the therapist had asked the mother to attend therapy sessions herself. In the course of therapy the mother realized that the family's behavioral patterns were severely dysfunctional. The father subsequently threatened to kill the therapist. Eventually a divorce followed. The father immediately started a new relationship with another woman who was a generation younger.

In this new relationship the pattern of domestic violence had apparently been repeated again.

She described having suffered from the lack of expressions of love. Eventually, at the age of ten, she asked her mother why the mother never held her or told her that she loved her. The mother replied that she was unable to do that. She interpreted the reply to mean that she was unlovable: loving her was impossible. This resulted in 'a deep feeling of emptiness' and a resignation of her efforts to be loved. These factors in conjunction with the general atmosphere of fear and her feeling of shame about herself 'resulted in consequences' later in life: in a deep feeling of never being enough, and in 'a desperate search for external validation by any possible means'.

After the divorce the mother's unemployment caused severe financial insecurity. The father refused to support his children in any way. She suffered from relative poverty and uncertainty, worrying about her mother and the family situation. This childhood experience led to overcompensation later in life: she had 'given everything' to become successful and financially stable.

In her mid-twenties she married, had two children and became a successful middle-class entrepreneur. She described herself as having had no self-confidence whatsoever but succeeding 'accidentally'. Success in studies and work was her only way to feel valued, to overcome 'an immense worthlessness'. Her occupation protected her from a total emotional collapse by providing the necessary external validation and social status. Despite feeling that her only way out was to end her life at some point in the near future, she was never absent from work. She described having developed 'excellent skills of acting happy in front of customers'. Despite succeeding in preserving the facade of normalcy, this acting further exhausted her.

She led a 'mainstream lifestyle' and strived to be 'a good taxpayer'. She valued people by their education, level of income and other indicators of social status, and acted dismissively towards people not up to her standards. In retrospect, she felt having been very judgmental and insensitive about the feelings of others, yet having been oversensitive about herself. She had also been dismissive of anything 'unscientific' or 'alternative', exhibiting an uncritical attitude towards 'science'.

Consistent with her middle-class background, she unquestioningly believed that medical doctors would resolve her chronic depression. During the next decade, in fifteen-minute appointments, various general practitioners prescribed her several different selective serotonin reuptake inhibitors (SSRIs). Possible reasons for her depression were never addressed, and prescriptions were often renewed without an appointment. The SSRIs had no effect on her depression but caused adverse effects, including a tinnitus persisting to this day. The inefficacy combined with adverse effects led to disillusionment, frustration and an eventual discontinuation of the medications.

She played the role of a housewife and took care of her children although she was emotionally absent and tired. Like her father, she prioritized work assignments over family time or the children's needs. The essence and focus of her life was the habit of drinking alcohol every weekend

and sometimes during the week. She was unable to derive pleasure from anything else including the family life. Alcohol was 'her thing, an escape into a world of softness'. Despite drinking secretly, aiming at getting drunk on every possible occasion, and being unable to even imagine spending a weekend without drinking ('it was not even theoretically possible'), she never considered her alcohol use to be a problem.

In her late twenties the situation escalated and she exhibited constant suicidal ideation, planning on jumping in front of a subway train. At the age of 29 she visited a psychiatrist for the first time. The psychiatrist commented that due to her depression having recurred for decades she would be on SSRIs for the rest of her life. At this point she initiated a three-year psychodynamic psychotherapy, along with SSRI medication. She described the therapist as 'very passive': during the sessions she was 'giving monologues for three years'. She said that the therapy had no effect on her self-image of deep worthlessness. She said that since the therapist never challenged anything, the therapy allowed her to completely avoid any difficult subjects. Between the ages of 33 and 37 her mood varied, with occasional periods of no SSRI medication due to pregnancies. After the birth of a second child, at the age of 34, she received another SSRI prescription.

At the age of 38, the severe depression re-emerged, with SSRIs having no effect on it. As she had the financial resources and was still functional enough to find a psychotherapist, at the age of 39 she eventually attended a second period of psychotherapy sessions which included eye movement desensitization and reprocessing (EMDR) trauma therapy (the standard type, not attachment-focused [17]). The therapist suggested that she would not use SSRIs during the therapy, and she discontinued them. Unfortunately she experienced little benefit from the psychotherapy sessions.

[17]: Laurel Parnell 2013 URL

Striving to be a 'good citizen', she also opposed illegal drug use. In the comprehensive school, psychedelics had been described as life-threatening, the absolute worst thing to do, causing one to jump from a roof thinking one was a bird, or to peel oneself like an orange. In her youth she briefly tested cannabis but it did not alleviate her depression, only making her feel worse.

Once, a severely depressed friend surprised her by commenting that their only chance was to 'wait for the legalization of psychedelics'. She had been unaware of such an option and despite her 'very negative attitude' towards drugs she was 'desperate for any solution'. An online search revealed preliminary studies about psychedelics on depression; this information 'completely contradicted' the information provided by the school system. As her suicidal ideation was constant and she felt hopeless, the risks seemed low and possible benefits significant; she commented that she would have accepted much higher risks.

She found a psychotherapist who agreed to discuss psychedelic therapies on a general level. Later she found a person who had investigated psychedelic therapies for five years. This person had observed conventional treatment of psychoses and had become disillusioned by it for family reasons. In his view, the treatment was not founded on a well-defined 'theory of mind', and antipsychotic medication appeared merely as palliative care. As he did not understand what psychosis was like, he

resorted to the idea of 'model psychosis' originating from the 'first wave' of psychedelics in the 1960s. According to the model psychosis theory, psychedelics were a method for experiencing psychosis-like states.

The person had become acquainted with various traditions and acquired personal experience of plant-based classical psychedelics psilocybin, ayahuasca, and mescaline. He had subsequently resolved his own depression with these plants. His depression had been due to 'a lack of self-understanding': lack of life purpose, working 'too much, in a wrong environment, with wrong people, for wrong reasons'. The resulting bad feeling he had dismissed as 'weakness'. To overcome stress, he had used alcohol. He had later overcome these issues, was physically fit, had received military leadership training, and appeared able to handle challenging situations.

The person interviewed possible group session attendees in advance and gave detailed instructions for preparation. The required preparation period was a few days. The instructions included avoidance of alcohol and recreational drugs, nutritional advice, and the importance of setting a precise intention for the session (see e.g. [18]). The intention and commitment to proper preparation were considered essential for the success of the session.

[18]: Berlowitz et al. 2022 DOI

The group sessions were organized in a cottage in a forest with psilocybin mushrooms collected nearby. On-site preparations included physical exercises such as yoga/stretching, movement, heat exposure (sauna), cold exposure (ice swimming), and breathing exercises. Some of the exercises were adopted or adapted from Kundalini yoga and the Wim Hof method of immune system enhancement [19, 20]. The methods were predominantly body-oriented. Methods for mental preparation included elements from martial arts.

[19]: Ledford 2014 DOI
[20]: Kox et al. 2014 DOI

The group setting aimed at providing safety and predefined structure. Sessions begun in the evening and ended in the morning. The first session was an individual session with the organizer. The second and sixth sessions were group sessions with the same organizer. The second session was with two people and the organizer. Her third session was carried out with her friend acting as a sitter. The fourth and fifth sessions were group sessions but not with the same organizer. The fourth session was with a group of four people and two sitters. The fifth was with five people and two sitters. One of the sitters had 'extensive' experience of psilocybin, the other some experience. They had not organized such events before. Also these events were structured as ceremonies. The sixth session was with the original organizer, a 'shaman', and three attendees. Financially, the sessions were either non-profit (immediate costs only, such as food and transportation) or free.

In order to facilitate a feeling of empowerment the attendees were recommended to sit up instead of lying down but this was not a requirement. The sessions consisted mainly of silent medication. Difficult emotions were handled with the breathing techniques learned in advance. These included forceful breathing similar to holotropic breathwork and Kundalini breath of fire, and more subdued techniques such as simply lengthening the exhalation.

During the sessions the attendees were instructed to 'allow the medicine to work', i.e avoid resisting what was emerging in the body or mind. According to the organizer, psychedelic plants possessed an intrinsic intelligence which directed the attendees' processes according to their individual needs. In order to direct the mood, direction and progress of the group the organizer utilized music, drumming, scents from essential oils, and introduction of physical practices or breaks. The organizer's role was to 'hold space': a concept commonly used in the context of psychedelic group and individual therapies, referring to an insulation from the external world that would allow participants to let go of reality and regress to earlier states of developmental arrest in service of reparation and healing [21]. The organizer also consumed psilocybin but utilized a half-dosing strategy, consuming half of what the participants did. This strategy has been recommended by, among others, Meckel Fischer, a Swiss psychotherapist who arranged a somewhat large-scale underground psychedelic group therapy in Switzerland for several years in the early 2000s [22, 23]. Half-dosing, also called psycholytic dosing, allows the sitter to better perceive and attune into the emotional states and needs of the participants.

[21]: Knight 2020 DOI

[22]: Meckel Fischer 2015
[23]: Sessa et al. 2015 DOI

Her first impression was that the organizer was a 'hippie' and the preparatory rituals 'ridiculous' and 'unscientific', something beneath her. In her desperation she focused solely on receiving the mushrooms. Her first psilocybin session 'taught her what acceptance means'. The session did not eliminate her depression but rather 'only scratched the surface . . . it was not sufficient in any way'. Regardless, she felt that the method was the way forward for her. Simultaneously she felt 'cheated' due to having expected something more impressive than a tutorial on acceptance. In retrospect, she considered learning that concept as being the most important for her at the time. Later she also 'understood the purpose' of the preparatory rituals.

Despite her depression remaining unresolved she was soon after surprised by an unintended effect: her almost daily drinking begun to feel inappropriate in an unspecified manner. There was 'a deep feeling of wrongness in my body', without specific intellectual content. In the following months she still occasionally got drunk at parties but the feeling of inappropriateness gradually intensified until she stopped drinking altogether. She commented that this result was unrelated to willpower: 'I drink as much as I feel like. Nowadays it just happens to be one glass of wine every three months'. She said this effect had felt very strange and been completely unexpected: she had never intended to quit drinking as it had been 'the only nice thing in my life'.

The second session three months later concerned 'compassion and nothing else, from the beginning until the end. It was like: throw anything at me, the compassion never ends . . . it was nice'. The third session concerned childhood sexual abuse: an issue whose importance she had until then denied. In the earlier psychotherapy sessions her therapist had attempted to convince her of the importance of these experiences but she had rejected these attempts, claiming that the abuse had been 'mild and inconsequential'. In the session she understood in detail how the abuse had affected her life. She described the reliving of these events as 'freezing'. Subsequently, she was shocked about how she could have until then denied the importance and consequences of the abuse. On the

positive side, the session also featured an experience of 'oneness' with everything: a common subtype of 'mystical experiences' in which the boundaries of self appear to dissolve. These experiences may alleviate the feeling of isolation typical for depression.

The fourth session concerned her relationships with her parents and her childhood need for feeling lovable. She could not recall the details of this subject. The session also included 'a tutorial' about her daily feeling of inconvenience in her social interactions. The essence of the inconvenience was her insecurity about herself with respect to expectations of others. She felt as if someone was telling her how to get rid of the inconvenience: 'You can dissolve it by changing your thoughts in this way'. She said the inconvenient feeling had soon returned and the process of teaching how to dissolve it repeated, over and over again. Regardless, after the session she soon relapsed into the same feeling of inconvenience in her daily life. A few months later, however, the tutorial session re-emerged in her mind, and she begun practicing its application in her daily life. She eventually learned how to be 'open to experiences' and 'truly myself without the constant worry'.

The fifth session was a 'nightmarish horror trip', the purpose of which she had not yet understood. After the previous four sessions she had thought that she had already seen everything and could handle any emerging material without much trouble by simply 'surrendering'. Despite her confidence, in the fifth session her strategy completely failed, rendering her defenseless, 'isolated in a dark desert', bombarded by 'indescribably horrible things'. She ended up thinking that she would never touch psychedelics again. She assumed that the session intended to show her that there was no hope for her, and that she would end up being even more traumatized than before, in hopeless suffering for the rest of her life. However, as the morning arrived, birds begun singing, the darkness disappeared, and 'love in the form of green sprouts begun growing in my heart'. She ended up not at all traumatized, thinking that the horrors had been something that she had needed to visit, yet couldn't say what she had been 'supposed to work on'. This session had been the only one in which she had needed help from a sitter. In practice, the situation had been solved by her telling that she was unable to handle the situation. As a response, the sitter had asked her to 'surrender' regardless. This had been sufficient for her to move on and continue the silent meditation. In retrospect, she speculated whether the difficult nature of the session had been due to lack of proper preparation: she had decided to attend the session at the last minute, ignoring the multi-day preparatory period.

The sixth session utilized a larger dose, and there were three attendees. Also, instead of the organizer being the only 'sitter', in this session there was also a 'shaman' who she described as 'strange and ageless, with a face of a 75-year old and a body of a 23-year old'. Initially she had been suspicious about the man, not understanding why he was there. As she was later sitting with her eyes closed, going through a difficult moment, the man approached her, and she felt 'as if someone had turned on the lights'. The man also played an instrument that she did not recognize; the instrument produced vibrations which 'penetrated her body'. Occasionally the man also sang which she had experienced as comforting. The man 'brought in some kind of eternal peace, light and love... I can't explain how'.

In general, the sixth session had been unexpected again, different from any of the previous ones, with her experiencing severe physical pains. She said that previously, she had 'not even felt her body . . . I had been elsewhere, completely'. When going through the pains, she had not felt that she should resist them. Instead, she had felt that she somehow needed to experience them, 'push through them'. Eventually, as the pain 'had gone through' her, 'some kind of light, love, I don't know, emerged, and I became whole'. She described the session as 'comparable to giving birth', 'a warrior's trip', 'an empowering experience'.

During the sixth session the attendees interacted with each other for the first time. After a period of silent meditation there was a moment without a predefined purpose or instructions. Some of the attendees began communicating with each other. One commented having 'a lot to apologize for' (in life). The others then joined in the theme, saying that they forgave the person. They then began forgiving each other for their various past mistakes, experiencing that they could better accept themselves as they were. When she experienced a difficult moment, another attendee approached her and asked whether they could extract the difficult issue out of her body. She then felt as if the other energetically entered her body, took away the difficult sensation, and disposed of it.

Returning home after the empowering sixth session felt 'like running into a brick wall'. She said this was because the mushrooms had sensitized her into seeing what was wrong about her life. The intensified awareness of her discontent about her relationship and work triggered an immense anxiety, making her realize that she needed to implement changes in these aspects of her life. However, she possessed a newfound feeling of empowerment and peace, a certainty that she would be able to implement the necessary changes.

After a period of approximately 1.5 years, during which she attended the six group sessions, she achieved a remission of her depression. She had performed a psilocybin session approximately once every three months. She commented that one could not go through such demanding experiences more often. After these sessions she was retrospectively interviewed about her experiences. She was occasionally feeling somewhat anxious, 'physically nervous' or 'on overdrive' but her depression was in remission with a low BDI score. She planned on attending a meditation retreat and at least one more psilocybin session, as well as finding a new career. She said that she could not have imagined that such a change was possible, and that the mushrooms 'likely saved my life'. She mentioned having been an extremely bitter and cynical person but these had now been replaced with their opposite: love. She added that 'this love thing might be somewhat incomprehensible until one experiences it personally'.

With regard to mechanisms of action of psychedelics, she said that psychedelics 'turned off defenses' which were originally intended to protect oneself but turned disadvantageous when applied chronically. As these defenses were temporarily turned off one could reach one's 'true self' or 'core self', bypassing the layers of societal conditioning (e.g. survival strategies and fixed beliefs). In the psychedelic state one could discern which layers were beneficial or necessary and which were harmful. An essential condition for progress was the strengthening of

intuition. In the childhood and youth she had learned to dismiss intuition or 'inner knowledge' as 'irrational'; she was in the process of unlearning these patterns.

To her, the essence of psychedelic experience was experiencing the purest form of oneself. According to her, all of the contents of her experience originated 'from the inside' and nothing from the outside. In a safe setting one received only as much from the mushrooms as one could handle at the time, not more or less.

Integration of the psychedelic experiences into everyday life presented a constant challenge. Often she could not recall the contents of the session immediately after it but gradually begun to notice situations reminding her of the concepts experienced in the sessions. For example after the first session she begun to notice situations in which she was able to apply the concepts of acceptance and compassion. Learning to apply these concepts in daily life 'required tens or hundreds of repetitions in order to gradually bend one's mind in the right direction'.

Comparing psychedelics to alcohol, psychedelics produced 'an opposite effect', forcing one to face one's issues instead of isolating one from them. She had been using alcohol to numb herself and to isolate herself from her feelings. Psychedelics directed one closer to one's essence, true needs or 'core self', whereas other drugs deluded a person further away from them. She had truly believed that she had been 'listening to herself' all the time; yet after the psychedelic sessions she had realized that her true needs were not what she had thought they had been (e.g. alcohol). She had also believed that her needs had originated from herself; later she had realized that most of them originated from cultural conditioning including the mass media. She also pointed at the absurdity of her alcohol use having been considered acceptable and 'normal', whereas her psychedelics use rendered her a criminal, despite her being 'a better mother now by all standards'.

About the resolution of her severe treatment-resistant depression she said that in theory, people might achieve the same result with decades of spiritual practice and meditation but it was unlikely in general and would have been impossible for her. She had tried meditation but did not understand how it could help her and could not figure out why she should do it, not understanding what it was about. Choosing a path of meditation in her suicidal, exhausted state would have been impossible. She said that many people were facing the same situation and had 'no capacity whatsoever to overcome even the smallest obstacles'. She did not find the motivation for meditation because she did not understand what she could have achieved with it. In contrast, with psilocybin she got a glimpse of what could be, what was possible, which created the motivation to continue.

After her first psilocybin sessions she had still attended a few psychotherapy sessions, processing some of the emerging issues there. She commented that all her useful insights had emerged in the psychedelic sessions, and without them the conventional psychotherapy 'would not have had much of an effect'. She would have been stuck in 'superficial issues' instead of delving into 'core issues'. An example of this was her earlier denial of the importance of the sexual abuse in the psychotherapy until the issue had come up in her third psychedelic session. In her view,

psychedelic therapy was 'immensely more effective' than psychotherapy, with psilocybin mushrooms possessing 'an almost scary power'. She did not consider the sessions risky. Instead, she commented that her earlier periods of suicidal ideation had been risky. She was disappointed about her therapist's inability to understand her experiences. The therapist's comments had felt irrelevant: the therapist had 'understood nothing' and attempts to discuss her experiences with the therapist had felt futile.

As another example, she described having possessed 'an enormous number of defenses and survival strategies' including the 'full-time search for external validation by any means possible'. Lack of constant validation had produced a feeling of not even existing, which she described as 'hellish'. She was still fighting with the need to please everyone: it had been 'a core feature of her personality' from a very early age. However, she was now able to observe this process, to see how her mind was functioning, and to 'follow it with acceptance'. While she could not immediately change her behavior in all occasions, she was regardless working on the change, while observing her actions 'with a certain wisdom and a peace of mind'.

On epistemology, she commented that she no longer had 'illusions of knowing anything'. She had possessed 'a rather rigid way of viewing the world', thinking that she knew and understood a certain amount, and the rest could be fully explained using scientific methods. By performing a scientific study about any subject one could 'find the facts'. What had existed for her was what had been 'scientifically studied and proven true'. However, psychedelics had given her an embodied experience indicating that 'no research exists about the most important subjects . . . current science does not cover all that exists'. According to her, 'a large part of what exists cannot be scientifically proven, and the unprovable part is larger and more important than the provable part'.

A follow-up interview 2.5 years after the initial interview indicated that the remission of her depression and other symptoms was permanent. She had successfully pursued several lifestyle and employment related changes. She had attended one additional group session and could have attended more of them but had not felt the need. Instead, she had considered herself sufficiently 'experienced' to pursue two psilocybin sessions together with a friend. These later sessions appeared predominantly as 'fine-tuning' of the treatment results achieved in the previous six sessions. Most recently, she was undergoing a divorce which she felt as 'triggering'.

She had begun to attend once-weekly hypnotherapy sessions approximately one year after the sixth session, almost two years before the second interview. Because psilocybin sessions had taught her how to access her 'core', how to 'bypass the ego', she could subsequently experience benefits from hypnotherapy. Although the therapist had no experience of psychedelics, the therapist 'intuitively' worked in a way compatible with the principles of psychedelic therapy. For her, the therapy had therefore begun to feel useful as a way of 'integration' of the material that had emerged in the psilocybin sessions.

After the idea of experimenting with hypnosis had occurred to her she had tested it with a video tutorial, noticed that she could easily enter a hypnotic state, that it was similar to a psychedelic experience,

and that the information gained in it was 'real' in the same way as in the psychedelic sessions. She found the idea of entering the state of 'direct experiencing of past events' without external substances more practical than psychedelic sessions. In her view, the psychedelic sessions had 'opened the path', showed her how she could access these states, allowing the hypnotherapy to work. She felt hypnotherapy was on a direct continuum with psychedelics: they shared the same mechanism of action. As she described it, the method used in the hypnotherapy sessions was essentially intuitively rediscovered Internal Family Systems therapy [24]. In the hypnotherapy sessions, she 'strengthened the intuitions achieved in psychedelic sessions', with the main intuitions being 'peace and love'.

[24]: Schwartz et al. 2020

The hypnotherapist did not know about her use of psychedelics. She had found it 'unnecessary' to mention it. In general, they talked very little. The therapist had mentioned that for the therapist, working with her was 'clinically very interesting', assumedly because the therapist was usually working in the cognitive-analytic framework, psychodrama, or EMDR, and working with hypnosis only was unusual and often advised against. Optimally, she wished to have a therapist who could sit her at psychedelics sessions and also provide integrative sessions.

Following the sixth session, she carried out three more psilocybin sessions, with increasingly long periods between them. The seventh was a group session with the original organizer. This time, she took a larger dose than the others, and her session was still ongoing when the others started a verbal sharing of their experiences. This gave her an unpleasant feeling that lasted for several days. After this she was unwilling to attend group sessions. She had not taken up the issue with the organizer, however.

The eighth session was an individual session with a sitter, with five grams of mushrooms resulting in 'a more challenging experience of deep loneliness' again, which transformed into a 'mystical experience' of 'ego dissolution', similar to the one experienced in the third session, 'strengthening access to a feeling of deep peace'.

The ninth session was with a friend, with both taking psilocybin at the same time. She had experienced feelings of deep love towards her husband who she had been in the process of divorcing. Issues in her marriage had preceded her first psilocybin session but the sessions had enabled her to better recognize her own needs. The feelings of love in the session had confused her and she mentioned having 'ignored' the contents afterwards. Eventually, a divorce followed.

Another feature of the ninth session had been that when her own session had ended, her friend's was still ongoing. Her experience had been 'magnificent' and she would have wanted to stay in this feeling but the friend was undergoing a difficult moment which resulted in her 'absorbing' the friend's mood into herself. She said it would have been better if she could have delegated taking care of the friend to a sitter.

She commented that all her issues might never be resolved but she was at peace with the idea that the process was ongoing. However, her depression (of any degree) as a clinical diagnosis had been completely resolved. The last time she had taken SSRI medication had been a few months before her first psilocybin session almost four years before the second interview. The first session had not been what she had expected

or wanted, it had 'not been magic', but it had given her a direction for life, which had remained unchanged since. There had been 'fluctuations' but the 'trend' was unchanged. Since the first session, her main focus had became the direction, not specific goals: she was 'in peace, knowing that she was going in the right direction'.

Previously, her core experience had been a deep loneliness and isolation. Currently, her core experience was 'oneness': she had 'found a connection to a feeling of love' that was unconnected to objects; she had not known that such love could exist. She said that love was the 'core essence of being, the essence of being human'. The most essential thing in life was an 'experience of universal love'. However, these features were 'difficult to conceptualize in words'.

2.3 Discussion

In this case, the treatment-resistant nature of depression was a result of an unacknowledged early trauma due to domestic violence and childhood sexual abuse, i.e. a complex post-traumatic stress disorder (C-PTSD) [25]. It appeared that in this case the sexual abuse had been somewhat less consequential than the persistent threat of other kinds of violence. She had not been a target of direct violence; instead, she had been traumatized by the constant threat of it. This had made it more difficult for her explain her symptoms, as 'nothing had actually happened'. She had also felt survivor's guilt in that she considered having had it 'easy' in comparison to her older siblings who had been directly targeted.

[25]: Cloitre 2020 DOI

Early trauma is likely a common factor in treatment-resistant depression. In this case the coping methods included looking for external validation and alcohol use which were resolved as a result of the treatment. While alcohol use was largely resolved in one session, remission of depression was achieved only after six sessions attended during a period of 1.5 years.

In accordance with the proposed idea of psychedelics causing various effects in a 'logical' order or in an individual order of importance, one could speculate that the cessation of drinking was a necessary condition to further progress. In the same manner, learning acceptance and compassion might have been prerequisites for processing the partially dissociated sexual abuse. After that, the process progressed into the theme of lovability, and further into some kind of mental endurance test, the purpose or meaning of which did not became clear to her in the next few years.

Psychedelics often appear to produce an 'anti-dissociative' effect (this applies even to low-dose ketamine). In the described case, it appeared that the complex trauma had caused a persistent state of dissociation, causing her to be unable to 'feel her body'. As her process eventually progressed from cognitive or relationship issues of the earlier sessions into bodily or somatic issues in the sixth session, her dissociation related to body appeared to have been dissolved by psilocybin, resulting in the dissociated physical pains emerging into consciousness. By 'working through' these sensations the dissociation was resolved, and she 'became

whole'. At this point, it seemed that the main issues related to the complex trauma had been resolved.

In this case, the woman needed approximately one and a half to three years of efficient processing per three decades of trauma. This 1/20-1/10 ratio appears optimal and is likely difficult to improve. A likely significant contributing factor to the permanence of the results in this case was a relatively good socioeconomic status: there were no significant issues with housing, employment, childcare, or current relationships except those related to a later divorce. The relatively stable situation enabled processing of past threats that were no longer immediate or persisting. Also, sufficient resources to maintain an orientation into the future were available. In comparison, achieving similar results while facing persistent poverty and violence would likely have been difficult or impossible. It is therefore a prerequisite to treatment efficacy that societies maintain a sufficient level of security and predictability.

This group protocol was adapted to individual needs, with a configurable number and timing of sessions. It appeared that the described psychedelic sessions in the group were adequately completed, except the seventh session. There were no significant adverse effects or re-traumatization, indicating relatively successful organization of the sessions.

The group sessions combined psychedelics and the Wim Hof method which includes breathwork and cold water exposure. The sympathetic nervous system and immune system can be voluntarily influenced and the innate immune response attenuated by this method [19, 20, 26]. Some effects may also be mediated by the effect of the cold water exposure on the vagus nerve [27].

[19]: Ledford 2014 DOI
[20]: Kox et al. 2014 DOI
[26]: van Marken Lichtenbelt 2017 DOI
[27]: Jungmann et al. 2018 DOI

Non-pharmaceutical methods capable of inducing altered states can be used in conjunction with pharmaceutical methods. Holotropic breathwork developed by Stanislav and Christina Grof as an alternative to LSD therapy sessions consists of continuous forceful circular breathing, combined with simple bodywork techniques applied by trained guides in specific situations [28]. The breathing technique leads to changes in oxygenation and typically to altered states of consciousness.

[28]: Grof 2010

Depression has been associated with low-grade inflammation; correspondingly, psychedelics, i.e. 5-HT_{2A} receptor agonists, have been found to be powerful anti-inflammatory agents. Flanagan and Nichols have hypothesized that psychedelics acutely reset resting state functional connectivity (rsFC) to healthy networks to rapidly alleviate depression, then produce long-lasting effects by reducing neuroinflammation and preventing the brain from returning to a persistent inflamed pathological state and the accompanying depression [29].

[29]: Flanagan et al. 2018 DOI

Hersey et al. proposed that histamine is the link between inflammation and depression [30]. Theoharides et al. investigated mitochondrial dysfunction and the involvement of mast cells [31]. Best et al. provided mathematical models of serotonin, histamine, and depression, noting that serotonin was inhibited by histamine through H_3 receptor [32]. Cheng et al. reviewed histaminergic system in neuropsychiatric disorders [33]. Comas-Basté et al. reviewed histamine intolerance [34]. Brabant et al. reviewed the brain histaminergic system in addiction [35]. Sankar et al. showed that LSD decreased the total level of histamine [36]. On the other

[30]: Hersey et al. 2021 DOI
[31]: Theoharides et al. 2011 DOI
[32]: Best et al. 2021 DOI
[33]: Cheng et al. 2021 DOI
[34]: Comas-Basté et al. 2020 DOI
[35]: Brabant et al. 2010 DOI
[36]: Sankar et al. 1963 DOI

hand, histamine inhibited the effect of LSD [37]. H_3 receptors and 5-HT_{2A} receptors may thus be associated [38].

[37]: Yamada et al. 1956 DOI
[38]: Morisset et al. 1999 URL

The case suggests the possible usefulness of hypnotherapy and Internal Family Systems therapy as methods of working with subconscious material emerging in psychedelic sessions. More generally, this case study illustrates both the relative inefficacy of conventional psychotherapies as well as the need for psychedelic therapy to be complemented with a suitable method for post-processing or 'integration' [39]. Psychotherapists should be re-educated to function in this capacity. Most therapists would, however, need to undergo at least a similar number of sessions as described in this case study, and therefore require a relatively long processing period for their own past experiences. In indigenous contexts, these 'periods of initiation' are typically much more demanding, taking years [18]. For immediate Western needs, Gorman et al. have presented a model for transtheoretical and transdiagnostic clinical approaches which may serve as a good starting point [39].

[39]: Gorman et al. 2021 DOI
[18]: Berlowitz et al. 2022 DOI
[39]: Gorman et al. 2021 DOI

This case study included a brief description of the principles of group session organization. As illustrated by the example of group interaction, these sessions may produce positive interpersonal effects that can not be produced in solo or individual sessions. Successful outcomes were produced without formal qualifications. Likely due to the experimental nature of the practice the group sizes were very small. In Meckel Fischer's sessions, average group size was 16-18 participants [22]. In the Brazilian syncretic churches Santo Daime and União do Vegetal, much larger group sessions are the norm [40]. Group therapy likely exhibits the best cost efficiency profile and might therefore become the predominant form of psychedelic therapy in the future. Also, as the individual experiences often contain experiences of sacredness, psychedelic therapies could be pursued in religious contexts instead of medical-psychiatric contexts, as exemplified by the mentioned Brazilian churches.

[22]: Meckel Fischer 2015
[40]: Hartogsohn 2021 DOI

Many treatment-resistant patients may have been re-traumatized by failed psychiatric treatments. For them, alternative contexts might present a more feasible option and, due to better therapeutic alliance [41], produce better outcomes. Alternative contexts such as the one presented also allow for flexibility that would be unachievable in the psychiatric context. These kind of contexts are actively being developed, for example, in the state of Oregon, US which partially legalized psilocybin mushrooms in 2020 [42], and in the city of Oakland, California, US which decriminalized all plant-based psychedelics in 2019. In countries where Christianity is privileged by the state, Christian populations have been in decline [43], yet these churches possess suitable musical capabilities, educated personnel, and underutilized spaces. Adopting a role as psilocybin group therapy organizer would give these churches a more relevant role in current societies.

[41]: Murphy et al. 2022 DOI
[42]: Oregon Secterary of State 2020 URL
[43]: Saiya et al. 2021 DOI

Currently, the field of psychedelic therapies has fallen under the spell of commercialization, with companies attempting to monopolize treatment methods or compounds [44]. Development of slightly altered compounds for commercial purposes often appears similar to the practices of the currently illegal designer drug industry. Altered compounds usually provide no benefit over classical alternatives but may introduce toxicity, costs, and/or administrative limitations. A good example of unnecessary

[44]: Marks et al. 2021 DOI

costs and limitations is esketamine [44]. Most importantly, development of equal or worse alternatives for patenting purposes wastes resources on issues that are already solved by classical psychedelics. Many of these commercial practices may be considered abusive and as such in direct contradiction with the intention of healing people wounded by similar practices. The unsuccessful 'war on drugs' was based on distrust, fear, and violence. As an alternative, this case study suggested 'love' that was 'difficult to conceptualize in words'. In practice, this would mean relaxation of overregulation in order to give space for build-up of trust and individual agency, lack of which may be a characterizing feature of depression as well as many other societal ills.

[44]: Marks et al. 2021 DOI

2.4 Conclusions

Recent clinical trials of treatment-resistant depression have utilized one or two doses of psilocybin. A recent single-dose study achieved a remission rate of approximately one quarter in the treatment group in contrast to one tenth in the control group. This case study illustrates that resolution of treatment-resistant depression typically requires processing of multiple aspects of early emotional trauma. It therefore typically requires several sessions during a prolonged time period. The number of sessions required as well as their dosing and timing cannot be conclusively set in advance but have to be adapted according to individual progress and needs.

Due to an immense mismatch between the demand and supply for the treatment of interpersonal trauma, all alternatives for large-scale societal rehabilitation should be taken into account. As psychedelics are affordable and a sufficient knowledge base for their utilization already exists, the main requirement for full adoption would simply be trust in the feasibility of the psychedelic process.

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3 Self-treatment of depression and complex post-traumatic stress disorder with psilocybin and LSD

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In medicine, psychedelics were initially considered as a tool for clinicians to understand psychotic states. Based on the presented case data, a reversal of that concept is proposed: psychedelics could be conceptualized as a tool for people chronically anxious and depressed since early childhood to understand ordinary states of mind (e.g. calmness, hopefulness, relaxation, and joy).

The case concerns a young man who suffered from early-onset complex trauma due to daily abuse by his comprehensive school teacher and other pupils, resulting in severe anxiety and depression. He refused anti-depressive medication. Supportive psychotherapy failed to alleviate the situation, and interaction with psychiatric personnel subjectively experienced as rejection escalated his symptoms. At the age of 19, he resorted to unsupervised self-treatment with psilocybin. Occasional high-dose psilocybin sessions alone did not produce permanent outcomes in a constantly retraumatizing environment.

After becoming unemployed at the age of 25, he dedicated himself to working with psychedelics more intensively, with gradually declining doses. The essence of his method was to relive the originally overwhelming traumatic events, maintaining a conscious focus on somatic sensations and avoiding getting overwhelmed again. In his own estimation, by the age of 30, he had resolved most of his early trauma but had been sensitized to the prevalence of trauma and its consequences (e.g. violence, racism) in the society, and his exposure to these continued to cause him suffering. Regardless, he had gained 'a foundational feeling of peace or stability that could provide safety in the middle of all this'.

The information for this case study was acquired in the course of semi-structured retrospective interviews 2.5 years apart. The case illustrates that chronic treatment-resistant depression together with an unsupportive social environment may present a challenge for psychedelic therapy. As with ketamine, chronic administration may be necessary in some cases.

3.1 Introduction

A post-traumatic stress disorder (PTSD) is typically understood to cover a single incident befalling a person with a relatively normal history of emotional development, and represents a disruption in that context. As such, PTSD can often be resolved in a relatively short time with psychedelics (e.g. MDMA [1, 2]). In contrast, despite bearing a similar name within the framework of current diagnostic thinking, a complex post-traumatic stress disorder (C-PTSD; ICD-11 6B41) [3], or complex trauma in short, represents an absence of normal emotional and social development.

[1]: Mitchell et al. 2021 DOI
[2]: Marseille et al. 2022 DOI
[3]: Maercker et al. 2022 DOI

In the non-psychedelic context, Walker, an American psychotherapist, has written about complex trauma [4]. His views and suggestions are based on his own history of complex trauma. He describes its origins and four coping strategies: fight, flight, freeze, and fawn (the fawn strategy intends to please the aggressor in order to ensure personal safety). Walker also described strategies for and typical phases of recovery.

[4]: Walker 2013 URL

Walker illustrates the development of complex trauma as follows: *'Contempt is a toxic cocktail of verbal and emotional abuse, a deadly amalgam of denigration, rage, and disgust. Rage creates fear, and disgust creates shame in the child in a way that soon teaches her to refrain from crying out, from ever asking for attention. Before long, the child gives up on seeking any kind of help or connection at all. The child's bid for bonding and acceptance is thwarted, and she is left to suffer in the frightened despair of abandonment.'*

The present case concerns unsupervised self-therapy of complex trauma with psychedelics. Due to the assumed risks of psychosis and/or retraumatization, such practice is usually advised against. However, according to a senior psychedelic therapy advocate, British psychiatrist Ben Sessa, the primary risk factors for psychoses are cocaine, amphetamine, and cannabis [5]. Also, a case study by the author presented a counterexample in which a psychotic patient successfully utilized psychedelics to heal complex trauma [6]. In the present case, occasional cannabis use did not result in psychotic symptoms; therefore, for this patient, the risk of psychosis was assumedly low.

[5]: Sessa 2018 URL

[6]: Turkia 2022 DOI

With regard to pharmacology of psilocybin, it is non-addictive and has low toxicity [7, 8]. Its public health and public order effects are very limited, and criminality related to the use, the production and trafficking of magic mushrooms is almost non-existent [9]. Using 2017 Global Drug Survey data, Kopra et al. investigated the seeking of emergency medical treatment (EMT) following the use of magic mushrooms [10]. Of 9,233 magic mushroom users in the previous year, 19 (0.2%) reported having sought EMT. Eleven (58%) had simultaneously consumed cannabis, alcohol, cocaine, MDMA, ketamine, or opioids. The rest of the incidents were mainly due to badly chosen environment or a wrong mindset before the session. The most common adverse reactions were anxiety or panic, paranoia or suspiciousness, and hallucinations. The only predictor of EMT incidents was younger age. The authors concluded that psilocybin was a relatively safe drug, with serious incidents rare and short-lasting: twelve of the incidents were resolved in less than six hours, all but one in 24 hours, and the last one in a week. The per-session risk estimate for EMT was 0.06% although 1.4% of 12,534 users (of which 9,233 responded to the EMT question) reported a diagnosis of psychosis and 2.6% a diagnosis of bipolar disorder.

[7]: Teixeira et al. 2022 DOI
[8]: Strickland et al. 2022 DOI
[9]: Amsterdam et al. 2011 DOI
[10]: Kopra et al. 2022 DOI

The ritual use of psilocybin mushrooms has been depicted in a document from the 1500s [11]. In the 1960s, psilocybin was utilized in individual psychotherapy and various types of group therapy [12]. In recent years, psilocybin therapy has been studied for the treatment of depression, alcohol and nicotine dependency, and anxiety, as well as prophylaxis of episodic cluster headache [13–15]. Various types of psychedelic therapy practice have been discussed in a recent book [16].

[11]: Court et al. 2022 DOI
[12]: Passie 2005
[13]: Meade et al. 2022 DOI
[14]: Mertens et al. 2022 DOI
[15]: Schindler et al. 2022 DOI
[16]: Read et al. 2021

In the present case, the mushrooms had been collected from nature, and other substances acquired through friends or from the darknet. High,

regular, and 'psycholytic' (i.e. half or a third of a 'regular' dose) dosing were utilized. What constitutes a regular dose varies between patients. The effects of psycholytic dosing are qualitatively different from those of higher doses, allowing normal functioning but adding an enhanced capability for introspection and perception [6].

[6]: Turkia 2022 DOI

Retraumatization due to recall and re-experiencing of an intolerable past life event may be a risk in an environment that does not provide the necessary safety and support to enable a previously overwhelming experience to be re-experienced in a non-overwhelming manner. However, almost any social interaction, including the presence of another person in a psychedelic session, may unexpectedly adversely affect or retraumatize a severely traumatized person. The mentioned case study also discussed the possible feasibility of self-treatment in such situations [6]. In the present case, the patient resorted to self-treatment because suitable external support was unavailable.

[6]: Turkia 2022 DOI

A recent ebook by Kaspian described a set of principles and suggested practices for self-therapy with MDMA [17]. The manual was based on the male author's own experiences of domestic violence and sexual abuse both at home as well as in a religious context, and a subsequent resolution of the trauma with 18 ayahuasca group ceremonies, 15 mescaline group ceremonies, five LSD sessions with a sitter, four MDMA sessions, regular psycholytic use of LSD, massage therapy, dance, and yoga [18]. Due to its less complicated nature, Kaspian suggested MDMA as particularly suitable for self-therapy.

[17]: Kaspian 2020 URL

[18]: Kaspian 2016 URL

Menesini et al. discussed bullying in schools, defining bullying as intentional, repetitive aggressive behavior in the presence of an imbalance of power; in other words, as a systematic abuse of power [19]. In Western countries, an estimated 9–25% of school-age children were bullied. Students belonging to ethnic minorities were at greater risk for being victimized. Individual risk factors included submissive, unassertive, or insecure behavior, as well as shyness and anxiousness; these features may often be symptoms of previous trauma. With regard to the home environment, overprotection was more strongly related to being a pure victim, whereas abuse or neglect was more strongly associated with being a bully-victim. With regard to the classroom environment, there was more bullying in highly hierarchical classrooms. Also, students' perceptions regarding teacher attitudes towards bullying were associated with the level of bullying problems in a classroom.

[19]: Menesini et al. 2017 DOI

The interviewee was found on an online discussion platform and was subsequently invited to participate in this case study by the author. The author's approach was ethnographic, with the intention of collecting cases of self-treatment or small-group treatment of various mental disorders with different psychedelics. The details of this case have been acquired from three semi-structured retrospective online interviews with a total duration of approximately 4.5 hours. A two-hour interview was conducted in November 2019, a 1.5-hour interview in March 2022, and a one-hour interview in April 2022. Medical records were unavailable.

The ICD-10 diagnostic manual does not contain the diagnosis of complex post-traumatic stress disorder; it will be added in the forthcoming ICD-11 manual. The patient had therefore not been assigned this diagnosis by a qualified clinician. However, the fulfillment of the ICD-11 diagnostic

criteria 6B41 can be derived from the clinical features presented in the case description.

Unsupervised self-administration of regular and high doses of psychedelics by inexperienced people carries risks and cannot be encouraged at this point. To overcome otherwise insurmountable issues related to the availability and scaling of psychedelic therapy, appropriate protocols including pre- and post-session support for psycholytic self-therapy could be developed [6].

[6]: Turkia 2022 DOI

3.2 Case description

A thirty-year-old man had suffered from depression since the age of nine. For years, he was bullied daily at his elementary school (grades 3 through 6) not only by other pupils but also, more importantly, by his female class teacher. The teacher routinely humiliated him, for example, by ridiculing his schoolwork in front of other students. He felt being under constant surveillance and persecution. He described the teacher's behavior as 'systematic bullying' and 'abuse of her position of power'. Eventually, he changed schools.

In the first interview, he was unwilling to describe the details of the bullying, but he provided a few details in the second interview. He had experienced the teacher as emotionally violent and oppressive. It had not been enough to correct a single error on a two-page spread; instead, he was made to erase the whole spread and redo everything. No rationale was given. He often left the school crying. The teacher lied about him having acted violently and denounced his parents. His parents were supportive and complained about the teacher several times but their complaints were ignored. With other teachers, the child had normal relationships. The teacher had also bullied a few other children, with similar results. No disciplinary action for her behavior was taken by the school. Years later, when the man accidentally met the teacher, her attitude had still been 'mean and cold' and her behavior had been inappropriate.

One of the child's parents was an immigrant. Tensions between that parent's culture and the mainstream culture caused complications both within the family as well as between the family and the society in general. The child was 'wrestling with his identity' and lacking social support. After finishing comprehensive school (grades 1 through 9), at the age of sixteen, he was diagnosed with 'major depressive disorder, single episode, moderate' (ICD-10 F32.1). He was repeatedly pressured to adopt selective serotonin reuptake inhibitors (SSRIs). According to the personnel, getting rid of depression would have been impossible without them. Yet, due to 'distrust' and unwillingness to depend on medication, he refused SSRIs. Distrust was partly due to a breach of confidentiality. According to him, the personnel had promised not to add some information to his health record, but it had nonetheless been added and leaked to external parties. In addition, he said that the medical record contained erroneous information.

From the age of sixteen, he received approximately three years of psychotherapy with appointments once a week at a youth outpatient psychi-

atric clinic. When the issue of having tried cannabis arose in one of the appointments, the therapist refused to discuss anything else, assigning all his issues to cannabis use. He explained that his depression had preceded his few experiments with cannabis, but the attitude of the nurse remained unchanged. In the interview, he explained that cannabis use had occasionally produced 'difficult moments' due to a recollection of former traumatic social situations (i.e. the 'difficult moments' had been due to the psychedelic effect of cannabis).

In his view, the only benefit from the therapy was that he was excused from military service. He refused sick leave offered by the clinic because it would have threatened his daily school routine, which was the only thing keeping him from falling into a debilitating depression. Had he not been aware of the danger of dropping the daily routine, the advice of the clinic would have been counter-productive. He felt that the personnel had ignored the concept of resilience [20].

[20]: Sisto et al. 2019 DOI

At the age of nineteen his depression and anxiety worsened. He heard that psilocybin could help with depression and searched for information online, primarily from Psychoactive Vault (psyvault.net) and Erowid (erowid.org). He adopted personally relevant aspects from Terence McKenna, Alan Watts, Timothy Leary, several Buddhist teachers and Zen masters, and Daoists such as Laozi, creating a synthesis adapted for his individual needs.

His first experience was with a low dose of dried psilocybin mushrooms gathered from nature. He described it as 'not very impressive'. Regardless, it had 'opened his eyes to the possibility of feeling something else than just apathy and blankness'. A second experience with approximately two to three grams of dried mushrooms was more influential.

At about the age of twenty, he enrolled in a polytechnic. The pressure to perform was more tolerable, and he was able to avoid situations that reminded him of the comprehensive school. He spent one year abroad as an exchange student. In that more healthy environment, he developed 'a new, healthy self', along with satisfying relationships. A return to his home country and the old environment initiated 'an existential crisis'.

Eventually, he graduated from the polytechnic and took a full-time job in a technical field. He was given lots of responsibilities and he faced high expectations of performance. This triggered his traumas related to being under surveillance and having his output criticized. He expected to be humiliated again. Occasionally, as his boss commented on his performance harshly, these fears were realized. His traumas related to humiliation were 'such a large complex' that the work environment was 'simply too much to handle'. An avoidance strategy was no longer possible, which led to a collapse and resignation.

He sought psychiatric care through the student health care system. He explained that at one appointment, a psychiatrist had asked him about something, and he had tried to explain his view on the issue. As the psychiatrist had dismissed his explanation, a feeling of immense worthlessness had overwhelmed him. At the time of the first interview, he still had difficulties recalling the contents of the discussion, evidently still displaying symptoms of dissociation, eventually recalling that it had been about cannabis. He had experienced the event as 'very traumatizing:

my distress and agony were dismissed because of a mention of cannabis in my health record'. He had felt 'completely naked, completely empty. It's difficult to explain. At the appointment, I closed everything out of my mind and dissociated. I was like on autopilot, just to get out of there, to get somewhere safe. When I got back home, the anxiety overwhelmed me like an avalanche'.

He had carried a 'huge mass of hopelessness, the whole history of everything having failed'. The psychiatrist's comment had re-awakened all the memories of being misunderstood and mistreated, causing an explosion of anxiety. Currently, in his more hopeful state of mind, he could probably have dismissed such comments with a shrug, but at the time they had exacerbated his pre-existing sense of complete meaninglessness of life, exacerbating his symptoms.

Subsequently, he met with a psychotherapist once or twice a week. He described the therapist as 'distant, even cold'. His relationship with the therapist was 'fearful': he was constantly afraid of saying or doing something wrong. He tried to discuss 'existential questions' such as: since he was a mortal being, he was eventually going to lose all the people close to him. This expected loss seemed to render all his pursuits in life meaningless, and there was no way to avoid the loss. This specific fear had its origin in his mother almost dying of a somatic emergency when he had been a child of approximately five years of age. He had been alone with the mother and called for help. The fear of losing people was thus based on a previous life experience. The personnel at the outpatient clinic were unable to respond to these issues, offering avoidance, 'turning one's gaze away,' as a solution and strategy. Yet his mental state 'forced' him to concentrate on these existential questions.

Assessing the appointments as fruitless or harmful, he eventually discontinued them. Due to his depression, he was disqualified from military service. Due to his healthcare record containing a mention of cannabis use, his visits to somatic healthcare units were also turned into interrogations about cannabis use. Although cannabis use occurred rarely and appeared inconsequential for this patient, he was perceived only as a cannabis abuser, and all his issues were viewed as a result of cannabis abuse, although he repeatedly attempted to explain that the issues were due to traumatization. He stated that 'what drove me to experiment with psychedelics was that the therapy was like that' (essentially retraumatizing).

His collapse at the workplace had happened five years before the first interview. Since then, he had been unemployed, receiving a very small unemployment benefit, taking occasional short-term jobs on the side 'for pocket money'. He described that only during these five years had he been able to really work on his issues. Before that, his trauma work had been 'tentative'; in addition to psychedelics, he had experimented with meditation, yoga, and boxing. However, both during the five years before the collapse and the five years thereafter, use of psychedelics had been 'essential', with larger doses more prevalent at the beginning and with the doses lowering towards the end, being replaced with daily non-psychedelic practice.

His largest dose had been approximately ten grams. In the beginning, he had 'searched for earthmoving experiences'. Upon gaining more

experience, the dosing had been reduced. Dosing had depended on the use case: smaller doses allowed for more delicate introspection, whereas large doses were for 'testing one's limits, riding the wave'.

He said that psychedelics revealed to him what his issues were and what they were fundamentally about. However, they did not resolve them. The main issue with psilocybin was that under its influence, his mind was usually 'so clear that it no longer felt necessary to work with the planned issues'. As his symptoms had gradually re-emerged following these sessions, he realized that a system of daily, non-psychedelic practice was needed. Depression appeared to him as deeply ingrained automated or subconscious patterns of behavior that generated friction in his social interactions. These patterns maintained the unwanted symptoms. Psychedelics revealed, or brought into consciousness, the fact that he possessed a certain pattern but changing it required him to 'not feed it' by recognizing it and actively aiming to change it in his daily life. According to him, psychedelics attenuated signals originating from the 'default mode network' [21], allowing other signals to be perceived. These signals included bodily sensations that were less perceptible than the stream of thoughts. The aim of the daily practice was to produce persistent neural changes.

[21]: Raichle 2015 DOI

In order to work on the ingrained patterns, in addition to the high-dose psilocybin sessions, he had been using approximately 120 µg of LSD (which for him produced a psycholytic effect) in social events to practice overcoming his social anxiety. He called this 'exposure therapy'. In practice, he consumed LSD one or two hours before attending a social event such as a night with friends in the city. He was then slightly distanced from his automated reactions. He could better observe his behavior and thoughts, and instead of reacting automatically, he could change his response consciously, introducing and reinforcing new, more adequate behavioral patterns. Instead of instantaneous automatic reactions, the psycholytic dosing enabled him to choose how to react. He could observe himself objectively, 'as another person', detached from his personal issues. The state was different from his typical trauma-related dissociation in that it was not a state of freezing or collapse within which consciousness was limited; instead, consciousness was expanded.

Even more essential than altering the patterns was a 'meta-level' observation or realization of the immense potential for reconfiguring one's mind: the extent to which one's interpretations, reactions, and experiences were plastic. As an example, if in some situations one's first reaction was fear, psychedelics allowed one to 'see through' one's projections, and under these projections lay 'a completely different reality' lacking the projected fear.

He also had a few experiences with DMT. He said the problem was that DMT 'propelled one to such heights that one didn't even remember having issues', leaving them unprocessed in a session. Therefore, he saw high doses of DMT as not having much therapeutic value. However, he added that he had experienced a 'breakthrough' once, but said that the only therapeutic aspect had been that 'dying might feel like that, and it didn't feel that bad'. Regardless, it had had 'nothing to do with this world: it was far too strange and otherworldly'. He described how processing issues requires a 'human self', and how this self vanished during the

experience. However, with lower doses of DMT, processing was feasible. As an example, as he had once been on a beach, a bird had screamed. He could see the reaction to the scream forming in his mind, and he could see that the reaction was caused by a separate part of him [22]. In his normal state, he would have been unable to perceive this reaction pattern within himself.

[22]: Schwartz et al. 2020

The concept of death had been the epicentre of his issues. The core of his fears had been losing his body, becoming ill, or getting old. The common factor in these was the concept of control. The crux of his psilocybin sessions had been experiences of losing control. Through experiencing loss of control, his fear of it had diminished. In the sessions, he had learned to surrender to the uncertainty of life. As he had persevered with the 'raw energy of emotions', he had learned to 'dance with it' or 'ride with it'. The proper method to avoid getting overwhelmed was to face one body sensation at a time. He had also learned to trust that the mushrooms only showed him what he needed to experience and know.

During the sessions, the loss of control had been associated with death, and as he had learned to handle the feelings related to loss of control, his fear of death had also lessened (see also e.g. [23]). Surviving the experiences had felt like a 'rebirth'. These repeated experiences of death and rebirth had been central to his progress.

[23]: Moreton et al. 2020 DOI

He described how traumas were embedded in the body. Each issue was a specific, locatable tension of a muscle, often connected to a specific episodic memory. Depression was also a specific, concrete bodily sensation. Psychedelics allowed him to access this information directly. Previously, his depression had appeared as 'a formless mass, with nothing to grab on'. Psychedelics had 'given a form' to the depression: to the sensations that constantly emerged and needed processing.

He saw his depression as a collection of embedded bodily sensations caused by repeated traumas. This collection of tension-memory objects then formed the 'depression' (possibly due to the large number of tensions all over the body, it was difficult to point out any specific issue, and the whole appeared formless and overwhelming).

Over time, his capability to observe these tensions and/or sensations improved. A specific type of fear could be felt in the iliopsoas, and anxiety about a specific issue in the neck. Tensions related to a specific episodic memory could also be stored asymmetrically in multiple locations, for example, one part in a knee and another in an elbow, but it was unclear what exactly the link was between these parts.

Further sessions revealed finer details and layers. The upper layers of experience could involve coarse tensions of large muscles. After tensions in these were released, a layer of finer details could be perceived. Eventually, one could progress to feeling 'the flow of raw energy'.

Directly encountering previously dissociated sensations was extremely uncomfortable: he compared it to touching a hot plate. The feelings 'were the original trauma': each one was still stored in the body as a sensation, and dissociation prevented one from accessing them. These areas of the body were 'uncommunicative' with the rest of the body. The body was 'fragmented', and subsequently, also the mind was fragmented (see e.g. [24]). As he 'entered' these dissociated fragments, sensations began to

[24]: van der Hart et al. 2006 URL

'bubble up'. The most important thing to do then was to stay calm. As energy was flowing into a specific location, the muscle could tremble, then relax, as if some 'bad energy' had been released. Subsequently, a 'feeling of lightness' could emerge, 'as if life was flowing into the area', occasionally accompanied by a euphoric state.

Comparing the properties of different psychedelics, he preferred mushrooms to LSD. LSD was 'like talking to a computer, an intelligence of a different level, an insect perhaps'. Mushrooms had 'a more organic, pleasant, lively spirit, as if communicating with a more human, lively entity . . . there was a stronger connection with nature'.

He also had some experience with muscimol, a $GABA_A$ agonist acquired from dried fly agaric mushrooms (Amanita muscaria) [25, 26]. The effect of muscimol was very different from other psychedelics. Low doses had merely had a calming effect, 'completely removing fear and anxiety, calming the mind', producing a feeling of 'being normal'. As an example, he had been bullied by a person, and when he accidentally met this person while being under the influence of muscimol, he lacked the fear of the bully, and subsequently, the bully seemed afraid of him. The quality of social interactions was thus very noticeably changed. To him, these experiences exemplified that 'if something essential changed in social interactions, it would look and feel like this'.

[25]: Winkelman 2022 DOI
[26]: Stebelska 2013 DOI

While in nature, the effect of psilocybin mushrooms allowed him to perceive nature as a process. A tree was not 'just a tree'. Instead, it appeared to him as a location-specific process or a stream. Its phenotype had been formed by the availability of nutrients, prevailing winds, the storms it had been subjected to, and the animals that had been present. To an observer sensitized by a plant psychedelic, the life history of the tree was easily readable and understandable.

Observing the tree in the psychedelic state also elicited comparisons to the observer's own life. The tree was an expression of the same principles or a 'philosophy of life' as the observer's: environmental pressures, conditions, and opportunities, as well as growth, trauma, and healing. The tree had acquired exactly the right form for its location to optimize the use of available resources, allowing the energy to flow in an optimal way. Conceptualizing the process of one's life in this manner was consoling in comparison to seeing it as a failure, a disorder, or a disease. He mentioned 'the pruning of dead branches' as an allegory for therapy.

During the first interview, after five years of more intense processing, his situation was 'significantly better': depression had not been an issue for a long time. He was 'no longer at all depressed'. His fears and anxieties had mostly dissipated: their 'amplitude had diminished'. More positive elements had replaced negative inner voices and thought patterns (Walker called this 'shrinking the critic' [4]). He rarely got stuck in negative thought patterns: only if he was very tired or otherwise exhausted.

[4]: Walker 2013 URL

He wanted to share his acquired knowledge by becoming a yoga and meditation teacher: there was 'a need and demand' for such education. Although he 'hadn't developed anything of his own but only collected and compiled existing knowledge', due to having acquired hands-on experience, he felt competent in giving advice on these subjects.

He stressed that processing trauma with the help of psychedelics had been 'almost a full-time job'. Yet his experience served as a proof that self-healing after such a trauma was possible. He added that someone without personal experience of a similar situation could not imagine the importance of experiencing a feeling of normalcy for the first time in one's life: the revelatory nature of feeling calm, hopeful, and joyful instead of residing in chronic generalized anxiety and severe depression.

A follow-up interview 2.5 years after the initial interview revealed that he had suffered from 'difficult periods', which he had been unable to predict at the time of the first interview because he 'had not realized how deep his issues had been ingrained'. The initial status had been 'a waypoint: an arrival into the sphere of normalcy'. He saw all people as 'more or less broken', with a mix of healthy and sick patterns or models of behavior.

Although his personal issues had been solved on some level and he had learned how to handle them, he had not realized that this acquired knowledge had not been sufficient. Previously he had only faced his own illness, whereas now he was facing other people's illnesses. The constant exposure to the traumas of others challenged his previous assumption of having permanently left his depression behind. Being healed was not a static state, but rather a constant battle to avoid relapse. For this, he was applying 'routine and skill'.

After he had freed resources previously tied to handling past issues, the present world of societal issues had been revealed to him in more detail, as more tangible. The past-oriented focus had been replaced with a more present-oriented one. He described this as 'a gradual awakening to deeper, more nuanced tensions'. As before, he felt these societal tensions in his body and processed them as such. Whereas before the tensions had been ingrained, the new tensions were presented to him as more immediate, originating from the outside. Unless he was aware of these influences and continuously processed them, tensions present in society were impacting him, attempting to ingrain themselves into his body.

The processing was done by sensing the 'raw energy', the body state caused by these influences, without dissociating. He called these skills 'the fruit of the practice which created a significant difference in my healing'. The skills had enabled him to handle a recent illness of a family member. He said that in this situation he might have been close to psychosis. As his original fear of losing people close to him had materialized – although it had been difficult – he had been able to handle it.

He explained that as a member of an unwanted minority, he was constantly living under the threat of violence. It was not something that could be healed in an individual person with psychedelics or meditation: it was structural violence, which was constantly present [27]. He said that he had 'denied this reality to himself for a long time, at school and at work'. Also, he had initially not realized how deep he had buried his own aggression towards this structural violence. The deep bitterness and hate had surfaced only very briefly in his initial psilocybin sessions. Only when 'his mind had been ready', at the age of thirty, after the first interview, issues related to structural violence and society had surfaced.

[27]: Burton et al. 2020 DOI

He commented that one's progress depended on the depth of the 'root causes'. Losing a close person, although difficult, might not alter one's identity. In contrast, being a target of violence may alter it, for example, by questioning one's manliness: becoming a victim would 'erase the masculine role'. He also added that some of his psychedelic sessions might have been retraumatizing. Destabilization of one's fundamental beliefs or life narrative could be problematic. The probability of retraumatization was not dose-dependent but trauma-type dependent, i.e. relative to the skill of handling a specific emerging topic. He said that 'psychedelics don't ask what they should show, they just show what one needs to see. It does not mean it could not be traumatizing'.

His initial idea of nothing bad no longer surfacing, and the idea that his deep depression had been completely erased, had been a misunderstanding. Regardless, the essential difference now was that 'nothing could cover a primitive, foundational feeling of peace or stability that could provide safety in the middle of all this'.

3.3 Discussion

In this case, the depression was a result of a complex post-traumatic stress disorder (C-PTSD) [3, 4], i.e. an early trauma due to abuse perpetrated by an authority figure who diverted from the expected role of a support provider and turned instead into a perpetrator, against whom the child was defenseless. The daily abuse lasted for years. Additional complexities at home and in society due to friction between two very different cultural backgrounds added to his difficulties.

[3]: Maercker et al. 2022 DOI
[4]: Walker 2013 URL

The single given example of bullying on behalf of the teacher may not make fully understandable how non-physical bullying could wound a child as severely as, say, sexual abuse. Being bullied raised an anger which others dismissed. Their behavior suggested that being bullied was his own fault and that his anger was not justified. His defenselessness and rejection by the peer group became a part of his core identity. In addition, although the boy felt severely hurt, it was difficult to prove that something severe had happened. There was no clearly attributable 'serious' reason for complaints. A core feature of trauma is the difficulty of conceptualizing it (likely partly due to the 'freeze' response).

A person who has been repeatedly traumatized from an early age may never have experienced a state of being calm, hopeful and relaxed, or at least cannot recall such states being considered ordinary by 'ordinary people', whereas ordinary people may have never experienced states typical of people with complex trauma. These differences often result in communication and mutual understanding being extremely difficult or impossible; these difficulties may often lead to a diagnosis of, for example, a personality disorder.

For someone whose past experiences have induced a chronic major depression, experiences of 'ordinary states' may be truly 'mind-expanding'. The 'mind-expanding' effects of psychedelics are typically portrayed as something supernormal, or more recently in the field of psychedelic research, as 'mystical' [28, 29]. For the depressed and traumatized, these effects may often be relatively uninteresting and inconsequential, and

[28]: Roseman et al. 2018 DOI
[29]: Garb et al. 2022 DOI

the more important effects may be those which build understanding of ordinary states experienced by other people: experiences of normalcy, stability, calmness, and joy.

In the 1950s, psychedelics were seen as a way for normal people to experience psychosis-like states (the 'model psychosis' theory [30]). A reverse understanding of psychedelics might better serve the current needs: psychedelics could be conceptualized as a way for traumatized people to experience ordinary states of mind.

[30]: McKellar 1957 DOI

The patient also described that under the influence of psilocybin, things seemed very clear: the depression dissolved. In the 'afterglow' after the sessions, he felt more cognitively and emotionally functional than in his everyday state. This suggests that for treatment-resistant depression, psilocybin could be most useful in daily psycholytic doses in a similar way to SSRIs, or in weekly regular doses. The feature might also indicate that the short duration of the beneficial effect of ketamine in suicidal depression would not be due to the pharmacological properties of ketamine but to somatic factors related to the depression. The mechanism of action may be partly anti-inflammatory [31, 32].

[31]: Flanagan et al. 2018 DOI
[32]: Hersey et al. 2021 DOI

The patient had been diagnosed at the age of sixteen with major depressive disorder (ICD-10 F32.1) and had received outpatient psychiatric care intended as supportive. He had, however, experienced these treatment attempts as retraumatizing and eventually refused them. As he had not found another system of support, self-treatment appeared as the only option. His low socioeconomic status caused additional stress that may have hindered his progress. He described the first five years after the first psilocybin experience (20–24) as tentative experimentation with the methods, during which he was further retraumatized in his studies and at work. The five years (25–29) following his collapse at the workplace and subsequent unemployment had been 'more productive', allowing him to work on his issues full-time.

It could be claimed that many people with major depression reach remission spontaneously. Despite the lack of treatment attempts with SSRIs, this patient was very likely treatment-resistant. The mention of psilocybin allowing a feeling of normalcy for the first time suggests the relevance of psychedelics in this case. The process could be claimed to have been very slow even though the condition was officially diagnosed as only 'moderate'. However, the diagnosis may have failed to grasp the severity of the condition.

In resource-limited settings, such patients may be more likely to deteriorate than remain stable or reach remission. The outcome might thus be considered relatively good, although some symptoms persisted. Younger people have had less time for additional retraumatization than older people. In this case, roughly half a decade of efficient processing per roughly two decades of trauma was needed. This 1/4 ratio could likely be improved with experienced external guidance and support.

The patient suggested that dissociation could be resolved by feeling the somatic sensations associated with the original trauma-inducing event without dissociating. The mechanism of action of psychedelics thus appeared to be a 're-opening' of the dissociated trauma memory in order to allow reliving the traumatic event without dissociating.

Walker pointed to 'underlying sensations of depression: hypo-aroused sensations that are subtle and barely perceptible at first, and which may include heaviness, swollenness, exhaustion, emptiness, hunger, longing, soreness, or deadness' [4]. According to him, 'fully feeling' these sensations ('sensate focusing') was the key to symptom resolution: 'with ongoing practice, focused attention digests them as they are integrated into consciousness'. Walker also mentioned sensations related to fear, with intense sensations of fear including nausea, jumpiness, feeling wired, shortness of breath, hyperventilation, and alimentary distress. Mild sensations of fear included muscular tightness or tension anywhere in the body, especially in the alimentary canal. The techniques discovered by the patient thus largely mirrored those described by Walker, whom the patient was not aware of.

[4]: Walker 2013 URL

The function of dissociation appeared to be to ensure short-term survival at the cost of long-term survival. Dissociation thus appeared to maintain a short-term focus in life (e.g. through focusing on avoidance of trauma triggers). On a societal level, a high prevalence of dissociation in the population would thus benefit short-term goals at the expense of long-term goals.

While 'mystical experiences' are often related to persisting positive effects [33, 34], they were not central in this case. A high-dose DMT experience was perceived as too mystical to have therapeutic value. Since the experiences with persisting positive effects were mostly 'ordinary states' not experienced by other means, positive effects are likely produced simply by experiences that are positive, new, and unexpected (i.e. corrective emotional experiences (CEE) [35]), with the potential to induce changes in patterns of thinking and behavior. Therefore, focusing solely on 'mystical' might be misleading. CEEs may be seen as a different mechanism of action than reliving traumatic events without dissociating.

[33]: McCulloch et al. 2022 DOI
[34]: Gandy 2022 DOI

[35]: Fried 2002 DOI

The patient described a deep, ongoing sensation of being socially isolated and devalued. This might be the core of treatment-resistant depression, and the reason why a permanent resolution of symptoms was difficult to achieve. Also, his early trauma at the age of five (his mother almost dying of a somatic emergency) may have remained partially unprocessed, preventing full remission. This early trauma might also have constituted a risk factor for being bullied.

To overcome isolation, Ona et al. have proposed a focus on the social/-community aspects, noting that the traditional use of psychoactive plants typically happens in groups, which promotes community engagement and participation [36]. They accentuated the importance of bridging traditional psychedelic therapy practices and Western medicine in order to combine the knowledge that can be obtained from both sides. Also, patients retraumatized by conventional psychiatric care might be better helped in alternative treatment contexts, for example in traditional indigenous contexts (e.g. Shipibo [37]), or in religious contexts [38, 39].

[36]: Ona et al. 2021 DOI

[37]: Gonzalez et al. 2021 DOI
[38]: Cole-Turner 2022 DOI
[39]: Hartogsohn 2021 DOI

3.4 Conclusions

Self-therapy of treatment-resistant depression with psychedelics might be slow and complicated in a subset of patients, yet feasible. Healthcare

systems should develop facilities to better support these patients in their efforts at self-healing. Psychedelics could be conceptualized as a method for experiencing ordinary, positive states of mind that remain inaccessible to the severely depressed. A constantly retraumatizing environment may not allow for a full remission. Chronic administration of psychedelics may be necessary in some cases. The core of treatment-resistant depression may be an ongoing sensation of being socially isolated and devalued. The case illustrates the need for more widespread, societal change.

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Self-treatment of psychosis and complex post-traumatic stress disorder with LSD and DMT

4

This article describes a case of a teenager with early complex trauma due to chronic domestic violence. Cannabis use triggered auditory hallucinations, after which the teenager was diagnosed with an acute schizophrenia-like psychotic disorder. Antipsychotic medication did not fully resolve symptoms. Eventually the teenager chose to self-medicate with LSD in order to resolve a suicidal condition. The teenager carried out six unsupervised LSD sessions, followed by an extended period of almost daily use of inhaled low-dose DMT. Psychotic symptoms were mostly resolved after approximately one year. Subsequent cannabis use caused a transient relapse.

While his psychosis may have been due to cannabis use in the presence of a genetic predisposition, LSD and DMT did not promote psychotic symptoms in this case and resolved the suicidal condition in one session. Additional high-dose LSD sessions and low-dose DMT sessions appeared to resolve the symptoms related to the early complex trauma. Alternatively, if psychosis is understood as a massive defense system resulting from early complex trauma and if his psychotic symptoms were partially due to such trauma, psychedelics appeared to transcend this defense system, providing access to traumatic memories in order to allow for an integrative treatment effect.

Information was acquired from medical record excerpts provided by the patient, a semi-structured retrospective video interview, and follow-up interviews a year later. The present case suggests a need for further studies on the relationship between psychedelics and psychotic disorders, the feasibility of supervised vs. unsupervised settings for various situations, and alternative therapeutic models for utilizing the hyperaware-hypersensitive state induced by psychedelics. With regard to self-treatment, a harm reduction approach should be adopted. Low-risk psycholytic self-treatment protocols could be developed for future use in public health care systems.

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Keywords: psychosis, cannabis, LSD, DMT, 25B-NBOMe

4.1 Introduction

Currently, the potential of the psychedelic model for the treatment of mental disorders is being studied in a safe and structured manner in the field of psychiatry. Clinical trials have already been carried out, for example, for the treatment of post-traumatic stress disorder with MDMA, the treatment of depression (major, treatment-resistant, cancer-related), anxiety (cancer-related, generalized, obsessive-compulsive, post-traumatic), borderline and narcissistic personality disorders, suicidality, various addictions (alcohol, stimulants, cocaine, tobacco, opioids, cannabis) and inflammation with psilocybin [1, 2], the treatment of Alzheimer's disease and anxiety associated with life-threatening disease with LSD [3–5], and the treatment of addictions (alcohol, cocaine, opioids), anxiety and depression with ayahuasca [6].

[1]: Gukasyan et al. 2022 DOI
[2]: Lowe et al. 2021 DOI
[3]: Reiff et al. 2020 DOI
[4]: dos Santos et al. 2016 URL DOI
[5]: Family et al. 2019 DOI
[6]: Hamill et al. 2019 DOI

Safety guidelines for human hallucinogen research from 2008 recommend the exclusion of volunteers with personal or family history of psychotic disorders or other severe psychiatric disorders [7]. They also recommend the presence of at least two study monitors, i.e., two extensively trained psychotherapists, during a psychedelic session. The proposed model requiring two therapists is time and labor intensive and, as such, presents a major challenge in how to scale the treatment up to meet future demand [8].

[7]: Johnson et al. 2008 DOI

[8]: Nutt et al. 2021 DOI

In contrast to this model, the present case study discusses unsupervised self-administration of psychedelics by a teenager who had been diagnosed with a psychotic disorder. The objective of the present case study was to investigate the relationship between psychedelics and psychotic disorders. Research on the treatment of psychosis with psychedelics is rare, and most of it originates from the 1960s and 1970s. Due to a lack of current clinical research, the quality of evidence is considered low. Regardless, at this initial phase of research, the existing limited data is also of value. To the author's knowledge, this is the first case description of self-treatment of a psychotic disorder, or self-treatment of complex trauma in the presence of a psychotic disorder, with psychedelics. As such, it may open up a new area of research.

As recommended by the above-mentioned safety guideline, any hints of psychotic disorders comprise an exclusion criterion with regard to current psychedelic therapy clinical trials. However, in the late 1960s, LSD was successfully administered to children between the ages of 9 and 12 diagnosed with chronic schizophrenia-like psychotic disorders [9–11]. Clinicians considered that the children had suffered severe early traumas, with psychosis acting as a massive defense system [10]. Under the influence of LSD, supervised by two members of the ward personnel who had had their own experience with LSD and psilocybin, the children relived situations from their traumatic past in a safe environment, in many cases resulting in resolution of symptoms. In one case, a 12-year-old girl, considered schizophrenic and characterized as 'bizarre, grossly regressive, retarded, hyperactive, assaultive, erratic, and destructive' as a result of having been raised by 'a completely psychotic mother', underwent 14 sessions with 100-300 µg of LSD and two sessions with psilocybin and became 'one of the most tender, loving, compassionate, and courageous persons the author has ever known' [9, 10]. Another case, an 11-year-old girl, was 'the most difficult and challenging person we treated' who was kept 'in complete restraints 24 hours a day' [10]. After a similar number of psychedelic sessions in the course of approximately half a year, she became 'affectionate and warm, loved to be physically touched, smiled happily a great deal of the time', and 'began to attend school on half days and was able to adjust to the setting'. Five other cases and the methodology were described [9–11]. Various other experimental psychedelic treatment programs for severely disturbed children also existed [12].

[9]: Fisher 1970 DOI
[10]: Fisher 1997 URL
[11]: Walsh et al. 2005
[10]: Fisher 1997 URL

[9]: Fisher 1970 DOI
[10]: Fisher 1997 URL
[10]: Fisher 1997 URL

[9]: Fisher 1970 DOI
[10]: Fisher 1997 URL
[11]: Walsh et al. 2005
[12]: Rhead 1977 DOI

On the other hand, LSD is known to occasionally cause psychosis in previously non-psychotic individuals with no risk factors. In a European case series of presentations to emergency departments dealing with acute recreational drug and novel psychoactive substance toxicity, psychosis was present in 348 (6.3%) of 5,529 cases [13]. In 27 presentations involving LSD as the only substance used (0.5% of all 5,529 presentations), psychosis

[13]: Vallersnes et al. 2016 DOI

was present in 7 cases (2.0% of all cases with psychosis, or 0.1% of all presentations). DMT was not mentioned separately in the study, but for tryptamines, two cases of psychosis were reported (0.6% of all cases with psychosis, or 0.04% of all presentations). In other literature, three case reports described psychotic episodes associated with DMT, but in all cases the subjects had used cannabis as well [14].

[14]: dos Santos et al. 2017 DOI

Oram has provided a history of LSD psychotherapy [15]. Recent examples of its application include, for example, group psychotherapy practices in Switzerland in the early 2000s [16]. Grof has presented experiences of a large amount of LSD psychotherapy sessions [17]. A recent book on psychedelic psychotherapy discusses various approaches, including individual, group, and underground settings, as well as various substances [18]. Vollenweider et al. have provided an overview of biological mechanisms, predictors of psychedelic experience, as well as acute and long-term outcomes [19]. Flanagan et al. have noted that psychedelics are anti-inflammatory [20].

[15]: Oram 2018 URL

[16]: Sessa et al. 2015 DOI

[17]: Grof 2001 URL

[18]: Read et al. 2021

[19]: Vollenweider et al. 2022 DOI

[20]: Flanagan et al. 2018 DOI

In 2010, a Swiss court agreed that LSD was not a dangerous drug and that it had no significant physical or psychological adverse effects when given in a controlled clinical setting [16]. In 2020, the District Court of Southwest Finland, based on an expert opinion [21], issued a similar decision, stating that 'LSD cannot be characterized as very dangerous' (R19/3703, 20/142412).

[16]: Sessa et al. 2015 DOI

[21]: Storvik et al. URL

In Switzerland, since 2014, two psychotherapists obtained 50 licenses on a case-by-case basis and developed a psychedelic-assisted group therapy model utilizing MDMA and LSD for patients suffering from chronic complex post-traumatic stress disorder (C-PTSD), dissociative, and other post-traumatic disorders [22]. The authors noted that the treatment of complex traumatic stress disorder (C-PTSD) needed a larger number of psychedelic experiences in contrast to PTSD resulting from single trauma. A short case vignette described a typical process comprising over ten sessions. The majority of participants improved according to clinical judgment, and no serious adverse events occurred.

[22]: Oehen et al. 2022 DOI

Concerning the physiological safety of LSD, DMT, and psilocybin, coadministration with lithium may cause seizures [23], and coadministration with tramadol is unsafe [24]. Caution is advised in combination with cannabis, amphetamines, and cocaine [24]. SSRI medication is not a contraindication but decreases or cancels the effects [25]. Most other combinations increase the effects.

[23]: Nayak et al. 2021 DOI

[24]: Tripsit.me 2022 URL

[24]: Tripsit.me 2022 URL

[25]: SpiritPharmacist.com 2022 URL

Large doses are physiologically safe (when it is certain that the substance is in fact LSD and not something else). In one case, 1,000 µg of LSD was reported to have accidentally cured a bipolar disorder [26]. A second case report concluded that 500 µg of LSD while in early pregnancy did not appear to cause harm to the fetus. A third case, in which a man had accidentally ingested 55,000 µg of LSD while alone at home, required no medical intervention but reported that his physical pains had disappeared the next day [26]. A report from 1974 described cases where apparently hundreds of milligrams of LSD had accidentally been ingested [27]. They required intensive care but were discharged from the hospital in 2-3 days without further consequences.

[26]: Haden et al. 2020 DOI

[26]: Haden et al. 2020 DOI

[27]: Klock et al. 1974 URL

The main 'mechanism of action' of psychedelic therapy is to revive or bring back to life repressed or 'forgotten' traumatic events. These events are not only 'remembered' as cognitive memories but *relived* embodied experiences, with their original, associated physical feelings. This main feature of this therapy also represents the main risk. By definition, these 'repressed', 'split' or 'exiled' events had been overwhelming at the time of the original trauma. Psychedelics typically remove the 'defenses', 'blocks', 'managers' or 'firefighters' that keep these traumas away from consciousness. This protection against the trauma requires significant energy and is often associated with psychiatric symptoms. Reliving the trauma may release this energy and resolve the symptoms.

When these traumas originate from a very early age, they may present themselves as psychotic symptoms. A psychotic state may be a partial regression into the conceptual framework of the age of the original trauma. The conceptual framework of, say, a two-year-old, with concepts of time and causality still very undeveloped and vague, is obviously unsuitable for navigating the adult world.

It should be clear from the above description that in order to undergo a psychedelic therapy session, in addition to being willing to re-experience their worst moments, one needs to have the time and all other resources to process their traumatic events without becoming overwhelmed again. Many adverse in-session experiences may be related to dysregulated breathing patterns and might be resolved with easily learnable techniques such as relaxation and conscious breathing in which exhalation is longer than inhalation. Most people benefit from external support. However, suitable support is not always available. In case of self-therapy, one needs to be certain that one can handle all such issues without such support. If skills and resources are insufficient, the experience may lead to *retraumatization*. In addition to in-session events, there may be adverse post-session consequences. A session may, for example, trigger generalized anxiety lasting weeks. These are typically features of the original trauma.

Non-pharmaceutical methods capable of inducing similar effects can be used instead of or in conjunction with pharmaceutical methods. Holotropic breathwork developed by Stanislav and Christina Grof as an alternative to LSD therapy sessions consists of continuous, forceful circular breathing combined with simple bodywork techniques applied by trained guides in specific situations [28]. The breathing technique leads to changes in oxygenation and typically to altered states of consciousness. The risk of retraumatization applies also to breathwork, but the pace of the session is typically slower and more manageable.

[28]: Grof 2010

Two dosing strategies were utilized in the present case. The first was 'regular dosing' (e.g., 100-300 µg of LSD), producing the conventionally assumed psychedelic effects. The second was 'minidosing', i.e., a half or a third of a 'regular dose' (e.g., 50 µg of LSD). Effects of this 'psycholytic therapy' ('psychotropic' combined with 'analytic') are qualitatively different from those of higher doses, allowing normal functioning but adding an enhanced capability for introspection and perception, as well as enhanced physical capabilities, including improvements in coordination, balance, and stamina [29]. Examples of extreme sport feats performed

[29]: James Oroc 2011 URL

under the influence of LSD included mountaineering, heli-skiing, competitive snowboarding, big-wall climbing, motor racing, big wave surfing, flying hang gliders, and playing major league baseball [29]. There is also a third dosing strategy, high dosing, described, for example, in a recent book by a professor of religious studies who underwent 73 solo sessions with 500-600 µg of LSD between 1979 and 1999 [30]. The sessions were carried out at his home in a separate room but his wife was present in the house. A fourth strategy is 'microdosing' [31]. Each strategy tends to produce qualitatively different outcomes; the strategies are thus not directly or quantitatively comparable to each other.

[29]: James Oroc 2011 URL

[30]: Bache 2019

[31]: Murray et al. 2021 DOI

The substances originated from illegal markets, and their contents had not been analyzed. This uncertainty cannot be avoided in a retrospective non-clinical study. In general, the European Monitoring Centre for Drugs and Drug Addiction has noted that deep web or darknet marketplaces feature a very effective user feedback model that incentivizes sellers to ensure their products are as described [32]. Eight samples sold as LSD and tested in 2014 were LSD with a purity level of 100%. A larger Spanish study of 263 samples, 50% of which were bought on the internet, indicated that 80% of the samples were unadulterated and contained LSD [33]. 13% of samples contained psychedelic amphetamines (25x-NBOMes or DOC). In the present case, the substances were acquired from the darknet.

[32]: European Monitoring Centre for Drugs and Drug Addiction 2016 DOI

[33]: Energy Control Drug Checking Service 2015 URL

The case description mentions two designer drugs, 25B-NBOMe and 25E-NBOH [34, 35]. Neurotoxicity, cardiotoxicity, other adverse effects, and fatalities have been reported. The role of the mentioned designer drugs was not central to this case.

[34]: Poulie et al. 2019 DOI
[35]: Machado et al. 2019 DOI

With regard to the relationship between child abuse and mental disorders, for example a study about a highly traumatized minority sample (n=328) found that exposure to moderate-to-severe child abuse was predictive of current psychotic disorder diagnosis in adulthood [36]. There was also significant comorbidity between current psychotic disorder and post-traumatic stress disorder, major depression, substance use disorders, and suicide attempts. The present case aligns with these findings.

[36]: Powers et al. 2016 DOI

An early-onset complex post-traumatic stress disorder (C-PTSD) [37], or complex trauma in short, represents an absence of normal emotional and social development. Despite bearing a similar name within the framework of current diagnostic thinking, its treatment is very different from a 'simple' post-traumatic stress disorder (PTSD) which represents a singular disruption of normal development, typically at an older age. The treatment involves not only the removal of consequences of the repeated traumas but also building something new to replace the resulting 'emptiness' and lack of structure. While PTSD symptoms can often be resolved in a single session, rebuilding a personality requires a more extensive approach.

[37]: Cloitre 2020 DOI

The young man had written about his experience on an online discussion platform and was subsequently invited to participate in this case study by the author. The author's approach was ethnographic, with an intention to collect cases of self-treatment or small-group treatment of various mental disorders with different psychedelics. The details of this case have been acquired from medical record excerpts provided by the patient, a one-hour semi-structured retrospective video interview

conducted in September 2020, and follow-up interviews in September 2021–April 2022. There was no opportunity to interview the various clinicians who had treated the patient. The discussion section contains occasional unreferenced, summarizing notes that are based on the author's direct ethnographic observation of various psychedelic therapy contexts internationally between 2017 and 2019.

4.2 Case description

From early childhood, the teenager had felt unsafe, mostly due to a competitive relationship between the teenager and his brother, who had been volatile and violent. Physical and emotional violence had been a daily occurrence. Family communication patterns had featured daily shaming, blaming, and other unsupportive behavior. These environments often lead to complex trauma. There had been no singular major traumas, only a series of repeated, smaller traumatic events. Figure 4.1 represents an overview of significant life events of the young man, including psychiatric treatments and psychedelic sessions.

This life history resulted in escapist behavior. At the age of eleven, the teenager had heard about LSD's capacity to produce 'new kinds of experiences'. At the age of thirteen, he had begun using various other drugs and pharmaceuticals, including designer drugs 25B-NBOMe and 25E-NBOH. By the age of fifteen, cannabis use had triggered a hearing of voices. The contents appeared to be mood-congruent replays of previous social communications, but they were not recognized as such at the time. The teenager did not pay much attention to the nature or origin of these voices, nor did he consider their existence a problem.

Initially, the use of 25B-NBOMe and 25E-NBOH had been 'mind-opening', resulting in improved school grades. Later, however, he had 'lost control'. By the age of sixteen, he had consumed ecstasy, cannabis, alcohol, amphetamine, metamphetamine, cocaine, various benzodiazepines, oral opioids, and various other designer drugs whenever he had been able to acquire these substances, but especially during weekends. He said this had 'magnified the negativity he had absorbed from the environment', and he had ended up 'saturated with negative sensory experiences'. He had suffered from 'existential issues': hopelessness and meaninglessness. As an example, he had not understood why he should set goals or even eat when he was going to die regardless. He said this depression had later 'turned into joy' as a result of his 'training program' with psychedelics.

After telling his mother about the voices, his mother mentioned that there had been schizophrenia in the family. An online investigation of the concept of schizophrenia evoked fears in the boy. He was voluntarily hospitalized for surveillance. A psychological evaluation revealed only minor defects in reality checking. The teenager said he 'had not presented with the same symptoms as psychotic people in general': he had not followed instructions given by the voices nor tried to invent explanations for their existence.

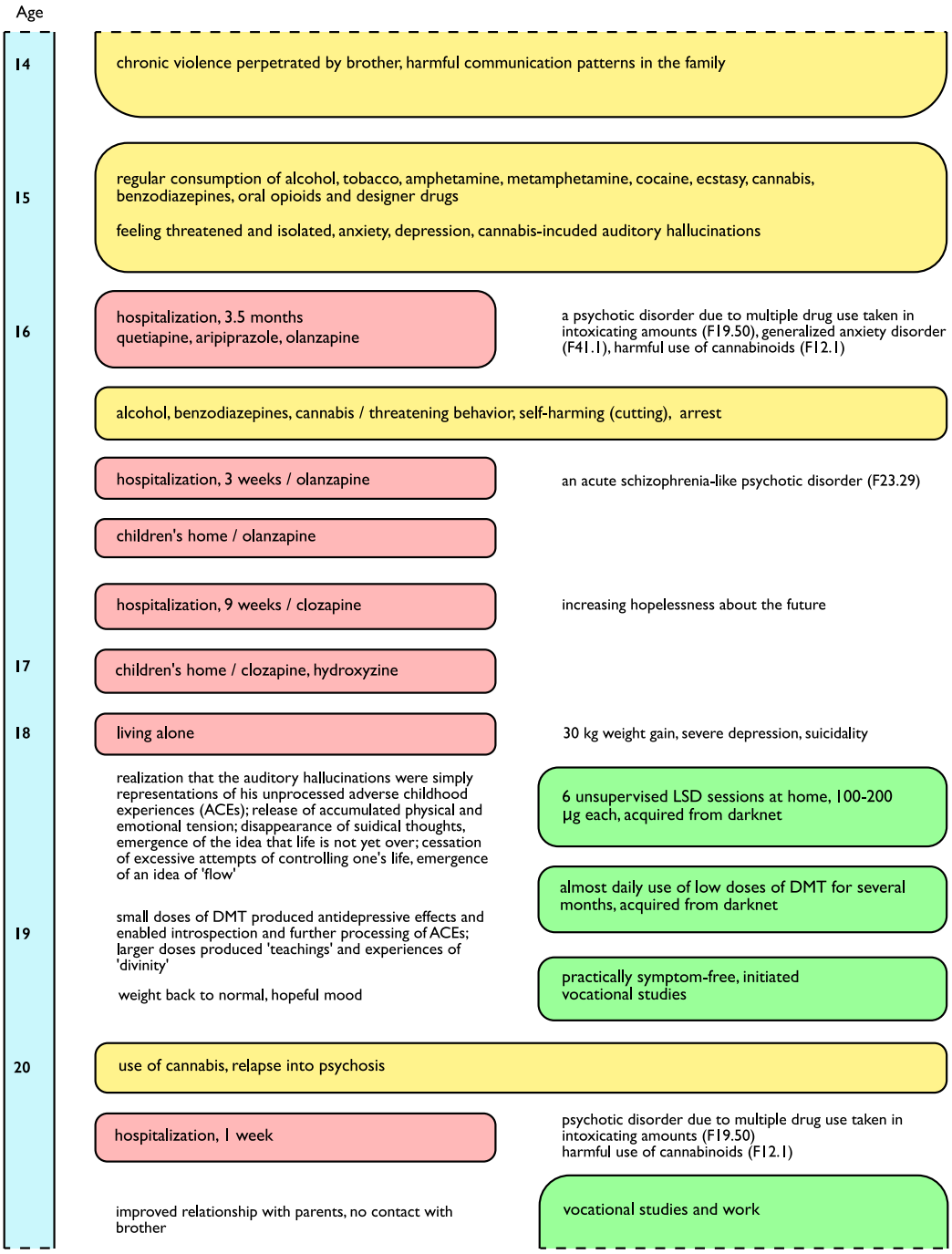

Figure 4.1: Timeline of life events, psychiatric treatments and psychedelic sessions.

According to the medical record, he had presented with paranoid ideation, feeling he had been followed. At the ward he had wanted to isolate but had been prevented from doing so and forced into social settings. He described that a doctor, 'an authority figure', had convinced him that the hallucinations were bad for him and that they would get worse, destroying his life. As a result, the teenager's neutral attitude toward the voices had changed. He had become convinced that he needed to get rid of them and accepted quetiapine, aripiprazole, and olanzapine medications. These had not resulted in the disappearance of the voices, leading the teenager into despair. He had experienced the hospital practices, including isolation from his girlfriend, as unjustified. There had been no therapy. The teenager had felt he had been 'pressured to accept the idea of psychosis', and he had 'internalized the idea, believed in it', partly in order to avoid possible punitive consequences.

The first hospitalization lasted 3.5 months, ending in April 2017. In mid-June 2017, he was given diagnoses of a psychotic disorder due to multiple drug use taken in intoxicating amounts (F19.50), a generalized anxiety disorder (F41.1), and harmful use of cannabinoids (F12.1). According to the medical record, borderline personality disorder had also been considered. Antipsychotic medication had not eliminated hearing voices, but he had been discharged from the hospital after he had repeatedly demanded it.

A second three-week hospitalization was involuntary and occurred in mid-July 2017. He had discontinued olanzapine, consumed alcohol, cannabis, and benzodiazepines, threatened others with a knife he had been carrying for a few days, cut himself, and been arrested by the police. He was diagnosed with an acute schizophrenia-like psychotic disorder (F23.29). Voices had told him that he was going to die in one year. In the hospital, he had cut himself again, experienced visual hallucinations, and threatened the personnel, but eventually stabilized somewhat, with less anxiety, agitation, and aggression. The auditory hallucinations had decreased in frequency but had not completely disappeared. His mental state was 'apathetic'. It was decided he could not return to his parents, and he was transferred to a children's home.

After three weeks in a children's home, he was voluntarily hospitalized due to suicidality and increased auditory and visual hallucinations despite olanzapine treatment. He suspected he was being followed by unidentified people who wanted to extract information from him. He had become increasingly worried about the voices, wanting to get rid of them completely. A clozapine medication had been initiated. After a nine-week hospitalization, he returned to the children's home on clozapine and hydroxyzine medications.

In retrospect, he said that clozapine had 'dismantled his mind', resulting in 'not having the energy to continue any longer'. He had gained 30 kg of weight. He said the doctor's claim that the voices would get worse had created 'a snowball effect' that had made the situation progressively worse.

4.2.1 Regular dose LSD and psycholytic dose DMT sessions

Being acutely suicidal, he decided to try his childhood idea of LSD treatment and acquired it from the darknet. He decided to commit suicide if the experiment would not help. In mid-February 2019, he took 100-200 µg of LSD. At first he had what he worried was a psychotic idea and thought he should stop the process with antipsychotics. However, he recalled that this session was to be the last effort in saving his life, decided there was nothing to lose, and continued.

He cried, shouted, and laughed for eight hours, reliving his previous life experiences: what he had done to others and what others had done to him. He realized that the voices were only representations of his unprocessed, previous life experiences. He gave up attempts to control his life, gave up resistance. The purportedly final nature of the session had enabled him to 'let go'. He had 'surrendered' to, 'accepted' what had been happening. He said he had learned that 'one can go with the flow and that it's futile to fight one's own nature'.

The session had triggered 'a flow state' and a decision that his life was not yet at its end: he would start a new life. He described having then 'trained his mind with the help of LSD', processing more of the adverse childhood experiences (ACEs), body postures and positions, such as the fetal position, related to the ACEs. He said he had previously been fearful of processing the ACEs. The auditory hallucinations mostly disappeared after he began processing the ACEs.

Yet a residual 'bad feeling' remained. He therefore experimented with DMT, which 'opened completely different perspectives'. Currently he was 'open to experiences' and 'no longer fearful'. He described that psychedelics had enabled him to question his negative self-image and transform it into a positive one.

In addition to psychedelic sessions, he devised a method for scrutinizing his thoughts for psychotic ideation. He said psychotic people typically deviated into pseudo-explanations. His method included 'taking a concept and seeing it from different perspectives, finding new ways of conceptualizing the situation, then reinspecting it once again, to find the most logical explanation'. He stressed the importance of logic and probabilities. He had never received psychotherapy, 'except taking psychedelics alone at home'; he said that had worked for him.

He carried out six LSD sessions in 2019, with doses of 100-200 µg. In the last session, he felt the presence of entities who wanted to show him something, but he did not feel ready to receive what they were offering. He encountered an icosahedron with a consciousness. Every thought that the teenager shared with the icosahedron was mirrored back to him as if it would have answers to all possible questions. The teenager told the entity that it was welcome to visit but that after the trip it would have to leave. The entity refused to leave. This caused the teenager to panic and interrupt the session with clozapine. The next morning he felt confused because he thought one could only see entities with psilocybin and DMT. Others told him it was normal also with LSD. This information resolved the fear, and he now interpreted the entities as parts of himself.

The teenager's friends felt LSD sessions to be too demanding for them. As a result, the teenager also discontinued LSD sessions. He instead smoked psycholytic doses of DMT almost daily for a few months, feeling that it helped him process remaining issues, after which he felt little need for further processing. By the time DMT use began, his paranoia had already been resolved. However, DMT caused a feeling of being 'smarter than other people' which vanished as DMT use ceased.

The main difference between DMT and LSD had been the duration of the experience. The quality of the DMT experience depended on the dose. A small dose produced an antidepressive effect. Larger doses simply 'hit one in the face'. He had eventually decided that entities in the DMT world were fundamentally good, and initially negative experiences were intended as 'teachings'. A later integration showed that they had been 'useful lessons', and 'getting beaten up' was 'a part of the process'.

He encountered one entity twice. He described it as all his recent negative experiences collected into one entity. The entity resided with him in an empty space containing nothing but him and the entity representing his negativity. Time had ceased to exist, yet in the background he maintained the idea of it being only a short-term experience. Confronting negative emotions head-on without 'filters' or 'defenses' felt slightly shocking at first, yet the next day the experience gained a new interpretation: he had been very negative without noticing it, and it was time to change it. He called these experiences 'wake-up calls'.

He also described divine experiences, the details of which have been forgotten. These repeated divine, i.e., positive, experiences had slowly begun to alter his worldview, causing forgotten positive childhood memories to resurface. He said he needed more repetitions than an average person. After one summer of psycholytic DMT use, he had not felt the need for further sessions. He wanted to belong to society and the world, to live and enjoy life. He described that 'life had begun to feel like a life'. A major factor had been an avoidance of 'toxic people' including his parents, brother, and some friends. However, recently his relationship with his mother had improved.

A psychiatric re-evaluation at the age of nineteen in September 2020 by a different psychiatrist concluded that his symptoms had mostly disappeared. This psychiatrist considered that his earlier psychotic symptoms had not been due to schizophrenia but multiple drug use and mentioned to the patient that clozapine appeared to have been 'a mistake'. The reasons behind this interpretation were not given, and the opinion of this psychiatrist about the earlier treatment decision of another psychiatrist was not mentioned in the medical record.

The teenager described that the effect of psychedelics depended on the environment. At the age of fourteen, his environment had been very negative, enforcing a feeling of powerlessness. According to him, psychedelics would have been unlikely to improve the situation much at the time. After the children's home, he moved to an apartment on his own, gained increased autonomy, and was not directly targeted by violence and external emotional influences. The LSD sessions had been carried out in this situation.

The initial interview for this article was conducted in September 2020. At the time he was enrolling in a program at a vocational school intended for the general public (not a special education program). In the winter of 2021, he 'got involved in bad company' for a few weeks, resumed cannabis use, relapsed into a psychosis, and was involuntarily hospitalized for a week. Upon discharge, he discontinued psychiatric medication and returned to his studies.

In a follow-up interview in September 2021, he said the studies felt suitable for him and he had successfully finished the school year. He occasionally heard voices but conceptualized them as 'fragments of reality'. The voices were helpful in revealing unprocessed ACEs. The voices prepared him for the future, defending him and teaching him how to handle situations he was expected to face. Due to their usefulness, he now wanted to retain the voices. Following his first LSD session three years earlier, he had taken antipsychotic medication on three days: once to terminate a psychedelic session (as described above), and twice for insomnia. In his own estimation, he fulfilled criteria for a type 2 hallucinogen persisting perception disorder, which 'caused his brain to recognize patterns that didn't exist' (HPPD; F16.983) [38]. He was moving to another city for a new job. He advised others to let go of fear, be brave, and accept things. He said that instead of changing brain chemistry, the social environment should change, and 'people should be nicer to each other'.

[38]: Halpern et al. 2016 DOI

4.3 Discussion

The ICD-10 diagnostic manual does not contain the diagnosis of complex post-traumatic stress disorder; it will be added in the forthcoming ICD-11 manual. The patient had therefore not been assigned this diagnosis by a qualified clinician. We can, however, compare the ICD-11 diagnostic criteria 6B41 to the clinical features presented in the case description. There had been prolonged domestic violence and/or repeated childhood physical abuse. He described the contents of the psychotic symptoms as reminders of earlier traumatic events; these could be interpreted as a specific form of the 'flashback' phenomena. He avoided contact with the aggressor and his parents. The psychotic paranoid ideation could be interpreted as persistent perceptions of heightened current threats. Severe and pervasive problems in affect regulation were present as violent outbursts and self-harm. There were persistent beliefs about oneself as diminished, defeated, or worthless. He also avoided social interaction and did not feel close to his peers. The disturbances resulted in significant impairment in all areas of life. Suicidal behavior, substance abuse, as well as depressive and psychotic symptoms, were present. It thus appears justified to classify the case as complex post-traumatic stress disorder and possibly to designate C-PTSD as the root issue leading to substance abuse as a way to escape the symptoms of C-PTSD. The substance abuse, in turn, appears to have been a major factor in the emergence of the psychosis.

While the cessation of cannabis use may have been the primary contributor to the resolution of psychosis, the resolution of the complex trauma with psychedelics may have been the primary contributor to the resolution

of major depression and generalized anxiety disorder. With regard to the diagnosis of schizophrenia, in retrospect he did not seem to have unambiguously presented with Schneider's First Rank Symptoms [39]. Schizotypal personality disorder could also be considered as an option, but it was not mentioned in the medical record. Nevertheless, during the two interviews, the patient no longer appeared to present with criteria sufficient for any of these diagnoses. The outcome, produced by the teenager by himself, with no formal education or assistance, may be seen as a notable achievement. Alternatively, the outcome may be interpreted as illustrating the self-guiding nature of a psychedelic therapy process. It could also be claimed that since the teenager mentioned having some residual symptoms and continued to possess a sensitivity to psychosis triggered by cannabis, his psychosis was not fully healed. However, comparing the situations before and after, including the newly acquired capability to study and work and the resolution of almost all symptoms, residual symptoms appear irrelevant.

[39]: Soares-Weiser et al. 2015 DOI

The teenager mentioned that the process had made him 'open to experiences', whereas before the sessions he had not been. This might illustrate that a central feature of mental disorders could be resistance to experience, i.e., defensiveness or non-acceptance of what is. This is likely due to the negative and overwhelming nature of traumatic events.

Fisher, who treated children diagnosed as schizophrenic-autistic with LSD, defined psychosis as a massive defense system [10]. Seikkula, the developer of an 'open dialog' model for treatment of psychoses, defined psychosis not as an illness but as a survival strategy in the case of severe stress [40]. The present case aligns with these views but also highlights the role of cannabis and genetic predisposition, with schizophrenia having been diagnosed in the extended family.

[10]: Fisher 1997 URL

[40]: Seikkula 2019 DOI

A minimalist explanation of the origin of the distorted, psychotic ideas of the teenager could be that his interpretations were simply a result of learning the features of his childhood environment, which was too different from the other environments to which he later tried to apply these models. The models therefore did not produce reliable predictions, i.e., did not enable correct reasoning about behaviors of other people. As the magnitude of these prediction errors was so high, the condition was deemed psychotic, whereas errors of lesser magnitudes might have been labeled, for example, a personality disorder or being a difficult person.

As an example, the teenager's estimation that people were trying to hurt him appeared to be simply derived from his experiences with his brother and parents. However, this model fit badly in an environment that was relatively unthreatening or neutral, leading to misinterpretations. Considering this, it may be feasible to cease labeling these kinds of overgeneralizations 'psychosis'. Interestingly, the teenager was able to devise a system for correcting these biases. In general, a feasible method to correct such misinterpretations may be an environment that would present with overly positive, even exaggerated yet believable affirmations of being non-threatening, i.e., safe.

As a detail of the described LSD sessions, the fright in the last session was caused by experiencing something unexpected. With better understanding and instructions, these kinds of issues could be passed by unnoticed in a session. As another detail, Watanabe et al. wrote that abnormal

perceptual priors involved in psychotic false perception have an affective nature and noted that in healthy people a feeling of presence usually arises in association with spatial perception of external stimuli, but under the influence of an anxious mood people feel a presence even without external stimuli [41]. In the present case, this feeling of presence was experienced by the teenager in the last LSD session, which he interrupted due to an overwhelming anxiety.

[41]: Watanabe et al. 2018 DOI

Although schizophrenia and bipolar disorder have vastly different neurobiological underpinnings, their clinical features overlap [42], and both are typically considered contraindications to psychedelic therapy. Regardless, Mudge has investigated the use of ayahuasca for bipolar disorder [43]. According to him, due to its short binding time to the 5-HT_{2A} receptor, DMT does not induce mania in people with bipolar disorder but acts as a mood enhancer/stabilizer instead [43]. The teenager in this case described the effect of psycholytic doses of DMT in the same way. Even prolonged daily use did not trigger a psychosis but produced a calming effect instead. Large doses had not triggered psychotic symptoms either.

[42]: Cattarinussi et al. 2022 DOI

[43]: Mudge 2016 URL

[43]: Mudge 2016 URL

In the context of bipolar disorder, ideas similar to the open dialog model for psychosis have been presented by, for example, Christina Grof [44], Sean Blackwell [45], and Benjamin Mudge [46]. In addition, many indigenous cultures conceptualize psychoses very differently from the current biomedical model, largely aligning with the views of the abovementioned authors.

[44]: Grof 1990

[45]: Blackwell 2011 URL

[46]: Buller et al. 2021 URL

In the present case, psychedelics, even unsupervised, appeared to produce integrative effects by lifting subconscious, i.e., embodied, traumas into consciousness for processing. The perceived nature of auditory hallucinations first transformed from neutral into threatening and finally into helpful. While the emergence of psychotic symptoms may have been due to genetic predisposition and cannabis use, psychedelics may have helped in reinterpreting the meaning of these symptoms in a similar manner as, for example, cognitive-behavioral therapy for psychosis.

In the present case, the history of illness and anti-psychotic medication was comparatively short. In the short term, there is evidence that antipsychotics improve the quality of life, functioning, and disability, reduce psychopathology, the severity of illness, compulsive behavior, and improve cognitive insight [47]. On the other hand, in a 19-year follow-up, moderate and high cumulative antipsychotic maintenance treatment within the first five years after first-episode psychosis was consistently associated with a higher risk of adverse outcomes (continuing use of antipsychotics, psychiatric treatment, disability allowances, mortality), as compared to low or zero exposure [48]. This suggests that antipsychotics should be used temporarily or intermittently instead of as prophylaxis.

[47]: Verma et al. 2020 DOI

[48]: Bergström et al. 2020 DOI

Antipsychotics also present a cardiometabolic burden, suggesting the need for alternatives with more favorable side effect profiles [49]. Psychedelics, for example with psycholytic dosing, in case they would consistently produce the mentioned 'calming effect' and/or promotion of positive reinterpretation of the meaning of symptoms, could be studied as possible alternatives to antipsychotics.

[49]: Khandker et al. 2022 DOI

4.3.1 Some benefits and risks related to various models of psychedelic therapy

Concerning self-treatment protocols, the most significant risk in self-treatment is the uncertainty related to the purity of substances. As mentioned in the introduction, at times designed drugs with an unknown safety profile are sold in place of classical psychedelics. A proper harm reduction approach might involve a state-organized supply of certified substances. A certified, affordable supply with proper education and protocols, together with psychotherapists and clinicians educated in the substances and post-treatment integration work, would eliminate the majority of risks, allowing broader access to the significant benefits of psychedelic therapy. As also mentioned in the introduction, in extreme sports, psycholytic doses have successfully been used to enhance safety. Therefore, it would be essential for societies to not fall into the trap of holding the current, possibly not fully evidence-based notion of safety as 'sacred' while ignoring significant trade-offs demanded by other practical and moral concerns. These concerns involve the fact that many severely traumatized people currently receive no support at all, and if current practices continue, they never will. Subsequently, they traumatize their surroundings, leading to a never-ending spiral of destruction and suffering. Wars and climate change are the two most prominent examples of the consequences of this phenomena.

The Multidisciplinary Association for Psychedelic Studies (MAPS) provided a protocol for psychedelic therapy sessions [50]. The protocol includes preparatory therapy and post-session integration with trained therapists, as well as 'non-directive' empathic support from therapists during dosing sessions. These features are considered to be a large factor in the overall efficacy of the protocol. Some clinical trials have not included a therapy component, for example, a RCT (n=29) in Brazil investigating the rapid antidepressant effects of ayahuasca in treatment-resistant depression [51]. In this trial, investigators remained in a room next door, offering assistance when needed. In one documented example of a traditional indigenous context, persons undergoing long-term psychedelic training were visited three times a day by a supervisor but were otherwise socially isolated [52, 53].

[50]: Mithoefer et al. 2017 URL

[51]: Palhano-Fontes et al. 2018 DOI

[52]: Berlowitz et al. 2017 DOI
[53]: Berlowitz et al. 2022 DOI

The self-administration practice utilized in the present case did not include external support during most sessions, although there appeared to have occasionally been friends present during psycholytic DMT sessions, and he utilized and benefited from online peer support. The patient did not feel the need for supervision during sessions, and in retrospect, appeared to have been correct in his estimation. He did not experience adverse events or any inconvenience that he could not overcome by himself. However, due to his history of multiple drug use, he already had experience with altered states of mind, and he was also familiar with handling psychotic states. With regard to the assumed worst-case risks of psychosis and/or suicidality, he was already psychotic and suicidal; there was thus little room for getting worse.

A balanced discussion about self-administration requires taking into account not only the perspective concerning benefits of control and regulation but also other points of view. While high dosing and inexperienced people certainly present a volatile combination and significant risks, the

risks involved in psycholytic dosing appear low. The concepts of trauma, control, risk, and safety are deeply interconnected, influencing attitudes towards self-treatment. Porges has studied the relationship between traumatic experiences, the autonomic nervous system, and feelings of safety and threat, noting these feelings are subjective interpretations based on the body's state [54].

[54]: Porges 2022 DOI

As psychedelic therapy trials are gaining mainstream attention but access to such therapy or psychiatric treatment in general remains unavailable, self-treatment attempts will unavoidably increase, and it is unlikely that they could be prevented. Unresolved questions about resources and scaling are central to the demand for such practice [8]. For example, in Europe, additional trauma is currently being produced at an unprecedented scale while resources were insufficient for handling even the preceding situation. Obsessing about threats and risks might exacerbate them instead of reducing them. Many societies have become dangerously unstable. In order to prevent worldwide chaos, it would be essential to swiftly reduce the prevalence of severe trauma in societies, especially in people in leadership positions.

[8]: Nutt et al. 2021 DOI

A more constructive approach would involve a balanced evaluation of the situation as a whole, as a society, instead of only from the point of view of the existing psychiatric care system. A harm-reduction approach has been widely and successfully adopted for conditions such as opioid addiction. It could be extended also to the issue of self-treatment with psychedelics. This approach would involve the development of proper self-treatment protocols, first with psycholytic dosing, for example. An extended psycholytic dosing strategy such as illustrated by the present case might produce many of the benefits of regular or high-dose sessions while avoiding most of their risks.

Contrary to common preconceptions, people are rarely rendered into uncontrollable states by psychedelics. As described in the introduction, the prevalence of psychosis due to LSD use appeared low [13]. A properly planned unsupervised self-therapy setting might be unlikely to produce such an outcome, as exemplified by the present case. In case of doubt, psycholytic dosing could be utilized as long as needed to build confidence in the process.

[13]: Vallersnes et al. 2016 DOI

Patient outcomes are known to depend on the quality of therapeutic alliance [55]. There are many reasons why this alliance might not exist or could not be built in to clinical or hospital settings. The only alternatives given in such a situation should not be the enforcement of inefficacious treatment or denial of treatment. Also, many lack even access to these settings.

[55]: Murphy et al. 2022 DOI

Excessive control and lack of trust may contribute to the emergence of mental disorders. The teenager's childhood family and the hospital system were low-trust environments. When the highly structured and regulated system failed to protect this patient, his application of individual agency and his subsequent *surrender to uncertainty* resulted in a reorganization of his thought system or his default mode network [56]. Safety was acquired through giving up safety.

[56]: Doss et al. 2021 DOI

In many indigenous traditions, psychedelics are considered externally controllable: a skilled psychedelic guide can direct the patient's experi-

ence by singing [57], in a manner similar to how a parent would sing to a child (patients are typically in regressed states). In the clinical context, the use of playlists is based on the same principle. In contrast, another plant medicine, wild tobacco (Nicotiana rustica) [58], is often considered uncontrollable by either the patient or the guide. Regardless, the controllable medicine is considered to only reveal issues in order to allow for later processing or 'integration' of the experience. The uncontrollable medicine, in turn, is often considered to resolve disorders. This may indicate the role of relaxing control as the actual 'healing force', possibly by releasing embodied trauma that cannot be released in the presence of self-inhibition, i.e., control.

[57]: Beyer 2009 URL

[58]: Narby et al. 2021

With regard to supervised settings, just as there are numerous ways in which the therapist can positively influence patient outcomes, there are also numerous ways in which the presence or the subtlest behaviors of another person may unconsciously and inadvertently adversely influence a person in a hyperaware-hypersensitive state. These mechanisms are usually no different from the ones present in ordinary states, but due to hyperawareness, observations are typically conscious instead of unconscious, and due to hypersensitivity, reactions to these observations may be amplified. Due to these two factors, a successful therapeutic intervention may thus result in somewhat miraculous outcomes, and vice versa.

Patients with early complex trauma suffering from depression have often been conditioned to default to a 'fawn response', i.e., to attempt to please aggressors and authorities [59]. In a supervised psychedelic session, their relationship to the supervisor will often default to the same response. This may disallow recognition and resolution of this response pattern and subsequently prevent resolution of the related trauma. Also, patients presenting with extreme distrust or social phobia, or with paranoia like the patient in the present case, will likely present with similar transference and may proceed better in the absence of direct observation.

[59]: Walker 2013 URL

Supervision is also likely to maintain an idea of dependence on a therapist or an 'expert'. An article that focused on the issue of agency in schizophrenia noted that recovery involved recapturing a sense of agency [60]. The present case may be considered to reflect this recapturing of personal agency over one's life, with a massive positive effect on his self-esteem and openness to social interaction. Based on his experiences, the young man concluded that 'doctors are not always right'.

[60]: Lysaker et al. 2012 DOI

Another complication of supervised sessions may be a reversal of the position of power. If the intention of the supervisor is to maintain an idea of 'controlling the situation', significant personal experience of psychedelics and learned skills are required. Fisher pointed out an issue 'generally not addressed in the literature': the vulnerability of the psychedelic therapist [10]. A patient, due to being in a state of expanded awareness of the surroundings, gains 'intimate knowledge of the therapist and his state of grace—or lack thereof; the therapist cannot hide from being "seen"'. This easily results in the patient being in control, rendering the idea of supervision futile. To reduce the probability of such disconnection between the therapist and the patient, a Swiss psychotherapist who organized group sessions with psychedelics in the early 2000s recommended

[10]: Fisher 1997 URL

that supervisors should utilize a psycholytic dosing strategy for themselves while supervising a session [61]. The hyperawareness of patients in conjunction with a more restricted awareness of 'sober' therapists is an actual, underappreciated problem that should be taken into account when designing supervised psychedelic therapy protocols.

[61]: Meckel Fischer 2015

All in all, it would be misleading or an oversimplification to state that a supervised setting would always be preferable to an unsupervised setting. A supervised setting is simply more complicated due to the possibility of interpersonal interaction. This interaction can be either beneficial or harmful; Read et al. have discussed therapist countertransference and projective identification [18]. Therefore, both models may have their uses and deserve to be studied in detail. Unsupervised use may be applicable to patients in later stages of psychedelic therapy who have already attended individual and/or group sessions and are familiar with both the substances as well as their reactions to them. It is not recommendable for patients with little or no experience. However, when used as intended, protocols combining individual, group, and self-treatment may provide superior cost-efficiency and scalability.

[18]: Read et al. 2021

With regard to group sessions, a preprint by the author described a case of small-group treatment of complex trauma and treatment-resistant depression due to domestic violence and sexual abuse, illustrating the potential of this model [62]. The patient first underwent an individual session, then attended small-group sessions, and further proceeded to sessions with a friend. No adverse events occurred. In similar cases, later sessions could also be psycholytic self-therapy. A similar group protocol developed in Switzerland was mentioned in the introduction [22].

[62]: Turkia 2022 DOI

[22]: Oehen et al. 2022 DOI

A more detailed example of psycholytic self-therapy was presented in another preprint by the author about self-treatment of complex trauma [63]. Also in this case, initial sessions were high-dose and latter sessions psycholytic. The latter sessions were described as 'exposure therapy'. Under the influence of a psycholytic dose of LSD, a young man with social phobia due to bullying attended social events. LSD produced a feeling of being slightly distanced from his automated reactions. He could better observe his behavior and thoughts as well as change his response consciously, introducing and reinforcing new, more adequate behavioral patterns. He could observe himself objectively, 'as another person', detached from his personal issues. Slight 'hyperawareness' of the internal functioning of his mind, which allowed processing of social trauma 'in real time'. There were no adverse events.

[63]: Turkia 2022 DOI

With regard to possible models of psychedelic therapy, there are also other overlooked models. Current clinical trials only study a model in which the patient consumes a psychedelic while the therapists do not. In some traditional indigenous contexts (e.g., Shipibo [64]), the situation was reversed: in order to enhance their diagnostic skills, the therapist utilized a psycholytic dosing while the patient was not under the influence of anything. An experienced therapist would likely be more capable of utilizing the benefits of the hyperaware-hypersensitive state than a patient with no previous experience of it. This model might immensely enhance the efficacy of psychotherapeutic practice, for example. It could be claimed that in the currently studied model, much of the potential might be 'wasted on the patients' while the potential of the therapists

[64]: Gonzalez et al. 2021 DOI

will be underutilized. It would therefore be essential to study also this model deemed better in some of the traditions.

4.3.2 Case studies and evidence based medicine

Concerning the reliability and applicability of case studies, Flyvbjerg has studied their role in science in depth [65]. He commented that the common concept of case studies being arbitrary and subjective, only useful for the generation of hypotheses, and not generalizable was 'so oversimplified as to be grossly misleading'. He stated that formal generalization was overvalued as a source of scientific development, whereas 'the force of a single example' was underestimated. Concerning general vs. context-dependent knowledge, he commented that the latter is 'at the very heart of expert activity'. He did not find greater bias than in other forms of research. The evidence found could often be generalized. Also, case studies were to be read as narratives in their entirety. The problems in summarizing were more often due to the properties of the reality studied than to the case study as a research method. As an example, the present case 'generalizes' and 'summarizes' many aspects of other, undocumented, observed cases that presented with similar features and outcomes.

[65]: Flyvbjerg 2006 DOI

Modern biomedicine is currently based on a paradigm of evidence-based medicine [66]. One of its core features is a grading system for assessing the quality of evidence. For example, the Centre for Evidence-Based Medicine gives the following order of preference, from highest to lowest [67]: systematic reviews of randomized controlled trials (RCTs), an individual RCT, all or none study, systematic review of cohort studies, individual cohort study or low quality RCT, outcomes research or ecological studies, systematic review of case-control studies, individual case-control study, case series or poor quality cohort and case-control studies, and expert opinion. Single case studies are not even mentioned but are considered comparable to expert opinion and are, as such, of little value in treatment decisions. It should therefore be clear that this case description is not to be taken as a treatment guideline or as a recommendation. Even though the described methods produced a feasible result for this person, a degree of unpredictability lies in the nature of psychedelics, and the same approach might not produce the same result in another person with a different background and characteristics.

[66]: Solomon 2011 DOI

[67]: Burns et al. 2011 DOI

4.4 Conclusions

The case illustrates that a diagnosis of a psychotic disorder may not necessarily need to be a contraindication to the treatment of early complex trauma, depression, suicidality, or other mental disorders with psychedelics. As psychedelics are gaining mainstream attention, self-treatment attempts will unavoidably increase. Unsupervised self-administration of regular and high doses by inexperienced people carries high risks and should not be encouraged at this point. Risks related to low-dose psycholytic self-administration may be more tolerable. In order to avoid risks related to uncertified substances and lack of guidance, a

harm reduction approach to self-therapy could be adopted. Suitable protocols, including pre- and post-session support for psycholytic self-therapy, could be developed to overcome otherwise insurmountable issues related to the availability and scaling of psychedelic therapy. Further research on these issues is warranted.

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5 Healing early neonatal death related family trauma with psilocybin

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In recent psychedelic therapy research, the concept of 'mystical experience' has been highlighted, as in several studies it has been identified as a significant predictor of improved outcome. Many studies mentioning the concept, for example, reports of randomized clinical trials, typically do not provide detailed examples of such experiences, however. In order to make the concept easily understandable, this case study aims at exemplifying what kinds of unexplainable or 'mystical' phenomena may emerge in the process of psychedelic therapy, how these experiences are related to treatment outcomes, and what kinds of attitudes clinicians might want to adopt when facing such situations.

The present case concerns a man in his forties with family trauma that happened before his birth. The trauma continually affected his life, leading to alienation from his parents after his teenage years. After more than two decades, interest in psychedelic therapy led him to attend a psilocybin session, in which he relived the family trauma. As a result, he rebuilt his relationship with his parents, as well as the relationship between his parents and his children. Another psilocybin session a year later led to an improved relationship with his wife. A third session with MDMA released embodied, job-related stress. Inspired by his experiences of such therapy, also his father attended a psilocybin session. Information was acquired from semi-structured retrospective interviews.

5.1 Introduction

Psilocybin, a classical psychedelic, has recently been studied for various psychiatric disorders, including addictions, anxiety disorders, treatment-resistant depression, suicidality, cluster headaches, chronic pain, demoralization, maladaptive narcissism, borderline personality disorder, epilepsy, psychopathy, violence, and inflammation [1]. In the 1960s, psilocybin was utilized in individual psychotherapy and various types of group therapies [2, 3]. Recent examples of the use of psilocybin as a form of family therapy do not appear to exist, however. This case study presents one example of such an application.

Psilocybin is non-addictive and has low toxicity [4]. According to a governmental assessment in the Netherlands, acute and chronic adverse effects of magic mushrooms are relatively infrequent and generally mild, their public health and public order effects are very limited, and criminality related to the use, production, and trafficking of magic mushrooms is almost non-existent [5]. In a recent questionnaire which included over 9,000 magic mushroom users, the per-session risk estimate for seeking emergency medical treatment due to psilocybin use was 0.06% although 1.4% of interviewees reported a diagnosis of psychosis and 2.6% a diagnosis of bipolar disorder [6]. In most cases, adverse events were caused by concurrent multiple drug use, were psychological in nature (e.g. anxiety), and resolved within a few hours. In the present case, the

[1]: Lowe et al. 2021 DOI

[2]: Passie 2005
[3]: Trope et al. 2019 DOI

[4]: Teixeira et al. 2022 DOI

[5]: Amsterdam et al. 2011 DOI

[6]: Kopra et al. 2022 DOI

psilocybin mushrooms had been collected from nature. A 'regular' dosing (a few grams of dried mushrooms) was used, producing conventionally assumed psychedelic effects.

General aspects of psychedelic therapy, such as dosing strategies, mechanisms of action, the necessity of adopting a harm reduction approach, and alternative models of therapy, have been discussed in a case study about self-treatment of psychosis and complex post-traumatic stress disorder with LSD and DMT [7]. In that case, the main mechanism of action was considered to be reliving previous traumatic events. Similarly, the present case features reliving of previous traumatic events as the main mechanism but adds a layer of mysticism.

[7]: Turkia 2022 DOI

Ko et al. provided a systematic review of studies on the association between mystical experience and symptom reduction (therapeutic efficacy) in psychedelic therapy [8]. They noted that while most of the studies were uncontrolled, unblinded, had a small sample size, and lacked diversity, ten out of twelve studies indicated that the presence and intensity of the mystical experience contributed to therapeutic efficacy, including both symptom reduction and improved quality of life. The present case aligned with these findings.

[8]: Ko et al. 2022 DOI

The present case also briefly illustrates the use of 3,4-methylenedioxymethamphetamine (MDMA, or 'ecstasy') for the treatment of work-related stress. Oehen and Gasser have described MDMA and LSD treatment of patients with complex post-traumatic stress disorder (C-PTSD) in Switzerland since 2014 [9]. Due to the repeated nature of more or less traumatizing or stressful events and the inescability of the situation unless one resigns from their job, severe cases of work-related stress may resemble C-PTSD. Also, in an emphatic person, repeated contact with severely traumatized people tends to induce vicarious traumatization or compassion fatigue [10, 11]. Oehen and Gasser used MDMA in the first phase of a psychedelic therapy continuum to enhance motivation to change and to strengthen the therapeutic alliance, 'allowing it to become more resilient, stress-relieved, and less ambivalent'. They then continued the treatment with LSD.

[9]: Oehen et al. 2022 DOI

[10]: McCann et al. 1990 DOI
[11]: Bell et al. 2003 DOI

In the present case, a psilocybin session preceded a MDMA session, but the patient suggested that a reverse order as utilized by Oehen and Gasser would likely make the therapy easier for the patient. The dosing and other aspects of the MDMA session broadly followed the guidelines of the Multidisciplinary Association for Psychedelic Studies (MAPS) [12].

[12]: Mithoefer et al. 2017 URL

Due to the possibility of fatal overdosing, MDMA is pharmacologically more demanding and risky to use than classical psychedelics such as psilocybin and LSD (for a summary of the safety of LSD, see [7]). Sarparast et al. have recently provided a systematic review of interactions between psychiatric medications and MDMA or psilocybin [13]. A clinical trial by Mitchell et al. found that MDMA-assisted therapy was highly efficacious in individuals with severe PTSD, and that the treatment was safe and well-tolerated even in those with comorbidities [14]. They concluded that the method represented a potential breakthrough treatment. Another recent clinical trial by Brewerton et al. found that MDMA-assisted therapy significantly reduced eating disorder symptoms in adults with severe PTSD [15]. In addition to delivering substantial clinical benefit, the method has been found to be very cost-effective [16].

[7]: Turkia 2022 DOI

[13]: Sarparast et al. 2022 DOI

[14]: Mitchell et al. 2021 DOI

[15]: Brewerton et al. 2022 DOI
[16]: Marseille et al. 2022 DOI

The author utilized an ethnographic approach, with the intention of collecting cases of treatment of various mental disorders with different psychedelics. The involved people were functional in working life and had not been assigned psychiatric diagnoses. Therefore, the case appeared more of a family therapy case than a psychiatric case. Information was acquired from semi-structured retrospective interviews with a total duration of approximately two hours, carried out in May 2022.

5.2 Case description

A few years before the patient was born, another child of his parents died immediately after birth. The parents became severely traumatized by this early neonatal death. A contributing factor might have been that one of the parents had lost their mother as a toddler. Later, they got another child: the patient. The parents' attitude towards him, due to a strong fear of something bad happening to him, was characterized by fear and anxiety. While the man was living at the childhood home with the parents, their fear was not as overwhelming, but after he left home, he experienced the continuous fear of his parents as suffocating. It led to him intermittently cutting all contact with his parents, the longest period of no contact being six years. In between the periods of complete disconnection, their contact was sparse, forced and superficial. This situation prevailed for more than two decades, also affecting the man's children, who lacked contact with their grandparents. Neither the man nor his parents could find a solution, and the man had already resigned his hope that the situation would ever be resolved.

He described that his parents' love was manifested 'through pain': the worries and fears came first. He said that a child could not understand or handle this kind of position. His parents loved him 'through sadness'. He did not recognize this sadness: it was 'not his'. Yet he resided in an atmosphere in which the sadness was ever-present, and he had 'adopted the burdens of others as his own' due to having been sensitive and due to his parents having been relatively young at the time. He said the parents' pain and fear had probably been intolerable to them.

He commented that this 'difficult issue' and 'big family trauma' regarding death had 'shadowed' his life since early childhood. It had also influenced his career choice. His forced experience of handling emotions related to death and fears led him to a career in social emergency services involving daily contact with people who had encountered accidents, sudden illness or death of a close relative, violence, and even murder. His earlier experiences helped him with handling the interpersonal aspects of these situations. Supporting a person in a situation involving the death of a family member, for example, required extreme sensitivity to the context and precision in communication.

According to his wife, despite often being in a good mood, he always carried with him 'an aura of unrecognizable sadness'. This isolated him from others who could not understand what the sadness was about. Despite being 'a sociable person', he felt different from others and was unable to share his true feelings ('no-one knew how I really felt'). He tried to process his trauma with conventional psychotherapy, through which he gained an increased understanding of the systemic nature

of the family trauma, but was unable to figure out any solution to the situation.

As he had children and his parents got older, the lack of connection began to feel increasingly pressing. In his early forties, he discovered psychedelic therapy. After his close friend experienced a psilocybin mushroom session supervised by a person with experience of psychedelics (a 'sitter'), he got an opportunity to attend a similar individual session. He assumed that the disconnect would come up but 'tried his best to set other intentions for the session' in order to avoid it. Regardless, the family trauma surfaced immediately at the start of the session, with a clearly implied assertion that the issue could not be avoided or postponed, and that it would be processed in full in that session.

Next, he underwent an embodied experience of the birth of his sibling, as if he himself was the sibling. He sensed the environment of the delivery room and felt the bodily sensations of the newborn. He cried and mourned the loss of the new life, describing the experience as 'very deeply shocking'. He felt his limbs becoming unmovable, sensed his energy fading, sensed the coldness of the metal platform onto which the baby had been placed, felt his body becoming colder, his fear and sadness intensifying as darkness was falling over him. The gradual 'fading out' of the processes of life was preceded by an understanding that the immense possibilities of a new life were lost: the future phases of life would never be materialized. The sensation of the finality of death became unavoidable. In addition, there was a feeling of deep unfairness, which caused him to cry, shout and kick in a fury. The early neonatal death was relived as a concrete, animated, embodied experience. He felt the energy and the extinguishment of the processes of life. The resulting sadness was enormous. He felt everything 'from the inside out', with all the accompanying sensations and thoughts.

After the death he fell into a darkness or nothingness. After a period of nothingness, the birth experience was reinitiated, this time in a hopeful mood as he experienced his own birth, with a clear sense that he was of the same energy as the baby who had died. This experience was very positive, with an implied message that he should be glad for the energy that exists, celebrate life, and treat himself well. The experience implied that there was no reason for any kind of worry: the first child had essentially been reborn as the second child.

He described the session as 'extremely hard, continuous work requiring bravery to face the things emerging . . . it could not be described as anything else than awful . . . the horror was tangible'. He commented that he 'saw no potential for an entertaining value of any kind'. Instead, the experience required a significant amount of mental resources: it was 'full work all the time', requiring one to face anything that would come up. Regardless, the session had not been overwhelming, and it had also been 'health-promoting'. In order to change deeply ingrained mental patterns, it had been necessary to go through an extreme experience. Only an embodied experience could have produced an understanding. He also commented that his 'understanding of the horrifying nature of the situation was wider than one could expect: it was situated in a certain context'.

The experience changed the man's 'angle of incidence' towards the family trauma. Subsequently, his anger and resentment towards his parents were replaced by compassion, and he was able to encounter them in an unforeseen manner through a better understanding of their experience. As he felt that he had overcome the issue, he wanted to help his parents also overcome it.

He was unsure of how to apply his 'new kind of consciousness' in his everyday life. He knew he needed to contact his parents, but deciding how to do it felt difficult. In the evening after the session he called his father, saying that 'there might be something to discuss' on a later date. He assumed the psychedelic context to be fully unknown to his parents, and was therefore unsure of how to explain his experience. After a few days, he accidentally met his parents in a shopping mall. Unexpectedly, whereas such encounters had previously felt awkward, this time the encounter felt natural in a new way. They visited a cafe together, discussing everyday things. Later, the parents commented that they had recognized 'an immense change in the man's attitude'.

After a week or two, he decided to tell his parents everything and visited them, assuming that they would not understand each other. Surprisingly, it was revealed that his parents had been trying to work on the issue by themselves by practicing breathwork and meditation. They found 'a common language' to discuss his experience, including the idea of the same energy being in both babies. The meeting restored their contact, although it was not problem-free due to the long period of disconnect. The grandchildren also needed a period of adjustment. Yet, 'on an emotional level' their connection was now functional and it had become 'a positive resource in daily life'. As he had previously assumed that the disconnect would never be resolved, its resolution had been a positive surprise.

One year later, he carried out another individual psilocybin session with a sitter. There was no singular main theme but multiple elements that he considered useful for later processing or 'integration'. The session included 'exquisite imagery and all that', but he did not consider these aspects consequential. Instead, the main outcome was 'a deeper understanding and mercifulness towards myself, and a deeper connection to other people and nature'. Psychedelics appeared as 'a good method for recalling the importance of these aspects'.

The session had also 'centered' and 'grounded' him, allowed him to focus on the essentials, and reduced stress and anxiety. It had 'increased the certainty of everything being well': their family was relatively well-off, and there was no reason to worry. It had produced insights about his relationship with his wife, improving their connection. One of the main insights had been that he should not expect his wife to ask for intimacy; instead, he should 'be more close to her', for example, spontaneously hold her wife instead of spending the moment for work. Instead of scattering his attention to everyday and work-related issues, he was to direct more of his focus on his wife; this was a 'basic issue' that had been forgotten.

One year after the second psilocybin session, he attended an individual MDMA session with a sitter, with the intention of releasing stress caused by constant overworking over the long term. His resources had been tested and he felt exhausted. The exhaustion and the resulting worries had coalesced into large complexes that he could not process. The MDMA

session allowed him to get a grip on his anxiety without it becoming overwhelming. The session had mainly consisted of bodily trembling that had begun in his feet and gradually extended to full-body trembling that he called an 'internal washing machine program' which had been 'very good'. Whereas psilocybin also produced embodied experiences, MDMA produced a more physical experience, similar to that of Berceli's trauma release exercises (TRE) [17]. The session was about 'going through everything that had been stored in the body and releasing it'.

[17]: Berceli et al. 2014 DOI

As a consequence, also his father was inspired to attend a psilocybin session, 'finding answers to his questions' as a result. His father had commented that the experience had been 'quite salubrious for a man in his sixties' who had thought he had 'already seen everything' and whose beliefs about the world had been rather fixed.

The man commented that psychedelic sessions with psilocybin had 'answered the needs of our family well'. Without the psilocybin session, overcoming the trauma would not have been possible. Comparing his psychotherapy experience to his psilocybin experience, he described the psychotherapy as 'an endless peeling of an onion' that took a long time and could easily lead one astray. In contrast, the psilocybin session had been a 'precision treatment'.

In retrospect, he said that it might have been better to start the process with MDMA and follow it with the psilocybin session later. This was because MDMA was 'somehow more lenient' and although it was still 'hard work', the experience contained 'a greater degree of empathy and safety'. In his view, MDMA could work as an introduction. Whereas psilocybin was 'not violent, it didn't ask if you wanted this or if you were scared'. With psilocybin, the emergence of fear indicated that something essential was being approached. Yet the fear could become counterproductive. MDMA attenuated the fear, providing safety: it was 'a softer tool'.

He considered psychedelic therapy methods 'extremely important for advancing the well-being of people'. He commented that 'it has to start somewhere', which was why he wanted to talk about his experiences.

5.3 Discussion

Early neonatal death, defined as the death of a newborn between zero and seven days after birth, plays an increasing role in childhood mortality both in high-income and low-income countries [18]. Recently, the need for family-centered bereavement care has been emphasized [19]. Several decades ago, as in the case of this family, such support was unavailable, resulting in prolongation of the traumatic experience and its propagation to the next generation (transgenerational trauma). In this case, the propagation mechanism appeared to be a partial inhibition of individuation.

[18]: Lehtonen et al. 2017 DOI
[19]: Razeq et al. 2021 DOI

The case illustrates a conventionally unexplainable phenomenon: experiencing selected life events as if in a body of another person. Experiences of 'ego dissolution' or 'oceanic boundlessness' are currently often labeled as 'mystical experiences' [20]. Experiencing someone else's bodily sensations

[20]: Barrett et al. 2017 DOI

might be considered a subtype of such boundlessness, but such classification would appear to add little to no explanatory value. In another classification [21], these experiences have been labeled 'transpersonal' [22]. In this case, there was a 'transcendence of spatial boundaries': an identification with another person. There was also a 'transcendence of temporal boundaries': an 'ancestral experience'.

[21]: Grof 2000
[22]: Kasprow et al. 1999 URL

In this case, the man appeared to experience bodily sensations of someone who had died before the man had been born. Their mother represented a connecting link. In search of a hypothetical explanation, one might speculate about some kind of epigenetic and mirror neuron related mechanism in which the mother would subconsciously record the sensations of the dying baby and then epigenetically transfer these memories to her next baby, who would subsequently replay the memories in an altered state of consciousness. These kinds of explanations, however, fall short in explaining similar experiences without a connecting link, such as experiencing bodily sensations of an unconnected person or animal. One proposed metaphysical claim occasionally presented in the psychedelic context suggests that all information would be constantly present everywhere (for example, as standing electromagnetic waves) and, given the right conditions, it could be accessed or 'tuned into', with the brain functioning as a receiver [23]. Assumedly, the necessary conditions might include 'an empty mind', i.e. the cessation of default mode network processing in order to allow for conscious perception of previously ignored information.

[23]: Barnard 2011

On the theme of childbirth, according to an anthropological survey, transpersonal experiences during childbirth due to spontaneously emerging altered states of consciousness have been reported [24]. In one given example, a nonexistent nurse guided a woman through the process of giving birth at a hospital ward. The phenomena might be conceptualized as a projection of an acute need onto an external imaginary 'entity' perceived as real due to an altered state of mind. The emergence of these states may be due to altered breathing patterns under exceptional physical and/or emotional stress, similar to states induced by Holotropic Breathwork [25, 26].

[24]: Lahood 2007 DOI

[25]: Grof 2010
[26]: Bray 2018 URL DOI

Although common in the psychedelic context, in conventional medical contexts, these experiences might be considered illusory or 'hallucinatory'. Regardless, what is striking is the 'context awareness' and apparent therapeutic effect of these experiences. In this man's case, the experiences had taught him to be more compassionate and understanding of his parents' behavior. Therefore, obtaining the outcome may be considered more relevant than understanding the mechanism of action.

In a more detailed analysis, the mechanism of action related to the treatment outcome was simply experiencing something personally. That in itself was no different from experiencing any ordinary event and subsequently understanding better others with similar experiences. The only mystical aspect was thus the transcendence of spatial and temporal boundaries.

Kasprov and Scotton have reviewed transpersonal theory and its application to the practice of psychotherapy [22]. The theory has its foundations in the work of William James, who suggested that 'spiritual experiences

[22]: Kasprow et al. 1999 URL

should be judged by their effect on people, rather than prejudged based on a particular theoretical, cultural, or religious orientation'.

With regard to spiritual or 'mystical' experiences, Johnson wrote that 'the goal of the clinician should be to create an open and supportive environment where the patient can make her or his own meaning, if any, from such experiences' [27]. Cole-Turner commented that 'medical professionals can support their patients but cannot be seen as guiding them in their interpretation of religious, spiritual, or mystical dimensions of the experience' [28]. He suggested a role for the church as a provider of such interpretations, and the initiation of co-operation between religious scholars and clinicians. He asked whether secular medical institutions would hire appropriately trained 'psychedelic chaplains', and whether there would be enough of them to meet the need.

[27]: Johnson 2021 DOI

[28]: Cole-Turner 2022 DOI

In the present case, regardless of the 'unexplainable' nature of the experience, there was no need for an external interpretation. Instead, the experience was merely accepted as such, and the favorable treatment outcome emerged naturally. However, in some cases, external guidance may be necessary. Regardless, when not asked for, interpretations should not be forced on patients.

Healthcare and social work employees may often suffer from significant stress caused by vicarious traumatization [10, 11], yet avoid seeking help due to fear of stigmatization. The available services may also be unsuitable or ineffective. In the present case, MDMA therapy appeared to be a cost-efficient and effective method for improving occupational health. Thus, the present case is consistent with the findings of current research on MDMA for PTSD and anxiety disorders [16].

[10]: McCann et al. 1990 DOI
[11]: Bell et al. 2003 DOI

[16]: Marseille et al. 2022 DOI

More generally, Rodríguez Arce and Winkelman discussed the role of psilocybin in human evolution [29]. They suggested that in early human evolution, the use of psychedelics, especially psilocybin mushrooms, possibly increased adaptability and fitness by enhancing management of psychological distress and treatment of health problems, as well as by enhancing social interaction and interpersonal relations. Psychedelics possibly imposed a systematic bias on the selective environment that favored selection for prosociality in human lineage. The present case aligned with this hypothesis.

[29]: Arce et al. 2021 DOI

5.4 Conclusions

In this case, a single psychedelic experience with psilocybin resolved a transgenerational family trauma. An unexplainable, 'mystical' phenomenon that emerged in the psychedelic session appeared as the main contributor to the treatment outcome. Whether the phenomena could be 'explained' or 'understood' appeared irrelevant with respect to the outcome. Therefore, for a clinician, the most feasible approach in such situations would likely be to simply accept and appreciate the outcome and ignore the unexplainability. The case illustrates that in people without severe psychiatric issues, even a single session may produce significant, permanent effects. In addition, MDMA appeared beneficial for the treatment of work-related stress.

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MDMA, Internal Family Systems therapy, and the Minnesota model in the resolution of C-PTSD-induced alcohol and diazepam addiction

6

In February 2023, Australia became the first country in the world to allow psychiatrists to prescribe 3,4-methylenedioxymethamphetamine (MDMA) for post-traumatic stress disorder (PTSD). This may have left interested clinicians looking for practical examples of the use of MDMA. In the 1950s and 1960s, psychedelics were successfully utilized in the treatment of alcoholism. This case study, the first of its kind in recent years, illustrates in detail how and why MDMA, combined with Internal Family Systems therapy (IFS), can promote abstinence.

The case features a man in his forties with a long history of addiction to alcohol and diazepam. The addiction appeared as an attempt to avoid emotional pain caused by witnessing severe, chronic domestic violence in early childhood perpetrated by an alcoholic stepfather. While alcohol temporarily suppressed complex post-traumatic stress disorder (C-PTSD)-related anxiety, it also created intolerable shame and a feeling of inadequacy, which in turn resulted in increased use of alcohol. SSRI medications initially helped somewhat but failed to resolve the issues in the long term. C-PTSD presented itself not only as anxiety and depression but also as physical tensions and pains, and their relaxation with various substances caused intense pleasure, leading to addiction. Later, diazepam was prescribed as a substitute for alcohol. While alcohol use was reduced, an addiction to diazepam emerged instead.

There appeared to be a lack of understanding about the causal relationship between adverse childhood experiences (ACEs) and the addiction, as well as the severity of the condition. Eventually, after several failed attempts at quitting and a suicidal period, the patient accepted that he needed more intensive external help, enrolled in a 28-day retreat utilizing the Minnesota abstinence model, felt unprecedented safety and acceptance, gained insight about the ACEs as a cause of his alcoholism, and was able to give up alcohol and diazepam, but the abstinence was fragile and stressful to maintain.

Regardless, 'the most painful issues' caused by witnessing life-threatening domestic violence remained unresolved. A single session combining MDMA and IFS therapy allowed him to safely re-experience these events in an embodied manner. A later IFS session without MDMA complemented the outcome of resolving his C-PTSD and stabilizing his abstinence.

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6.1 Introduction

Substance use disorder treatments may be divided into abstinence and non-abstinence models [1]. The latter include harm reduction approaches. The use of benzodiazepines as a substitute for alcohol as a method of alleviating anxiety resulting from an underlying, unresolved complex post-traumatic stress disorder (C-PTSD) could be classified as a harm reduction method.

[1]: Paquette et al. 2022 DOI

A more feasible approach would be to resolve the underlying trauma with the intention of reaching abstinence. Classical psychedelics, due to their somatic safety and non-addictive nature, may complement abstinence models. 3,4-methylenedioxymethamphetamine (MDMA) is not a classical psychedelic but an 'empathogen', and a possibility of lethal overdosing exists. Regardless, its properties typically make a treatment with it 'easier' for patients than with classical psychedelics, as well as possibly more feasible to use by therapists with insufficient personal experience with classical psychedelics. Also, MDMA will likely be the first psychedelic therapy to be officially endorsed for PTSD. The present case therefore exemplifies the use of MDMA in the treatment of alcoholism.

While MDMA sessions may spontaneously result in favorable outcomes without a therapy component, the concepts and methods of Internal Family Systems (IFS) therapy have been found compatible with MDMA therapy [2]. IFS techniques applied in a state of emotional safety induced by MDMA may help in rescuing parts of the personality that have been 'exiled' as too painful. An embodied 'reliving' and a subsequent 'integration' of these 'exiled' or 'split' memories of adverse experiences may result in resolution of the related symptoms, including addiction and anxiety.

[2]: Schwartz et al. 2020

The author's approach was ethnographic, with an intention to collect cases of successful treatment of various mental disorders with different psychedelics. The interviewee was found on an online forum. The details of this case were acquired through two semi-structured, retrospective online interviews conducted in October 2022, with a total duration of three hours. In addition, the patient provided an audio recording of the application of IFS techniques during the latter part of the first MDMA session. An additional follow-up discussion was conducted in December 2022. Medical records were unavailable. The fulfillment of the ICD-11 diagnostic criteria 6B41 for C-PTSD, as well as the fulfillment of diagnostic criteria for anxiety disorders and alcohol-related disorders, can be derived from the clinical features presented in the case description.

6.1.1 Benzodiazepines as a substitute for alcohol

In the 1980s, a standard for medical practice stated that benzodiazepines had become the standard pharmacological treatment for alcohol withdrawal and that the use of other medications in alcohol withdrawal without defensible medical justification could raise potential medical-legal liability [3]. The withdrawal was intended to be short-term. Regardless, benzodiazepines began to be routinely prescribed long-term as a substitute for alcohol. In most cases, this practice was insufficient to produce satisfactory results, and withdrawal from benzodiazepines was often as difficult as or more difficult than withdrawal from alcohol [4].

[3]: Smith et al. 1985

[4]: Peppin et al. 2021

6.1.2 The Minnesota abstinence model

The Minnesota model is an abstinence model that originates from the 12-step model of Alcoholics Anonymous (AA), a mutual aid fellowship for individuals with alcoholism [5–8]. The Minnesota model is an in-patient/retreat model consisting of a 28-day individualized treatment

[5]: McElrath 1997 DOI
[6]: Montague et al. 2019 DOI
[7]: White et al. 2008 DOI
[8]: Anderson et al. 1999 DOI

plan including group and individual psychotherapy, psychoeducation, assignments, family involvement, and fellowship attendance [6].

[6]: Montague et al. 2019 DOI

AA-based models are often classified as 'spiritual' approaches [9]. In this context, 'spiritual' might be best understood as *having to do with (re)gaining personal agency that was lost due to trauma*. Personal agency has recently been recognized as central to the recovery from severe mental illness [10]; addictions resulting in interpersonal violence and/or suicidality may qualify as such. With regard to efficacy, Montague and Fairholm concluded that the model enhanced psychological wellbeing in the addicted population [6]. It also appeared promising as an effective treatment for anxiety and depression in the absence of addiction.

[9]: Feigenbaum 2013 DOI

[10]: Lysaker et al. 2012 DOI

[6]: Montague et al. 2019 DOI

An alternative definition of 'spiritual' could be 'feeling connected to something that is greater than you are, or actually feeling as being it, feeling as one with it . . . one shifts from one's identity' [11]. In this sense, transcending one's everyday consciousness ('default mode network') or conceptual framework, or connecting with one's subconscious memories, resulting in a noticeable alteration of one's self-concept or identity, could be construed as a 'spiritual' experience.

[11]: Solluna 2018 URL

6.1.3 The Internal Family Systems therapy model

Internal Family Systems therapy is a relatively recent therapeutic approach developed by Richard Schwartz [2, 12]. It has also been adapted for self-therapy [13]. Schwartz was initially a family therapist but found the method ineffective. After listening to his patients talk about conflicting, internal subpersonalities or 'parts', he began applying his family therapy methods to these internal parts. Instead of seeing the mind as monolithic, he began viewing it as multi-part, or as an 'internal family'. However, his initial attempts to force, fight, and control these parts in his patients resulted in failure. Therefore, Schwartz considered the concept of 'willpower' counterproductive.

[2]: Schwartz et al. 2020
[12]: Schwartz 2021
[13]: Earley 2009 URL

Eventually, he adopted a method based on acceptance and curiosity about the parts. He noticed that parts could be discussed with, and they 'replied' to questions about their motives. Many parts aimed at protecting the patient from events similar to those that had occurred in the past. He noted that the mindsets of these parts appeared 'frozen in past traumas', i.e. events during which their extreme roles had been needed. Yet even the most destructive parts had protective intentions. If these 'protectors' could be convinced that it was no longer necessary to protect the patient, they could 'step out of their roles'. Subsequently, the patient and therapist could access 'exiled' parts that the protectors had been protecting.

These 'exiles' contained a conceptual framework from the age of the original trauma. Moreover, they acted according to that framework. They also carried a representation of the body state from the age of the trauma. In other words, the exiles carried emotions and beliefs that had become 'attached' to them from one's environment. Schwartz labeled these as 'burdens', and the goal of IFS therapy was to 'unattach' these burdens from parts (this resembled indigenous conceptualizations of trauma as an external 'entity').

Burdens could result from either direct or indirect experience. For example, the sense of worthlessness that came into a child when a parent abused them, or the belief that no one could be trusted were 'personal burdens', corresponding to 'internal working models' of Bowlby's attachment theory. Another class of burdens were indirectly acquired 'legacy burdens'. These represented transgenerational trauma that could be adopted from the behavioral patterns of one's parents. The existence of legacy burdens could be more difficult to notice.

Schwartz described that typically, a person using substances was considered 'an addict' who had 'an irresistible urge to use drugs'. The urge could be combated with opioid antagonists, with the willpower of the addict, or with recovery programs. However, some recovery programs could further polarize the addictive part, and willpower often failed. Instead, Schwartz proposed that the part that sought drugs should be viewed as protective: it carried the burden of responsibility for keeping the person from severe emotional pain or even suicide. The person was to be helped to get to know that part, to honor it for its noble intention, and eventually negotiate permission to heal or change what the part protected, i.e., an 'exiled' part (often called 'an inner child'). The 'addict' part thus served as a protector and carried a burden of fear and responsibility. As such a protector part was liberated from its associated burden, the part typically transformed into a useful ally, serving a productive purpose.

If a person had been abused as a child, a protector could also adopt the violent energy of their perpetrator and use that energy to protect the person from the abuser. The part subsequently carried the (legacy) burden of the perpetrator's hatred, and a desire to dominate and punish vulnerability. These parts could then violate other, internal parts of the person, or other people.

In addition to parts, every person also possessed a 'Self'. It could not be damaged, it did not have to develop, and it possessed an inherent capacity to heal internal and external relationships. It could be temporarily obscured, but it never disappeared. If protectors could be convinced to 'step aside', eventually the Self would come forward.

Protector parts could also 'blend' with the Self, resulting in the blended parts taking over the person. The reason for blending was that protectors distrusted the Self because it had not been able to protect the person from abuse. Concerning interpersonal relations, one's protectors could only see the protectors of others. Thus, if one was blended with burdened protectors, one could not perceive the Selves of others. Blended parts produced only projections, transferences, and other distortions, resulting in the person feeling lonely and disconnected; the opposite of 'oneness'. The interactions of people with blended protectors often ended up in polarized, constantly escalating 'protector wars', typical in corporations, families, and politics.

In contrast, the Self's view was undistorted. The Self represented perfection (or perhaps 'divinity' or 'sacredness') which only needed to be uncovered and released. It was the seat of consciousness, characterized by qualities such as perspective, presence, patience, playfulness, persistence, curiosity, calm, confidence, compassion, creativity, clarity, courage, and connectedness ('the eight C's'). The Self was the only inner entity that was fully equipped to lead the internal family. The goals of IFS thus included

the restoration of trust in the Self, and the subsequent promotion of Self-leadership. Once in Self, one felt less isolated and lonely, was more curious about others, and had more courage to help them.

Parts could be identified by their associated bodily sensations, and by discerning a set of bodily sensations, one could identify and 'unblend' a protector part from the Self. Eventually, if all protectors could be unblended, only the Self would remain, resulting in a state similar to enlightenment.

Yugler discussed the intersection of IFS and psychedelics, calling IFS 'a non-pathologizing form of psychotherapy' [14]. He also connected some indigenous, psychiatric, psychedelic, and IFS concepts. For example, the indigenous concept of a 'spirit' could, in some contexts, refer to an IFS part. Similarly, the concept of 'entity' in the psychedelic context referred to a part. Yugler mentioned that IFS could be used for 'navigating' psychedelic experiences. Additionally, Dutcher has discussed the limitations of IFS with regard to dissociative identity disorder (DID) [15].

[14]: Yugler 2021 URL

[15]: Dutcher 2022 URL

6.1.4 Trauma Release Exercises

The present case also involved the use of Trauma Release Exercises (TRE), a method featuring self-induced therapeutic musculoskeletal tremors that release trauma- or anxiety-induced muscle tension [16–18]. While academic research on the method remains scarce, due to its ease of adoption and perceived efficacy, the method has gained relatively widespread popular adoption. A small nine-week initial trial (n=9) on multiple sclerosis patients indicated improvements in most measured indicators, including an almost 50% decrease in fatigue [19]. Anecdotally, the method might occasionally resolve a trauma, but more commonly, it only transiently alleviates symptoms, leaving the underlying conflict unresolved, and requiring the method to be applied repeatedly. Its advantages include ease of adoption, feasibility for self-treatment, perceived efficacy in alleviating symptoms, and being cost-free.

[16]: Berceli et al. 2014 DOI
[17]: Berceli 2015
[18]: Begin et al. 2022 DOI

[19]: Lynning et al. 2021 DOI

6.1.5 Psychedelics for alcohol use disorders

The treatment of addictions, including alcoholism, with psychedelics is not a new idea. In fact, it was widely utilized in the 1950s and 1960s, until misguided politics originating from the US resulted in the international prohibition of psychedelics, against expert advice. Assuming that the primary mechanism of action of psychedelics is the resolution of underlying complex traumas, which cause symptoms, and that the avoidance of symptoms maintains addictive behaviors, outcomes appear consistent for classical psychedelics, as expected.

With regard to the conception of psychedelics/entheogens as 'spiritual' or 'sacred', Roberts noted that the world may be 'transitioning from an era of word-based religion to an era of experience-based religion' [20]. Borrowing from Stolaroff [21], Roberts suggested a protocol that included: initially working with patients in individual sessions, then moving them to a group; starting with a less challenging entheogen such as MDMA; and starting with a low dose and working up to stronger ones.

[20]: Roberts 2014
[21]: Stolaroff 2012

Utilizing the concept of sacredness, better treatment efficacy could be achieved through personal, embodied experiences of 'sacressness' or 'divinity', instead of attempts to understand issues intellectually. These experiences of divinity would not need to be related to an externalized 'God', but to an experience of divinity of the Self, i.e., the divinity of the patients themselves. Such experiences would then result in these patients conceptualizing themselves as valued instead of failed and inadequate, which, in turn, would resolve depression and anxiety.

6.1.5.1 LSD

LSD was widely utilized for the treatment of alcoholism in the 1950s and 1960s [22]. Lattin described that the co-founder of AA, Bill Wilson, was 'a firm believer in the ability of LSD to free some hardcore alcoholics from their addiction' [23, 24]. In Wilson's view, 'some diehard alcoholics' required 'a spiritual awakening to overcome their addiction'. Wilson said LSD sparked 'a great broadening, deepening, and heightening of consciousness'. Wilson had experienced a spontaneous or plant medicine induced spiritual experience in 1934. His first LSD experience in 1956 was similar. He and his AA friends had taken LSD 'frequently and with much benefit'. Lattin himself had used psilocybin, MDMA, ketamine, ayahuasca, and 5-MeO-DMT successfully for his addiction, while some others were said to have experienced unspecified issues.

[22]: Abramson 1966 DOI

[23]: Lattin 2020 URL
[24]: Yaden et al. 2021 DOI

In 2012, Krebs and Johansen performed a meta-analysis of randomized controlled trials of a single 200–800 µg dose of LSD for alcoholism [25]. Six eligible trials including 536 participants indicated a beneficial effect of LSD on alcohol misuse (OR 2.0; 95% CI 1.4–2.8; $p<0.001$; $I_2=0\%$).

[25]: Krebs et al. 2012 DOI

Concerning the treatment of C-PTSD with LSD, in the last two decades, it has been utilized, for example, in Switzerland, its birthplace. Psychotherapist Friederike Meckel Fischer organized group psychotherapy sessions with MDMA, LSD, and 2C-B [26, 27]. More recently, Oehen and Gasser also treated C-PTSD patients with MDMA and LSD [28]. The safety of LSD has been discussed in another article by the author [29]. Yaden et al. went into great detail about the potential synergies between classical psychedelics and 12-step programs [24].

[26]: Meckel Fischer 2015
[27]: Sessa et al. 2015 DOI
[28]: Oehen et al. 2022 DOI
[29]: Turkia 2022 DOI

[24]: Yaden et al. 2021 DOI

6.1.5.2 Ayahuasca

In indigenous and neoshamanic contexts, ayahuasca, a botanical decoction originating from the Amazonian rainforest, has been routinely used in the treatment of addictions [30]. A systematic review by Calleja-Conde et al. pointed to significant benefits in both animal and human studies [31]. Reviews by Frecska et al. and James et al. discussed additional aspects [32, 33]. A substance use disorder treatment program described by Berlowitz et al. (n=36) pointed to significant decreases in addiction severity to various substances, including alcohol [34]. Rush et al. presented a study protocol [35]. Loizaga-Velder and Verres interviewed thirteen therapists who applied ayahuasca professionally in the treatment of addictions [36]. A recent online cross-sectional study (n=8629) by Perkins et al. found that consumption of ayahuasca in naturalistic settings was associated with lower self-reported current consumption of alcohol and other drugs for

[30]: Talin et al. 2017 DOI
[31]: Calleja-Conde et al. 2022 DOI

[32]: Frecska et al. 2016 DOI
[33]: James et al. 2022 DOI

[34]: Berlowitz et al. 2019 DOI
[35]: Rush et al. 2021 DOI
[36]: Loizaga-Velder et al. 2014 DOI

those with and without prior substance use disorders, with such effects present after adjusting for religious or social group effects [37].

[37]: Perkins et al. 2021 DOI

6.1.5.3 MDMA

MDMA has been described as an 'empathogen', meaning 'generating a state of empathy'; an 'entheogen', meaning 'awakening the God within'; and an 'entactogen', meaning 'touching the self within' [38]. In the IFS context, the third characterization would appear to be the most fitting: a general reduction of fear would allow for the 'stepping aside' of protectors, and subsequently a more direct access to the Self.

[38]: Shulgin 2020

With regard to the effects of MDMA, Holland noted that 'unlike alcohol or anti-anxiety drugs, there is no clouding of consciousness or sedation, and unlike cocaine or methamphetamine, there is no agitation or paranoia. Its effects are more easily controlled and predictable than those of LSD or psilocybin. The chemical effects of MDMA more closely resemble an immediately acting antidepressant such as fluoxetine, but the euphoria and calm are more profound' [39]. Holland et al. also provided detailed interviews of therapists who had utilized MDMA in psychotherapy.

[39]: Holland 2001

Passie chronicled the early use of MDMA in psychotherapy between 1977–1985 [40]. A predecessor of MDMA was the mescaline derivative methylenedioxy-amphetamine (MDA), which 'became the drug of choice of some underground psychotherapists from the mid-1960s on'. However, due to a degree of toxicity, MDA was later replaced with MDMA.

[40]: Passie 2018 DOI

In the late 1970s and 1980s, psychotherapist Leo Zeff, who had initially worked with LSD, later trained more than 150 MDMA therapists and administered MDMA to about 4000 people. Later, the Association for the Responsible Use of Psychedelic Agents (ARUPA) was formed. Its members included Zeff, pharmacologist-chemist David E. Nichols, psychologist Rick Doblin (the founder of MAPS), Joseph Jackson Downing (a gestalt therapist treating alcoholics with LSD), psychiatrist Stanislav Grof (LSD therapist and the inventor of the Holotropic Breathwork method), psychiatrist and psychotherapist Oscar Janiger (also treated alcoholics with LSD), psychiatrist Richard Ingrasci [41], chemist Alexander Shulgin (the inventor of 2C-B, which could be combined with MDMA; [42, 43]), engineer-researcher Myron Stolaroff [21], associate professor of psychiatry Rick Strassman, psychologist-psychotherapist-researcher Ralph Metzner [44], and psychiatrist George Greer. Another main character in the field was Chilean psychiatrist Claudio Naranjo. Yet another psychiatrist and an associate professor at Stanford University, Joseph J. Downing, treated alcoholics with LSD in the 1960s and adopted MDMA in the 1980s.

[41]: Ingrasci 1985 URL

[21]: Stolaroff 2012

[44]: Leary et al. 1964 URL

Another early MDMA therapist, Ann Shulgin, wrote about Zeff, describing that he began by giving MDMA to therapists because 'no therapist had any business giving a consciousness-altering drug to any other person unless the therapist personally knew its effects' [38]. MDMA became a favorite tool of psychotherapists 'because it could be given safely to people who were too emotionally fragile to benefit from classical psychedelics'.

[38]: Shulgin 2020

According to Shulgin, a verbal, face-to-face contract between the therapist and patient was a necessary condition for MDMA therapy [38]. It was

[38]: Shulgin 2020

essential that the contract was face-to-face instead of written. The contract consisted of four rules: 1. all sexual feelings were allowable and could be discussed but could not be acted out physically; 2. feelings of hostility and anger were allowable and could be discussed but could not be acted out physically except in a mutually agreed manner, for example by pounding a pillow; 3. a decision to commit suicide in a symbolic manner during the session was not allowed, i.e., if the patient would 'see the friendly death door and know, that by stepping through it, she would be done with this life, she was not to do so during that session'; 4. the patient needed to promise to abide by these rules without exception and without reservations.

Shulgin noted that the critical period was the falling-off of the drug effects, that is, the last 1–2 hours of the 4–6-hour session. In this phase, the fears, 'defenses', or structures that had been lifted by the euphoric effect gradually tried to reintroduce themselves, and in order to obtain a lasting benefit from the session, the patient needed to fight them off. The session was to be ended only when the patient decided that she was too tired to work further.

Shulgin emphasized that a therapist who had not undergone a journey to her own 'dark side' or 'shadow' could not and was not allowed to guide a client on such a journey: such a therapist lacked authority and believability to calm a client struggling with intense, deep fears [38]. Shulgin also gave another rule: a therapist needed to feel 'something very close to love for the person she was guiding'. There needed to be real caring 'at the gut level', not only intellectual concern for the client's welfare. Shulgin added that such real caring could not be forced, and that the therapist was required to have sufficient insight and honesty in order to be aware of her own true feelings. Hostility, apprehension, or indifference were absolute contraindications to therapeutic work.

[38]: Shulgin 2020

In general, Shulgin's insights and suggestions mirrored the principles of IFS. For example, she referred to the concept of an 'overseer' or 'higher self' of the patient, which was the actual healing force: 'a part that was a self-healer'; the therapist only 'helped to activate it'.

The MDMA sessions described in this case study broadly followed the outlines given by Shulgin (as well as the outlines recommended by the Multidisciplinary Association for Psychedelic Studies [45, 46]). The duration of the session was 5–6 hours. The dose was 130 mg, with a 'booster' dose of 70 mg two hours after the first dose.

[45]: Henriques et al. 2020 URL
[46]: Mithoefer et al. 2017 URL

Recent SSRI exposure may reduce response to MDMA-assisted psychotherapy [47, 48]. In the present case, SSRIs had been discontinued almost two years before the MDMA session. SSRI administration had been chronic, but the dose was moderate (over a decade of escitalopram with a daily dose of 10 mg). Response to MDMA appeared non-attenuated.

[47]: Price et al. 2022 DOI
[48]: Feduccia et al. 2020 DOI

Sarparast et al. recently provided a systematic review of interactions between psychiatric medications and MDMA or psilocybin [49]. A clinical trial by Mitchell et al. found that MDMA-assisted therapy was highly efficacious in individuals with severe PTSD, and that the treatment was safe and well-tolerated even in those with comorbidities [50]. They concluded that the method represented a potential breakthrough treatment. Another recent clinical trial by Brewerton et al. found that MDMA-assisted

[49]: Sarparast et al. 2022 DOI

[50]: Mitchell et al. 2021 DOI

therapy significantly reduced eating disorder symptoms in adults with severe PTSD [51]. In addition to delivering substantial clinical benefit, the method was found to be very cost-effective [52]. Kaspian discussed the feasibility of MDMA for self-treatment [53, 54]. Passie provided a short review of Phil Wolfson's work with patients in psychotic crisis and their families [40]. McCarthy discussed MDMA and the role of theology in the 'psychedelic renaissance' [55]. A 2019 documentary film, 'Trip of Compassion', featured MDMA therapy sessions carried out at the Beer Yaakov Mental Health Center in Israel [56].

[51]: Brewerton et al. 2022 DOI
[52]: Marseille et al. 2022 DOI
[53]: Kaspian 2020 URL
[54]: Kaspian 2016 URL
[40]: Passie 2018 DOI
[55]: McCarthy 2022 DOI
[56]: Karni 2019 URL

6.2 Case description

A man in his early forties described his first four years of childhood as 'good', but had only one memory of these years for a long time. At the age of five, his parents divorced. All his other memories concerned the period after that. His 'self-consciousness' emerged during this time. His stepfather was an 'untreated alcohol addict' who was physically violent and mentally unstable. Between the age of five and fifteen, the boy felt unsafe, as well as insecure about himself. He avoided conflicts with the stepfather, and tried to 'protect' his mother. His role was that of a protector, and he needed to stay 'on watch' all the time.

When the stepfather had been drinking, he became unpredictable and extremely violent toward the mother. Regardless, the boy had succeeded at school and been 'so nice' that his mother had wondered about it. He had good social skills, was popular at school, and had played football since the age of six. The football club was a supportive factor that enabled him to develop as a person, to become a 'team player', to play 'for the team', and to take care of people in his social circles. He had friends, he was talented, learning was easy for him, and his memory was good, especially his 'body memory' [57]. Externally, his life appeared good.

[57]: Riva 2018 DOI

However, 'deeper, darker patterns of thought' were present already in his early childhood. His father was a teacher, a school principal, and a 'pragmatic atheist' who believed in mathematical models, physics, and rationality. At the age of four, his father took him to a planetarium. He felt he got 'too much information': things he could not understand. He heard about space, the sun's expansion into a red giant, and the end of the world. For a few weeks, he felt intense fear about the world coming to an end. He 'became conscious of such issues too early', without the capability to understand them. This caused anxiety and fears.

A more severe, 'persistent atmosphere of danger' emerged after the divorce, due to the arrival of the stepfather. The stepfather did not exactly hit the boy, but could drag him around by pulling his hair, or push him. These reactions resulted from stating one's own opinion, or from disagreeing. This created a feeling of injustice. If the boy tried to defend himself, the stepfather punished him physically to 'put him in his place'.

In the meantime, the mother had another child with the stepfather. At the age of fifteen, the boy wondered how his mother had endured the relationship with the stepfather for ten years. Through sports, the boy gained physical strength and a feeling of empowerment. He told the

mother that the next time the stepfather hurt her, he would defend her and, if necessary, kill the stepfather. For this purpose, he had acquired a heavy steel bar, which he kept in his room.

Soon after, the mother announced that she would leave the stepfather, and she moved out with both children. He described the stepfather as 'narcissistic' but said that the connection had been cut quite soon, without excessive problems.

At the age of fifteen, the boy found a girlfriend who was one year younger. Her family was 'supportive and loving', with three daughters, and the girlfriend's parents 'kind of adopted' him as a member of their family. He was happy with the girlfriend, living a 'normal life'; he gained 'space for his own feelings'. In retrospect, he felt grateful toward her family.

During secondary school, around the age of seventeen, feelings of anxiety and panic emerged. Once, he could not breath, and the girlfriend's father drove him home. Once during a class, he panicked and was taken to a school nurse, and to a health clinic. The ECG was normal. The feeling of being cared for calmed him down, allowing him to survive the school and eventually graduate from it, but with less stellar grades than before.

The military service felt easier for him: everything was well structured, and he did not need to worry about anything by himself. The team spirit was good; he felt safe and loved in the group. He enjoyed the physical training. Life was 'clearly structured'. Only situations in which he had to stand guard or perform something under stress caused bouts of anxiety. An 'introspection mode' caused severe symptoms of anxiety.

After the military service, he got an apartment with his girlfriend. The relationship was satisfying. He was in excellent physical shape and took a job in which he could utilize it. The job was relatively simple and well structured. Soon he got an offer for a better job.

Between the ages of 20 and 24, he noticed that for him, due to the intense feeling of safety and relaxation it produced, occasional drinking gave an unusually strong satisfaction. Alcohol kept fears at bay, and under its influence, he could 'be himself: a world-loving person', without the anxiety that 'persisted in the background'.

Between the ages of 25 and 30, he noticed that such ideation intensified. He only drank on weekends and was functional at work, but he drank all weekend instead of just Friday and Saturday, the doses grew constantly larger, and he could not tolerate the hangovers because of 'too intense mental suffering'.

At the age of 26, he visited a doctor who, after three visits, said that 'after a difficult childhood, his brain was in a difficult state, and medication would help'. The doctor prescribed him 10 mg of escitalopram and 0.25 mg of alprazolam (later 0.5 mg). After a few weeks, this medication decreased the anxiety, but he described the effect as 'transient'.

His girlfriend suffered about his issues, and their relationship ended after 14 years. He got a 'dream job' in another city and moved there. The new job and the new environment gave him 'some extra kick', and he also started a new relationship. His relationship with alcohol, however, caused problems in the new relationship.

At the age of 30, he realized he was drinking too much but could not stop drinking. It affected his work performance during the week. He could not recall what had happened during his drinking periods, and cheated his girlfriend a few times. One of these events resulted in the conception of a child outside his relationship. This caused a 'massive crisis' with his girlfriend. He realized how much of an effect alcohol had on his life, and completely stopped using it.

The relationship crisis was solved, they got married, and had a child together three years later. While he did not drink, he was prescribed 5 mg of diazepam for anxiety and 'maintenance of abstinence'. He began using it almost daily. On some days, he used 10-15 mg, on other days, nothing. Without diazepam, he could not function at work. Summer holidays were 'easier'. He was also prescribed codeine/acetaminophen compound analgesics and muscle relaxants for physical pains. He described all these as 'very addictive', producing feelings of 'safety and peace, relaxation, and intense pleasure'. In retrospect, he considered that his 'addiction disease' had effectively started during this time, as a result of diazepam use.

The prescriptions were intended as temporary, but he found them 'difficult to end'. He mentioned that his body had possibly 'invented pains' in order for him to get a new prescription. Back pain was included in the symptoms. He did not intentionally mix the medication with alcohol, but he frequently took them while suffering from a hangover; in practice, the use was frequently mixed. Yet, he only used prescribed medication, and did not attempt to buy it from the street.

At the age of 40, he 'crashed': he could not control his drinking, and failed at his job. For the most part, he blamed the workplace for his issues. He could not sleep, and his use of prescription medicines increased. Soon after, he and the management agreed on a severance package, and he left the job.

His intention was to find 'his own path for healing and get himself into shape'. He noted that medicine had not helped, and looked into science more generally, investigating the physiology of sleep, pharmacology, addiction theory, body therapies, and yoga. Regardless, his suffering did not end there: he was constantly 'balancing' his diazepam use, and after a few months, his drinking became uncontrollable once more. He realized that he had lost control of his life, and felt intolerable shame for his inadequacy as a husband and father. Possibly as an excuse to escape the intolerable situation, he again cheated on his wife while drunk, and eventually filed for a divorce.

At the age of 41, although his drinking was uncontrollable, he began a relationship with the new woman. Her mother had died of alcoholism 20 years earlier, and she therefore recognized his situation as similar. Twice, he ended up in an emergency room as a result of drinking, and stayed at a hospital for 3–5 days each time. Twice he had to call an ambulance due to a panic attack, and he stayed at the emergency department overnight. Outwardly, he appeared as 'an outgoing, average middle-class father in his 40s', and his addiction was not taken too seriously.

Soon after, on a work trip, he drank so much that he could not complete his tasks, nor leave the hotel. After five days of drinking, he called his mother,

who traveled six hours to fetch him from a hotel room and to enroll him in a hospital. Only at this point did his mother realize the seriousness of the situation. At this point, he was suicidal, and a psychiatric evaluation was performed. However, as his mother was accompanying him, he was discharged from the hospital.

Due to his suicidality, the hospital notified child welfare authorities, who in turn notified his ex-wife. She, in turn, enlisted a neighbor who had a background in Alcoholics Anonymous. The neighbor visited him and told him about the possibility of attending AA group meetings.

His first two-hour meeting 'opened a new way of thinking'. An older gentleman had noted that the substances were not the actual issue: instead, the pain 'originated from the depths of the soul', i.e., from past experiences. According to the man, if one flushed with alcohol pain originating from something that had happened the same day, one might have been slightly in trouble, but if one tried to flush pain originating far away in the past, one was in deep trouble.

The man described that this was 'the first time' he thought about his situation 'in a wider perspective', the issue being 'the immense intolerability of being me'. Because of 'an enormous feeling of safety and acceptance, unlike anything I had experienced before when I had been weak and revealed it', he was able to adopt this new perspective.

He attended two more sessions before taking a trip that he had booked earlier. The sessions had empowered him, and he felt that he could travel while retaining his abstinence. However, already at the airport, he had been too fearful to board the airplane without drinking. From that moment on, 'the disease took over'. He ended up again at a detoxification center, and subsequently as an inpatient at a substance abuse rehabilitation facility, confused.

At this point, he realized that he needed to admit that he had a problem, a disease, and that he needed help. In the rehabilitation center, he ended the escitalopram medication that he had been using for 13–14 years, although there had been breaks of a few months and once of six months. While the medication had initially helped, in the end the response had been nonexistent despite increases in dosing. He speculated that this might have been due to withdrawal symptoms exceeding the therapeutic effect.

He had been taking alprazolam for nearly five years and diazepam for nine years. He said that his 'actual dependency' had been towards diazepam, not alcohol. As an alleviator of anxiety and fear, 'diazepam had replaced alcohol'. He did not crave alcohol, and he could attend business events without drinking; therefore, he had not considered himself an alcoholic.

After the rehabilitation period, he visited AA once a week, focusing on following the 12-step program and building daily routines: sleeping, breathing, yoga, training, and bodywork. It 'felt like hell' but he 'survived'. He learned to 'direct the anxiety' and gained 'occasional moments of control'. Relying on emotional support from the AA group, he 'stayed on the path', following an exact daily routine for ten months, and took on a new job.

When the COVID-19 pandemic arrived, his new workplace was practically shut down, AA meetings were cancelled, daycare centers closed, and babysitters were unavailable. The 'emotional load'—feelings of inadequacy and shame—grew too large, and he relapsed into drinking. His new employer proved unexpectedly supportive, but there were simply no customers, and he could not reach his own goals in order to feel that he was 'worth his pay'. Eventually, he changed to another job less affected by the pandemic. His new boss was an ex-alcoholic, and he felt 'seen', safe, and performed well.

Yet, he got 'a single arrogant idea': since he had been abstinent for a year, he could surely take one drink on a work trip without relapsing. After the first glass, he knew he had 'no intention or capability whatsoever to stop drinking', so the 'disease took over immediately', and he drank continuously for nine days. This led to immense suffering and shame about his drinking, and eventually to suicidality. He retreated to a hotel room without anyone knowing where he was, with the idea of drinking himself to death.

Meanwhile his family was on high alert, he 'had visions, dreams'. In his dream, his daughter appeared, pleading with him to return home. This dream 'gave his life a meaning': even if he had nothing else, his daughter loved him. He still had his fatherhood; it was 'the light to walk toward'.

He took a taxi to a rehabilitation center and fought through the initial detoxification period. His employer paid for a longer inpatient rehabilitation period. He was motivated to try anything to feel better. He had realized that he had 'drifted very far from what he had been born to be', could 'no longer recognize himself', and wanted to 'find a way to reconnect with himself'.

After the rehabilitation, a few days after New Year's Eve, he enrolled directly into a 28-day Minnesota inpatient treatment period. He was 43 years old, and had quit taking prescription pharmaceuticals approximately 1.5 years before. At the door, he pleaded: 'Help me'. The treatment 'restored his faith in the possibility of feeling happy, feeling that life is meaningful, feeling love and caring, and knowing how to laugh'. These had been hidden for a very long time; he had hidden behind a wall, shut himself down completely. He felt 'mentally at home' at the clinic. There was a community. He could 'just be, without caring about anything outside'. Everyone knew that he was there, they did not need to worry, and he himself was safe, felt safe. In retrospect, he said that it had been 'absolutely necessary' that he got into this treatment, no matter how. Perhaps, without the pandemic, he would have missed it. During treatment, he began to 'more firmly walk the right path' and connect with himself. Inside, there was a defenseless little boy who had developed all kinds of methods for protection, and demanded consolation for the pain that still resided in him.

Since this period, his 'path from the dark into the light was quite firm'. He attended AA meetings daily. For the whole winter of 2021, he did cross-country skiing, and for the rest of the year, he cooked, attended meetings, and led meetings, living with his new partner. This 'enormously consoled the small child inside him'.

Regardless, some issues remained too painful to face. His experience of himself remained 'fragmented'. He recalled one memory from early childhood: he had looked at a mirror, recognized that the image represented himself, and felt shocked because he had felt uncertain about who he was. This memory was, to him, a 'fragment'. Thereafter, his identity remained unclear, which posed a challenge for him.

Of the more recent experiences, the most difficult concerned his pain over his mother being beaten up. Several times, as the mother had been lying unconscious on the floor without moving, he had thought that the mother had died. At other times, she had been vomiting because of a concussion, and he had been shouting in an attempt to make the stepfather stop beating her. Nothing had helped; the abuse had continued. They had been at a cottage in the countryside, which they could not leave without the stepfather, and where no help was available. He had not been afraid of getting beaten up himself, but he had worried for the mother.

By chance, he found a therapist who provided IFS and MDMA therapy. By the time of the interview, he had attended two therapy sessions. The first session was with MDMA, combined with IFS therapy during the session. Unexpectedly, a week before the prearranged MDMA session, the stepfather passed away. The theme of the session was the stepfather's violence towards the patient's mother. The patient met a child part related to this age. The events were relived, and the history of cruelties was eventually emotionally accepted. He overcame his hatred and gently bid the stepfather farewell. Subsequently, the patient also recalled a few good moments with the stepfather, concluding that he had not been only a monster but had also possessed a few positive qualities. The patient felt 'exceedingly grateful' about this experience. The session had produced 'such a large effect', that he felt that there was no need to hurry with the second one, because he needed to process the material that had come up.

Three months later, a second session without MDMA was arranged. The patient wanted to 'challenge himself', that is, to show that he could progress without MDMA. IFS activated a one-hour TRE-like trembling that felt 'enormous'. Three 'waves' of trembling washed over him. Painful issues 'spontaneously emerged from the subconscious', and he was 'detoxed from dogmatic thinking'. The theme of this session was a moment in his early childhood (three or four years old) during which he had become conscious of his own mortality. He had worried that if his breathing stopped, he would die; this was the early root of his anxiety.

With regard to the contributions of the utilized methods, his attendance in AA and the Minnesota retreat contributed to his understanding that he was an addict, with a strong tendency to get addicted to anything that alleviated his C-PTSD-induced anxiety. The interpersonal acceptance and support provided by these treatments also directly alleviated his symptoms, and increased his readiness to accept external help.

Regardless, he remained unable to face 'the most painful memories'. The contribution of the single session combining MDMA and IFS was the resolution of the most severe traumas. This session resolved amnesia and fragmentation related to the memories of domestic violence. Afterwards, he also discussed these events with his mother, gaining an understanding that his mother was no longer under duress because of the violence. He

understood that the stepfather's father had also been a violent alcoholic; this resolved the rest of his anger and bitterness towards the stepfather. The need for revenge dissolved, and he ceased to dream of killing the stepfather. He also realized that his own father had also possessed a number of issues leading to the divorce, although these issues were less severe than those of the stepfather's.

6.3 An analysis of the IFS session

After an unguided, introspective part of the MDMA session, a 45-minute IFS therapy session was arranged. An audio recording of the IFS session was available. In the beginning of this session, the patient described feeling a 'burning sensation of discomfort and hopelessness that was unallowable'. This feeling was about longing for his father. Missing the father had 'felt wrong', something that he 'should not have felt'.

When the family, with the stepfather, traveled to a summer cottage by car, the ever-increasing physical distance to his real father felt sad. There was no way to contact his father, and he missed him silently. He also described a later event during which he was forced to separate from his girlfriend due to him taking a job in another city. The longing for connection with the girlfriend resembled the longing for connection with the father. During his later relationships, this longing presented itself as jealousy.

The therapist pointed to the part missing the father, asking for its age. The part was five or six years old. The therapist then asked the patient (his Self) to 'be present' for this child part. The child part felt physical discomfort. When asked what the child part would need, the patient answered: 'Father, love, intimacy'. The feeling of longing for the father raised guilt about hurting the mother's feelings.

The therapist pointed out that the feelings of the child were more important than those of the mother's; this felt 'contradictory, confusing' to the patient. The patient was instructed to give the child what he would have needed; the answer was 'being held'. The therapist asked the patient to introduce the adult Self to the child part, including his real age, and his current life situation.

When asked how the child part reacted to this, the child part felt happy about 'connecting to an adult who understood him'. When asked what the child part wanted to do in the presence of this newfound adult connection, the patient responded that simply being able to feel the longing was 'important'. The therapist responded that the child part was allowed to miss the father and that being able to share one's dreams and needs was fundamentally important in order for a person to stay healthy.

The therapist asked whether this child part still carried physical, emotional, or 'spiritual' residual tensions in its body, and instructed the patient to 'collect all these into a pile' in front of him. The patient commented that he 'no longer needed to feel unsafe'. The therapist asked the patient to imagine a bonfire in which all these sensations of unsafety burned and disappeared, and were 'replaced by a healing luminosity'. The therapist stated that the child part could access all the qualities,

information, methods, tools, and technologies that it needed to sustain this new consciousness. The patient was instructed to thank the child part and give it a present, which symbolized the new cooperative relationship between the part and the adult Self. The patient chose a candle as this symbol, commenting that it symbolized 'hope and light'.

The therapist appeared to have concluded that there were two child parts related to the car trip. The second part was asked whether it wanted to join the Self and the first child part in their newfound communality. The patient could not immediately recall the situation, then described that the second part 'no longer felt that bad'. The therapist commented that this part would likely reintegrate by itself but nonetheless instructed the patient to ask the part's age, introduce both his adult Self and the first child part to the second part, and ask what the second part would need. The second part wanted to have 'a friend' so that it would not need to stay on the backseat of the car alone. The part 'felt ill' and vomited on occasion. The therapist asked the adult Self to 'sit with' the child part. The child part was 'reading a comic book'. With the Self as a friend, the child part wanted to chat and tell jokes. The therapist asked the child part to tell a joke. The part did, and its mood became more positive.

The therapist asked whether this child part still carried something that had served it so far but was no longer necessary and should be released. The part no longer needed to carry the feelings of longing and loneliness. These were again released to the earth and to the healing light. The therapist stated that the second child part was now privileged to have access to all the amusing material that existed. It now also had a new friend who enjoyed any discussions and jokes. The part could summon any superpower it wanted and update itself whenever it wanted. It was free to choose any location in the patient's body and reside there. The part again got a present and was thanked for its protective role and cooperation. The patient was instructed to take a deep breath to gain a somatic feeling of bodily expansion.

The patient was then instructed to ask [the 'protectors'] whether it would be allowable to access the teenager part who had been separated from the first girlfriend. This part felt 'inconsolable, desolate', and was crying. The needs of the part were 'consolation and trust' and its age was fifteen. The therapist instructed the patient to inform the part of the patient's actual age. The patient was instructed to tell the teenage part that the adult Self could offer 'life experience that could provide trust'. The patient described feelings of loneliness, adding that the fifteen-year old part was also 'slightly drunk'. By lowering his defenses, alcohol had enabled him to feel the longing for love. The patient remembered more details about the situation. The girlfriend had provided the teenager 'the only safety' that he possessed at the time, and having been forced to separate from her had resulted in desolation. Alcohol had eased this feeling of desolation.

The patient mentioned that he could now approach the feeling of desolation with gentleness. The teenager part wanted to be held in safety; a mental image of this was provided. The therapist asked how the teenager would feel if this safe holding were continuously available as 'a superpower'. The patient said that he 'needed to save the teenager', as well as the five-year-old missing love. He had always wanted to sleep next to his

mother but had not been allowed to do so; he was instructed to imagine this.

The patient wished for faith in the strength of the relationship with the girlfriend. The therapist asked whether there was something that the teenager, now holding the superpower of safety, could give up. The patient wanted to give up 'the difficult, horrible, excruciating energy'. It was released into nature. The patient was asked to breathe into the space in his body left empty by the feeling that had been released. He felt lighter, could see colors in a more intense way, and felt the longing of the small child in a safe way, instead of feeling it as 'poison'. The patient was again instructed that he could access all the information needed to update the part, including 'patience, calmness, curiosity, playfulness, and creativity'. He would never again miss anything; instead, he would reside in a beautiful state of creation.

When asked what was still missing, the teenager part wanted to get a kiss from his girlfriend. The patient imagined this event, commented that it 'worked well', and imagined holding the girlfriend. The part was asked to maintain this feeling of being embraced while missing nothing at all, and to 'save' this feeling in some location in his body. The part was asked to continuously keep itself updated and continue integrating in the body, deepening the feelings of bodily extension, relaxation, and being safe and 'blessed'. The therapist stated that these updated parts could also update the patient's other parts as needed. The IFS session was ended when all parts responded that they no longer missed something.

6.4 Discussion

Likely due to the effect of the MDMA calming down the protectors, the need to negotiate with the protectors was minimal. Most of the work in the session involved updating the exiled child and teenager parts. The effect of the therapy was likely largely based on the believability of the patient's mental images based on the therapist's suggestions given while the patient's 'defenses' were still lowered by MDMA. A key part of the session appeared to have been a recall of a situation at the age of fifteen in which alcohol had been associated with the regulation of feelings of safety. Assumedly, this use of alcohol at the age of fifteen was the initiation period of alcohol addiction. Thus, the 'root of the problem' was addressed in the MDMA and IFS session, resulting in the stabilization of the patient's abstinence.

A traumatizing event, by being overwhelming and uncontrollable, eliminates the sense of personal agency, i.e., the feeling or expectation of having control over one's state (i.e., control over the satisfaction of one's basic needs, especially physical safety). Rebuilding this sense of agency is required for the resolution of such a trauma. In a naturalistic setting, revenge, or killing the aggressor, is a primitive method for regaining agency (in the case of sexual trauma, raping someone else may serve as such a method). In the therapeutic context, optimally, both parties should be healed by processing the experiences in a peaceful manner, without further physical aggression taking place.

When describing his experience, the patient said that the MDMA session had been the first time that he had been able to think about his experiences of domestic violence 'in a wider perspective'. He had been able to adopt a new perspective because of 'an enormous feeling of safety and acceptance, unlike anything I had experienced during the previous times when I had been weak and had revealed it'. Thus, the healing was due to having been 'weak', 'seen' and 'accepted', all three simultaneously.

Alternatively, using IFS terminology, it could be said that the process involved an unblending of protector parts from the Self, resulting in an uncovering of the inherent qualities of the Self, and the promotion of Self-leadership. The 'addict' protector part was liberated from its burdens (fears). This rendered unnecessary both the alleviation of emotional pain by substance use, and the planning of violent revenge.

A good outcome was achieved with only one MDMA session because the patient had already practiced many of the available somatic methods, such as TRE, yoga, and breathwork. Also, the role of Minnesota treatment and learning to accept external help appeared essential, although the patient speculated that had he received MDMA therapy a decade or so earlier, it would likely have resolved his issues on its own.

6.4.1 On the adoption of psychedelic therapy

With regard to the adoption of psychedelic therapy, Shulgin noted that the likely reason for non-adoption so far has been 'an intense unconscious fear of the hidden depths of the human psyche . . . nurtured in a thousand ways by family and culture, and too often by institutional religion'. She noted that it was 'up to us to find out how to turn this around'. As a sign of hope, she commented that a change in attitude seemed already to have begun, and that 'this kind of spiritual journey, this kind of understanding and transformation of the dark side of the soul' was required for the survival of the human species.

Schwartz wrote that the currently prevailing mindsets had resulted in massive inequality and polarization, and the solution was to adopt a new view of human nature that would 'release the collaboration and caring that lives in our hearts' [12]. He emphasized the need for leadership that would reduce fear-based reactive behaviors and foster confidence in the inherent goodness and ingenuity of humanity. The obstacle was the current mindset, which promoted 'the darkness in humanity'. He proposed IFS as a paradigm that would allow for the necessary changes.

[12]: Schwartz 2021

Another method worth mentioning is Allione's adaptation of a Buddhist Chöd method [58–60]. This method also involves 'parts' and 'unblending', does not require the use of psychedelics, and is applicable for self-treatment. The method has also been described as 'cutting through the ego'; in this interpretation, 'ego states' might roughly equal blended protector parts (see also [15]).

[58]: Allione 2008
[59]: Allione 2020 URL
[60]: Allione 2014 URL

[15]: Dutcher 2022 URL

With regard to the training of therapists, it has been noted that a therapist can only bring a patient to the level of clarity that the therapist herself has reached. With regard to Shulgin's four rules [38], it can be seen that a therapist or a public health official lacking any or sufficient personal experience of psychedelics could not have produced the third rule, nor

[38]: Shulgin 2020

understand the rationale behind the ruleset. On the other hand, we can question the universal validity of Shulgin's ruleset, and assume that the rule against symbolic suicide was set because she had not passed that 'gate' herself. Another therapist who had passed this 'gate' considered it a part of a symbolic death-rebirth process, and considered the rule unnecessary or counterproductive.

Indigenous psychedelic guides often stress the importance of following a strict ruleset. However, when asked what the actual rules are, it appears that they are personal. The role of such rules would thus seem to be to keep the therapist within their personal area of expertise. In general, it is likely that the more experienced a therapist, the fewer restrictions are necessary (e.g., with respect to the treatment of borderline conditions or psychotic disorders). Conversely, therapists who have not fully processed their own past experiences would likely be triggered by the patients' issues and would constantly need to fight against this triggering, consuming their energy, possibly eventually ending up (re)traumatized or burned out after working with difficult patients. By becoming triggered, they would also fail to properly 'hold the space' (provide safety) for their patients, resulting in inferior outcomes and/or re-traumatization of the patients.

Reaching sufficient 'evidence-based' self-confidence may require a few hundred personal sessions with varied dosing in varied situations. Regardless, even some psychedelic guides with such experience appear to carry an unfeasible amount of residual personal trauma. In these cases, reaching the 'next level' of therapeutic efficacy would assumedly require experiencing a fully non-dual state, i.e., a state where all boundaries, including all distinctions between 'desirability' and 'undesirability', or 'good' and 'bad', are fully dissolved, the observing self is fully absent, and all residual somatic tensions are fully relaxed, including all tensions on a sub-limbic level. While such states may be occasionally, tangentially, and transiently reached with high doses of classical psychedelics such as LSD and ayahuasca, it may be that these substances are, after all, in many cases insufficient for the purpose of consistently and fully experiencing such states, and therefore too slow to produce results in difficult cases, as well as too weak as tools to consistently produce therapists with the rock-solid confidence needed to tackle the likely most challenging issues, for example the treatment of violent, psychotic prisoners. Eventually, a therapist should likely reach a state of complete acceptance based on the energy of Self, with an attitude of neither trying nor needing to change anything or heal anyone. This, admittedly paradoxical-sounding position for a therapist, would nonetheless likely be the requirement for ultimate therapeutic efficacy. Therefore, the final frontiers of psychedelic therapy may currently remain unexplored for most people.

6.5 Conclusions

On a societal level, alcohol may have been utilized as one of the main instruments for suppressing issues that should have been faced and resolved instead. Alcohol and psychedelics likely represent opposite approaches: alcohol suppresses, while classical psychedelics reveal. En-

tactogens such as MDMA might provide 'the Middle Way'—a more gradual, softer journey into our collective traumatic past.

The many incidental consequences of the prevalent alcohol abuse include child abuse and neglect, and domestic violence. This case study described how MDMA, a more 'beginner-level' instrument for therapeutic work, resolved severe, complex post-traumatic stress disorder in one session, although preliminary work had been completed in advance. The Internal Family Systems (IFS) framework, a relatively recent development in the field of psychotherapy, complemented MDMA in producing the desired outcome.

With these tools, the perpetuation of transgenerational trauma was stopped. These affordable methods, already widely and successfully utilized in the mid-1900s, deserve to be swiftly and widely re-adopted. Sufficiently deep personal experience with classical psychedelics and/or MDMA is required for the therapists, and the processes for acquiring this experience should be initiated already.

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7 Self-treatment of parental neglect-induced mixed anxiety and depressive disorder with psilocybin

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This article presents the case of a young woman in her mid-twenties with a history of depression since childhood. She lived with a mother who failed to take care of her. The patient cared for the emotional needs of the mother instead of the mother caring for the daughter's needs. Her father was mostly absent. Already around the age of thirteen, the patient was severely depressed and was self-harming without anyone interfering with it. Eventually, her parents divorced when she was fourteen. Since then, she and her younger brother lived practically on their own for several years.

She was 'unable to either recognize or process' her feelings, and assumed that she was supposed to 'serve others'. At the age of twenty, she moved in with a severely traumatized boyfriend. Compared to his, her childhood appeared 'very happy'. She was 'disconnected from her feelings' and 'could not understand what was wrong'. As she enrolled in a higher education facility, comparisons with other students made her realize that her own upbringing differed from theirs.

She was unable to verbalize her problem, and the student healthcare system did not recommend psychotherapy for her. She was prescribed escitalopram, but it 'never worked'. Cannabis somewhat alleviated anxiety but led to passivity. Eventually, she tried psilocybin mushrooms. In the course of two years, she carried out four sessions with lower doses, and three sessions with conventional psychedelic doses of psilocybin. Subsequently, she considered her depression resolved.

The mushrooms 'did not provide a swift solution' but 'played a major role' in the resolution of her depression. They enabled her to see that the root of her depression was in her adverse childhood experiences. Later, 'setting boundaries' and 'doing things as she wished' provided 'significant relief'. After this, she was also granted psychotherapy, which she utilized for 'psychedelic integration'.

This case, along with previous case studies on the same approach, demonstrates that unsupervised self-treatment is a feasible, cost-effective, and relatively simple method, which could enable societies to overcome the cost and resource crisis of mental health care.

7.1 Introduction

Unsupervised self-treatment of mental disorders with psychedelics has previously been discussed by the same author. Self-treatment of psychosis and C-PTSD with LSD and DMT was featured in an article [1]. A preprint featured self-treatment of depression and complex post-traumatic stress disorder (C-PTSD) with psilocybin and LSD [2]. This case presentation supports the findings of the previous studies.

[1]: Turkia 2022 DOI

[2]: Turkia 2022 DOI

With regard to other case studies on this subject, Lyons presented the case of one patient for whom electroconvulsive therapy had provided no relief of their treatment-resistant depression. Subsequently, the patient successfully self-medicated with low, non-hallucinogenic doses of psilocybin [3]. During a two-year period of psilocybin use, the patient's Hamilton Depression Rating Scale (HDRS) score decreased in a linear fashion [4], and the patient reached remission from depression. Lyons suggested psilocybin as a safer and cheaper alternative to electroconvulsive therapy.

[3]: Lyons 2022 URL

[4]: Hamilton 1960 DOI

In the present case, the patient had been medicated with escitalopram, with no result. Nayak et al. discussed a recent trial (n=59) of two doses of psilocybin (25 mg) versus six weeks of escitalopram (20 mg) for major depressive disorder [5]. They presented a Bayesian (versus frequentist) reanalysis of the data, noting that they found 'extremely strong evidence for psilocybin's noninferiority versus escitalopram'.

[5]: Nayak et al. 2022 DOI

A meta-analysis by Masi noted that according to RCTs, antidepressants were minimally to moderately more effective than placebo, principally based on very high placebo responses, and only fluoxetine showed more evidence of efficacy [6]. An additional, often overlooked aspect of SSRI vs. psilocybin comparisons is antidepressant withdrawal and rebound phenomena [7]. A pharmacovigilance database analysis by Chiappini et al. noted that a range of proper withdrawal symptoms could occur well after SSRI discontinuation, especially with paroxetine, and awareness of the dependence and withdrawal potential needed to be taken into account [8]. In a review concerning children and adolescents, Strawn et al. noted that persistent or late-emerging adverse effects of SSRIs included suicidal thinking and behavior, sexual dysfunction, weight gain, headaches, and other symptoms [9]. They also reviewed aspects of sertraline and escitalopram withdrawal.

[6]: Masi 2022 DOI

[7]: Henssler et al. 2019 DOI

[8]: Chiappini et al. 2022 DOI

[9]: Strawn et al. 2023 DOI

Davis et al. presented a randomized clinical trial (n=24) of two doses of psilocybin with major depressive disorder [10], noting that the trial demonstrated the efficacy of psilocybin-assisted therapy in producing large, rapid, and sustained antidepressant effects among patients with major depressive disorder. Al-Naggar et al. interviewed ten patients who had self-medicated with psilocybin, and concluded that psilocybin appeared to have promising effects on patients with depression and anxiety even after a single dose [11].

[10]: Davis et al. 2021 DOI

[11]: Al-Naggar et al. 2021 DOI

The safety of psilocybin has been discussed in more detail in two other case reports concerning self-treatment of depression and complex post-traumatic stress disorder (C-PTSD) with psilocybin and LSD [2], and small-group therapy of treatment-resistant depression and complex post-traumatic stress disorder (C-PTSD) with psilocybin [12]. Additional aspects related to the feasibility, safety, and necessity of self-treatment have been discussed in the context of a case study concerning the self-treatment of C-PTSD and psychosis [1].

[2]: Turkia 2022 DOI

[12]: Turkia 2022 DOI

[1]: Turkia 2022 DOI

Goodwin et al. presented a phase II double-blind trial (n=233) of single-dose psilocybin for treatment-resistant depression, indicating that a single dose of 25 mg (n=79) reduced depression more than a one-milligram dose (n=79) or a ten-milligram dose (n=75) [13]. In many clinical trials, adverse events such as suicidal thoughts or acute suicidality are counted, and interpreted as harmful effects of the substance. As comparisons

[13]: Goodwin et al. 2022 DOI

of the prevalence of suicidal thoughts or acute suicidality pre- and post-treatment are rarely, if ever, made, conclusions can't be drawn: suicidality may have increased, remained unchanged, or decreased. In the mentioned trial, over a period of twelve weeks, in the high-dose group, suicidal ideation occurred in two cases (2.5%), intentional self-injury in two cases (2.5%), and suicidal behavior in three cases (3.7%). In the context of psychedelic therapy, the traditional understanding of the concept of 'adverse events' may rarely, if ever, be useful or applicable. Negative experiences are almost always due to the underlying trauma, i.e., due to reliving or re-experiencing emotions and somatic sensations related to the original trauma. The healing process explicitly requires the patient to, briefly but consciously, re-experience them.

In the present case, major depression was a result of traumatization caused by parental neglect. Bird et al. provided a review of psilocybin and 3,4-methylenedioxymethamphetamine (MDMA) for the treatment of trauma-related psychopathology [14]. They noted that trauma exposure had been linked to the development and severity of various psychiatric conditions, including major depressive disorder (MDD), substance abuse disorders, and anxiety disorders, and that MDD was possibly the most common condition following trauma. They stated that the 'trust enhancing' qualities of MDMA were likely useful in strengthening the therapeutic alliance in the first instance to allow for a 'deeper' subsequent acute psilocybin experience. Proof-of-concept studies were suggested.

[14]: Bird et al. 2021 DOI

With regard to psilocybin versus esketamine for depression, Psiuk et al. provided a systematic review, noting that psilocybin was possibly superior to esketamine treatment [15].

[15]: Psiuk et al. 2022 DOI

The interviewee was found on an online discussion platform and was subsequently invited to participate in this case study by the author. The author's approach was ethnographic, with the intention of collecting cases of self-treatment or small-group treatment of various mental disorders with different psychedelics. The details of this case were acquired from a semi-structured retrospective online interview with a total duration of approximately 1.5 hours conducted in December 2022. An one-hour follow-up interview was conducted in January 2023. Medical records were unavailable.

7.2 Case description

A girl in her mid-twenties described how, in her childhood, her parents were not violent or otherwise overtly abusive but neglected her. She lived with a mother who failed to take care of her; instead, the patient cared for herself, her little brother, and largely also for her mother. The patient was assumed to answer for the mother's emotional needs instead of the mother answering for the daughter's needs. She briefly referred to her mother as 'narcissistic' and mentioned that she was 'never really a mother to us'. She and her brother had to manage largely on their own, although the mother took somewhat better care of the son.

The mother bought food and clothes for them, but since approximately the age of ten, she had to, for example, wash her clothes by herself. Her father, in turn, was mostly absent from home and did not interfere with

the upbringing of their children. He worked in another country, and while he visited, he remained 'not present'. She mentioned being 'confused' about her school never paying attention to the complete absence of her mother: she failed to even sign official documents.

The girl was 'unable to either recognize or process' her feelings. Individuation, individual thoughts, and feelings appeared to have been 'forbidden'. She 'lacked a capability for independent thinking'. She assumed that she was 'supposed to live for other people' and 'serve others'. She was tasked with listening to her mother's sorrows and worries, and with 'supporting' her mother. She was occasionally praised for 'acting very adult-like'.

She was 'obviously and visibly severely depressed' already around the age of ten, and was self-harming around the age of thirteen. Neither of the parents interfered with this. Eventually, her parents divorced when she was fourteen. Since then, she and her younger brother lived practically on their own for a couple of years. For one year, their father was working abroad, and the mother 'disappeared', leaving the children on their own. When she was sixteen, the father returned from abroad, and the mother officially moved away. However, the father was forced to stay in other locations for work during weeks and often also during weekends.

At the age of 20, she moved in with a boyfriend in another city. The distancing from her childhood environment caused previously unrecognized feelings to surface. She described that she was 'disconnected from her feelings' and 'could not understand what was wrong'. Initially, she began wondering 'why her mother had never cared for her'.

The boyfriend had been taken into custody at an early age due to severe domestic violence, and had lived in a children's home since. While they both had their own issues, compared to their childhood environments, the relationship appeared quite functional and supportive. Compared to the boyfriend's childhood experiences, the girl's childhood appeared to her as 'very happy'. She stated that at this point, she had 'no clue that anything was wrong with her relationship with her parents, or in her family, but she did not feel very well emotionally'. She attributed this lack of situational understanding to the fact that 'the family had always been like that', and that she lacked points of reference, that is, experience of other kinds of families. She described herself as 'withdrawn'. She encountered cannabis and used it occasionally.

She contacted a municipal health center, which referred her to a psychologist, but there was the possibility of only one appointment. The psychologist commented that she should 'investigate her childhood in more depth'. Regardless, at this point, she continued to believe that her childhood had been quite conventional, and searched for the root of her problems in herself, conceptualizing her depression as a 'psychiatric problem' of an individual instead of a systemic issue.

At the age of 21, she enrolled in a higher education facility. Due to this, further contact with the municipal health center was not allowed. She remained severely depressed and anxious, and accessed the student healthcare system but was unable to verbalize her problem. She was diagnosed with mixed anxiety and depressive disorder (ICD-10 F41.2). During a few appointments with a psychiatric nurse, 'nothing sensible' was discussed. She commented that the personnel 'failed to recognize

the severity' of her situation. Psychotherapy was not recommended for her.

She was prescribed escitalopram, but it 'never worked' and failed to resolve her depression. She mentioned that the medication 'only caused harm' by numbing her emotions. In addition, she commented that the medication probably caused a hypomanic episode, during which she harmed her relationship. Subsequently, she discontinued medication. As her condition worsened, she also 'searched for bad solutions', meaning that her cannabis use became more frequent. It slightly alleviated her anxiety but led to passivity. However, some varieties also activated her during the most disabling depression so that she could, for example, clean her apartment instead of laying in bed all day. As a whole, she considered cannabis 'quite passivating'.

Cannabis also caused some psychedelic, 'mind-expanding' effects, but these easily led to daily rumination over the same issues without real progress, and eventually 'to not ruminating about anything', i.e., to a passive state. Due to her depression, she could no longer experience pleasure from anything. In retrospect, she considered that her cannabis use had not made any difference to her state, neither positive nor negative. She considered its daily use harmful but also said it should be decriminalized. Had she used alcohol in the same manner, the end result 'would have been way worse'. Cannabis had been 'graceful' to her, not causing any permanent harm.

At the age of 22, her relationship with the boyfriend ended, and she moved to live alone in her own apartment in another city. Subsequently, her depression worsened, and eventually escalated into near-complete dysfunctionality. At this point, she had realized that her issues were somehow causally related to her childhood experiences.

She contacted the student healthcare system again, and they informed her that they had nothing to offer her. She was also refused sick leave from her studies. The personnel informed her that her childhood experiences were out of the scope of their care, and again did not consider psychotherapy indicated for her. She was prescribed 50 mg of sertraline, which she soon discontinued due to severe adverse effects, and continued with escitalopram. The clinic granted her a few appointments with a psychologist, but the appointments were six months apart and led to nothing.

Her first boyfriend had experimented with psilocybin mushrooms and suggested that they could try them together. He had been able to process some of his own experiences with the help of the mushrooms on his own, unsupervised. This had initiated her interest in the mushrooms, but during the relationship, she never experimented with them. At this point, living alone and being severely depressed, she remembered this option. She was 'searching for answers' and assumed that mushrooms could provide them. She also understood that she was 'stuck' with her issues and would 'need to open' something.

Having learned to be self-reliant, she decided to try psilocybin mushrooms on her own, unsupervised, like her first boyfriend had done. During the year of living alone, she began 'practicing' with the mushrooms. In order to keep the possible anxiety under control, her approach

was gradual. She was slightly fearful about the first trip, which eventually proved to be an 'anticlimax': she experienced next to no effects. Initially, due to the dampening effect of escitalopram, her 'trips were not very deep'. Regardless, the session convinced her that she was 'not going to die from taking them, and that being in the psychedelic state was manageable and okay'. The state felt 'safe and good'.

She carried out four unsupervised trips with doses of around one gram of dried psilocybin mushrooms. The most important consequence of these sessions was that the mushrooms 'guided' her to consider the role of her parents' behavior as a possible cause of her emotional issues. They gave her a glimpse of how she would feel if she would not be depressed: she could feel 'interested in life' and 'feel good and normal'. Her depression was temporarily resolved by each session.

Initially, the mushrooms 'enabled her to access her feelings', although at that point, her view of her parents was still 'incorrect'. She searched for the cause of her issues primarily within herself, not in her parents' behavior. She 'remained unable to realize the severity' of the condition in their home. Mushrooms allowed her to 'become unstuck from her thought patterns and think outside of the box'.

Going forward, the sessions caused more of her childhood memories to surface, and caused her to more fully realize the causality between her current state and the adverse childhood experiences. She fully realized that her parents had not cared for her properly. At this point, she said, these realizations did not necessarily 'do good' for her, as her increased understanding of these facts merely increased her sadness and anxiety. Regardless, she mentioned not having experienced so-called 'bad trips'. None of the trips had been 'solely agonizing': there had always been something positive.

For a year, she used cannabis almost daily. This period overlapped with her 'most severe' period of depression. She suspected that cannabis use had been 'a symptom of depression' because it largely ceased at the time when her use of psychedelics began and her depression ended. According to her, depression had caused her to use cannabis. Its function was to numb emotions. When the emotions were processed, numbing them was no longer necessary. Also, the mushrooms suggested that cannabis use was a problem, and that nothing should be used daily. She had no experience of other drugs, nor experience of 'problematic substance use'.

Around the age of 23, she moved to another city and found a new relationship (it was ongoing at the time of the interview). She arranged her first session with a 'regular' psychedelic dose. As a consequence, for the first time, she 'realized which things in her life made her happy and what she wanted to include in her life'. In addition, 'saying these things out loud for the first time in her life' had been a very meaningful experience; she commented that this 'sounded stupid but had been a big thing'.

Due to the previous psilocybin sessions, she was able to verbalize her issues, and subsequently contacted a municipal health center in her current city for additional help. She was officially assigned the same diagnosis (ICD-10 F41.2), but she was also preliminarily diagnosed with

recurrent depressive disorder, current episode severe, without psychotic symptoms (ICD-10 F33.2). She was also granted a year of sick leave from her studies. Around this time, she discontinued escitalopram.

She carried out three additional psilocybin sessions with doses of approximately three to four grams of dried mushrooms. Predicting the exact response to a certain dose of mushrooms was difficult because it 'depended on the day'. One of her 'best memories' from these trips was an autumn day when, untypically for her, she walked outdoors during the experience. The nature had been in full fall foliage, and the visual experience had been breathtaking.

During some of these trips, she spent time with her new boyfriend. This was because 'during a trip, an enormous need for another person's presence arose'. His presence kept her calm because she expected him to assist her in the event of severe anxiety. Such anxiety never arose, however. The presence of another person provided a feeling of safety, allowing the experience to stay pleasant. A more important function of his presence was that she wanted to express to him some feelings that she had not been able to express to anyone before.

At the time of the interview, she was nearly 26 years old. Compared to a few years before, her life was 'completely different'. Her severe depression had been resolved nearly two years before. 'Setting boundaries' and 'doing things as she wished' had provided 'significant relief'. This setting of boundaries included cutting off all contact with her mother. Her father remained 'unable to understand the issue or handle it'. It appeared that another positive factor had been the physical distance from her childhood environment.

Her last psilocybin session had been 1.5 years before, and her last cannabis use was a year ago (during the year before that, she had used cannabis once a month). Her studies were on hold: she was waiting for her motivation to return. Instead, she was working full time. She was 'able to make decisions' and 'do things that felt good'. She now had her own horse, and was also raising other animals. During her childhood, taking care of animals had 'comforted' her, and allowed her to spend time out of their home. Otherwise, she 'might not have left her room at all'.

For the last year, based on a medical certificate issued by the municipal health center, she was granted psychotherapy given by a cognitive therapist who had additional education in trauma awareness. She considered the latter an essential factor: a therapist lacking it 'could not have helped her'. Attending therapy had 'not been easy' because she still had 'difficulties discussing certain issues in a close relationship'. It was more difficult to discuss sensitive issues with someone one saw frequently. Regardless, she felt that she had undoubtedly been in need of psychotherapy. While she had processed her ACEs quite a lot on her own, she considered therapy suitable for resolving practical issues caused by ACEs. Although she had processed some issues in her mind, not all observations had yet been put into practice (this is often referred to as 'psychedelic integration' [16]). Also, 'not everything could be solved on one's own'. A therapeutic alliance helped to improve self-esteem, and a professional could provide 'the perspective of a professional'. According to her, psychotherapy would likely have been too exhausting during the most severe period of depression. However, she considered that it should have been organized

[16]: Aixalà 2022

a year or two earlier by the student healthcare system. When asked to compare the effects of therapy and the mushrooms, she speculated that the mushrooms had greatly accelerated her progress and allowed for independent processing of ACEs prior to the initiation of therapy.

Considering the mushroom experiences of her first boyfriend, she commented that 'a child always wants to believe in the goodness of one's parents'. During their relationship, the boyfriend had not been able to give up this belief. She commented that 'singular insights only rarely produce feasible long-term outcomes' and pointed to the necessity of 'acknowledging the faults' of one's parents.

The mushrooms had not been a 'swift solution' but had played a major role in the resolution of her depression. The treatment took approximately two years and included approximately four lower-dose sessions and three higher-dose sessions with psilocybin. She described how psilocybin had enabled her to see that the root of her depression had been her adverse childhood experiences. Comparisons of family backgrounds with her fellow students were also important in realizing this.

It was 'difficult to put in words how the mushrooms had helped, but perhaps the essence was that during bad times, they could show the beauty of life, and give one a direction'. She cited another person who said that whenever a person needed guidance in their life, they could take mushrooms to show them the right way. She considered this 'a good rule of thumb'. Recently, she had no longer felt the need for such guidance, nor would she have had the required free time for preparations. Earlier, however, the mushrooms had produced an 'enormous improvement'. While they 'had not solved all the issues', they had 'allowed her mind to step across the threshold'. The sessions always produced new issues to process, and she currently did not feel the need for, or have any interest in processing additional issues.

7.3 Discussion

In comparison to the two other case studies about psilocybin by the author, in the present case, depression was resolved more easily. The young woman resided in a relatively supportive environment since the beginning of her psychedelic use. She had no experience with psychedelics other than psilocybin. She saw no reason to use psychedelics again. Cannabis use had also ceased a year before. Only a few unsupervised sessions were necessary to resolve her depression.

In the case of a middle-aged woman attending small-group therapy for treatment-resistant depression, the patient was almost two decades older, had a more severe history of traumatization, and had been suicidal [12]. While her environment was relatively supportive, the resolution of her symptoms required group support and a higher number of high-dose psilocybin sessions, which were also quite demanding for her.

[12]: Turkia 2022 DOI

In the case of a young man who self-treated his depression with psilocybin and LSD, the patient had a more severe history of trauma and resided in a constantly retraumatizing environment [2]. Based on this case, it was suggested that psychedelics could be conceptualized as a tool for people who have been chronically anxious and depressed since early childhood

[2]: Turkia 2022 DOI

to understand ordinary states of mind (e.g., calmness, hopefulness, relaxation, and joy). The young woman in the present case referred to the same concept, saying that psilocybin allowed her to feel 'normal': happy, hopeful, and interested in life.

In the two previous cases, traumatization resulted from aggression and boundary violations. In contrast, in the present case, traumatization resulted from deprivation of basic needs. While the resulting symptoms may not fulfill the official criteria for C-PTSD, the required treatment approach is very similar.

In comparison with the case presented by Lyons, the present case appeared quite similar [3]. In both cases, the depression gradually eased over the course of two years. The case featured very frequent non-psychedelic doses. In contrast, in the present case, the dosing was higher and the number of sessions was lower. Similar results were achieved regardless of the dosing strategy. No adverse events were noted in either case, supporting the concept of unsupervised psilocybin use as relatively safe, similar to unsupervised use of alcohol.

[3]: Lyons 2022 URL

The role of psychedelics was to identify (reveal) the underlying causes of symptoms, allowing for real-world interventions to correct or resolve these issues. These actions included the setting of personal boundaries and the clarification of responsibilities between parents and children. The case thus indicated the role of psychedelics as a temporary, transitional tool. The actual resolution of symptoms depends on one's ability to impose the necessary changes in the real world.

The case also demonstrates a breakdown in societal communality: the children lived practically alone for years without anyone noticing or interfering. It may also illustrate the breakdown of public mental health care: for years, it offered her 'nothing'. Emotional traumas were considered 'out of scope' of psychiatric care. On the societal level, it appeared that reliance on the initially (in the 1980s) somewhat functional public health care system led to an over-reliance on it and a breakup of communal support structures. A later, gradual deterioration of public mental health care since the 1990s led to a situation in which neither a functional mental health care system nor supportive communal structures existed. However, most people had been conditioned to believe in and rely on 'professionals' [17]. When such professionals were either unavailable or unable to solve patients' issues, most patients appeared unable to act on their own and were instead rendered helpless. As a solution, Illich suggested a partial 'deprofessionalization of medicine' of which the present case may be considered an example.

[17]: Illich 2011

Illich noted that medicine 'does for health what education does for learning: it converts a good that people might autonomously cultivate into a scarce commodity only accessible through an institution that monopolizes its distribution' [18]. In other words, it may have promoted 'learned helplessness', which is considered a common feature of depression. Lysaker et al. noted that recovery from mental illness involved recapturing a sense of agency [19]. In this sense, weakening the sense of personal agency may promote depression.

[18]: Shullenberger 2022 URL

[19]: Lysaker et al. 2012 DOI

With the exception of the trauma-informed psychotherapy received years later, the described mental health care system appeared hollow. When

adequate health services are not provided, it would appear reasonable to allow patients to resort to self-treatment with efficacious methods such as the one presented in this case study. Regardless of the chosen point of view, whether it is related to health, employment, or financial aspects, early self-treatment of mental health issues is in everyone's best interests.

According to a statement given in 2001 by Herbert Schaepe, Secretary of the Board of the United Nations International Narcotics Control Board (INCB), psilocybin-containing plants were not controlled under the 1971 United Nations Convention on Psychotropic Substances [20, 21]. Schaepe stated that 'preparations made from these plants are not under international control and, therefore, not subject to any of the articles of the 1971 Convention'. Therefore, as these substances are under domestic law, adopting the presented kind of self-treatment would be straightforward.

[20]: Schaepe 2001 URL
[21]: Schaepe 2001 URL

Internationally, psilocybin mushrooms have been legal at least in Brazil and Jamaica and either decriminalized or illegal but unenforced in some other countries. In the United States, Oregon passed statewide legislation decriminalizing magic mushrooms in 2020 [22]. By the end of 2022, San Francisco and approximately twelve other US cities had either decriminalized or assigned the lowest level of law enforcement priority to psilocybin mushrooms. In the Czech Republic, drug possession for personal use in small amounts has been decriminalized since 1990 [23]. A similar model was adopted in Spain in 1992 [24]. Portugal, adopting an approach focused on public health rather than public-order priorities, decriminalized the public and private use, acquisition, and possession of all drugs in 2000 [25]. In the Netherlands, psilocybin truffles have been legal [22, 26]. In Austria, suspension of prosecution for personal use of small amounts is possible [27]. In Finland, according to a precedent issued by the Supreme Court of Finland in 2017, psilocybin has been considered comparable to cannabis [28].

[22]: Schwarz-Plaschg 2022 DOI

[23]: Belackova et al. 2018 DOI
[24]: Quintas et al. 2017 DOI

[25]: Rêgo et al. 2021 DOI
[22]: Schwarz-Plaschg 2022 DOI
[26]: Coordination Centre for the Assessment and Monitoring of New Drugs 2000 URL
[27]: European Monitoring Centre for Drugs and Drug Addiction 2014 URL
[28]: Supreme Court of Finland / Korkein oikeus 2017 URL

As illustrated by the present case, the principles of the treatment were relatively simple and easy to follow. The requirements for a successful resolution of the condition were: 1. physical and emotional distancing from the traumatizing environment to a safer environment, to prevent retraumatization and allow for a wider perspective on one's issues; 2. comparisons with the experiences of others who had lived in a non-traumatizing environment, to allow for an understanding of causal relationships; an understanding of what was missing, so that corrective emotional experiences can later be pursued; 3. psilocybin-facilitated experiences of positive states of mind (happiness, joy, calmness); access to dissociated memories, to expand the space of known states of mind, allowing them to be pursued later without psychedelics; expression of previously suppressed feelings, and their interpersonal validation; 4. time to put the gained insights into practice, preferably in a relationship with another person who has experience with similar issues.

7.4 Conclusions

The findings align with those of previous case studies, suggesting that psilocybin is feasible for unsupervised self-treatment of major depressive

disorder. A reasonable expectation for resolution of a relatively uncomplicated case of major depression, such as the one presented in this study, is a treatment period of approximately two years with psilocybin, and an additional period for real-world application of the insights gained with psilocybin. The end result depends largely on external, environmental factors such as the quality of human interactions, and the supportiveness and coherence of the local community. From a healthcare perspective, the self-treatment approach would likely enable significant improvements in both treatment efficacy and cost effectiveness, as well as reduce the need for health care personnel.

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8 Ayahuasca in the treatment of bipolar disorder with psychotic features

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[1]: Turkia 2022 DOI

Ayahuasca is a plant-based brew of indigenous Amazonian origin. It has psychedelic, anti-inflammatory, neuroprotective, cytotoxic, and anti-parasitic effects, which are primarily due to monoamine oxidase inhibitors (MAOIs) and N,N-dimethyltryptamine (DMT). This retrospective case study describes the case of a woman in her late thirties with complex trauma due to severe, years-long sexual abuse in early childhood, resulting in a decades-long chronic condition involving suicidality. She was diagnosed with bipolar disorder and borderline personality disorder, but refused to accept either of them. She presented with delusional parasitosis and deep dissociation. Despite being severely psychotic in private, she appeared high-functioning in public, hiding most of her symptoms.

In her mid-thirties, she participated in an ayahuasca ceremony in a legal setting. It resolved her suicidality, eliminated her social isolation, and reduced her shame related to her early trauma. Nine more ceremonies alleviated her distress further. Her abuser also participated in an ayahuasca ceremony and confirmed her memories of childhood abuse.

The first interview was conducted 1.5 years after her first ceremony, and a follow-up interview 2.5 years later. She had experienced sixteen additional ceremonies, recognized the validity of her bipolar disorder diagnosis, and believed her early trauma to be its sole cause. Her core trauma remained partially unresolved, but her dissociative symptoms continued to decrease. She had observed several other instances of psychosis and bipolar disorder in which ayahuasca had resulted in positive effects. This case study contributes to a better understanding of the use of ayahuasca in bipolar disorder and severe traumatization. It also reviews the current state-of-the-art in the treatment of bipolar disorder using low-dose ayahuasca, and a case in which bipolar disorder was resolved with LSD.

8.1 Introduction

Documented examples of the treatment of psychoses and bipolar disorder with psychedelics are currently rare. A recent study by the author featured a teenager with complex post-traumatic stress disorder (C-PTSD), genetic predisposition to schizophrenia, psychosis triggered by cannabis use, and acute suicidality [1]. He successfully resolved acute suicidality with a single unsupervised session with 100–200 µg of LSD carried out alone at home. Subsequently, he resolved his C-PTSD with five more similar LSD sessions, and a few months of almost daily low-dose (psycholytic) N,N-dimethyltryptamine (DMT) sessions. While some residual auditory hallucinations remained, the teenager interpreted them as representations of unprocessed adverse childhood experiences (ACEs), and considered the information contained in these representations helpful in recognizing

the remaining unprocessed material. After one year of such unsupervised self-treatment, he had acquired the capability to study and work.

The article also featured a general discussion about the role of self-treatment and harm reduction policies, the safety of LSD, a proposed mechanism of action of psychedelics in healing C-PTSD, comparisons of various models of psychedelic therapy, and examples of successful treatment of severely psychotic children with LSD and psilocybin in the 1960s and 1970s [1].

[1]: Turkia 2022 DOI

According to the article, the primary 'mechanism of action' of psychedelic therapy was to revive or bring back to life repressed or dissociated traumatic events. These events were not only 'remembered' as cognitive memories but relived as embodied experiences, with their original, associated physical feelings (another interpretation could be that psychedelics acted as 'anti-dissociatives'). When these unresolved traumas originated at a very young age, they could present themselves as psychotic symptoms. A psychotic state could be understood as a partial regression into the conceptual framework of the age of the original trauma. The conceptual framework of that age could consist of undeveloped and vague concepts, including vague concepts of time and causality, unsuitable for navigating the adult world.

It was also proposed that distorted, psychotic ideas could simply result from learning the features of one's childhood environment, which was too different from the other environments in which one later tried to apply these learned models. These 'biased' models could not produce reliable predictions, i.e., could not enable correct reasoning about the behaviors of other people and the features of one's current living environment. If the magnitude of these prediction errors was high, the condition of a person could have been deemed psychotic, whereas errors of lesser magnitude could have been labeled personality disorders or, say, 'being a difficult person'.

The current case bears similarities to the above case featuring the teenager, but the outcome was achieved with ayahuasca, an Amazonian psychedelic plant-based brew, administered in a group setting [2–7]. The effects of ayahuasca are considered to be mostly due to monoamine oxidase inhibitors (MAOIs) harmine (originally known as 'telepathine'), harmaline, tetrahydroharmine, and other harmala alkaloids, as well as DMT [8, 9]. The effects of ayahuasca are not limited to psychedelic effects but include, for example, anti-inflammatory, neuroprotective, cytotoxic, and anti-parasitic effects [10–14]. In people with dissociative disorders, it appears to exert an 'anti-dissociative' effect.

[2]: Frecska et al. 2016 DOI
[3]: dos Santos et al. 2016 DOI
[4]: dos Santos et al. 2017 DOI
[5]: Palhano-Fontes et al. 2018 DOI
[6]: Hamill et al. 2019 DOI
[7]: Wolff 2020
[8]: Kaasik et al. 2020 DOI
[9]: Durante et al. 2021 URL DOI
[10]: Santos et al. 2022 DOI
[11]: Flanagan et al. 2018 DOI
[12]: Katchborian-Neto et al. 2020 DOI
[13]: Simão et al. 2020 DOI
[14]: Katchborian-Neto et al. 2022 DOI

Concerning the physiological safety of ayahuasca, coadministration with SSRIs, some psychedelic tryptamines (5-MeO-xxT, such as 5-MeO-DMT [15]), amphetamines, MDMA [16], cocaine [17], tramadol, and dextromethorphan (DXM) is considered dangerous [18]. Coadministration with alcohol and methoxetamine (MXE) is considered unsafe [18]. Caution is advised in combination with cannabis, mescaline, substituted amphetamines (DOx), substituted phenethylamines (NBOM), psychedelic phenethylamines (2C-x, 2C-T-x), ketamine, and opioids [18]. Coadministration of DMT with lithium may cause seizures [19].

[15]: Reckweg et al. 2022 DOI
[16]: Sottile et al. 2022 DOI
[17]: Simon et al. 2016 DOI
[18]: Tripsit.me 2022 URL
[18]: Tripsit.me 2022 URL
[18]: Tripsit.me 2022 URL
[19]: Nayak et al. 2021 DOI

In practice, people using SSRIs have attended ayahuasca ceremonies without adverse consequences. Ruffell noted that there wasn't a single known case of serotonin toxicity recorded in the literature [20]. Recently, Malcolm and Thomas have reviewed the serotonin toxicity of serotonergic psychedelics in detail [21]. They noted that little information is available on the circumstances of severe toxicities, but ayahuasca by itself is unlikely to pose a high risk of serotonin toxicity, and its propensity to induce vomiting may also limit the ability to consume large quantities. Also, psilocybin and LSD appear to be relatively safe in combination with ayahuasca. Henríquez-Hernández et al. recently discussed general aspects of toxicology of psychedelics [22].

[20]: Ruffell 2022 URL

[21]: Malcolm et al. 2021 DOI

[22]: Henriquez-Hernández et al. 2023 DOI

A systematic review by dos Santos et al. found three case series concerning members of the Brazilian syncretic ayahuasca church União do Vegetal (UdV) and two case reports describing psychotic episodes associated with ayahuasca intake [4]. The overall incidence of psychotic episodes in the UdV context was estimated to be less than 0.1% (0.052–0.096%), and cannabis use could not be excluded as a contributing factor. They noted that the incidence of psychotic episodes appeared rare in both ritual and recreational/uncontrolled settings. An European case series of presentations to emergency departments dealing with acute recreational drug and novel psychoactive substance toxicity (n=5529) did not mention ayahuasca [23].

[4]: dos Santos et al. 2017 DOI

[23]: Vallersnes et al. 2016 DOI

The use of ayahuasca has spread internationally in the 2000s [24, 25]. It is typically used in ritualized group settings, i.e., 'ceremonies', in which trained psychedelic guides direct participants' experiences by singing [1, 26, 27]. In Western societies, ceremonies typically happen overnight during weekends, beginning on Friday evening and ending on Sunday morning. Participants usually present with treatment-resistant psychiatric conditions such as treatment-resistant depression, post-traumatic stress disorder (PTSD), and complex post-traumatic stress disorder (C-PTSD), and they have exhausted other, official options for treatment. Usually, people with psychotic and bipolar conditions are excluded, primarily due to a lack of sufficient resources for follow-up, and increased legal risks for the organizers. In the present case, however, the psychotic patient attended tens of ceremonies without complications.

[24]: Labate et al. 2011
[25]: Labate et al. 2014 DOI

[1]: Turkia 2022 DOI
[26]: Beyer 2009 URL
[27]: Mori 2009 URL

In many cases, ayahuasca ceremonies organized elsewhere still follow various Amazonian indigenous traditions, most of which remain either sparsely documented or undocumented in the scientific literature. One documented example of such a tradition is the Shipibo tradition [28], although in Europe, ceremonies adhering to this tradition have appeared relatively rare.

[28]: Gonzalez et al. 2021 DOI

O'Shaughnessy and Berlowitz studied 'plant diet' practices of Peruvian Amazonian medicine [29]. Graham et al. investigated the phenomenology of listening to 'icaros', or medicine songs, during an ayahuasca ceremony [30]. Callon et al. discussed ayahuasca ceremony leaders' perspectives on preparation and integration practices for participants [31]. Sapoznikow et al. noted that cross-cultural ceremonial use may have advantages relative to psychonautic (individual) use [32]. Kaasik described ayahuasca ceremony culture in Estonia [33], and analyzed the chemical composition of traditional and analog ayahuasca [8]. Byrska et al. noted that the chemical composition of ayahuasca seized in Poland varied [34]. Pontual

[29]: O'Shaughnessy et al. 2021 DOI

[30]: Graham et al. 2022 DOI
[31]: Callon et al. 2021 DOI

[32]: Sapoznikow et al. 2019 DOI
[33]: Kaasik et al. 2020 DOI
[8]: Kaasik et al. 2020 DOI
[34]: Byrska et al. 2022 DOI

et al. studied the importance of non-pharmacological factors such as the setting to induce or promote mystical experiences or challenging experiences among ayahuasca users in neoshamanic and syncretic church contexts in the Netherlands and Brazil [35].

[35]: Deus Pontual et al. 2022 DOI

Dobkin de Rios et al. described how the União do Vegetal (UdV), a Brazilian syncretic church, was granted a permission for the ritual and religious use of ayahuasca in the US Supreme Court [36]. Their book also discusses the Santo Daime church of Brazil, the traditional use of ayahuasca by indigenous peoples, 'neoshamanism', and the globalization of ayahuasca. Groisman et al. described the corresponding legal process concerning the Santo Daime church in the US Supreme Court [37]. Groisman et al. analyzed the healing, neurophenomenological, and therapeutic aspects of the ritual and religious use of ayahuasca in the Santo Daime church [38].

[36]: Dobkin de Rios et al. 2008

[37]: Groisman et al. 2007 URL

[38]: Groisman et al. 1996 URL

A book edited by Roberts discussed ceremonial use of psychedelics more generally [39]. Alcantarilla et al. presented a case of psychosis following the use of ayahuasca [40]; Neyra-Ontaneda presented another case [41]. Williams et al. discussed indigenous ontologies [42]. Devenot et al. discussed an open source alternative to psychedelic capitalism [43]. Fotiou warned against idealizing South American indigenous tribes [44]. Somé discussed the treatment of first psychosis in an indigenous African context, emphasizing the importance of rituals [45].

[39]: Roberts 2020
[40]: Alcantarilla et al. 2022 DOI
[41]: Neyra-Ontaneda 2017 DOI
[42]: Williams et al. 2022 DOI
[43]: Devenot et al. 2022 DOI
[44]: Fotiou 2016 DOI
[45]: Somé 1997

James et al. provided a narrative review about the current status of medical ayahuasca research [46]. A recent handbook of medical hallucinogens edited by Grob et al. covered a wide range of aspects related to psychedelic therapy [47]. Devenot et al. examined how therapeutic frameworks interact with the psychedelic substance in ways that can rapidly reshape participants' identity and sense of self [48]. Friesen discussed historical entanglements and contemporary contrasts between psychosis research and psychedelic therapy research [49]. Nemu discussed biases and prejudices in the academic study of ayahuasca [50]. Maia et al. recently reviewed ayahuasca's therapeutic potential [51]. Perkins et al. presented the results of a naturalistic longitudinal study concerning changes in mental health, wellbeing, and personality following ayahuasca consumption, concluding that ayahuasca consumption in naïve participants may precipitate wide-ranging improvements in mental health, relationships, personality structure, and alcohol use [52]. Perkins et al. also discussed psychotherapeutic and neurobiological processes associated with ayahuasca [53]. Bouso et al. reported survey results on adverse effects [54]. Mastinu et al. reviewed the ethnobotanical uses of the best-known psychedelic plants and the pharmacological mechanisms of the main active ingredients they contained [55]. The pharmacopoeia of the Huni Kuin tribe of Brazil featured over a hundred plant medicines [56].

[46]: James et al. 2022 DOI

[47]: Grob et al. 2021

[48]: Devenot et al. 2022 DOI

[49]: Friesen 2022 DOI
[50]: Nemu 2019 URL
[51]: Maia et al. 2023 DOI

[52]: Perkins et al. 2022 DOI

[53]: Perkins et al. 2023 DOI
[54]: Bouso et al. 2022 DOI

[55]: Mastinu et al. 2023 DOI

[56]: Muru et al. 2019 URL

Ona et al. described the essential features and benefits of traditional practices and the importance of incorporating them into a 'Global Mental Health' movement [57]. Group therapy and communal aspects were discussed by Hartogsohn [58, 59], Gonzalez et al. [28], and Meckel Fischer [60, 61]. Oehen and Gasser described the treatment of patients with C-PTSD in Switzerland since 2014 [62]. General aspects of the use of psychedelics in psychotherapy have been discussed in a recent

[57]: Ona et al. 2021 DOI
[58]: Hartogsohn 2021 DOI
[59]: Hartogsohn 2022 DOI
[28]: Gonzalez et al. 2021 DOI
[60]: Meckel Fischer 2015
[61]: Sessa et al. 2015 DOI
[62]: Oehen et al. 2022 DOI

book edited by Read et al. [63]. Danforth discussed focusing-oriented psychotherapy as a supplement to preparation for psychedelic therapy [64]. Dolezal et al. suggested that shame-sensitive practice is essential for the trauma-informed approach [65, 66].

Bosch et al. reviewed psychedelics in the treatment of bipolar depression, commenting that the integration of these promising and fascinating substances into contemporary biomedicine seems feasible and even desirable [67]. Szmulewicz et al. reported a case of mania after ayahuasca consumption in a man with bipolar disorder [68]; Oliveira et al. reported a similar case [69]. Wrobel et al. surveyed childhood trauma and depressive symptoms in bipolar disorder, noting that feelings of worthlessness emerged as a key symptom among participants with—but not without—a history of childhood trauma [70]. Janikian investigated the potential and risks of psychedelics in bipolar disorder [71]. Blackwell presented 'bipolar breathwork' method: an adaptation of holotropic breathwork developed for bipolar patients [72–74]. Young et al. discussed the neurobiology of bipolar disorder [75]. Healy reviewed the history of bipolar disorder [76]. A preprint by McCutcheon et al. presented a new, receptor affinity-based classification system for antipsychotic medication [77].

An article by Fusar-Poli et al., co-written by experts by experience and academics, reviewed the lived experience of psychosis using a bottom-up method (deriving a theory from ethnographic material) rather than a top-down method (trying to overlay a theory onto data) [78]. Utilizing the same method, Estradé et al. reviewed the lived experiences of family members and carers of people with psychosis [79]. Sips also discussed the phenomenology and the lived experience of psychosis [80]. A book edited by Moskowitz et al. discussed the relationship between psychosis, trauma, and dissociation [81]. A book edited by Dorahy et al. brought together current thinking and conceptualizations on dissociation and the dissociative disorders [82]. A book edited by Vermetten et al. discussed the neurobiology and treatment of traumatic dissociation [83]; Vermetten et al. also studied MDMA-assisted psychotherapy for PTSD [84]. Beutler et al. reviewed the knowledge on the relationship between trauma-related dissociation and the autonomic nervous system [85]. Trauma and dissociation have also been discussed by van der Hart [86]. Ratcliffe discussed hallucinations, trauma, and trust [87]. A book edited by Woods et al. discussed voices in psychosis from an interdisciplinary perspective [88]. A book by Lanius et al. discussed the impact of early life trauma on health and disease, considering it to be a 'hidden epidemic' [89]. Ritunnano et al. noted that delusions have and give meaning [90].

Bourgeois et al. noted that sexually abused youth were ten times more at risk of receiving a diagnosis of psychotic disorder than youth from the general population [91]. Rhodes et al. discussed the relationship between psychosis and trauma, including the relationship between psychosis and child sexual abuse [92, 93]; however, the cases appeared to differ significantly from the present case. McLaren described methods for (self-)treatment of the consequences of childhood sexual abuse using the 'spiritual' terminology [94]. Maté discussed 'spiritual' roots of trauma, considering that the cause of any mental disorder was (transgenerational) trauma [95, 96]. Youngman et al. discussed modeling complex adaptive systems in the humanities [97]; in this context, Turkia previously presented a computational model of emotions [98]. Dourron et al. pre-

[63]: Read et al. 2021

[64]: Danforth 2009 URL
[65]: Dolezal et al. 2022 DOI
[66]: Dolezal 2022 DOI

[67]: Bosch et al. 2022 DOI
[68]: Szmulewicz et al. 2015 DOI
[69]: Oliveira et al. 2018 DOI

[70]: Wrobel et al. 2023 DOI
[71]: Janikian 2020 URL

[72]: Blackwell 2011 URL
[73]: Bray 2018 URL DOI
[74]: Grof 2010
[75]: Young et al. 2020 DOI
[76]: Healy 2008
[77]: McCutcheon et al. 2023 DOI

[78]: Fusar-Poli et al. 2022 DOI

[79]: Estradé et al. 2023 DOI
[80]: Sips 2022 URL

[81]: Moskowitz et al. 2019

[82]: Dorahy et al. 2023
[83]: Vermetten et al. 2007
[84]: Vermetten et al. 2019 DOI

[85]: Beutler et al. 2022 DOI
[86]: Hart 2021 DOI
[87]: Ratcliffe 2017

[88]: Woods et al. 2022
[89]: Lanius et al. 2010
[90]: Ritunnano et al. 2021 DOI

[91]: Bourgeois et al. 2018 DOI

[92]: Rhodes et al. 2018 DOI
[93]: Rhodes 2022 DOI

[94]: McLaren 1997

[95]: Maté 2019
[96]: Maté 2018
[97]: Youngman et al. 2014
[98]: Turkia 2009 URL DOI

sented a novel theory, the self-entropic broadening theory, examining how psychedelics could be therapeutic while mimicking symptoms of psychosis [99].

Kettner et al. noted that intersubjective experience during psychedelic group sessions predicted enduring changes in psychological wellbeing and social connectedness [100]. Brennan et al. presented a qualitative exploration of relational ethical challenges and practices in psychedelic healing [101]. Aixalà wrote about post-session psychedelic integration in detail [102]. Hendricks proposed awe as a putative mechanism of action [103]. Scull noted that 'the limitations of the psychiatric enterprise to date rest in part on the depths of our ignorance about the etiology of mental disturbances' [104]; the present case study also aims at enlightening etiological aspects.

Schwartz described the Internal Family Systems (IFS) therapy approach [105, 106]. Yugler discussed psychedelics in the context of IFS [107], noting that 'parts' (subpersonalities, alters) corresponded to 'entities', 'beings', or 'spirits' in the psychedelic context. Hallucinatory voices originated from the parts/entities. In addition to parts, there was also an unchanging, boundless source of energy called 'the Self' whose energy was characterized by compassion, curiosity, calm, clarity, courage, connectedness, confidence, and creativity (8 C's). In the end, any therapeutic outcome was due to the energy of the Self, not to a therapist or substance. Everyone, regardless of the severity of their past trauma, had the ability to heal. Yugler also described the concepts of 'unburdening', 'polarization', and 'blending'. IFS was a method or 'toolkit' for 'navigating' any experiences, including psychedelic ones.

Wolynn reviewed current research into the epigenetic inheritance of trauma, i.e., the evidence on the genetic transgenerational inheritance of trauma [108]. Research on mice indicated that trauma triggers could be epigenetically inherited by the offspring [109, 110]. Levine, the inventor of the somatic experiencing method [111, 112], provided an introductory overview of the role of memory in trauma, including the long history of the role of the phylogenetically more ancient structures of the brain in trauma [113].

[99]: Dourron et al. 2022 DOI

[100]: Kettner et al. 2021 DOI

[101]: Brennan et al. 2021 DOI
[102]: Aixalà 2022
[103]: Hendricks 2018 DOI

[104]: Scull 2022

[105]: Schwartz et al. 2020
[106]: Schwartz 2021
[107]: Yugler 2021 URL

[108]: Wolynn 2016
[109]: Dias et al. 2013 DOI
[110]: Morin et al. 2021 DOI
[111]: Kuhfuß et al. 2021 DOI
[112]: Winblad et al. 2018 DOI

[113]: Levine 2015

8.1.1 The low-dose maintenance treatment method of Mudge

Mudge has developed a method for the treatment of bipolar disorder with ayahuasca, and has utilized it himself for his own bipolar disorder for years [71, 114–116]. Since his teenage years, describing himself as a 'compliant patient in the mainstream psychiatry', he unsuccessfully tried seventeen different pharmaceutical medications. He said that their adverse effects were downplayed or ignored. In his youth, SSRIs had triggered mania which was ignored by his psychiatrist who doubled of the dose. This led to full-blown manic episode with psychotic features. He was hospitalized and injected with antipsychotics. In the following years, he was administered seventeen different medications without results. Eventually, after experiencing 'massive' adverse effects, he quit.

After finding ayahuasca around 2006, he had not used pharmaceutical drugs [117]. Initially, he used it with psychedelic doses in ceremonies a few months apart. However, the effect did not last for months; therefore,

[71]: Janikian 2020 URL
[114]: Mudge 2016 URL
[115]: Saiardi et al. 2018 DOI
[116]: Mudge 2022 URL

[117]: Buller et al. 2021 URL

he invented a more regular low-dose self-treatment practice. He initiated a research program, and as a part of his PhD studies, he tested various ayahuasca preparations on himself.

All in all, Mudge has 15 years of experience on the use of ayahuasca and on brewing it himself in various formulations, using different varieties of the ayahuasca vine, resulting in different ratios of the MAOIs harmine, harmaline, and tetrahydroharmine. Different ratios produced different effects: stimulating, sedative, or balancing. He was currently analyzing 50 different varieties in a laboratory. Mudge had also received ceremony facilitator training in the contexts of Santo Daime, and various indigenous traditions including Huni Kuin [56], Shipibo [28], and Yawanawá [118, 119]. He was planning on creating a manual for guiding ceremonies for bipolar people.

[56]: Muru et al. 2019 URL
[28]: Gonzalez et al. 2021 DOI
[118]: Pérez-Gil 2001 DOI
[119]: Oikarinen 2020 URL

The main risk was that in bipolar people, psychedelics could induce mania, even psychotic mania. However, a few cases did not imply that all bipolar people should be excluded from the use of psychedelics (an overgeneralization). Also, adverse effects had often been exaggerated; some were due to taking ayahuasca four nights in a row and not sleeping, for example [117]. Mugde stated that the exclusion of bipolar people was not only illogical but also dangerous because bipolar people were highly suicidal. The 'do no harm' principle was applied illogically. By treating bipolar disorder as a contraindication, patients were given a message: 'We're just going to ignore you', depriving them of hope.

[117]: Buller et al. 2021 URL

Another consequence was that bipolar people were 'doing it anyway, in a messy way', for example, by lying in the screening for ceremonies and ending up in a wrong kind of ceremony for them, with a variety of ayahuasca which was not designed to have a balancing effect but, say, stimulating. Therefore, bipolar people should be included but their special needs taken into account. In addition to bipolar people, the exclusion issue also applied to schizophrenics. Mudge stated that 'doing nothing did not equal to doing no harm'; in effect, it implied avoidance of responsibility.

The fact that ethics committee had prevented Mudge from offering his medication to suicidal people in need, had led him to 'question the whole concept of ethics as defined by an institutional committee of experts, as opposed to peer ethics based on compassion'. Mudge did not see any logical, ethical reason for bipolar people not being allowed to help each other out. Also, who had the right to decide what risks they could take? Avoiding suicidality was more important than preventing mania. According to Mudge, no-one had the right to say they they could not try a possibly life-saving medicine. He added that 'psychedelics experts had taken on this patronizing attitude from psychiatrists'. Due to mainstreaming of psychedelics, there was no longer need to be overly cautious about appearances; instead, it was time to be more brave.

Mudge had been deeply involved with the Brazilian syncretic church Santo Daime [58], as well as with several indigenous tribes of the Amazonian area. He described himself as 'post-bipolar', mentioning that developing his method was complicated and challenging, but it had been 'incredibly beneficial' for him [120]. He concluded that due to its short binding time to 5-HT$_{2A}$ receptor, DMT did not induce mania in people

[58]: Hartogsohn 2021 DOI

[120]: Janikian et al. 2021 URL

with bipolar disorder, but instead acted as a mood enhancer/stabilizer. Tetrahydroharmine, in turn, provided a SSRI-like effect.

Mudge commented that he went 'seriously manic' on LSD or mescaline, and 'borderline manic in a funny way' on psilocybin [117]. With MDMA, he 'felt terrible afterwards'; ketamine appeared slightly better. With ayahuasca, it appeared that the balancing effect was due to the MAOIs; subsequently, he could 'get the psychedelic benefits in a balanced context'. Through ayahuasca, he had learned to recognize when he was about to escalate into mania, and could then stop the process in time. In other words, he had less 'self-denial'. He had also become more compassionate or aware of the adverse social consequences of manic episodes, i.e. harm to others close him; this motivated him to stop things that escalated mania. The increasing self-compassion, it had also reduced self-destructive behaviors and suicidality.

[117]: Buller et al. 2021 URL

In summary, self-awareness was the key. The irony was that it was the opposite of numbing oneself with pharmaceutical drugs. Numbing prevented access to trauma: 'the reason why bipolar people got depressed in the first place'. Interestingly, he commented that there was 'an epidemic of sexual trauma', particularly affecting women, and there was a large statistical correlation between sexual trauma and bipolar disorder. Mudge had a friend who had previously been given 65 different pharmaceutical drugs and 50 applications of electroconvulsive therapy without result. In the process, her sexual trauma had never been addressed. The trauma was eventually treated by a Shipibo woman in an ayahuasca ceremony. Currently, she was 'getting great results with ayahuasca'. Thus, psychosocial healing could happen with psychedelics that basically eliminated the underlying triggers. Diet and lifestyle (sleep habit) changes had also been resulted from the use of ayahuasca.

Based on qualitative interview data about 75 bipolar people who had consumed ayahuasca, Mudge acknowledged numerous cases of bipolar people becoming manic, but his detailed analysis indicated that many of these were false negative results, and that the majority of bipolar people had therapeutically positive experiences with ayahuasca [116]. Adverse events were due to either unsuitable mindsets and/or environments, or pharmaceutical differences resulting from differences in preparation methods.

[116]: Mudge 2022 URL

Mudge concluded that the crucial determining factor for people with bipolar disorder was the cooking technique, because cooking variations affected the ratios of the four major psychoactive ingredients. Also, it was essential that ayahuasca did not ferment, in order to avoid alcohol forming in it [120]. Alcohol triggered depressive episodes [117]. With these enhancements, adverse effects could be minimized or avoided.

[120]: Janikian et al. 2021 URL
[117]: Buller et al. 2021 URL

It was also critical to avoid using any other psychoactive agents at the same time, particularly cannabis/tetrahydrocannabinol (THC), tobacco (rapé) [121, 122], and even caffeine, chocolate, sports supplements, and incense. THC could overstimulate the dopaminergic system and induce paranoia and psychoses. The concurrent use of MAOIs amplified this effect of THC. This combination had been linked to four incidents of violence or homicide. Regardless, although a large part of the population attending ceremonies consume cannabis regularly, and many tribes and

[121]: Mori 2020 DOI
[122]: Narby et al. 2021

syncretic churches consume cannabis in ceremonies, such incidents are very rare and may only concern people with bipolar disorder.

Mudge's mother was a professor of neurobiology who specialized in bipolar disorder after her son was diagnosed with it. She found that mood swings corresponded to modulations in the frequency of the phosphoinositide turnover cycle in cortical neurons; as the cyclic process speeded up and slowed down, mood swung up and down [115]. Lithium and fluoxetine regulated the rate of phosphoinositide synthesis in neurons. 5-HT_{2A} receptor appeared to stimulate phosphoinositide hydrolysis [123, 124]. Ayahuasca likely also contained a counteracting component and thus modulated phosphoinositide synthesis in the same way that the combination of lithium and fluoxetine did, thus resulting in the previously mentioned mood-enhancing and stabilizing effect.

[115]: Saiardi et al. 2018 DOI

[123]: Rabin et al. 2002 DOI
[124]: Brito-da-Costa et al. 2020 DOI

Mudge mentioned that there was currently an unfounded 'community belief' functioning as a 'cultural taboo' that psychedelics and bipolar people were contraindicated. Mudge mentioned that due to bureaucracy and 'ethics approval' related obstacles, conducting clinical trials had proved impossible for him, and he had only been able to produce pre-clinical studies. In the meantime, five of his 75 interviewees had committed suicide. Mudge was 'not willing to wait fifteen years' before people could be treated. In terms of academia/community, Mudge felt having 'struggled against taboos, getting mixed responses'. Some conferences had appeared supportive, others 'just hadn't wanted to know': the subject was 'too controversial'. Mudge described that earlier, a professor of psychiatry, after reading his abstract, had commented: 'So, a bipolar person thinks that he's worked out a treatment for bipolar disorder by himself, and he thinks it's ayahuasca. Well, that sounds like a grandiose delusion, doesn't it?' Two years later, after hearing Mudge's presentation, the professor acknowledged Mudge's work as 'very progressive'.

[75]: Young et al. 2020 DOI
[125]: Ruffell et al. 2020 DOI
[126]: Ruffell et al. 2021 DOI

[127]: Standish 2019 URL

Young, a leading bipolar disorder expert in the UK [75], had recently become involved with ayahuasca research [125, 126]. There was also a project by Standish aimed at getting a standardized ayahuasca product approved by the FDA, produced from ayahuasca wine grown in Hawaii [127]; however, according to Mudge, their current recipe was likely unsuitable for bipolar disorder. There was also initial interest and 'unofficial encouragement' in the subject but no resources at the Multidisciplinary Association for Psychedelic Studies (MAPS). Yet, no individual or institution, outside the PhD supervisory panel, had yet officially backed Mudge's study. Mudge considered the current mainstream research practices 'playing a reductionist game'.

About the idea of using a synthetic product containing only DMT, or DMT and harmine, Mudge commented that a product without harmaline, tetrahydroharmine, and other components would be unlikely to provide the required balancing effect. Also, the ritualistic-ceremonial concept was central to him. However, acquiring a specific ratio of components would be easier. All in all, as a prescription option, even such a 'substandard' mass-producible synthetic product would be a significant improvement over the current situation, i.e., the use of antipsychotics. Also, initially, Mudge himself had only been able to acquire products that he now considered substandard.

The maintenance protocol consisted of 'microceremonies': taking a low dose of ayahuasca before going to sleep, in a self-organized, uninterrupted meditation ritual, held approximately once every one to two weeks, according to the need, i.e., depending on the intensity of depression. After such a ritual, the 'afterglow', or calming and uplifting effect, usually lasted for a week or two. With regard to dosing, the dose required for a balancing effect was significantly lower than that required for psychedelic effects. Mudge recommended taking 1/8 of the 'standard' dose (approximately a spoonful). According to Mudge, this maintenance treatment would likely need to be ongoing.

With regard to the indigenous roots of ayahuasca, Mudge pointed to the extreme poverty of the tribes, the lack of even clean drinking water, their cynicism about biopiracy by commercial companies (as happened with psilocybin in Mexico), and 'active government policies of genocide against indigenous populations' in some countries. On the other hand, bipolar people were also 'desperate and life-threatened', but Mudge 'did not see why there couldn't be a win-win situation if it was just done right, with ethics'.

There were a lot of controversial issues: a synthetic product would essentially be biopiracy, unless a large part of the profits were given to the indigenous people. There was also a conflict between for-profit companies possibly getting the medicine to market faster and universities possibly providing a non-profit product a decade or so later. An advantage of for-profit companies was that they didn't care about academic reputation or taboos. Over USD 200 billion was spent annually in the US on the treatment of bipolar disorder, the vast majority of which went to pharmaceutical companies and psychiatrists. Mudge commented that there were 'a lot of people profiting from my people's illness'.

Psychedelics startups were slightly separated from traditional pharmaceutical businesses, and, as an example, a hedge fund manager whose wife was bipolar had mentioned that maybe he could 'help out'. Mudge proposed an alternative model to the university-led and business-led models: founding a new church that would take into account the specific needs of bipolar people, which the Santo Daime church had not accommodated. The day before, he had received three calls from three suicidal friends.

8.1.2 Aspects of the present case

The dosing strategy presented by Mudge was non-psychedelic, intended for balancing the mood without accessing traumatic memories, and utilized without support at home in regular, self-organized 'microceremonies', depending on subjectively perceived need. This dosing might be called sub-psycholytic, somewhere between 'microdosing' and 'psycholytic' [128]. The ayahuasca was made according to a special recipe developed for the treatment of bipolar disorder.

[128]: Passie et al. 2022 DOI

In contrast, in the present case, the dosing was psychedelic, intended for accessing the traumatic memories, and utilized in a group ceremony context. The ayahuasca ceremonies were 'neoshamanic', i.e., not strictly adhering to any specific traditional lineage of the Amazonian area. The

patient always attended the same group, organized by the same non-indigenous facilitator. In total, she participated in 26 ceremonies over the course of four years. There was one nine-month break between ceremonies, but on average, she attended a ceremony once every two months. The ayahuasca was always brewed by the same person but it was not specifically prepared for bipolar patients and would likely have been considered substandard by Mudge's standards. There was no maintenance treatment with ayahuasca between the ceremonies. The described ceremonies were arranged *in a legal setting*; further details are omitted for the purposes of anonymization.

Information was acquired from a 20-minute audio recording produced by the interviewee in 2019, and two semi-structured retrospective interviews with a total duration of approximately three hours conducted in 2020. Diagnoses and prescriptions were confirmed from medical record excerpts provided by the patient. In general, with the exception of the last two years, her contact with the psychiatric healthcare system had been sporadic and shallow. Thorough follow-up discussions and a review of all data were conducted in 2023.

The interviewee favored the term 'spiritual'. Pollan proposed 'egoistic' as the antonym of 'spiritual' [129]. In this presentation, the 'spiritual roots' of trauma roughly correspond to 'having to do with the loss of individual agency'. Similarly, the term 'awakening' refers to remembering trauma memories, or their re-emergence from the subconscious. Assumed to re-emerge in their original, age-specific form, such memories might appear incomprehensible.

[129]: Pollan 2018

One intention of this article is the facilitation of a shared conceptual framework, i.e., a preliminary fusion of several paradigms. Concepts were adopted from IFS [105], the object relations paradigm [130, 131], the paradigm of psychosis as a 'spiritual awakening' [72, 132], the Open Dialogue approach [133, 134], and various indigenous ayahuasca traditions.

[105]: Schwartz et al. 2020
[130]: Tähkä 2006 DOI
[131]: Tähkä 1993
[72]: Blackwell 2011 URL
[132]: Grof 1990
[133]: Mosse et al. 2023 DOI
[134]: Bergström et al. 2022 DOI

The present case description is not to be taken as a treatment guideline or a recommendation. Even though the described methods produced a feasible result for this person and in another case briefly reviewed in the discussion section, a degree of unpredictability lies in the nature of psychedelics, and the same approaches might not produce the same results in others with a different background and characteristics. The intention of the present study is to open new perspectives and lines of research on C-PTSD, psychosis, and bipolar disorder. The role of case studies in the context of the current paradigm, evidence-based medicine (EBM), has been discussed in the author's previous article [1].

[1]: Turkia 2022 DOI

8.2 Case description

At the time of the interview, the female interviewee was in her late thirties. Since early childhood, she had been exposed to continuing, severe sexual abuse by an older male sibling from the mother's previous marriage. The boy did not get along with his stepfather (the girl's father). The abuse had been frequent and ongoing for several years. As her life had felt unbearable, she had 'invented a wonderful world' which she 'blended

with this one' in order to be able 'to breathe, to escape an unescapable situation, to gain some control', i.e., agency.

Her parents had been either unaware of or unresponsive to the abuse. She described that she loved her parents and wanted to make them happy by being happy herself. In her words, 'I understood that being happy was the greatest gift you could give to the people you love. So I took it as my duty. But I couldn't be happy if I lived in this world, so I built another one, or chose to see it, and chose to disappear from this world every time the door to that tiny room would close and I knew what was coming next. I chose to love my brother and to forget everything for years. Although I never actually forgot.'

In her memory, the abuse had been ongoing. She could not say exactly when it had began but based on certain events, she timed its beginning at the age of five or six. She described that a child did not have a memory of life being any other way; a part of the child's mind assumed that such a life was normal. Yet there was another part that had the information that such abuse was not ok. These two parts were in conflict. According to her, for these reasons, early trauma was difficult to handle or treat, and resided at the root of all psychiatric diagnoses.

Her relationship to her parents was 'good'. She was always 'a good girl', behaving nicely and not causing problems. She was 'perfect at school and with friends'. Occasionally, however, her behavior rapidly changed, and she became impulsive and physically violent, yet she returned to normalcy just as rapidly. Her parents did not recognize the ongoing abuse. All through her childhood, they dismissed her symptoms as a sign of her having been 'spoiled'. She believed that her parents 'had not wanted to see; if they really would have wanted to see, they would have seen'. She described that as her environment did not 'see her', her mind adopted the same mechanism and applied it to herself. The part that had not been acknowledged, ie. 'seen', was 'split' as a separate part. This process of 'splitting' led to problems.

> *I was abused in one room. When my parents returned home, I had to pretend to be happy and act like a good girl. At school, I appeared to be a perfect student. But at night, my life was completely different from the daytime. This created a huge internal conflict: a split. One cannot process severe trauma as it is happening. The internal split was actually a survival mechanism.*

As a way to maintain a sense of control over her life, she secretly went to the roof of her house every day for years with the intention of jumping off, but she never followed through. Not jumping served as proof of her agency. She had no recollection of experiencing any pain. She had 'just wanted to die for no apparent reason'.

Dissociative symptoms started with intentional and conscious daydreaming as a form of escapism, but eventually transformed into an uncontrollable and unconscious automatic response. The child's visions of imaginary friends and mythical creatures, which were initially created to create a safe and controllable personal world, took on a life of their own and led to severe dissociation and derealization. She felt like she was not in the present, but she didn't know where she was.

She started to 'shift between worlds'. This shifting was accompanied by a physical sensation in her stomach. When she dissociated, she seemed to exist in multiple states of consciousness at the same time, partly in the present moment as if she were having an out-of-body experience, and partly in a dimension without time where she felt like she was simultaneously in the present, past, and future. There was also a dimension without causality, where her perceptions and actions seemed disconnected from each other.

She felt that everything she saw around her was 'created by her and also parts of her'. Boundaries between inner and outer dissolved into 'oneness'. When 'everything coexisted in timelessness', social interaction was difficult. Words could turn into units of time, or into 'souls who found their vibrational matches in their surroundings'. To 'bring herself back', she applied obsessive-compulsive methods: repetitive sounds and rituals, 'to keep her grounded before she got completely lost in the other worlds'.

When her parents finally found out about her habit, they closed all access to the rooftop. Subsequently, she began to feel the pain. She described that 'it broke my heart that I felt I was being taken even this control and freedom. Standing on the edge every day had been my secret. I felt like my choice of not jumping had made me a good girl, and after the lockdown, that choice was no longer mine'. Subsequently, she began sleepwalking, playing with knives and blades, cutting herself, and swallowing pharmaceuticals and detergents. Once she stood on a tramline when a tram was coming, but a neighbor pushed her away from the tracks. She remembered being pushed away, but not how she had ended up standing there.

Her suicidality originated from 'not being seen: likely the most common and influential trauma on the societal scale'. According to her, a lot of people actually did not want to live but remained largely unaware of this tendency. The lack of overt suicidality did not imply the absence of an unconscious wish to die. Such unwillingness was 'the biggest conflict one could have'. In an organism with a fundamental survival instinct, it sent a 'completely wrong signal'. A healthy individual fought to remain alive. An internally conflicted individual might have lost this objective.

In her case, the abuse had been 'more dramatic, and thus had more dramatic effects' but an 'unseen' hypersensitive child could become traumatized in the absence of dramatic events, through neglect alone. The underlying mechanism was the same: not being seen led to not being protected. It was interpreted as not being important enough to be protected, which led to low self-esteem and efforts to compensate by performing at school and work.

> *Every time a child is beaten by his parents, he gets the message that he is not worthy of not being beaten. If he goes the extra length, like many do, he will translate that into: I'm not worthy of being here, not worthy of being loved, not worthy of anything. I suffer, but it remains unseen and therefore unvalidated. The subconscious message is that I deserve that suffering because nobody saved me. The logical conclusion will naturally be that I'm not worthy of being here, and since being here brings only suffering, why should I be here?*

At the age of thirteen, she developed 'a firm irrational belief' that she had terminal cancer. Yearly health checks made her 'hysterical', yet when the results came back completely normal, it only strengthened her belief that her illness had become 'so much worse'. She believed that she knew the exact type and location of the tumor and was trying to prepare her mother for her death, praying that her mother would stop loving her in order to not be hurt by her death. In retrospect, she described that the belief had 'no grounds in reality' and that 'the fact that I was perfectly healthy all those years was in no way connected in my head to the possibility that I didn't have cancer'.

For seven years, she was convinced that she would die in a month at the latest. In her diary, she organized her funeral and wrote letters to her mother, telling how happy she had been during her life, asking her mother not to be sad. Her heart was breaking because of the pain her mother would feel. She cried 'every night without exception from 10 p.m. to 3 or 4 a.m.' She cried 'so hard she couldn't breathe' and begged God to forgive her for dying and causing so much pain for her mother.

Despite these issues, she was 'an A-grade student all the way, winning first place every year at every contest or competition'. She said that 'absolutely no-one knew' about her suicidality. A few times, she attempted suicide because she 'could not stand to look at all the suffering that was waiting in my near future because of this imaginary cancer'.

Around the age of 20, the belief about having cancer was replaced with a different belief: delusional parasitosis. She became convinced that inside her body were unique species of bugs that were multiplying faster and faster because her body was feeding them. She saw bugs all around her body: they were moving under the skin of her arms, on her head, and inside her brain. Describing her question as 'curiosity' unrelated to herself, she asked a medical doctor whether such a phenomenon was possible. The doctor 'explained to me why that couldn't happen, and I understood the explanation perfectly, but it made no difference: I knew the bugs were there. I was seeing and feeling them, and every time I looked in the mirror, I had to throw up due to disgust about the bugs'. She had always hated bugs and still did.

Psychosis could be due to trauma or extreme sensitivity. Her mind was hypersensitive, extremely flexible, and 'allowed to travel to very unusual places'. It 'lacked a kind of identity', i.e., *points of reference*. Hypersensitivity in itself was not a problem, but the inability to ground this hypersensitivity on anything ejected her 'into outer space'. Her mind 'flowed like a wave', yet when it attached to something, it became rigid 'in a nanosecond'. Everyday beliefs and opinions were formed gradually, but in psychosis, an impression instantly transformed into an unchangeable belief. The belief transformed into 'a black hole sucking everything in', and her whole life was subsequently subordinated to that belief.

> *For example, when I saw that bug near me, I immediately stated: 'It's from me'. I don't know why. It just happened. After that, any sensation confirmed that idea. If I felt itchy or saw a leaf moving in the wind, it was because of the bugs. My mind went to great lengths to fabricate stories to sustain the thought. I started creating.*

> *Creating is the essence of psychosis, and its connection to the spiritual realm. We create our reality and manifest externally what is inside us. Psychosis is an extreme example of creating your own reality: you shape everything around you to fit your beliefs. My mind got very imaginative. Every thought, every move, the way clothes fit on me, and how I felt after eating supported that belief. If there was a wrinkle in my pants, it was because there was a bug under the fabric. If I felt better or worse after eating, it was because the bugs liked or disliked that food.*
>
> *In retrospect, it is interesting to look back and see what a very playful mind was capable of inventing. It was like an improvisation exercise: how can I link everything in my world to a single belief? When you already understand that the belief was untrue, it appears funny.*

It appeared that building a better world, or 'choosing to see it', was central to maintaining individual agency. Lysaker et al. noted that recovery from mental illness involved recapturing a sense of agency [135]. Creating also aligned with the concept of psychosis as a survival strategy in severe stress [134, 136], as well as with the concept of psychosis as a massive defense system [137–139].

[135]: Lysaker et al. 2012 DOI

[134]: Bergström et al. 2022 DOI
[136]: Seikkula 2019 DOI
[137]: Fisher 1970 DOI
[138]: Fisher 1997 URL
[139]: Walsh et al. 2005

After contemplating the parasite issue for two weeks, she ingested rat poison, assuming that it would kill the bugs but not her. However, as she began to feel ill, she realized she had poisoned herself and called the ambulance. At the hospital, she described the situation and was referred to a psychiatrist, who mentioned that she might have 'latent schizophrenia', adding that she would need to go through a formal evaluation to establish a formal diagnosis. She refused both the suggestion and the evaluation, commenting that she was 'refusing to have this illness'. The psychiatrist appeared to feel pity for her and commented that it was not her choice: no-one decided whether they had the condition or not. She repeated that she had the choice and that she 'decided to not have it or be that'. Regardless, she accepted the prescribed antipsychotic medication, and promised to start a therapy program but never did. The medications she took occasionally.

According to her, anti-psychotic medications 'did not necessarily make a person worse, although they could', but primarily they just 'completely hid the causes of the disease'. She considered them not medicines but anesthetics, which suppressed symptoms instead of addressing the root causes. The causes of disorders were not 'psychiatric' but 'spiritual', and needed to be handled as such.

In this context, 'psychiatric' referred to the view that psychosis was due to biological predispositions (genetic variance) leading to a 'failure state' that was to be corrected with medication to allow a return to a state of normalcy. 'Spiritual', in turn, referred to a holistic view according to which psychosis was due to the loss of individual agency: the loss of one's 'spirit', as a result of a process sometimes referred to as 'soul loss'. She was not against antipsychotic medication but considered it very important to mix both approaches and 'avoid the extremes'. She proposed a dialog between these approaches in order to improve the treatment of serious conditions.

> *In psychosis, the mind becomes rigid or calcified around an idea, losing all flexibility. It resembles a very tight muscle. A person blinded by such a rigid belief needs help. It is impossible to work with someone who has not slept for four nights. First, she needs to relax. Antipsychotics can function as 'muscle relaxants'. Afterwards, she can be approached by a doctor, a friend, or even herself. In my case, the person approaching was usually myself. Upon noticing that I had lost connection with myself, I temporarily used whatever was necessary to unblind me, after which I did whatever else was necessary. My work was very personal; no one taught me how to do it. It was step-by-step intuition. The essentiality of inspecting one's beliefs is a general rule that applies to everyone: don't hold rigid beliefs or slip into fanaticism. Opinions can and should always be combined.*

She began educating herself on 'what schizophrenia meant and how to make sure she didn't have it'. She described that when the antipsychotics (aripiprazole, 15 mg) worked as intended, she 'recognized the unnaturally rigid and inflexible nature of her beliefs, which were always in complete contradiction with any kind of rational reality'. For this reason, she admitted to herself that her mind was not functioning properly. She described having gone through 'uncountable rituals all day': counting various things or saying specific words in certain fixed sequences. The rationale for this was 'to ascertain that a major disaster, such as a fatal accident to someone I loved, or a fatal earthquake, would not happen during the next half hour'.

She described how, upon reading about schizophrenia, she 'slowly began to understand that this was not normal'. In order to resolve the situation, she initiated 'a program for learning the proper way of thinking, in the same manner as someone would re-learn to walk or speak, or how autistic children learn about feelings'. She learned to discern how 'the type, density, or energy' of her psychotic beliefs, sounds, presences, or voices differed from 'the real, healthy ones'. She became her 'toughest and most unforgiving trainer', constantly checking whether what she saw, heard, felt, and thought was similar to the perceptions, feelings, and thoughts of others. When she observed differences, she either adopted the ways of the others, or buried her idea or habit altogether. Her method proved successful, and after some time she was 'doing it almost automatically, like fixing an engine in motion piece by piece, an engine that was constantly working erroneously'.

In the presence of fear or paranoia, she experienced a partial dissolution of boundaries: an external object was 'from her or in her'. There was no full identification: she was not one with the object. The experience resembled a type of paranoid projection in the presence of partial boundlessness. To overcome such projection, she developed a technique for differentiating paranoid ideas from the non-paranoid ones.

> *I began questioning everything in this way: 'Does this thought or idea originate from fear or love?' The ideas 'I am the bug' and 'I am the universe' originated from love. Such good, functional ideas brought me further. On the other hand, the idea that inside me were bugs that were attacking me originated from fear. It was a sort of metaphor for the underlying trauma: you're a victim with*

> *no control over what happens to you, to your body. Psychosis is always a metaphor.*

The differentiating factors were her emotional state and the degree of identification with the object. In the presence of love, one could fully identify with the world and its parts (perhaps 'surrender' to it): she experienced 'oneness'. In the presence of fear, one experienced the world as consisting of separate, threatening parts, and needed to defend oneself against them.

She felt that she was feeding the attacker simply by being alive. The bug appeared to be a representation or a metaphor of the abuser. Her brain tried to convince her that, in order to stop being attacked, she needed to die. While, from a purely factual perspective, death would have been one solution to the problem, it also conflicted with the two most fundamental intentions or 'drives': survival and reproduction.

> *The brain is extremely smart in this way, actually. The fact that you're alive feeds your attacker. That was the message that my brain was trying to send me: 'You feel attacked, and what do I want you to do: I want you to die. That is your role. How do I get you to die?' So I created this story: 'The fact that I'm alive is keeping the bug alive. So what do I have to do?' You see: it's a kind of a puzzle, a trick of the brain, that will always give you the same answer. That's what the mind does: it loops. You will have to die, and how do I get you to do that? I convince you that you have a disease, I convince you that you are being attacked. In various ways, the mind will try to convince you to do the same thing: to die.*

In her words, her 'life force was feeding the position of being a victim'. On the other hand, 'being a victim was feeding the bug', which could be interpreted as follows: the attacker was receiving energy from the abuse, or in other words, her suffering was promoting the well-being of the attacker. In the ayahuasca context, this phenomenon is typically referred to as 'energy exchange'. Regardless of the metaphoric details, the essence was about her vulnerability, her 'core feeling', originating from personal and transgenerational trauma. She was 'certain that there could exist genetic information telling you that you are vulnerable, which could manifest as metaphors' (see e.g., [108–110]).

[108]: Wolynn 2016
[109]: Dias et al. 2013 DOI
[110]: Morin et al. 2021 DOI

Regardless of her relative success in correcting her biases, she commented that 'I was never a whole: there were just pieces that I had made functional'. Still, her only reason for staying alive was the fear of hurting her mother and her family with her death. Like in her teens, she remained very high-functioning professionally in her twenties, acquiring a PhD and starting a family of her own. Successfully keeping her symptoms a secret, she only presented with 'brief but frequent moments when my friends would see a glitch and a crisis would emerge'. She described that everyone had regarded her as 'very atypical, explosive, and unpredictable, but otherwise fun and a good friend'.

However, after a couple of years, she 'could no longer hold her emotions in check', and was beginning to act 'more and more impulsive, dangerous, and unstable'. She 'bursted in fits of uncontrollable anger, violence, and self-harm'. Frequently, she was 'watching powerlessly how someone else

was in control', someone who was destroying her life, relationships, and family.

Her husband, not knowing that she had seen a psychiatrist before, convinced her to see one. The second psychiatrist performed an EEG, which he said was showing a 'classic bipolar pattern with abnormal activity all around'. He therefore diagnosed her as bipolar, prescribing a mood stabilizer (sodium valproate, 1000 mg) and an anti-epileptic (clonazepam, 0.5 mg). She told her husband about being prescribed some medication but not about the diagnosis.

After having taken the new medications for a short while, she decided that she would not accept the diagnosis of bipolar disorder either. Overcoming bipolar features was more difficult because they were 'more about emotions' which she described as her 'soft spot'. Her thoughts were easier to control than her emotions. At the time of the interview, she said this issue was 'not yet completely healed but much easier than before' and that she could manage it. She linked schizophrenia to cognitive biases and delusions, and bipolar disorder to emotional instability.

Due to medical reasons, she had to terminate a pregnancy. After that, she had another pregnancy with a high risk of death for both herself and the child. Her husband was aware of the risk but not the severity of it until the very end of the pregnancy. Her grief over the loss of the first child, and the fear of losing the second one made her more unstable than before. Her husband again asked her to see another psychiatrist, who added a diagnosis of borderline personality disorder. She remained uncertain whether this diagnosis was intended to replace or complement the diagnosis of bipolar disorder, but 'they seemed quite similar anyway'.

Once again, she began studying her newly acquired diagnosis, working on understanding it and gathering skills to handle it. However, this time she was 'too tired'. She described having been 'completely exhausted and feeling the cosmic pain that my children would eventually lose their mother because not even my children, whom I loved beyond what was possible, were enough for me to actually want to live, or like it here'. Adding to the exhaustion, she had 'another traumatic sexual experience' (undisclosed, but assumedly a rape), which led to yet another suicide attempt involving a car crash.

By then, although she could recognize in herself many of the features associated with the diagnosis of bipolar disorder, she became convinced that she had 'never actually been either schizophrenic or bipolar'. She identified more with the borderline criteria, which she said also explained her history of psychosis. She 'gave up all three diagnoses' and the related prescription medications. Regardless, she was 'not coping well'.

The memory of the diagnoses 'continued to scare' her, keeping her 'maybe even overly aware of any irregular state of mind'. She described that her sense of personal identity or trust in her thoughts or feelings had been 'completely lacking'. After years of 'forming herself based on other people's patterns', she had ended up with 'no idea' of what she liked or who she actually was (an 'adverse effect' of her training method, perhaps). She was also 'terrified of someone seeing through my well-organized composure'. This was not because of the fear of abandonment but mostly because 'I knew that if someone would regard me as crazy, I

would have no tools against seeing myself instantly in the same way and eventually end up being exactly that—if there was anything to save me from being that, I was my secrecy and my decision that I was neither of those diagnoses'.

In this situation, ayahuasca had been her 'last shot'. She said that, although up to that point in her life she had also experienced 'many happy moments' and 'sincerely enjoyed life often', only her first experience with ayahuasca had transcended her life story into 'a story of light'.

> *The first thing I experienced during the ceremony was the emotional storm that I had trained to control for years. Following that, I felt the familiar energy, high density, and the unescapable isolation of psychosis. Only at that time, these feelings were fleeting, and they always ended in an unimaginable ocean of love and support, coming from both inside and outside of me. It was a degree of support I had never felt before, and most importantly, I experienced it in a state in which I had absolutely no way of hiding anything. For me, in that moment, there were no more secrets.*
>
> *I was shocked by two things. First, about the enormity of pain and terror living inside me, which I saw so clearly that I could not believe I had ever managed to survive it. Second, about receiving so much support and trust even though this pain had surfaced and was visible. I realized that I had treated this pain as a disease, as my fault, and as my greatest shame. I could feel nothing but compassion and amazement about how I had managed to live for so long with that, with what I felt were many generations of grief, loneliness, and pure sadness. For the first time, I felt genuinely proud that I was alive.*

Subsequent ayahuasca ceremonies shifted her away from having a self-image of being 'mentally broken'. She gained 'an understanding of the massive split and fragmentation that had been created in me'. Her former challenges had been about unbiasing her thoughts (cognitive or 'schizophrenic' aspects), and bypassing or controlling her emotions (emotional or 'bipolar' aspects). Her new challenge became 'how to hold in so much love, so many supportive presences, and the entire understanding of the dimensions of the soul' (connecting with the Self, perhaps). She described that 'the opening of so many more levels of consciousness finally created a space in which I as a whole made sense'.

> *Once I visited a psychotherapist who asked about my childhood. I said I had a perfect childhood. It was perfect. And in that exact moment when you say it, your inner child, who was hurt and not seen, kind of splits from you. This was exactly what half of my latest ayahuasca journey was about. I saw a girl who told me: 'Every time you repeated this lie, you denied me completely'.*

Ayahuasca ceremony facilitators trained in accordance with traditional indigenous guidelines often mention that in ceremonies, they have the ability to access participants' visions. Interestingly, the interviewee described possessing the same skill: in a ceremony, she saw the vision of another participant; this was confirmed in a discussion afterwards. In a sharing after another ceremony, participants realized that a group of

participants had shared a vision of having been in a burning medieval town, some as attackers, some as victims.

As described, her childhood symptoms had included violent raging, sleepwalking, suicidal behavior and self-harm, and actual suicide attempts. Her mother continued to deny the existence of these events or interpret them as inconsequential or harmless. The interviewee had eventually admitted her parents' wrongdoing: 'Allowing myself to accuse my parents of wrongdoing was a big thing for me. It was essential because the validation of myself as a whole became possible only after I admitted that it was not ok, instead of telling myself all my life that it was ok'.

Before the first interview, she had attended ten ayahuasca ceremonies. For the last ceremony, she had two intentions: first, to see whether unresolved trauma existed (it had appeared as if nothing significant remained); second, to find out whether ayahuasca was safe for psychotic people. To her, this was significant because she 'cared so much and believed with all her heart in this medicine'. She was going to dedicate as much of herself as she could 'to bring it to the people who need it'. She felt that it would break her heart if she felt that ayahuasca would hurt the people she wanted to help.

The result of this inquiry was that ayahuasca 'could not hurt anyone, at least not on its own'. According to her, all ayahuasca did was 'purge'. She described that while ayahuasca often caused vomiting, 'the purge' was to be understood as a metaphor, as a purging of unwanted elements from the body. In a similar way, psychosis or mania was to be conceptualized as 'vomiting of the mind'.

While her first ceremony had been explicitly about her personal early trauma, in the subsequent ones she was forced to adopt the role of a therapist for lost souls or 'spirits' who needed to be seen. This otherworldly social service function paralleled her own trauma of not having been seen. For years, she had learned various ways of conceptualizing psychological phenomena, and could choose a point of view: 'spirits' could be hallucinations, exiled parts she could not integrate, or representations of transgenerational trauma. But was such theorizing helpful, or did it only make her worse? By choosing a point of view, she could choose her reality.

> *In this way, we create our own reality. Rules that are pragmatic for you might not be pragmatic for me. That is why a person should primarily trust their own intuition. When you see spirits coming, you can ask: 'Do they make you feel bad? Are they intrusive?' Such questions actually matter. I found that for me, the spirits are actually vibrational matches. I have always been a very empathic person. I feel the emotions of others around me, as well as my own, very intensely. I often felt clear presences around me. I didn't see them or hear them, only felt their presence. I always had the same relationship with them: I needed to tell them that they were fine.*
>
> *I could call it transgenerational trauma, but I didn't think about it like that. I felt them coming to me all the time, to show me the dead in their families. I didn't see them visually: they only existed in my mind's eye, as if I were imagining them. They could come*

with a dead child in their arms and say: 'Look what happened! No one knew about this.'

It was breaking my heart. I had moments during which I could not go on with my tasks. This was the most difficult thing for me. I don't know whether this specific aspect should be called psychosis. A doctor might say: 'Yes, because it disrupts your actions'. I would go erratic and stop what I was doing. I would feel that I was breaking. I had moments during which I cried as if my entire family would have been dead. Later, I learned to manage it to a degree.

Each time I asked them: 'What do you expect me to do? I feel you, I see you, and I'm really sorry for you. You see that I am breaking, but I don't know what to do with you, yet you keep coming'. Their message was always the same: 'We just want someone to see us'. After fighting with it, I eventually accepted the situation, saying: 'You know what? Maybe I simply am the kind of person who needs to see the dead people or whatever, the suffering that needs to be seen'.

My first ayahuasca ceremony was about my personal trauma and the purging of that. Right after that, spirits started arriving in droves, and my ceremonies transformed into this kind of collective work. I begun to see them visually, in person. They could look like ordinary people or like bodies of light. Each time, it was perfectly clear to me why they came to see me. It was no longer about me. I was only holding space for these spirits.

Initially, it felt like I was dying for real. The cosmic pain was of such intensity that I felt unable to contain it all. I was hopelessly restless. Eventually, I learned that the proper way to hold space was to allow their emotions to pass through me. It was an important lesson in opening myself up. I relaxed. They embodied my body for a few seconds, and then went their ways. Their energy simply needed to flow through me to be released. They were energy stuck in the universe because they had never been seen or validated. The energy just needed to pass through something, like when you are mad and need to go to the garden just to smash something.

When I got the idea and accepted my role, things got easier. Currently, this work happens not only in ceremonies, but all the time. Maybe this doesn't really make my case that I'm no longer psychotic. I mentioned to my friends that now I actually see the spirits visually and communicate with them. They likely thought I was still psychotic. But as long as you're functional, and as long as the process feels fulfilling for you, it is a non-issue.

Eventually, I found out that, in the same way that they need me, I need them. I am not only doing charity work for the spirits. Because they are my vibrational matches, and the fact that I needed my pain to be seen attracts similar vibrations from all the layers of reality around me. It is like coming together. We think that our soul has a human experience in our body, but maybe my soul is comprised of all these external parts and fragments that are coming together.

Ever since I was a child, I had the organic possibility to see such things. It was not because I was taught to see them. I was taught

> *differently. But this was how I felt inside since I was three or four years old. In the ceremonies, others around me shared the same experience, which I had thought was only my psychosis. I used the complete emotional instability and intensity of the psychotic experience as a bridge to connect deeply with those around me, as well as with my soul as a whole in all its past charge. I recognized that because of my unusual traits, I was able to connect to a greater wisdom, to higher self, and to feel unconditional and absolute love. I begun to consider these traits a privilege.*

In guidelines for ayahuasca ceremony participants and psychedelic therapy in general, participants are typically instructed to 'surrender' or 'let go' of resisting their emotions. The described process largely mirrored these instructions. The idea of emotional energy being released through experiencing it was also described in another case study concerning psychedelic therapy [140]. A conventional interpretation might consider her holding space for the spirits as indirect processing of either transgenerational or personal trauma. The increased visibility of the spirits could be interpreted, for example, as a strengthening of connections between exiled parts and the Self.

[140]: Turkia 2022 DOI

It was essential to belong to a group where one felt accepted instead of being 'a freak left alone'. Her previous attempts to belong had been based on conformance, mimicry, and pretending that she was like the others and believed in the same things. This resembled society 'putting beliefs in her head' when these beliefs did not fit her. Subsequently, she believed that there was something wrong with her.

In the ceremonies, she discovered that other participants experienced the same 'dimensions' through ayahuasca. Being able to share her internal experience connected her to others, dissolving her feeling of complete isolation: 'Overcoming this isolation for the first time in my life was the reason for my ayahuasca experiences being such a big relief for me'. Instead of being 'crazy', she was 'awakened'. Despite this, she could only connect with a small group of people who shared her experience, rather than the entire society.

She also realized that she 'needed to choose what is practical'. The idea of her creating everything around her was impractical in everyday life. Among the infinite alternative worlds, the most practical solution was to choose a point of view. Existing in all dimensions made daily life impossible and equaled to psychosis. An inability to choose a point of view appeared to equal to *a lack of identity*.

Psychosis was partly 'a sort of enlightenment': a process of receiving a lot of relevant information. It only became a problem when one did not understand the information, could not process it, or choose a point of view, and subsequently got confused. Other people could provide points of reference, to discern between 'true' and 'false', practical and impractical. Although she considered many common concepts (such as, at the time of the first interview, the idea of external objects not being created by her) arbitrary and fundamentally untrue, she had 'chosen to play by the rules, to play the social game' (e.g., believe that external objects were 'real'). This acceptance had been 'her key to professional success'.

[141]: Linehan et al. 2015 DOI

Another essential concept had been 'radical acceptance' originating from Zen Buddhism and dialectical behavior therapy [141]. Her acceptance of the usefulness of radical acceptance was based on its pragmatic value in everyday life. Its essence was that there was no good or bad, and one believed that everything was necessary. By eliminating resistance, fighting, and the associated negative emotions, acceptance set an order to life: one just 'needed to play along'.

Despite having presented with 'all contraindications' to the use of psychedelics as well as contraindications to attending most ayahuasca retreats, her ceremonies had been unproblematic and productive. In her view, the purpose of contraindications was to protect weekend retreat organizers who could not provide extensive in-ceremony support and/or follow-up after ceremonies. These contraindications were understandable but, in the broader view, counterproductive.

The most difficult patients were 'usually stuck in all kinds of therapies or medications that functioned as anesthetics, only hiding their problems'. In order to optimize the cost-effectiveness of mental health services, these more challenging patients should have been prioritized over the 'easier ones'. The scarce resource of ayahuasca ceremonies should have been used for the ones who had not been helped by other means, as well as for the ones who caused the most harm to themselves, others and society by remaining untreated. Ceremonies should have been augmented with proper aftercare ('psychedelic integration'); what was important was what one did after the ceremony. She planned on providing these services herself in the future.

With regard to 'adverse effects' during the ceremony, she commented that 'if something unwanted happened, it was because one's soul chose that as its method to heal itself'. Adverse events occasionally occurred: a bipolar woman became manic after a ceremony. According to the interviewee, this was because the woman 'lacked any insight into her issues, as well as any skills for handling her particular brain chemistry'. Therefore, she had also been vulnerable to various everyday environmental triggers.

Adverse events functioned as a diagnostic filter. Instead of the patients' issues remaining 'blind spots' and these patients refusing to admit the existence and/or severity of their issues, the so-called 'adverse events' made them attentive to their issues, giving them a chance to learn how to handle them. The purpose of psychedelics was to reveal such unprocessed issues, to 'bring into light what remained unseen'. Allowing that to happen was 'very necessary'. Rather than depriving such patients of treatment, a more comprehensive approach was required.

Attitudes were also essential. An indigenous healer (met outside of the ceremony context) with a 'very gentle way of communicating and zero judgement' seemed to 'read her' non-verbally, making her feel 'very seen and validated'. His approach had been working together in order to teach her something, without putting it into words. The healer had shown her how to navigate the 'dimensions' without psychedelics. Psychiatric personnel, in contrast, verbalized, labeled, and judged, as well as appeared scared and avoidant, treating symptoms as 'monsters'. Being labeled often shocked patients, amplifying their feelings of inadequacy.

Such practices arose from and propagated 'collective trauma'. In her view, societal structures were traumatized. In the absence of experiences with alternative ways of being, collective traumatization appeared normal. Despite such appearances, an individual could feel the abnormality as an internal conflict, i.e., the pain and suffering ingrained in structures. Such causal relationships remained largely unrecognized. Some people could remain open to perceiving this state of affairs. Psychoses could result from collective trauma. Failure to find explanations in individual life histories could lead to patients being handled as mechanistic systems that could be 'adjusted with buttons: anger down, pain down, joy up'. In the extreme case, collective trauma could lead to an unrecognized, subconscious unwillingness to live, resulting in society-scale failure to thrive, or inadequate or delayed responses, 'collective freeze reactions', in the face of threats such as climate change. Societies typically wanted to further repress collective trauma instead of 'sitting with it in order to transcend to higher levels of consciousness'.

On the individual level, chronic stress from collective trauma could manifest either as psychiatric or somatic issues such as immune system disorders or cancer. The exact phenotype was determined by how much of the trauma an individual could accept, i.e. process, and release, or 'pass through'. The remainder of the 'stagnated energy' remained in the body, causing disease.

With regard to her childhood psychosis, she commented that she had 'chosen not to include myself in the world because I was not ready to acknowledge all that darkness, and also because I was basing my so-called modesty on the fact that I was still alive and others were not'. Also, getting confused was due to the simultaneous experiencing of several 'states of consciousness' or 'dimensions', some of which lacked the concepts of time and causality, as well as involuntary switching between such states.

Diagnostic practices she considered inappropriate. Schizophrenia was mentioned once in an emergency room, and never again by any doctor. Bipolar disorder was diagnosed after a short appointment with a psychiatrist, based on an EEG. She considered herself 'a victim of superficial labeling'. While some people could be 'actually bipolar' or 'schizophrenic', she considered herself different due to her high performance in her working life, which would have been impossible if she was actually bipolar or schizophrenic. She 'exhibited some unusual traits' but predominantly identified herself with a borderline condition. Therefore, she did not want to see herself as someone who had been healed from bipolar disorder and/or schizophrenia.

According to her, the root cause of schizophrenia was currently considered to be trauma combined with hiding it. Her psychotherapist friends working with schizophrenic patients considered 'stopping their patients from hiding' their primary method. A person could only heal by feeling safe and stopping hiding. They could first experience it in therapy sessions, and later in real life; in contrast, 'taking sedatives and becoming compliant' did not heal.

The outcomes of first psychoses were determined by how cultures conceptualized psychoses. She learned about the concept of psychoses as 'awakenings' from TED Talk video presentations, which mentioned that

in many indigenous cultures, if a child hallucinated, she was instantly separated from her peers, carefully nurtured, regarded as a carrier of special skills, and later trained as a healer [45, 142]. Individuals with hypersensitivity to interpersonal issues were identified by asking whether they had experienced near-death experiences or psychotic episodes. They were open to receiving an unusually large amount of information in interpersonal situations, but if they lacked the skill to organize and process such information, they would become dysfunctional. They could only become healers, leaders, or prophets by learning to process the information. Indigenous approaches to first psychoses aimed at initially calming these individuals down by explaining that nothing was actually wrong [45]. Subsequently, they were taught the required skills, and later assigned a role in their society as a solver of complex interpersonal/psychiatric, and/or medical issues.

[45]: Somé 1997
[142]: Borges 2021 URL

[45]: Somé 1997

> *This information is mixed up and very irrational. But if you regard it like: 'Oh, how interesting! You're psychotic, maybe you have a gift, maybe you have a special ability, let's see what we can do with that', then you completely shift the perspective, prioritize that person, make him accept himself, maybe even be proud of himself: 'Oh, look: I am special, I have this kind of thing'. That's why they say that the psychotic ones are future shamans.*

Her struggles had largely been the result of being overloaded with information. Conventionally, the source might be considered to be the subconscious or exiled parts. She was 'not yet perfectly healthy, and there was still processing to be done'. The abused girl part remained dissociated: she could not feel anything when talking about it, and talking about it triggered escapist reactions.

> *I still can't connect to it in any way. The previous time, when we talked about the abuse, I could not feel anything. I was completely blank. I could not handle the situation. I felt that if I connected, I would get completely depressed. Afterwards, I chose to numb everything with alcohol and cocaine, and I partied for three nights. Party drugs and alcohol, in contrast to plant medicines, completely isolate you from yourself and the world around you—from everything. They function exactly like psychiatric drugs, which are artificial and toxic. I knew very well what I was doing, and did it on purpose. It was a trauma response to do the exact opposite. This is how people become alcoholics or drug addicts.*
>
> *I still possess these ingrained, dissociative patterns that affect my memory. Even when I don't drink or take drugs, when I go out with friends and drink only tea, the next day I only remember arriving at the bar and being at home in the morning. It is freaky. Usually, there was a trigger: something hurtful that caused me to lose touch with myself. Yet my friends did not notice anything. Later, when I asked, they said that I had acted completely normal. Regardless, none of it was stored in my memory.*
>
> *As another example, people often tell me that I met with them yesterday, and I am like: Oh yes, we met yesterday, of course, I know that. And I do know that, but I only remember one sentence from a one-hour meeting. Such situations are extremely difficult: I have to pretend that I remember everything or else I will appear*

> *insane. Such situations perpetuate a vicious circle: by pretending that I remember, I deny the hurt part that caused me to forget what happened. I fail to validate that part. It creates yet another split. Ideally, I would simply tell them: 'My memory fails because I am very traumatized'. But I cannot say that.*

Some of her close friends, whom she had told about this issue, could 'watch for her', i.e., occasionally notice changes in her behavior, and subsequently assume a protective role by 'not leaving her side from that moment on'.

> *I often see myself from the outside, say, ordering ten tequilas in a bar. I would be completely out of myself, observing the situation and saying: 'I do not want to do this, please stop, you'll get drunk'. I am certain that I don't want to get drunk, but I am looking at this person from above: looking at something that I cannot influence or stop. I need to have friends with me who say: 'Stop it!' Currently, this happens less often than before, maybe once every two or three times I attend social events. I call it 'my feet slipping'.*
>
> *My friend then tells me: 'You're acting irrationally, you're crazy, stop it!' And I do. I am very complacent in such situations, even if I sometimes don't understand what they are saying. I might ask: 'What?' and they would tell me something that completely contradicts my own idea of my behavior. It might resemble descriptions of bipolar disorder. I could buy whatever people want from the bar, for a lot of people, for people I don't know, feeling like I actually know them very well, as if they were all my friends. An actual friend of mine might then interfere, saying: 'You don't know these people!' I would realize that she is right: I don't know them. But in a way, I feel that we are friends. Sometimes I need help with such things.*

She also consulted her friends about work-related projects. External feedback and validation provided her with 'a lot of safety'. Regardless, she was trying to find a balance between external support and trusting herself, 'because you have to trust yourself'.

After her first ayahuasca session, in which she first experienced the possibility of not having to hide, she participated in IFS therapy sessions. The therapist asked her to pay careful attention to dissociative traits. In some sessions, he asked if he could talk to 'the other her', and 'yet another her'. According to the psychiatrist, her parts possessed different voices, moved differently, and related to people differently. She was aware of the issue herself, and mentioned that these traits also originated from her childhood traumas, and that switching between these parts was caused by trauma triggers.

She chose to tell her story 'because it was not only her story'. She felt survivor's guilt about ending up as one of those who did not jump off the roof, although she believed the selection was 'random'. This 'complete randomness' had been the most difficult lesson of her survival. She considered herself lucky because her problems had been severe enough to 'push her into a clear awareness of the underlying causes'. People with less severe issues could remain unable to identify the underlying causes, and remain indefinitely confused and chronically depressed. People who were 'only neglected', regardless 'got the message that they were not

survivable material and didn't matter'. Like a sick puppy ignored by its mother, they gave up trying. In such cases, 'soul retrieval', or a guided reliving of a traumatic event in a safe setting, accompanied by 'rewriting' the trauma memory in such a way that personal agency is reestablished, could be indicated (this mechanism may be considered the core essence shared by all psychotherapies).

> *Eventually, your soul breaks. In such cases, if we get more spiritual, 'soul retrieval' could be helpful. It is a metaphor, a meditation upon your wholeness: going back to the scene of the traumatic event, and taking back something that was left behind, because that is what trauma does: it breaks you and leaves a part of you at the scene.*

A thorough review of the previous discussions in a follow-up interview two and a half years later revealed that, after two years, not all she had said before reflected her current views. The main difference was that she now recognized the validity of her bipolar disorder (officially, bipolar type II disorder, ICD-11 6A61; with rapid cycling, 6A80.5). Based on the case description, it could be said that before her first ayahuasca ceremony, she presented with severe (suicidal) depressive episodes with psychotic symptoms. After the first ceremonies, severe episodes no longer emerged. During the first interview, she might have been slightly manic. She was taking mood stabilizers (lamotrigine, 200 mg/day) but also continuing regular plant medicine work with ayahuasca. According to her, mood stabilizers did not interfere with the plant medicine work. With regard to dissociative symptoms, she mentioned that they had largely been resolved.

She believed that her early trauma was solely responsible for the onset of her bipolar disorder, which was an adaptation to trauma, and the core of her early trauma remained largely unresolved. She needed more C-PTSD-focused therapy and somatic work to overcome the remaining toxic shame and coping mechanisms, which included self-harm. Through constant plant medicine practice paralleled with trauma therapy, she was making slow progress with these issues, however.

She still occasionally struggled with bipolar symptoms, and while plant medicine brought 'immense gifts to her life on a daily basis', the years had brought a clear awareness that it had not cured her bipolar disorder. She was therefore 'more moderate and humble' in how she talked about plant medicines. Plant medicine or psychedelics, in any case, 'opened the door to integrating the fragmented parts from trauma, which automatically helped to resolve the bipolar mechanisms'.

She held that a history of psychotic disorders was not a contraindication to psychedelic therapy. She had been involved with plant medicine and trauma work for the whole time, and observed, in detail and for long periods of time, several people diagnosed with bipolar disorder or psychotic episodes. She was using her expertise to train psychotherapists in plant medicine work.

She considered schizophrenia to be outside the scope of her expertise. She 'did not want to risk anyone' by saying that plant medicine could cure psychosis, schizophrenia, or dissociative identity disorder. Her suffering did not match 'the really deep suffering' of people with schizophrenia. Her own diagnosis of schizophrenia she saw as a mistake: it was 'just a

word someone threw once', not something she had to deal with. Instead, practically all her challenges were due to bipolar disorder. Ayahuasca had helped her a lot with that, as well as with suicidality, and she had observed the same positive effects in others.

8.2.1 The abuser's perspective

In contrast to most cases of early childhood sexual abuse, in the present case, the abuser later admitted the issue, validating the victim's memories. This recognition was a consequence of him attending an ayahuasca ceremony.

> *About my early trauma, I can talk in general terms: it was sexual abuse that went on for some years. Then I forgot about it. Such amnesia is typical. It is called dissociative memory: you kind of forget these things. And because it is a kind of Stockholm syndrome, you begin to repeat the same pattern. You get attracted to the same kind of people, because that is how you understand that you are valued.*
>
> *One day, I remembered the abuse. Regardless, I always doubted whether those memories were real. There was always at least a grain of doubt: What if I am not right? What if I am only imagining it? I doubted my memories because they had been forgotten for so many years. This is very typical for victims, especially for victims of early childhood trauma. When you eventually remember, it is of course shocking, and you feel hurt. At the same time, you also feel that maybe you are crazy, or that you have invented it all. You don't have the luxury of an ordinary person beaten up on the street. He will not question himself or the fact that he was beaten up. Therefore, he will allow himself to grieve and feel angry at his abuser.*
>
> *In contrast, if you have carried a dissociated memory with you for years or decades, and suddenly remember what happened, unless you get a chance to really put the issue on the table, it will always be unclear to you whether the event you remembered really happened in the first place. Many people do not have the chance to speak to the abuser afterwards to say: 'Hey, did this really happen?' Some people do that. They have the courage. I didn't have the courage to open that discussion. But many do. Of course, typically, the abuser will then lie and say that the abuse did not happen. The victim will end up even more confused, no longer knowing what is right or wrong. I think that in time, such a response can actually cause schizophrenia. It is a split: a part of you is hurt and knows it, while another part of you is accusing the hurt part of being wrong.*
>
> *I, too, carried this conflict until recently. Then I found out that all of it was actually true, although a part of me already knew that it was true. Nonetheless, receiving confirmation was a relief. But I didn't have the courage to open this discussion. The other person did.*

Interestingly, the abuser eventually took up the issue as a result of also attending an ayahuasca retreat, although not immediately after it. She assumed that the ceremony had 'opened up something in him'.

In addition, during the preceding years, the abuser had pursued 'self-development', realizing that he was also traumatized. According to her, they were both victims. His trauma was also an early childhood issue: the divorce of his parents. After the divorce, his parents did not get along. Because the abuser did not get along with his stepfather, i.e., the girl's father, the situation may have included an element of vengeance: abusing the girl to exact revenge on the stepfather.

> *People think psychosis only means having visual or auditory delusions, but it is not only that. It can also be a belief that you have. In my case, my therapist always said that if you don't talk to your abuser, if you don't tell him that you know what happened, you'll never be fully healed. You need to hear how the abuser reacts, in order to bridge your reality and the abuser's reality. Despite everything, I stayed in close contact with the abuser. We spent a lot of time together, but that reality did not link in any way to the reality of my childhood. They existed as two completely separate worlds.*
>
> *Later, I recognized the same phenomenon in others. A child lives between the two incompatible realities of the mother and the father, each of whom accuses the other parent. At the father's house, he has to act like his mama is horrible. Regardless, she is still his mother, and he loves her. This situation induces trauma, because the child is presenting a facade, acting, and being something that he is not. Similarly, at the mother's place, the same kind of conflict toward the father exists. Since every child wants to be accepted and loved, he has to switch between these two conflicting realities. He will try to please the parent with whom he is living at the moment. It is very hard for a child to find a middle ground, so he will say exactly what each parent expects him to say. This creates a split in the child's mind. He has no idea how to choose or which is the true reality. Since he loves both parents, he is forced to constantly feel 'wrong'.*

According to her, abusing others was another way to gain personal agency in a conflicted situation, perhaps an alternative to psychotic creation. In this option, creation was more concrete instead of illusory. Whereas a psychotic exerted power over imaginary objects, an abuser exerted power over real people.

> *Abusing someone else was his way of taking revenge and creating his own reality that he could control. That is how people become abusers. Initially, every time, they are victims. Victimized children lose control over their lives. For example, in such a divorce, the child will be completely torn between his parents, and has no control over his own life, his reality, or what he can create. Or maybe his needs and desires are constantly invalidated or judged. He may be considered 'never good enough' or greedy. For a traumatized child, there is no right or wrong, only the desire for reparation. Through finding someone more vulnerable, and doing something in his power for this person, he creates a reality over which he has control. By validating his desires, his actions make him feel powerful. And because what he did was a secret, he could not be judged.*

Bullying someone in school or sexually abusing someone were both caused by the same mechanism. The difference was perhaps that sexuality was 'a vital force'. Sexual assault and sexual abuse were ways of expressing this vital force, but in a wrong way.

> *If a trauma is very deep, it affects the vital core of a person and is manifested through sexuality. It is not actually sexual: it is only vital energy that needs to be released without getting judged while feeling powerful enough to release it. This is the core issue, and it is how people become rapists or sexual abusers. It is easy to call them monsters, but they are not that. They can become monsters, but the process itself is always explainable. It would be important for our society to dare to look at these issues and begin talking about them more openly.*

The reason why the abuser's trauma manifested as sexual abuse rather than other kinds of violence was because sexuality brought (more) pleasure. According to her, a traumatized person is always severely depressed. Being depressed meant that one could no longer find pleasure in anything. Yet all animals sought pleasure. It could come through affection, understanding, or other forms, but when one lacked all of those, one resorted to shortcuts: 'any easy, animalistic way to find pleasure' (in other kinds of cases, pleasure-seeking could manifest as substance abuse or other addictions, including porn addiction).

She expressed surprise that these mechanisms were usually not clearly explained anywhere. Even therapists rarely explained them to patients. Yet, many would have benefited from clear explanations, such as: 'You were in this situation, then you did this, and maybe it was a mistake, and subsequently this and this happened, and now you need to stop splitting and hiding'. She said that these issues were currently treated in a wrong way.

> *People with experience of these mechanisms should talk about them. They are actually quite simple, and understanding them makes many things much easier. It would prevent people from getting lost on non-essentials such as diagnoses, and instead enable them to work on their core issues, core traumas. There are a few therapists who can actually arrive at anyone's core issue in five minutes, making it fully clear where that person's problem originated from.*

8.2.2 Bipolar disorder as a consequence of trauma

On the relationship between emotional trauma and mental disorders, the interviewee held that the root cause of all mental disorders was complex trauma (C-PTSD). With regard to bipolar disorder specifically, she held that the idea of bipolar disorder having a genetic background was an unproven assumption. There was a 'chemical imbalance' in the bipolar brain, but this imbalance was a normal reaction to the abnormal childhood circumstances of the bipolar person. In other words, it was the neurochemical manifestation of defense mechanisms developed against trauma—a consequence of a bipolar behavioral pattern instead of its cause.

Trauma was defined as what happened in a person as a result of what happened to that person. Trauma was not a direct cause of the event itself, but a consequence of an individual's reaction to the event. Trauma only developed when the event was experienced as overwhelming, i.e., when it exceeded the person's capacity to process it. In general, younger children had less adaptive capacity and were therefore more easily traumatized than older children or adults. Typically, in cases of abuse or neglect, the child could not talk about it to anyone, or the harm was done by someone in the family. The child was perhaps unable to conceptualize the issue, lacked trust in their parents to share their experience, or was forced into secrecy.

Depending on the age of onset and the intensity of the event, the child could develop a variety of defense mechanisms. One mechanism was grandiosity and independence as a defense: 'I can do anything, I don't need anything, I am all-powerful, I am strong, I can do everything myself'. This would often lead to perfectionism, overachieving, and hyperactivity. Due to the repression of a lot of emotions, the child would also be prone to impulsivity, acting out, and aggression. These features represented the mental patterns of mania. These patterns could later lead to paranoia about someone or something trying to harm the person; this represented the vulnerability related to the original trauma that the child had not been able to speak about. The paranoia was a 'metaphor of the trauma'.

The second pole of bipolar disorder was depression: a consequence of the person running out of energy to maintain the manic defense. As the person 'crashed' or burnt out, another feature related to the original traumatic experience surfaced: powerlessness; 'I am completely unprotected and vulnerable, I am hopeless, this is never-ending; what is the point of trying anything? I will just give up'.

Summarizing the above, bipolar disorder could be conceptualized as an energy level dependent fluctuation between repressing trauma symptoms and failing at it. In this perspective, resolving the underlying trauma would fully resolve bipolar disorder. To what degree the underlying trauma can be resolved likely depends on the resources of the individual and their environment. More specifically, the resolution likely requires that a sufficient level of subjectively perceived emotional safety be achieved.

8.3 Discussion

Noorani, who also studied psychoses in the context of psychedelics, asked whether the greatest contribution of the psychedelic renaissance might actually emerge from research into states labeled as psychotic and schizophrenic [143]. He advised against the normalization of the contraindication of psychedelics in people with family histories of psychosis and other 'major disorders'. He also warned against the excessive formalization of modalities of psychedelic therapy. As an example, he mentioned the dominance of the idea that psychedelic experiences were 'challenging journeys that ended by returning with a treasure'. Viewed from the perspective of infinite possibilities, attempts to restrict the psychedelic experience and psychedelic therapies into rigid templates,

[143]: Noorani 2022 URL

such as current medical conventions, might appear counterintuitive and counterproductive.

Indigenous and syncretic religious practices represent alternatives to the medical model. Many indigenous worldviews greatly differ from first world conventions, up to the point of incomprehensibility. Yet, as illustrated by this case, the applications derived from those worldviews and practices may result in more viable outcomes than the more familiar alternatives. Such differences illustrate the above mentioned arbitrariness in how concepts and practices may be chosen in societies.

Traditionally, ayahuasca and other plant medicines such as psilocybin, peyote, mescaline, and ibogaine have been used in spiritual-religious, community-centric contexts with purpose-built ritualistic structures that imply certain ethical and social principles. To ensure better treatment outcomes, instead of trying to subjugate these medicines to the medical context, their international adoption should broadly follow the community-centric models already established in the practices of various indigenous traditions and syncretic churches.

Another characteristic of the medical model is the often seemingly exaggerated pursuit of the minimization of risks. As seen, the described patient presented with all typical contraindications, yet failed to experience a single 'adverse event'. Unwanted effects might occur more often in people presenting with psychotic and/or bipolar traits, but as described by Mudge, methods to avoid most of such effects had already been developed. Also, as described by the patient, unwanted effects might serve as a screening method for identifying patients with deeper trauma.

In the context of psychedelic therapy, the traditional understanding of the concept of 'adverse events' is rarely, if ever, useful or applicable. Negative experiences are almost always due to the underlying trauma, i.e., due to reliving or re-experiencing emotions and somatic sensations related to the original trauma. The healing process explicitly requires the patient to consciously re-experience them. Usually, however, in the absence of resistance, the re-experiencing period is brief, as illustrated by the description of reliving the psychotic state. Another aspect is that in many clinical trials, adverse events such as suicidal thoughts or acute suicidality are counted, and interpreted as harmful effects of the substance. This likely indicates a misunderstanding of the therapeutic process. In addition, comparisons of the prevalence of suicidal thoughts or acute suicidality pre- and post-treatment are rarely, if ever, made. Consequently, no conclusions can be drawn; suicidality may have increased, remained unchanged, or decreased.

Concerning dosing, both Mudge and the described patient initially utilized ayahuasca in psychedelic doses. Later, Mudge adopted a practice of maintenance dosing with ayahuasca. The described patient appeared to have adopted a similar maintenance practice, but with antipsychotics (with regard to antipsychotics, McCutcheon et al. presented a new, receptor affinity-based classification system for antipsychotic medication [77]; it would be interesting to see where ayahuasca and its MAOI components would be located in this taxonomy). The maintenance practice likely allowed for a gradual processing of the underlying trauma. As to why it had not been fully resolved, in general, reliving trauma requires a suitable mindset and environment. There must be sufficient

[77]: McCutcheon et al. 2023 DOI

safety. If the patient does not feel safe enough, the traumatic events cannot be relived. Also, as is the case with C-PTSD, there may be hundreds of traumatic events. While similar events may at times be processed 'in bulk' (according to Stanislav Grof's concept of 'systems of condensed experiences', or COEX [144]), processing hundreds of events usually takes years. Also, new 'adult' personality structures may need to be formed where they were missing.

[144]: Grof 2019

A group setting may partly enhance safety, but due to the need to take others into account and possible fears related to others, it may also prevent achieving a state of complete safety. The most important factor, however, are the characteristics of the facilitator of the ceremony; in the present case, details were unavailable. Similarly, in an individual therapy setting, the therapist's characteristics can either allow or prevent the patient from feeling safe [1]. Therefore, a general rule would likely be that when a sufficient outcome was not achieved, the situation did not allow it. In other words, sufficient safety to relive the traumatic events was not yet reached. It should be noted, however, that there was continual, gradual progress.

[1]: Turkia 2022 DOI

One reason for the lack of expected outcomes may be a lack of safety. Another reason may be excessive mental power or energy, which allows for resistance. Stimulants (e.g., caffeine) enhance resistance. One likely purpose of the plant diets is to weaken the person. Counterintuitively, a person in poor health may be easier to heal than a person in better health. As the person gradually (re)gains energy, healing residual issues may become more difficult, as the person is in possession of more energy to counter the energy of psychedelics, which try to push one 'across the threshold'. Also, residual issues are typically more deeply ingrained and about personality than more superficial post-traumatic symptoms. In this sense, psychedelic therapy could be conceptualized as a fight between the person's mental power and the power of the psychedelic substance.

The described practice of mixing psychedelic dosing to access trauma with psycholytic or maintenance dosing to balance mood would likely be applicable and necessary in many cases of treatment-resistant depression. In previous case studies, it was estimated that in the absence of re-traumatization (i.e., under optimal conditions), a ratio of one to ten existed between years of psychedelic therapy and years of previous traumatization [145]. In a less optimal situation (i.e., in the presence of constant re-traumatization), a ratio of one to four was more likely [140]. In the present case, the patient had been traumatized for approximately thirty years. Thus, an optimal process might have taken three years; a less optimal one might take approximately eight years. In the present case, the ayahuasca treatment process had been ongoing for four years, thus falling somewhere in the middle.

[145]: Turkia 2022 DOI
[140]: Turkia 2022 DOI

This particular patient was highly educated, exceedingly capable of introspection and analysis, and may not represent a typical psychotic patient. Regardless, her case illustrates the immense potential of psychedelics in psychosis. Her process also aligned with the experiences of successful treatment of severely traumatized, psychotic children in the early 1970s in the US [137–139], as well as the previously mentioned case of the suicidal-psychotic boy [1].

[137]: Fisher 1970 DOI
[138]: Fisher 1997 URL
[139]: Walsh et al. 2005
[1]: Turkia 2022 DOI

Mudge proposed a religious framework as the most suitable for the management of bipolar individuals. The indigenous consider ayahuasca ceremonies a sacrament. Their practices may not be directly applicable to Western societies. Therefore, adaptations founded on a commonly agreed-upon conceptual core might be the most appropriate. The 'neoshamanic' ceremonies in which the patient participated represented such an adaptation.

Groisman et al. anticipated that the principles of religious freedom will trump those of political definitions of illicit acts and substances [37]. They proposed that 'hallucinogenic' use to access spiritual realms should be distinguished from the use of substances to deaden pain and anguish or to provide hedonistic experiences.

8.3.1 LSD in the resolution of bipolar disorder

An important area of research is the exact relationship between trauma and bipolar disorder: is trauma the sole cause of bipolar disorder, and why does trauma cause bipolar disorder in some cases but, say, treatment-resistant depression in others? Such an inquiry would likely also allow for a new kind of diagnostic system based on etiology, based on the age of onset of trauma and the intensity and other characteristics of it, for example, whether the perpetrator was a parent, sibling, or another person, and whether the trauma was caused by neglect or aggression.

The idea of manic defense originates from Melanie Klein [146–148]. From this perspective, mania would appear as a defense against depression caused by a loss of expectation of fulfilling one's basic needs, or against becoming conscious of a traumatic event. Subsequently, resolution of the underlying trauma would resolve bipolar disorder.

[146]: Klein 1940 URL
[147]: Schweitzer et al. 2005 DOI
[148]: Bowins 2008 DOI

One such case of resolution has been documented by Haden and Woods in 2019 [149]. At the age of twelve, a young girl's father was incarcerated, and she was ostracized by her peers. At the same age, she was diagnosed with an unspecified psychotic disorder, with psychotic depression, bipolar disorder, and schizophreniform disorder as possible diagnoses. She reported having heard intermittent voices in her head for several years as well as having been depressed due to various psychosocial stressors. Two of her paternal relatives had bipolar diagnoses and alcoholism. In addition, there was trauma in her maternal lineage. She was initially medicated with sertraline, which appeared to worsen her depression. A light-box treatment induced hypomania. She used cannabis daily and tried ecstasy twice. A bit later, her grandmother died. She was diagnosed with bipolar II disorder and prescribed a mood stabilizer. Later, she was hospitalized for a full-blown manic episode with psychotic features. Her diagnosis was changed to bipolar I disorder, and she was medicated with lithium and olanzapine.

[149]: Haden et al. 2020 DOI

At the age of fifteen, in June 2000, she accidentally ingested approximately 1100 µg of liquid LSD instead of the intended 100 µg. For the next 6.5 hours, her behavior was erratic. In the end, she was lying in a fetal position with her arms and fists clenched tightly; this was interpreted as a seizure, and an ambulance was called. When the ambulance arrived, she was alert and oriented, with no signs of a seizure. It was assumed that she had briefly lost consciousness or had been intensely preoccupied with

her experience. Regardless, she was hospitalized for surveillance. The next morning, referring to her bipolar disorder, she stated, 'It's over'. In 2019, she commented that after the incident, she had lived her life 'with a normal brain', whereas before, her brain had felt 'chemically unbalanced'. Her cannabis use had remained unchanged, i.e., daily. She had stable employment, stable positive friendships, and good work relationships.

Compared to the present case, this patient was much younger, suicidality was absent, and her early traumatization was likely less severe. It may be that a similar intensity of effect cannot be reached with ayahuasca due to its propensity to induce vomiting. Also, LSD would likely be more practical in the medical context. High-dose sessions are typically self-guided. Such unsupervised sessions have been described in a recent book written by a professor of religious studies who underwent 73 solo sessions with 500–600 µg of LSD between 1979 and 1999 [150]. As exemplified by his case, an overly complex organization may not always be necessary. A treatment might consist of a 16- to 24-hour session, preferably supervised by an experienced facilitator, followed by overnight or one-day surveillance that could be carried out by, for example, a nurse. The primary requirement for the supervisor is the ability to remain calm and focused. It should be noted that subjectively, doses around 1000 µg may be qualitatively very different from lower doses such as 100 µg, but this is also the likely reason for the exceptional outcome in the case of the girl. Before such a session, lower doses should be experimented with. Further research and experimentation on this option are needed.

[150]: Bache 2019

8.3.2 The role of trauma in the etiology of psychosis

With regard to the present case, Moreira-Almeida and Cardeña discussed the differential diagnosis between non-pathological psychotic and spiritual experiences and mental disorders from a Latin American perspective [151]. Considering the chronic nature of this patient's condition and the excessive distress caused by her symptoms, her condition before treatment appeared pathological. However, the ayahuasca experience appeared to transform her condition into a 'spiritual' one: nearly all of the suffering dissipated, and the level of social and functional impairment was greatly reduced.

[151]: Moreira-Almeida et al. 2011 DOI

The patient had been diagnosed as bipolar and borderline by qualified clinicians, and it was suggested that she might present with a dissociative disorder. One clinician also suggested that she might have been schizophrenic. From an etiological point of view, the primary diagnosis could have been complex post-traumatic stress disorder (C-PTSD; ICD-11 6B41) [152]. With regard to early trauma, a more useful diagnosis might have been found in the category of dissociative disorders (e.g., dissociative amnesia, ICD-11 6B61). Due to the fact that her early trauma appeared to remain only partially processed, many of the dissociative symptoms remained even after ten ceremonies. In the 2.5-year followup, however, she mentioned that dissociative symptoms had largely been resolved.

[152]: Maercker et al. 2022 DOI

With regard to schizophrenia, she did not seem to have presented with Schneider's First Rank Symptoms: there were no auditory hallucinations, no thought withdrawal, insertion, interruption, or broadcasting, and no feelings or actions experienced as made or influenced by external agents

[153]. Somatic hallucinations and delusional perceptions might have been considered a delusional disorder (ICD-11 6A24).

[153]: Soares-Weiser et al. 2015 DOI

Khan et al. described a case of delusional parasitosis after sexual abuse [154]. Norman et al. noted that patients frequently inherently rejected the diagnosis of delusion, refused to accept psychiatric care, and requested an escalating number of diagnostic tests and anti-parasitic treatments instead [155].

[154]: Khan et al. 2021 URL DOI

[155]: Norman et al. 2021 DOI

In another undocumented and unresolved case of chronic, episodic psychosis caused by domestic violence and early childhood sexual abuse by the mother's brother, the girl attempted to tell her mother about the abuse, but the mother refused to believe the girl, got angry, and blamed the girl for lying. The mother's response thus amounted to an extreme betrayal of trust. In the present case, the patient stayed quiet about the abuse while the mother possibly 'chose not to see'; this could be seen as a similar but more subdued betrayal.

Mitchell, an IFS therapist, defined psychosis as an enormous internal conflict with two groups of 'parts' of personality with conflicting intentions: one group of parts needing something to be known, and another group of parts needing the same thing not to be known [156]. Mitchell referred to psychosis as a 'spiritual awakening'. Mitchell mentioned that her patients had described the psychotic, 'non-ordinary' states as the 'most terrifying they had ever experienced' [156]. The therapist needed to maintain a 'curious but thoroughly unafraid' attitude in order to support ('hold space') such patients. Mitchell's observations and suggestions were consistent with those made in the current case.

[156]: Mitchell 2021 URL

[156]: Mitchell 2021 URL

In an innovative manner, Fusar-Poli et al. utilized ethnographic methods and wrote an article about the subjective experience of psychosis together with patients [78]. They divided the subjective experience of psychosis into five phases: 1. premorbid; 2. prodromal; 3. the first episode; 4. relapsing; and 5. chronic. The premorbid phase was often asymptomatic and characterized by loneliness, isolation, loss of common sense, and bodily discomfort or alienation. The prodromal phase was characterized by a feeling that an important truth about the world was soon going to be revealed. The sense of self was perturbed, and contact with reality was compromised. These issues were typically kept secret. In the first episode phase, the onset of delusions triggered a sense of relief and resolution. There was a feeling that everything related to oneself. Boundaries between the inner and outer worlds were lost, as well as agency. There was a feeling of overwhelm and chaos, and a loss of trust in the world. The relapsing phase was about grieving for personal losses, feeling split between realities, and the uncertainty of the future. The chronic phase was about accepting the new self-world, hiding the inner chaos from others, feeling loneliness, and having a desperate need to belong.

[78]: Fusar-Poli et al. 2022 DOI

In the present case description, most of the features of these phases can be recognized, but there were no clear phases. Instead, she appeared to have been more or less psychotic for her whole childhood, without a clear 'first psychosis'. Her refusal to accept the diagnoses functioned as a way to maintain a degree of personal agency.

In contrast to the present case study, the study by Fusar-Poli et al. did not recognize or discuss the role of emotional or early trauma. They also

appeared to present psychosis as chronic and unhealable, seemingly focusing on schizophrenia, whereas the present case discussed bipolar disorder with psychotic features. Missing from their description of phases were gradual recovery and remission. In the present case, such a recovery phase can be recognized. The current state could be considered a nearly full remission phase: she was high-performing professionally, her relationships and family life were functional, and the main remaining issue was relatively mild dissociation.

With regard to transgenerational inheritance of trauma, in addition to epigenetic mechanisms leaving no cognitive trace [110], trauma could also be picked up from the behavior of parents, grandparents, relatives, or anyone. Reactions by triggered parents could overwhelm their children, causing exiled parts to emerge. Trauma would propagate, or evolve, with slightly different exiled cognitive content, but possibly (nearly) identical physiological consequences. Regardless, the essence of the cognitive content would likely be shame and inadequacy. Collective trauma, i.e., society-wide, shared trauma, would propagate in the same interpersonal manner, but also through any existing structures: group behaviors, habits, rituals, mindsets, institutions, and/or architecture.

[110]: Morin et al. 2021 DOI

As an aside, the interviewee mentioned that social pressure to conform had made her feel as if society was 'putting beliefs in her head', and that such beliefs 'had not fit her'. Hypothetically, this pattern of thought, when expressed in a more vague form (say, how a four-year old would put it), appears to resemble the concept of 'thought insertion' in schizophrenia. After all, external influence, say, in the form of propaganda, is essentially 'thought insertion'.

In the previous case study [1], it was proposed that antipsychotics should be used temporarily or intermittently instead of as a prophylaxis. There is evidence that in the short term, antipsychotics improve quality of life, functioning, and disability, reduce psychopathology, the severity of illness, compulsive behavior, and improve cognitive insight [157]. However, in a 19-year follow-up, moderate and high cumulative antipsychotic maintenance treatment within the first five years after first-episode psychosis was consistently associated with a higher risk of adverse outcomes (continuing use of antipsychotics, psychiatric treatment, disability allowances, mortality), as compared to low or zero exposure [158]. The present case aligned with the idea of intermittent use.

[1]: Turkia 2022 DOI

[157]: Verma et al. 2020 DOI

[158]: Bergström et al. 2020 DOI

8.3.3 The brain as a filter

The interviewee referred to the long-standing hypothesis in psychedelic discourse: the brain as a potential receiver of information existing in a universal field (an unpublished hypothesis proposed that information would be encoded as standing electromagnetic waves; due to the waves being standing, they could be accessed at any point, and any change to the waveform would immediately be reflected everywhere). According to the interviewee, the field manifested as 'absolute, unconditional love'. In the IFS terminology, such a field of absolute love might refer to the absolute powers of the Self; in the Christian religious terminology, it might refer to the concept of 'heaven'. The suggested interpretation would be that such a field of information could be accessed only in a certain state, and

this state would be characterized by the attributes of unconditional love, ecstasy, 'oneness', or 'ego dissolution'; in other words, through a complete absence of fears.

Concerning Christianity, a notable recent pursuit is the Ligare network (ligare.org): 'an open network of people who desire legal and safe access and believe that Christianity and other existing religious traditions offer paths for preparing, experiencing, and integrating mystical experiences, including those occasioned by sacred plants and compounds'. The network was founded by reverend Hunt Priest, one of the participants in a 2016 psilocybin study involving religious professionals [159]. A similar Jewish network was founded by another study participant (shefaflow.org).

[159]: Lattin 2022 URL

Huxley, who experimented with the plant psychedelic mescaline, held that psychedelics opened a 'reducing valve' in the brain and nervous system that ordinarily inhibited access not only to the subconscious but to 'everything that is happening everywhere in the universe' [160]. Filtering was helpful in preventing overwhelm in some ways, but it was also counterproductive in others. The field could be accessed by psychotic people, people under the influence of psychedelics, and children who had not yet been habituated to such filtering. Osmond noted that not only did the brain filter out the information, but it also provided no means of describing it [161]. Therefore, such experiences could not be properly put into words.

[160]: Huxley 2004

[161]: Huxley et al. 2018

Carhart-Harris et al. suggested that psychedelics decrease activity and connectivity in the brain's key connector hubs, enabling a state of unconstrained cognition [162]. Psilocybin 'appeared to inhibit brain regions that are responsible for constraining consciousness within the narrow boundaries of the normal waking state, an interpretation that is remarkably similar to what Huxley proposed over half a century ago' [163].

[162]: Carhart-Harris et al. 2012 DOI

[163]: Halberstadt et al. 2012 URL

Some indigenous traditions use plant diets and dietary restrictions to transform the body by turning it 'bitter' by consuming only bitter plants [118]. Such practices appeared to assume that consumption of salt or any sweet food, as well as any sexual behavior, prevented proper access to this information.

[118]: Pérez-Gil 2001 DOI

8.3.4 The three types of intuition

Such information could also be accessed without substances through serenity, i.e., in the absence of fear, through euphoric, harmonic, or 'connected' states of mind (perhaps through the Self). Raami, who researched Finnish inventors, noted that most of them described having acquired their ideas through 'unexplainable' methods or 'intuition' [164, 165]; better known examples included Nicola Tesla and cytogeneticist Barbara McClintock [166]. For comparison with the EBM paradigm and as an example, McClintock utilized a rather different, perhaps more 'psychedelics-compatible' method for knowledge acquisition [166]. Her method was described as mystical and was based on intuition, dissolution of the ego, and the concept of plant consciousness [167]. Subsequently, she was ridiculed for decades. In 1983, she was awarded the unshared Nobel Prize in Physiology or Medicine. With regard to other methods, the family

[164]: Raami 2015 URL
[165]: Raami 2019 DOI
[166]: Keller 1983

[166]: Keller 1983

[167]: Owl 2022 URL

constellations method often appears to produce similar 'unexplainable' information about the participants' lives [108].

[108]: Wolynn 2016

Raami classified intuition into three types: instinct based, domain specific, and 'superintuition' [168]. With regard to time, the first concerned the present, the second history and the future, and the third lacked the concept of time. Various individuals and groups emphasized different types. In a very rough categorization, it might be considered that medical professionals emphasize the second type, which may lead to rigid single-lens perspectives. Indigenous people appear to emphasize the first type. Psychedelics and psychosis appear to open the third type, also occasionally accessible with other means. Relationships between groups using different types may become tense. From the domain-specific perspective, the third type appears based on superstition, and the first type appears irrational. From an instinct based perspective, the second type appears as hairsplitting, rigid, elitist, and impractical, and the first type as weak and lazy. From the perspective of the third type, the first may appear as selfish, brutal, and unethical, and the second as arrogant, heartless, immovable, cold, and boring. All these disconnections were based on and fed by fears and separation.

[168]: Raami 2019 DOI

In practice, from the indigenous perspective, the need to 'research the efficacy and safety' of the methods they have successfully used for centuries may appear ridiculous, especially if the people in question refuse to test the methods for themselves, subsequently appearing pusillanimous. On the other hand, medical professionals may consider the application of these methods 'without evidence base' completely 'irresponsible'. To the extent possible, the present case study aims at illustrating that such polarized views are unnecessary, and that the required kind of societal progress can only follow from the adoption and application of all three approaches.

8.3.5 Victimization/object-perspective versus agency/subject-perspective

With regard to victimization, a large proportion of the population may see themselves as victims. While understandable, it is counterproductive from the perspective of regaining agency. More generally, this attitude may result from seeing oneself and the world as conceptual objects instead of subjects or processes. In this condition, perceptions appear to the consciousness primarily as predefined concepts and logical relationships between them (a 'historical' view). An alternative is perceiving oneself as being in the present in an immediate sensory field, which is a continually changing process. Such 'pre-conceptual' experiences may be experienced with psychedelics. In everyday life, pre-conceptual experience may be more common in, say, dancers and children. It may also be more typical for the indigenous, who may refer to the rigid, conceptual way of experiencing as 'white person's mind'. In the sensory, or 'sensual' approach, the world may appear as more fluid, immediate, and changeable: things, including oneself, are processes, not objects. They may appear primarily as 'energies' or impressions; the experience may feel more 'direct', unfiltered, or immediate. Such experience may

be related to reacquiring an embodied feeling of agency—a difficult-to-describe sensation of experiencing oneself as a subject instead of an object; as powerful, or as someone who can create.

An embodied sense of agency is required to implement the necessary changes in everyday life. While psychedelics may show what should be done, and resolve some triggers preventing certain actions, in the end, they don't do things for you. As an example, let us assume that overwhelming traumatic events caused chronic tension to accumulate in the body, and this tension prevented proper functioning of the lymphatic system, which led to somatic disease. Psychedelics may reveal that such tension is present and even dissolve the triggers. However, somatic work such as yoga may be needed to resolve the effects of the chronic tension [169, 170]. As another example, psychedelics may reveal that you reside in a constantly re-traumatizing social setting (e.g., marriage, workplace), but they don't change that environment for you [140, 145]. This brings us to the communal aspect: as illustrated by the present case, both illness and healing are processes, not states. They are also systemic instead of individual phenomena.

[169]: Namkhai Norbu 2008
[170]: Wangyal et al. 2002

[140]: Turkia 2022 DOI
[145]: Turkia 2022 DOI

8.3.6 Societal aspects

In the context of the 'psychedelic renaissance', there has often been a certain caution about not repeating the backlash of the 1970s. Hughes et al. noted that the Portuguese decriminalization of all illicit drugs in 2001 did not lead to major increases in drug use; instead, evidence indicated reductions in problematic use, drug-related harms, and criminal justice overcrowding [171, 172]. The continuous availability of psilocybin in the Netherlands has been uneventful [173]. Holoyda noted that large-scale epidemiologic surveys suggested that psychedelics may reduce individuals' risk of interpersonal violence [174]. Roberts outlined a program to enhance human capabilities to match or surpass the increasing capabilities of artificial intelligence [175].

[171]: Hughes et al. 2010 DOI
[172]: Rêgo et al. 2021 DOI

[173]: Amsterdam et al. 2011 DOI

[174]: Holoyda 2020 URL DOI

[175]: Roberts 2013

Since the 1980s, on a societal level, after a few decades of apparently borderlinish developments, overt psychotic episodes seem to have emerged in some nations in the 2020s. In this situation, even a widespread, uncontrolled, adoption of psychedelics might merely add clarity, enforce boundaries, and clarify long-term visions of societal goals. In general, people tend to avoid facing their traumas, and consequently, even when offered a chance, they tend to come up with any kind of excuses in order to avoid the use of psychedelics. To put it differently, they actively seek out psychedelics and express interest in taking them, but when offered the opportunity, they ultimately choose not to partake. In the short term, the free availability of psychedelics would likely not lead to much, as has been observed with the legalization of cannabis. In the mid- and long-term, however, it would likely lead to significant improvements in mental health and leadership skills.

Democratic practices appear to be failing in many societies due to a decreasing ability to understand how societies function (everyone must feel that they have a personally meaningful task and a purpose, there must be a shared understanding of which tasks and methods are necessary and useful and which are not, and the useful tasks must be executed in a

harmonious, synchronized manner). Many healthcare systems appear lost in shortsightedness, a lack of perspective, and a pursuit for profits, as well as stuck in an ever-increasing pursuit for 'evidence' through archaic methods. If Western societies wish to retain some relevance, they need to significantly improve the clarity of thinking and decision-making of people in leadership positions. It has seemed impossible to achieve with the current methods. As stated in a famous quote, 'problems cannot be solved at the same level of awareness that created them' [176], or 'a new type of thinking is essential if mankind is to survive and move toward higher levels' [177].

[176]: Geus 1997

[177]: Foster 2011 URL

[178]: Celidwen et al. 2023 DOI

Celidwen et al. proposed that the ethical principles of traditional indigenous medicine could guide psychedelic research and practice [178]. A global indigenous consensus process identified eight interconnected ethical principles, including: reverence for Mother Nature, respect, responsibility, relevance, regulation, reparation, restoration, and reconciliation. In practice, the intention appeared to be, roughly, that indigenous authority should be prioritized in anything related to psychedelics, indigenous actors should lead or participate in leading all psychedelic-related practices, indigenous actors should be included in ethical review boards, and profits should go mainly to the indigenous.

[60]: Meckel Fischer 2015

[179]: Turkia 2023 DOI

From the above, it could be inferred that a largely irreconcilable conflict might persist for some time. A practical solution would be that ayahuasca would remain primarily, within reason, in the control of indigenous peoples, while first-world therapies would be primarily based on the patent-free application of LSD, DMT, MDMA, and 2C-B [60], for example. In other words, at least the synthetic psychedelics and therapies based on them should be free of any profit motive, and available to all without restrictions. On the other hand, neither should an indigenous dictatorship resembling 'Big Pharma' be built around plant psychedelics. A reasonable balance between interests is needed. Both the abusive, ignorant practices of profit-driven psychiatry and the psychedelic industry, and indigenous peoples' poverty and bitterness are issues that must be addressed. Regardless, the response to abuse should not be counter-abuse [179]. All parties should overcome their destructive patterns. For example, in some tribes, despite the use of ayahuasca, women are still occasionally subjected to extreme sexual violence.

[180]: Shulgin et al. 1997 URL
[181]: Shulgin et al. 1991 URL

[137]: Fisher 1970 DOI
[138]: Fisher 1997 URL
[139]: Walsh et al. 2005
[182]: Passie 2018 DOI

To be fair, while, in many cases, current indigenous practices may be considered 'university-level' and the corresponding first-world practices 'kindergarten-level', the indigenous are not the only inventors of psychedelics or psychedelic therapies. LSD was invented in Switzerland, MDMA in Germany, and 2C-B in the US [180, 181]. Independent of indigenous practices, therapies based on these have a relatively long history in Western countries. Notable examples include the treatment of psychotic children with LSD in the US in the early 1970s [137–139], and the use of MDMA in Europe and the US [182]. The case of psilocybin is complex, as psilocybin mushrooms grow naturally in most parts of the world.

8.3.7 Neurobiological aspects

The origin of the dimensions without time or causality is an interesting open question. From a modeling perspective, in a simple control system lacking memory and only capable of fixed, reflexive reactions to stimuli, each reaction is causally independent, and there is no experience of continuous time. Adding rudimentary learning capabilities (e.g., classical conditioning and habituation) allows for the learning of trauma triggers.

If the 'life experience' of such a system were observed from the outside, it might resemble a series of flashback-like images occurring at irregular, apparently random time intervals (determined by the environment), with each stimulus causing an instant reaction with no understandable rationale. The system would react only when 'triggered', and the reactions would appear incomprehensible to an observer lacking an understanding of the physical structure. In the presence of an upper layer with its own control system, reactions triggered at the lower layer would override decisions at the upper layer. Apart from the minimal capacity for conditioning and habituation, from the perspective of the observing upper layer, life would appear uncontrollable and randomly disrupted.

Together, the brainstem, the cerebellum, and the autonomous nervous system might form the closest approximation of such a system in humans. They are considered responsible for regulating basic life-sustaining functions such as breathing, heart rate, blood pressure, and the control of movement, including instinctual, automatic, survival-related behaviors (fight, flight, and freeze). Severe trauma might alter connectivity between these and other parts of the brain so that the person could observe their internal functioning. Psychedelics have been observed to enhance connectivity between some areas of the brain [183]. Hypothetically, increased connectivity might allow for such direct inspection, and the same phenomenon might be present in severe traumatization.

[183]: Preller et al. 2018 DOI

The survival-related behaviors could be seen as fixed programs. Freeze should end in reactivation, fight in victory, and flight in a successful escape. In this context, trauma would be an interruption of these programs. Healing trauma would be letting these programs run to their ends.

In 2017, Roelofs reviewed neurobiological mechanisms in animal and human freezing, proposing a research agenda to stimulate translational animal–human research in the emerging field of human defensive stress responses [184]. This agenda would likely involve the role of implicit or procedural memory in trauma [113]. The fundamental control structures responsible for survival-related behaviors might currently be the most promising direction for further research.

[184]: Roelofs 2017 DOI
[113]: Levine 2015

Most people never experience a dysfunction involving severe trauma and uncontrollable dissociation. A lack of direct, personal experience may hinder both research and therapy. This may be why some indigenous traditions require prospective ayahuasca ceremony facilitators to undergo extensive training that induces prolonged starvation and near-death experiences: the mechanisms differ too much from conventional emotional-cognitive logic, and may only be comprehensible through personal experience.

8.3.8 The practice of self-experimentation

With regard to research, while psychedelics may be seen as a somewhat progressive approach, a more interesting question, however, is: what comes after psychedelics? Largely, psychedelics deal with the limits of observing the process of observing. Is there a yet another, never seen a level or way of experiencing? Is there an even deeper explanation of the process of being alive?

Self-experimentation, i.e., scientific experimentation in which the experimenter conducts the experiment on themselves, has a long history in medicine [185]. Notable recent examples include the development of the opioid detoxification product Heantos-4 by a traditional Vietnamese herbalist, Tran Khuong Dan, who tested his method by addicting himself first to opium and then heroin, confirming the efficacy of his invention based on twelve non-toxic, non-addictive herbal components [186]. Tetrahydroprotoberberines were later identified as the most likely active ingredients [187, 188].

[185]: Weisse 2012 URL

[186]: Turkia 2021 DOI

[187]: Ahn et al. 2020 DOI

[188]: Nesbit et al. 2020 DOI

The instance of self-experimentation conducted by Mudge aligns with the historical tradition of similar endeavors undertaken by previous investigators. As noted by Weisse, several of these investigators received Nobel Prizes. He added that 'although self-experimentation by physicians and other biological scientists appears to be in decline, the courage of those involved and the benefits to society cannot be denied' [185].

[185]: Weisse 2012 URL

8.4 Conclusions

This article aims to deepen current understanding of bipolar disorder and psychotic episodes caused by early trauma. As demonstrated by the present case, contrary to common belief, psychedelics may increase mental clarity and add structure to life. Low-dose maintenance treatment of bipolar disorder with certain preparations of ayahuasca shows promise. Larger doses may alleviate suicidality and facilitate the processing of traumatic events, but the process requires commitment and patience. Although a single session with ayahuasca or LSD may resolve acute suicidality, resolving the long-term effects of early abuse can be challenging. Thus, preventing complex trauma remains critical.

Psychedelic therapies may primarily benefit individuals with high cognitive capacity and intrinsic motivation for their use, but with proper guidance, they could be beneficial for the majority of people with severe trauma. In this particular case, it seemed that while neither mood stabilizers nor ayahuasca alone were sufficient to resolve bipolar disorder in the short term, in combination they enabled continuous progress in healing her complex trauma in the long term. The research in progress may provide further perspectives on the use of ayahuasca in the management of bipolar disorder. With regard to full resolution instead of the management of symptoms, high-dose LSD treatment might open new perspectives on the issue.

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The treatment of abandonment anxiety with MDMA and LSD

9

This retrospective study presents the case of a young woman in her mid-twenties who suffered from insecurity and abandonment-related anxiety, which intensified after a breakup of her relationship. Her parents' alcoholism and schizophrenia, as well as emotional and physical violence, had been a part of her childhood, but they had appeared 'normal' to her. Her parents and relatives had not benefited from conventional therapies, which led her to conclude that they would not benefit her either. A friend introduced her to psychedelics, which she initially found strange. She participated in a few psilocybin mushroom ceremonies but felt that there was a lack of supportive structure between ceremonies. Subsequently, she found a therapist who utilized Internal Family Systems (IFS) methodology, MDMA, and LSD. In the course of 1.5 years, she attended thirteen sessions with a therapist, eighteen unsupervised self-treatment sessions, and almost weekly additional IFS-only sessions. In the beginning, MDMA was utilized in the sessions; later, it was replaced by LSD. The dosages were relatively high (120-400 mg of MDMA, or 400–600 µg of LSD).

The most important experience was a reliving of her birth trauma. She described it as perfectly aligned with the model presented by Stanislav Grof. Its essence was the experience of abandonment, which represented a core around which her whole life had been organized. Becoming conscious of this core made her life history appear understandable and explainable. Typical emotions to process had included deep sorrow and feelings of betrayal.

She considered that the process had benefited her enormously, especially because the therapist had extensive personal experience of these medicines as well as the same psychedelic states and types of experience. The therapist had thus been able to provide a clear 'route map' within which her experiences fit. She had resolved her fear of abandonment, ceased to blame herself for her past, and experienced 'grace'. She found that many of her experiences represented allegories of events found in the Bible and religious art. The healing process was still ongoing, with each session producing additional benefits. She considered the process so interesting that she intended to continue it for the rest of her life. Her aim was to stop further transmission of transgenerational trauma. She stated that everyone should go through a similar process.

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9.1 Introduction

This case study belongs to a series of similar studies. Previous studies included a straightforward case of self-treatment of depression with psilocybin [1], a more complicated case of self-treatment of depression with psilocybin [2], the treatment of depression in small-group psilocybin ceremonies [3], the treatment of family trauma with psilocybin and MDMA involving a 'mystical experience' [4], the treatment of alcohol and diazepam addictions with MDMA [5], and the treatment of bipolar

[1]: Turkia 2023 DOI
[2]: Turkia 2022 DOI
[3]: Turkia 2022 DOI
[4]: Turkia 2022 DOI
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disorder with psychotic features with ayahuasca [6]. Fundamentally, all cases involved complex post-traumatic stress disorder (C-PTSD; ICD-11 6B41) [7].

The case involved frequent high-dose self-treatment sessions with MDMA and LSD. The principles and the rationale for self-treatment were discussed in the author's previous article about the treatment of psychosis with LSD and DMT [8]. As also illustrated by the present case, the rationale for self-treatment is the optimization of limited resources. Experienced psychedelic therapists are very rare. After a few guided sessions, faster progress of treatment can be achieved with the addition of self-treatment sessions in between guided sessions. In the present case, the combination appeared very functional and productive. Unsupervised high-dose LSD sessions have also been described in a recent book written by a professor of religious studies, Christopher M. Bache, who underwent 73 solo sessions with 500–600 µg of LSD between 1979 and 1999 [9]. In the present case, the unsupervised sessions utilized slightly lower doses of 250–400 µg.

The present case also involved the Internal Family Systems (IFS) therapy approach [10, 11], which has recently become popular in the context of psychedelic therapy, has been utilized by several psychedelic therapists, and is included in the Multidisciplinary Association for Psychedelic Studies (MAPS) training for psychedelic therapists. IFS can also be utilized as self-therapy, as described by Earley [12–14].

Yugler discussed psychedelics in the context of IFS [15], noting that 'parts' (subpersonalities, alters) often corresponded to 'entities', 'beings', or 'spirits' in the psychedelic context (but they could also be unattached burdens or guides). In addition to these, there was also an unchanging, boundless source of energy called 'the Self' whose energy was characterized by compassion, curiosity, calm, clarity, courage, connectedness, confidence, and creativity (8 C's). In addition, the Self possessed five qualities (5 P's): presence, perspective, persistence, playfulness, and patience. Together, the parts and the Self formed a 'system'. In the end, any therapeutic outcome was due to the energy of the Self, not to a therapist or substance. Everyone, regardless of the severity of their past trauma, had the ability to heal. Yugler also described the concepts of 'unburdening', 'polarization', and 'blending'. IFS was a method or toolkit for navigating any experiences, including psychedelic ones.

In the IFS model, a child approached the world through Self. Parts were considered pre-existing in the system. In the face of overwhelming experiences, they could take on burdens. This corresponded to traumatization. The burdened parts became alienated from the Self, and lost trust in the Self's leadership. The burdens kept the parts frozen in time, thinking that they were still children stuck in the original, traumatizing environment. The burdened parts were transformed into 'exiles', which had to be concealed. Other parts called protectors were tasked with keeping the exiles hidden. If the parts could be unburdened, the parts' trust in the Self could be restored, and the mindsets of the parts updated to correspond to the present day, the parts could release their burdens, and the corresponding trauma could be healed.

Interestingly, the concept of birth trauma emerged as central in this case. The concept can be traced to Stanislav Grof, who introduced it in

[6]: Turkia 2023 DOI

[7]: Maercker et al. 2022 DOI

[8]: Turkia 2022 DOI

[9]: Bache 2019

[10]: Schwartz et al. 2020
[11]: Schwartz 2021

[12]: Earley 2012
[13]: Earley 2016
[14]: Earley 2016

[15]: Yugler 2021 URL

his book about LSD psychotherapy, originally published in 1980 [16]. The concept was based on his experiences facilitating several thousand psychedelic sessions for patients. Later, Grof invented Holotropic Breathwork, a substance-free method for achieving psychedelic states [17, 18]. He also introduced the concept of 'systems of condensed experiences' (COEX) [16, 19, 20]. In essence, it meant that similar experiences formed clusters in the brain or mind. For example, all subsequent experiences of abandonment would connect to the earliest such experience. Recently, in the biomedical context, Grof's ideas have often been overlooked or considered 'unscientific'. This is largely based on the assumption that it would not be possible to remember such events, as the parts of the brain responsible for autobiographical memory would not yet have developed at the time of birth.

[16]: Grof 2001 URL

[17]: Grof 2010
[18]: Bray 2018 URL DOI

[16]: Grof 2001 URL
[19]: Grof 2019
[20]: Grof 2019

In contrast to the previous cases, the dosing in this case was higher, and the guidance, facilitation and integration of psychedelic experiences was more structured and consistent. Subsequently, it appeared that the patient's progress was significantly faster than in the previous cases. Adverse events appeared to be completely absent. On the other hand, while this case is also a case of C-PTSD, the degree of traumatization was perhaps lower than in some cases that involved, for example, early childhood sexual abuse. Also, there were no psychotic features or debilitating depression; the interviewee had been functional in studies and working life. All in all, this case appeared perhaps more similar to Bache's mystical experiences than the cases that focused solely on the resolution of biographical trauma.

The young woman was found online and invited to participate in this retrospective case study. The author's approach was ethnographic, with an intention to collect cases of self-treatment or small-group treatment of various mental disorders with different psychedelics. The details of this case were acquired from a 1.5-hour semi-structured online interview conducted in March 2023, and a follow-up review of the materials. Relevant medical records did not exist due to her not having been involved with the psychiatric care system.

It should be taken into account that while high doses of LSD are considered safe (doses many times higher than the doses used in this case; see, for example, the discussion in [8]), excessive doses of MDMA may be lethal (for example, 500 mg taken by a small girl at once [21, 22]). Furthermore, there may be uncertainty as to whether substances obtained from the dark markets are truly what they are marketed as, or something else that is potentially dangerous. In any case, this study is intended for research and training purposes, and is not to be taken as a recommendation or a guideline.

[8]: Turkia 2022 DOI

[21]: Cockburn 2013
[22]: Cockburn 2019 URL

9.2 Case description

At the time of the interview, the attractive, conventional-looking young woman was 25 years old, employed full-time, and living a middle-class life. No apparent symptoms of any mental disorders could be perceived in her behavior. A few years ago, after a breakup of her relationship, she experienced particularly intense insecurity and abandonment-related anxiety, more intense than during previous breakups or other crises,

feeling that 'nothing helped' with her symptoms. The breakup 'resembled a lot some childhood experiences and kind of made sense, but made no sense'. She 'needed answers for why she was feeling so bad'. She had seen herself as hopeless, 'without future, without value', and that her only purpose in life was to work in some futile job and 'pay taxes'.

One of her parents suffered from schizophrenia and had been somewhat functional on antipsychotics, which, however, 'limited the emotional life'. Her parents' alcohol use had been noticeable, and there had been emotional and physical violence. She had considered these as 'common and normal features of children's lives' in her society at the time.

Her grandparents had been traumatized in the Second World War (1939-1945). These traumas were transmitted to her parents and, to a lesser degree, to herself. In her childhood, the material living conditions were tolerable, but 'emotional aspects were severely lacking'. Many types of experiences and many emotions were 'forbidden'. Her parents' drinking had often been heavy, and the schizophrenia also caused issues. She had experienced 'deep feelings of insecurity and abandonment'. She had needed to repress such feelings, however. Regardless, such a life had appeared relatively normal to her: she had not realized that it was not fully normal.

Some of her parents and relatives had attended conventional therapies but had not benefited from them. Years of therapy had provided no changes; they had 'never helped any of them'. During her crisis, she therefore assumed that such therapies represented a dead end. In the pursuit for other options, a friend introduced her to psychedelics which she initially found odd because she lacked experience of any drugs. She described that it had taken half a year 'to understand what are psychiatrists, what are mushrooms, what is MDMA, and how they function'. Gradually, observing others, she realized that substances such as psilocybin and MDMA could be used as therapeutics.

At the age of 22, she participated in a psilocybin mushroom ceremony. She was one of seven participants; there was little individual guidance. After the ceremony, she lacked support and direction about what to do next. She felt alone or 'abandoned' (there could have been a clash between her type of trauma and the ceremonies' organizational style). While she had 'mystical experiences', they remained somewhat indecipherable and had no long-term effects on her life. Her mindset at the time was 'very dark', and she blamed herself for everything that had happened to her.

Eventually, she found a therapist who utilized Internal Family Systems (IFS) methodology, MDMA, and LSD. The process began with a one-hour introduction to the theory of IFS. It had initially felt strange to her. Following the introduction, there was a one-hour IFS session that 'felt natural'. Afterwards, she wondered why no one had told her before about the existence of such a method, with which one could 'sit with oneself and find answers'.

Soon after the IFS session there was a short discussion, during which a MDMA session was planned. A bit before, she had experimented with MDMA with a friend. However, the MDMA session guided by a therapist was 'much more therapeutic and a great experience'. In the session, she had relived an event during which she had been eight years

old, alone in a hospital after surgery. This event was a part of a cluster of abandonment-related early experiences. After this initial success, she understood how the substance could be utilized 'to help oneself'. She could understand how all her previous experiences 'were stored in the system' and how that realization could cause fear or confusion.

She continued MDMA sessions once every three months. Most sessions utilized doses of 120 with a booster dose of 60 mg after two hours; the durations of these sessions were approximately three to four hours. One session utilized a dose of 400 mg, divided into an initial dose of 120 mg and four booster doses of 70 mg every 1.5 hours. The duration of this session was approximately seven hours. According to her, high dosing was necessary in order to gain access to her childhood experiences. During the sessions, she was blindfolded and listening to music from a predefined playlist compiled by the therapist.

In between sessions, once-weekly online IFS sessions 'resolved a lot of issues'. She had drawn maps of her 'parts' found during the sessions, with notes indicating which parts had been integrated back 'into the system'. The therapist was also reachable online on a messaging system, and they were in contact almost daily. The predefined structure and frequent contact had been essential for her: there was always a plan to follow, an idea of what would happen next, and someone to ask if in doubt.

Mostly out of curiosity, she revisited a psilocybin mushroom ceremony. After the individual sessions, she knew what to expect and was 'more open' to the experience. Subsequently, the ceremony felt more consequential. Regardless, post-session support for integration was still missing.

Perhaps halfway through the process, MDMA was switched for LSD, which was the main instrument of the therapist. In this process, MDMA was used to prepare the patient to work with LSD. MDMA removed enough trauma from the system of parts and instilled enough compassion in oneself to allow one to reap the full benefits of LSD without feeling overwhelmed. MDMA was described as 'LSD with training wheels', whereas LSD was 'like full-blast rocket fuel'.

High-dose LSD produced 'mystical experiences', the most important of which was the re-experiencing of her birth in full detail in her first LSD session (400 µg). She had been born via Cesarean section. She had never believed that such an experience was possible. After living it, however, she had no choice but to believe it. The essence of the experience had been that all attachment wounds were linked to the birth experience, 'exactly as Grof said'. This experience had provided 'richness' in her life; she hoped that everyone could have a similar experience.

At the time of the first interview, a year after the birth experience, she was still 'integrating' it, i.e., determining how the consequences of the experience should be applied in her daily life. She described her experience as 'enormous, opening and enabling a lot of new possibilities'. She said that she 'fully believed in Grof's holotropic paradigm'. For her, LSD was 'the most interesting', due to being the most visual and the duration of the session being the longest.

In addition, she believed that the importance of an experienced therapist could not be overstated. Since the therapist 'had gone through heaven

and hell', including the rebirth experience, a post-session discussion about it with the therapist had been 'the most wonderful experience': she had felt fully supported by the therapist. She described the therapist's work as 'very systematic: there is always a path, a map to follow to go forward'. She also stressed the importance of a trusting relationship with the therapist. Concerning substances, she considered MDMA and LSD superior to psilocybin.

After a while, the therapy resulted in changes in her relationships with people. She became 'unable to close her eyes to certain truths'. Some friendships ended, while others were transformed. Her relationship to her parents also changed. The 'complete makeover of her existence' had resulted in 'enormous improvements'. The sessions consistently produced information that felt subjectively true to herself; finding more of these truths was her aim. She found practical the idea that carriers of experiences were parts, not the Self. Even though parts could be blended with the Self, they were ultimately distinct. The realization of this difference had been the key for her.

Her deepest wound was the experience of having been abandoned. She described that, fundamentally, it originated from the experience of the birth itself, not even the experience of being insufficiently cared for after birth due to her mother having suffered from postpartum depression. Instead, the core trauma was about leaving the safe environment of the womb. The various other experiences of abandonment had then been organized around and connected to this core, forming a cluster, or COEX.

9.2.1 Self-treatment session practices

The therapist had 'taught her how to trust herself' to self-organize sessions for herself at home. This practice allowed her to do 12 to 18 solo sessions a year. Recently, she had organized self-treatment sessions approximately once in every two to four weeks, depending on self-set scheduling. Initial sessions utilized 120 mg of MDMA, occasionally augmented with a booster dose of 60 mg. Current sessions utilized either 400 µg of LSD, or a so-called 'candyflip' (400 µg of LSD combined with 120 mg of MDMA) [23]. She was also interested in trying a 'hippieflip', which was a combination of MDMA and psilocybin mushrooms; for some reason, she had recently developed an interest in mushrooms.

[23]: Liquidrome 2016 URL

For two to four hours before the session, in order to avoid nausea, she refrained from eating. After taking the substance, she set a timer. After 30 to 40 minutes, she began to feel the effect, and retreated to her bedroom, curtains closed. On her computer, she had prepared playlists partly according to the therapist's guidance and partly according to her own preferences. The list included, for example, certain kinds of classical music and songs typical for ayahuasca ceremonies. The list was designed to guide the experience forward by, for example, utilizing variations in intensity between songs. Variations gave a rhythm to the experience and prevented the experience from stalling into a certain mood: when the song changed, the experience typically also changed.

For the next four to five hours, she was on the bed, blindfolded, listening to the music on headphones. This duration was currently 'the most her

system could take' because the process involved a lot of physical release of trauma in the style of Trauma Release Exercises (TRE) [24, 25], as well as sweating. If needed, she could take a break to drink or go to the toilet. She compared the experience to 'running a marathon'.

[24]: Berceli 2015
[25]: Lynning et al. 2021 DOI

Doses between 250 and 400 µg allowed for working with trauma. The smaller dose of 250 µg resulted in the focus and contents of the experience being more biographical. The larger dose of 400 µg 'went deeper', resulting in the processing of issues such as birth trauma. The precise contents were determined by 'which direction her system wanted to take her'. Typically, the contents involved her experiences of having been alone or left alone in a hospital as a child (she had undergone several surgeries as a child). Emotionally, feelings of betrayal were central to these experiences. She described these as 'biblical'. As a child, she had been interested in religion and read the Bible a lot. In the Bible, she could find experiences and events corresponding to her psychedelic experiences.

Although the effect of a high dose of LSD could be felt for up to 12 hours, after a four-to-five-hour session, she regardless experienced no difficulties in returning to her normal tasks. In contrast, after a MDMA session, although the duration of its pharmacological effect was much shorter (perhaps 3-5 hours), she often felt too exhausted to get up from the bed.

After the session, she could message the therapist to discuss her experience. She could inform the therapist about finding a new part, for example, or ask for guidance about some details. She described the post-session guidance as 'very wonderful'. Sometimes they did an IFS session to complement the LSD session.

9.2.2 'Mystical' and religious experiences

Her highest doses of LSD had been 600 µg, taken in a session supervised by the therapist. Such a dose resulted in the experience being predominantly mystical instead of trauma-oriented. These typically concerned the polarity between the feminine and the masculine: the nature and essence of these archetypes, their respective strengths and burdens, their positive and negative aspects, and what could happen if either utilized excessive power over the other. Some issues were 'very primitive': about the biological purpose of humans, and why people existed. She saw visions about tribes, families, children, and the continuum of generations. She described also these as biblical and 'reaching the root issues'.

She had 'found grace' in her system for herself. It had felt like a divine christening or baptism: a baptism into life. Visually, a beautiful, bright light granted amnesty to everything that she had experienced. She found the experience 'very Christian'. Her mother had considered receiving a Christian upbringing important. As a child, she frequently read the Bible as well as other books on religion and philosophy. Partly, this inquiry has been an attempt to understand what was wrong with her. She knew that something was wrong, but could not figure out what it was.

Regardless, she had left the church at the age of eighteen, feeling that she did not need an external authority or structure to support her beliefs. She 'did not need external validation'. She still considered that she only

believed in what she had personally experienced and learned. She saw herself as a creator of her own life. According to her, the Bible was written as an allegory to guide people back to the 'core' or 'root' of their existence. Similarly, other books were relevant to the extent that one could personally validate their information by finding the same structures in their own system, or personally experiencing something described in those books.

The Bible had been able to answer some of her psychedelic-related questions that books about psychology, psychiatry, and philosophy had failed to answer. These answers appeared to be universal and collective – things that everyone experienced in their lives. This had led her to feel connected to humanity. To her, it seemed as if everyone had these experiences, but only a select few were allowed to really look into them. She considered this 'collective mysticism'.

As an example, the experiences of Jesus, such as betrayal and crucifixion, represented archetypal experiences that were present in everyone's system of parts. Similarly, the religious art theme of the 'Immaculate Heart of Mary' represented an archetypal experience of personal pain and love for one's own child [26]. She thought it likely that the artists who created such works had personally experienced these emotions.

[26]: Kupelwieser et al. 2013 URL

Psychedelic experiences made her see the meanings hidden in the Bible and religious art. She had begun to read the Bible again to find additional insights and connections. She stated that the same things could most likely be found in the main works of other religions; it was just that Christianity was her background and thus the most familiar to her.

She found the painting 'Immaculate Heart of Mary' to be a fitting allegory for her healing process [26]. The artwork depicts Mary's heart burning, pierced by a dagger, and surrounded by a wreath of flowers. The dagger symbolizes the pain that needs to be processed, but it is also surrounded by love, represented by the heart and flowers. The love eventually sanctified one of the pain. The pain experienced in the sessions originated from love and eventually dissolved into love.

[26]: Kupelwieser et al. 2013 URL

Concerning negative aspects of the process, she mentioned that undergoing uncommon experiences had produced a degree of isolation from the rest of society which lacked similar experience. Few people had an interest in emotional or spiritual development. This made her feel lonely. The society appeared to be aimed at directing people in a certain direction, very different from a religious or spiritual path. While she was deeply connected to herself, she had, to a degree, also been alienated from others. On the other hand, connecting to herself had allowed her to function autonomously, without unhealthy patterns of attachment, and to better understand the experiences of others. She had overcome her anxious attachment style and undergone a process of individuation, becoming 'more adult'.

She felt that she was now able to 'live as a normal person, keep a job, find friends, and have a family'. She noted that at this point, most people would discontinue the psychedelic therapy process and begin to live a normal life. Her idea, however, was different. She considered the process too interesting to stop. Her quality of life was constantly improving, and there did not appear to be a limit to what could be achieved. While she

said the way of working would likely change with time, she was going to continue the work in one form or another indefinitely, if not only in the form of meditation without psychedelics. However, she wanted to continue using psychedelics 'for a few years, at least'. One reason for this was that she wanted to transfer her newly acquired knowledge base to the next generation. One aspect of this goal was to prevent further transmission of transgenerational war trauma and to heal her extended family. Her work was also a preparation for future traumatic events: she considered that her new skills would allow her to process future events without getting traumatized.

She was delighted about the fact that 'there existed people who had gone through the enormous trouble of having learned how to use psychedelics in the proper way'. Connecting to this knowledge 'had enabled a lot' for her. The only issue was the attitudes of society: people did not know about or understand these methods. Therefore, a certain degree of secrecy had to be maintained. This state of the world and society occasionally made her sad. It seemed that there were parties that did not want people to see the true state of affairs: they did not want the secrets, abuses, and violence to be revealed in full. It was a game about power in which people were the pawns. To address this, primary education needed to be transformed, and children needed to be taught better emotional skills, such as understanding and applying the IFS model. The greatest impediment to achieving societal progress was the widespread fear of the unknown and change. The fear of change was fundamentally the fear of rejection, 'the core wound of everyone', and resulted in societal stagnation.

Regardless, for her, it was enough to know and abide by her own truth, despite a degree of isolation in a society full of people who appeared withdrawn, fearful, and lacking an interest in personal development. As a result of her process, she was able to 'offer herself a better future' also in this environment: she could access her fundamental experiences and needs, accept them, and let the acceptance guide her. Before the process, she had been guided by her fears, especially her fear of abandonment, fear of losing people, and her fear of ending up alone. After facing these fears in the psychedelic sessions, she realized that she was able to live independently, without seeking constant validation. Previously, her mindset had been one of constant conflict; she then realized that her problems had been merely illusory, products of her mind. She had found a new, harmonious relationship and was planning on having children in the future.

9.3 Discussion

Recent psychedelic research has concentrated on meeting the demands of the evidence-based medicine paradigm in order to obtain regulatory approval for these substances to be used in the medical context. In the present case, the interviewee skipped participation in the medical context. Recently, another paradigm has been proposed: the religious context [27]. Traditionally, ayahuasca has been considered a sacrament [28]. As illustrated above, high-dose LSD also falls into this category. While, to a degree, it may be utilized as a 'tool' in a medical context, in the end, such

[27]: Cole-Turner 2022 DOI
[28]: Groisman et al. 2007 URL

a reductionist approach may appear somewhat violent to the true nature of the substance.

The term 'mystical' has gained popularity in the field of current psychedelic research. However, it could be considered problematic. Seeing an optical character recognition (OCR) system for the first time in the early 1990s felt mystical. Similarly, seeing some features of ChatGPT 3.5 for the first time in 2023 seemed mystical; for example, it appeared creative. At the moment, no-one considers OCR mystical, and everyone 'knows' that ChatGPT is 'just a large language model'. Only a few people consider that the human mind is a similar mechanism [29]. While the experience of birth trauma might appear mystical, in the end, it is just another experience like everything else. One might, for example, also find it mystical that effective treatments for C-PTSD remain unadopted because of adherence to 'evidence-based medicine', while ineffective treatments remain adopted in the same paradigm despite the lack of evidence for their efficacy.

[29]: Wolfram 2023 URL

In the Christian context, the Ligare association (ligare.org) represents an attempt to link or fusion the universe of psychedelic experience and the Christian contemplative tradition [30]. Their stated intention is 'making direct experience of the sacred available to all who desire it through the use of psychedelic medicine and within the context of the Christian contemplative tradition'. In the present case, the experience of 'finding grace' amounted to such a direct experience of the divine.

[30]: Lattin 2022 URL

9.4 Conclusions

In this case, the healing process could be considered swifter and deeper than usual, likely due to two main factors: the therapist's experience and the higher dosing. Additionally, the type and degree of traumatization were likely somewhat milder than in some other cases (e.g., lack of early childhood sexual abuse and lack of psychotic features). In the previous cases, the dosing of LSD typically varied in the range of 50–200 µg. In the present case, the range was 250–600 µg, with 400 µg being the most common. This decision was likely primarily based on the therapist's personal experience of working with this range, as well as the expectation that the chosen dosing would produce the optimal outcome. It appeared that this decision was reasonable. She reported no adverse events.

In the ayahuasca context, the competence required for the facilitation of psychedelic experiences has been said to depend on two factors: knowledge and power. Knowledge, in this context, refers to knowledge about the properties of substances and the structure and functioning of the mind. Power, respectively, refers primarily to confidence and trust in one's ability to facilitate the process successfully. Together, power and knowledge produce a single factor that may be the primary determinant of treatment efficacy and successful outcomes: subjectively perceived safety.

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10 Psycholytic dosing or 'microdosing' of Amanita muscaria (red fly agaric) mushrooms

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Following advice received in a dream, a woman in her early thirties, suffering from depression, anxiety, and sleep disorders caused by complex trauma in her childhood, experimented with 'microdosing' or psycholytic dosing of Amanita muscaria (fly agaric) mushrooms. Over a 3.5-month period, following an intuition-based, gradually declining dosing regimen, a notable reduction in her symptoms was observed. No adverse effects were reported. Hematological tests indicated no abnormalities but revealed a slight improvement in liver function, potentially attributed to the remission of addictive behavioral patterns related to sugar consumption and the hepatoprotective effects of muscimol. These findings aligned with the existing literature.

10.1 Introduction

Recently, 'microdosing' of Amanita muscaria (fly agaric) has increased in popularity, with three guidebooks published about the practice in 2022 and 2023 [1–3]. In addition to a review by Feeney [4], interviews with their authors have been featured on a social media video platform (e.g., [5–7]).

[1]: Masha 2022
[2]: Harret et al. 2022
[3]: Dreamer 2023
[4]: Feeney 2023 DOI

While raw samples of Amanita muscaria are toxic, dried mushrooms in small amounts have appeared relatively benign. As an example, a case report featured five people between the ages of 18 and 21 who had consumed dried samples at a party in order to evoke hallucinations [8]. Visual and auditory hallucinations occurred in four of them, whereas an 18-year-old girl lost consciousness. To rule out possible damage, she visited a clinic, where she was observed for several days and had check-up examinations performed. After four days without any problems, she was discharged. No organ complications were observed. The remaining four people were free from any complaints.

[8]: Satora et al. 2005 DOI

A book edited by Feeney provided background on the history, mythology, and pharmacology of the use of Amanita muscaria [9, 10]. New findings supported Amanita muscaria as the ancient sacrament of the Vedas. There was also evidence of its traditional use on Russia's Kamchatka Peninsula [1].

[9]: Feeney 2020
[10]: Winkelman 2022 DOI

[1]: Masha 2022

Psychedelic therapy pioneer and UK psychiatrist Ben Sessa wrote that Amanita muscaria 'also has psychedelic qualities as a result of the active components muscimol and ibotenic acid, which can cause nausea, drowsiness, and low blood pressure as a result of its cholinergic effects. Despite its classically lethal appearance, the toxicity, as well as the psychedelic effects of Amanita, are not too much to write home about. Certainly, it can cause harm, though reported fatalities are very rare indeed. Furthermore, drying or boiling the mushroom can reduce the toxicity' [11].

[11]: Sessa 2012

Due to the remaining ibotenic acid content or other components, excessive doses of dried Amanita muscaria may still be fatal, as in one case involving six to ten dried mushrooms [12]. In another case described by the same authors, one large cap of raw Amanita muscaria was near-fatal. Meisel et al. also described that from 2011 to 2018, the American Association of Poison Control Centers reported 312 exposures to ibotenic acid-containing mushrooms (assumedly, species containing amatoxin were included). Of these, only 15 (4.8%) had a major outcome, with one (0.3%) fatality. 46% of reported ingestions were intentional. A review of six case series accounted for 98 patients, of whom seven were intubated, without any fatalities reported. Mikaszewska-Sokolewicz et al. described a case of coma caused by severe poisoning [13]. Patocka et al. described symptoms of toxicity at high doses [14]. Pieta-Chrystofiak et al. reported results of an online survey about Amanita muscaria consumption among participants of internet discussion groups in Poland (n=95) [15].

[12]: Meisel et al. 2022 DOI

[13]: Mikaszewska-Sokolewicz et al. 2016 DOI

[14]: Patocka et al. 2017 DOI

[15]: Pieta-Chrystofiak et al. 2023 DOI

In a comprehensive review of cyclic peptide toxins of the genus Amanita, Walton described that Amanita muscaria does not make amatoxins or phallotoxins,[1] which are the most lethal compounds found in the dangerous species of the genus [18]. Instead, the relevant compounds in Amanita muscaria are the nonpeptidic mushroom toxins ibotenic acid and muscimol, structurally similar the two main neurotransmitters of the central nervous system, glutamic acid and γ-aminobutyric acid (GABA), respectively [8]. The red skin of the cap and the yellow tissue beneath it contain the highest amounts of these substances.

1: As a side note, a letter to the editor by Laing described a treatment method for poisonings by toxic species of the Amanita genus containing phallotoxins (e.g., Amanita phalloides or the 'death cap', with reported fatality rates between 34 and 63%) [16]. The treatment consisted of intravenous vitamin C (ascorbic acid) at 3 g/d, oral nifuroxazide at 1200 mg/d, and dihydro-streptomycin at 1500 mg/d, administered for three days during which carrot broth was the only source of nutrition. The method had reportedly been successful in all but one case, in which treatment was initiated too late. The inventor of the method had fatally poisoned himself twice and then successfully treated himself in order to advertise the method. A case report in the Lancet provided more details [17].

[18]: Walton 2018 DOI

Ibotenic acid is converted to muscimol by decarboxylation during cooking and/or in the gastrointestinal tract [18]. As a mimic of GABA, muscimol is a potent agonist of the $GABA_A$ neurotransmitter receptors. Walton noted that it is almost certainly the compound responsible for Amanita muscaria's psychotropic effects.

[8]: Satora et al. 2005 DOI

[18]: Walton 2018 DOI

The GABAergic system is involved in the brain's reward pathways. As such, there may be some potential for tolerance, cross-tolerance, addiction, and withdrawal. Alternatively, the different components of Amanita muscaria might partially counteract each other with regard to this potential. There did not appear to be data on this issue, i.e., muscimol was not typically associated with addiction.

In addition, Amanita muscaria contains low levels of muscarine, which is a mimic of acetylcholine and defines the muscarinic acetylcholine subclass of neurotransmitter receptors [18]. It therefore stimulates the peripheral parasympathetic nervous system. Amanita muscaria may also contain small or trace amounts of muscazone, choline, acetylcholine, betaine, muscaridine, atropine, hyoscyamine, scopolamine, and bufotenine [8]. Voynova et al. listed a large number of additional components and pointed out that UV light (e.g., drying in the sun) converted ibotenic acid to muscazone [19]; they also showed that synthetic muscimol had an effect on monoamine oxidase B (MAO-B), indicating that naturally-derived psychoactive alkaloids such as muscimol could have a role in the treatment of neurodegenerative diseases such as Alzheimer's and Parkinson's [20]. Wieczorek et al. discussed bioactivity of these components [21]. Carboué et al. provided an encyclopedia entry [22].

[18]: Walton 2018 DOI

[8]: Satora et al. 2005 DOI

[19]: Voynova et al. 2020 DOI

[20]: Voynova et al. 2021 DOI

[21]: Wieczorek et al. 2015 DOI

[22]: Carboué et al. 2021 DOI

Tsunoda et al. investigated changes in ibotenic acid and muscimol contents in Amanita muscaria during drying, storing, or cooking [23]. Twelve raw

[23]: Tsunoda et al. 1993 DOI

samples contained 462 units of ibotenic acid and 8 units of muscimol. Samples dried in sunlight for three days contained 216 units (47% of the initial amount) of ibotenic acid and 96 units (1200%) of muscimol. Samples dried in sunlight for eleven days contained 36 units (8%) of ibotenic acid and 33 units (413%) of muscimol. Samples dried near an oil heater for two days contained 58 units (13%) of ibotenic acid and 31 units (388%) of muscimol. Table 1 presents the information in a tabular format.

Table 10.1: Changes in ibotenic acid and muscimol contents during drying [23]

method	raw		sundried 3d		sundried 11d		heater dried 2d	
	ibo	mus	ibo	mus	ibo	mus	ibo	mus
units	462	8	216	96	36	33	58	31
percent	100%	100%	47%	1200%	8%	413%	13%	388%

In another set of experiments, raw samples were air-dried in a forced convection oven at various temperatures for various durations (tables 2 and 3).

Table 10.2: Changes in ibotenic acid and muscimol contents during forced convection oven drying (40–60°C) [23]

method	40°C for 18.5 h				50°C for 10.5 h				60°C for 9.5 h			
	raw		dried		raw		dried		raw		dried	
	ibo	mus	ibo	mus	ibo	mus	ibo	mus	ibo	mus	ibo	mus
units	394	5	256	31	515	5	332	29	575	6	313	41
percent	100%	100%	65%	620%	100%	100%	64%	580%	100%	100%	54%	683%

Table 10.3: Changes in ibotenic acid and muscimol contents during forced convection oven drying (80–120°C) [23]

method	80°C for 5.5 h				100°C for 4 h				120°C for 4 h			
	raw		dried		raw		dried		raw		dried	
	ibo	mus	ibo	mus	ibo	mus	ibo	mus	ibo	mus	ibo	mus
units	494	6	82	40	429	13	51	37	335	11	2	6
percent	100%	100%	17%	666%	100%	100%	12%	280%	100%	100%	0.6%	54%

Boiling dried samples in acidic water (pH 4.0) increased the solubility of muscimol and reduced the solubility of ibotenic acid, resulting in more muscimol than ibotenic acid being dissolved in the water after 90 minutes of incubation. Storing dried samples for 90 days in a cool and dark place did not significantly affect the concentrations of ibotenic acid and muscimol.

It thus appeared that either drying with low heat for at least two weeks or drying at 100°C for four hours would reduce the amount of ibotenic acid to a tolerable level while producing a relevant amount of muscimol, after which boiling the dried samples would dissolve more of the muscimol than ibotenic acid in the water. On the other hand, it appeared that boiling raw samples in acidic water for 90 minutes would produce a similar or better outcome.

[24]: Nielsen et al. 1985 DOI

An earlier study by Nielsen et al. indeed indicated that at least a 150-minute boil in a pH 2.7 water solution eliminated all ibotenic acid [24].

Based on the above investigations, in a blog post, Gruska thus indicated that as the current recommended decarboxylation method [25]. The pH of the solution could be easily adjusted with citric acid or lemons. A complex, patented method of using fermentation for decarboxylation also existed.

[25]: Gruska 2020 URL

Regarding the usefulness of Amanita muscaria as a psychopharmaceutical, Feeney wrote that Amanita muscaria had the odd property of producing both stimulating and relaxing effects, though these effects generally depended on the timing of ingestion; in this way, the mushroom could be seen as a modulator of wakefulness [4].

[4]: Feeney 2023 DOI

Masha had collected the experiences of more than 3000 participants who had tested the method for a broad range of conditions [1]. Table 4 lists the conditions, with the the number of participants and percentages of positive, neutral, and negative outcomes during the experiment. In depression, 8% experienced temporary relief only. Mild withdrawal effects were reported in a quarter of Amanita muscaria microdosers (unbalanced mood in 17%, insomnia in 6%, other symptoms in 3%) [1].

[1]: Masha 2022

[1]: Masha 2022

condition	n	positive	no change	negative
allergy	104	59%	41%	0%
asthma	26	54%	46%	0%
autism	13	77%	15%	8%
depression	999	79%	10%	3%
sleep disorders	980	73%	17%	10%
migraine	115	72%	38%	5%
addictions				
alcohol	385	85%	15%	0%
amphetamines	78	78%	14%	8%
caffeine	210	40%	58%	2%
cannabis	169	57%	40%	3%
cocaine	38	74%	26%	0%
designer drugs	74	88%	12%	0%
opioids	34	68%	17%	15%
sugar	503	48%	52%	0.4%

Table 10.4: Effects of Amanita muscaria microdosing on various conditions [1].

Feeney noted that Masha had collected an enormous amount of likely important data, but it had been underutilized [4]. Masha also provided methods for preparing the mushroom for safe use.

[4]: Feeney 2023 DOI

Dreamer's self-help book focused on mental health and issues arising out of trauma [3, 4]. Feeney commented that the book was 'more personal and intuitive and provided the reader with hands-on tools for different types of dosing as well as self-reflection'. Dreamer described that she had suffered from debilitating panic attacks and anxiety and had consumed high doses of synthetic pharmaceuticals without success. Amanita muscaria had 'saved her life, so she had chosen to devote the rest of her life to helping others learn about it'. After encountering 'harsh censorship' on mainstream platforms, she created her own website.

[3]: Dreamer 2023
[4]: Feeney 2023 DOI

Stebelska provided a review of the pharmacodynamics, detection, and isolation of ibotenic acid and muscimol [26]. Referring to an earlier study [27], she mentioned that muscimol applied in relatively low doses improved schizophrenia symptoms by working as an anxiolytic. Masha

[26]: Stebelska 2013 DOI
[27]: Tamminga et al. 1978 DOI

noted, however, that in her experiments, feedback from patients with bipolar disorder or schizophrenia had been 'quite negative', and she subsequently listed these conditions as contraindications [1]. More recently, GABA agonists have been suggested for the reduction of antipsychotic-induced tardive dyskinesia [28].

[1]: Masha 2022

[28]: Alabed et al. 2018 DOI

A study by Gabriella et al. elicited intense, dose-dependent feeding in rats, suggesting muscimol as possibly useful in the treatment of eating disorders [29]. Escartin-Perez et al. reviewed the interactions between serotonin, GABA, and cannabinoids in food intake regulation [30].

[29]: Gabriella et al. 2022 DOI

[30]: Pérez et al. 2021 DOI

As additional details, muscimol promoted slow-wave sleep (delta sleep), a stage of increasingly intense deep sleep in non-rapid eye movement sleep, prior to the onset of rapid eye movement sleep [31]. Wang et al. demonstrated the hepatoprotective effect of muscimol in mice [32]. Similarly, Li et al. demonstrated a protective effect of muscimol against systemic inflammatory response [33]. Muscimol activated the TREK-2 channel [34], and appeared to antagonize some effects of ketamine [35]. A Canadian biotechnology company successfully distilled and purified muscimol [36].

[31]: Bacon et al. 2007 DOI

[32]: Wang et al. 2017 DOI

[33]: Li et al. 2022 DOI

[34]: Kim et al. 2021 DOI

[35]: Fuchikami et al. 2015 DOI

[36]: MacDonald 2021 URL

Masha also described similar positive effects of Amanita muscaria in somatic conditions such as allergy, asthma, gingivitis, goiter, hypertension, pain, prostatitis, stroke, and cardiac recovery [1]. Previously, Voynova et al. briefly reviewed the mushroom's anticarcinogenic and antioxidant effects [19].

[1]: Masha 2022

[19]: Voynova et al. 2020 DOI

As with most psychedelics, variations in doses as well as in timing may produce qualitatively different effects, with low doses being anxiolytic and high doses producing 'trips' largely similar to those with classical psychedelics, including visions of fractal patterns, as well as various emotional-cognitive-somatic effects, the exact characteristics of which depend on the life history of the person. Depending on the ibotenic acid-muscimol ratio, the effects of higher doses may be more or less unpleasant.

One of the author's earlier case studies contained examples of low dosing [37]. In that case describing the experiences of a young man, the effect of muscimol was considered 'very different' from other psychedelics. Low doses 'completely removed fear and anxiety, calming the mind', and produced a feeling of 'being normal'. They attenuated trauma-related social anxiety, allowing for functioning in social situations that had previously caused panic attacks. The effects of muscimol 'altered social dynamics', so that bullies stopped targeting him. The interviewee commented that his experiences exemplified that 'if something essential changed in social interactions, it would look and feel like this'.

[37]: Turkia 2022 DOI

With regard to the current case, the interviewee referred to the concept of a 'highly sensitive person' (HSP), introduced by US psychologist Elaine Aron in the 1990s [38–40]. She described four central aspects of a HSP: depth of processing, overarousability, emotional intensity, and sensory processing sensitivity. Acevedo et al. suggested that sensory processing sensitivity served species survival via deep integration and memory for environmental and social information that might subserve well-being and cooperation [41].

[38]: Aron et al. 1997 DOI

[39]: Aron 1997

[40]: Aron 2002

[41]: Acevedo et al. 2018 DOI

The information was acquired by a semi-structured interview conducted online in November 2023, augmented with earlier interviewee-produced written documentation, including a diary covering the first week of dosing and an excerpt of a medical record of a clinical consultation concerning possible somatic issues related to the experiment. The duration of the interview was approximately one hour. A few follow-up questions, checks, and reviews were performed in the following week. As this paper was made available shortly after the interview, there was no follow-up period in this case.

10.2 Case description

A woman in her early thirties reported that following a dream that advocated 'microdosing' (psycholytic dosing) of Amanita muscaria, she had utilized it for approximately three months, experimenting with varying methods of administration and experiencing benefits from it.

Her childhood was influenced by chronic domestic violence perpetrated by her parents. As a result, in her teens and adulthood, she suffered from chronic depression, anxiety, panic attacks, and sleeplessness. She was prescribed escitalopram for depression, propranolol for panic attacks, and quetiapine for sleep disorders. Escitalopram caused 'electric shocks from her brain to her body' that could be so severe that she dropped her tray on the floor in her school's cafeteria. Propranolol took half an hour to produce an effect; it then slowed down her heart rate so much that she got another panic attack from suspecting that her heart was stopping. Quetiapine allowed her to sleep, but then she 'never woke up again', spending the next day 'in a fog'. She commented that these medications 'never fit her', as they numbed and desensitized her, in effect 'thwarting her from being herself'.

She described herself as a 'highly sensitive person' (HSP). In her twenties, she completed a vocational education. Her central issue with regard to capability to work and study was overarousability: currently, one day of work triggered so many somatic and emotional, likely trauma-related, reactions that she needed four days of rest to recover.

Approximately 4.5 years before starting the experiment, she had been diagnosed with ADHD and prescribed lisdexamfetamine; all the previous medications she discontinued at this time. After that, she also received cognitive psychotherapy once a week for three years. She considered it useful, as some traumas that were surfacing could be discussed there, and she had been able 'to connect better with her wounds'. In addition, lisdexamfetamine 'was helpful in the beginning . . . it is not a completely bad substance'. Due to the national limits of public health insurance coverage, the therapy had ended approximately three months before the beginning of the experiment, approximately six months before the interview.

A month or two before the end of therapy, she had discontinued lisdexamfetamine. She described that for some time, an inner voice had 'shouted at her', saying that the medication was not good for her. According to her, it 'suppressed parts of her', 'accumulated things inside her', so that

through becoming suppressed, she could function in her society as a HSP.

After the psychotherapy ended, the accumulated stress culminated in burnout, with escalating symptoms of depression and sleeplessness. She felt 'numb' and was 'unable to feel any kind of joy'. In her view, the burnout was a release of everything that had been repressed during the last few years under lisdexamfetamine. In her view, the medication had 'attenuated parts of her'.

Through her friends, she had heard about the possibility of 'microdosing' fly agaric, but she 'had been programmed to be afraid of it', considering it 'horribly dangerous, even deadly'. However, one night during the burnout, she saw a dream in which she was advised to visit a specific place in a nearby forest outside of her usual path. In that place, she was told, there would be fly agaric mushrooms that she should consume.

She visited the location, and to her surprise, she found the mushrooms as advised. She commented that she had not even known that these mushrooms could grow in July. She picked some but did not consume them immediately due to fears of toxicity. However, this event initiated her interest in the practice, and she began looking for information about it online. She was surprised by the amount, clarity, and good quality of the information found in the videos. Eventually, she felt ready to initiate the experiment.

Soon after that, she encountered a really large red fly agaric elsewhere, decided to initiate the process, picked it up, and put it in the sauna to dry. After a while, she noticed a liquid dripping from it, of which she ingested several large drops. Its taste was 'strong, salty', similar to game meat, resembling that of forest; according to her, the flavor was 'a combination of many flavors . . . the flavor, in itself, was a special, awakening experience' for her. After the first taste, fears of toxicity dissolved.

An initial sensation was that of a dry mouth. She noticed that it was a full moon and walked out to a balcony, being enchanted by her surroundings, 'as if seeing it all for the first time'. Simultaneously, she listened to music on headphones and felt as if 'living through each song' and dancing while watching the night sky, fascinated, with her body 'swaying'. Her mood was elated, 'as if nature were embracing her'. The drops thus triggered a 'trip' or a 'trance state' involving hyperfocus and a partial loss of the experience of time; she could not say how long she stayed in that state. At some point, she also saw fractal patterns but remained unconcerned by that, as she assumed it was a benign effect of the mushroom. Next, her hands appeared to 'radiate shining energy'.

After that, she went to sleep. After a few hours, she woke up to hear 'a voice inside me shouting, calling her by her real name' (i.e., she woke up because she had shouted out loud while sleeping). In retrospect, she considered that 'the voice' had been her 'inner child' or 'myself, locked up inside me'. She had lacked connection to this inner child, and the connection had re-emerged due to the effect of the mushroom.

On the second day, she continued experimenting with a few small drops of the liquid, mixing them with blueberry juice. She went for a walk in the forest and began feeling 'how all my thoughts were billowing to the surface, as if floodgates had opened up'. She 'stepped aside to

observe herself' and was 'surprised at how many thoughts she was entertaining in her mind'. Thoughts kept billowing on her, with 'all that mess in my head surfacing'. She began 'discussing with the spirit of the mushroom', deliberating on whether her intention was to get intoxicated in order to 'escape herself', or 'to reconnect with nature' and get support for dealing with her traumas originating from domestic violence. As she then 'felt having been heard, she 'felt relieved. In her mind, she 'agreed with the spirit of the mushroom to continue the experiment'. Later, she described becoming conscious of her subconscious thoughts as 'a purgative experience'.

On the third day, she took a small piece of dried mushroom, approximately the size of the tip of her little finger. The taste was again 'pleasant, slightly salty'. She noticed a slightly dry mouth but no other effects. During the day, however, she experienced an absence of depression and hopelessness; everything felt 'tolerable'. The next night, she slept 'better than usually'.

On the fourth day, she felt that her usual morning tiredness had abated. Waking up was 'less difficult than usually'. Also, her repetitive thought patterns typical for mornings appeared 'fast-forwarded'. She was able to clean up her apartment 'without forcing herself'. Later that day, for the first time, she made tea from a thumbtip-sized dried piece of the mushroom. The taste was pleasant, 'mushroomy'. As social workers came for a visit, she noticed that she felt 'unusually clear and bright'. She described that usually in these meetings, she had trouble remembering things, her narration was disoriented, and she was 'jumping from one subject to another'.This time, she noticed that she could remember unusually well what she had been up to during that week, as well as narrate the events in a more logical order. Her feeling was peaceful, and she could 'also discuss her emotions, for example, what the week's events had felt like'. She 'could laugh to herself'. As a result, the meeting was much more productive than the earlier ones, and they were able to organize issues related to childcare.

On the fifth day, she drank the leftover tea from the previous day, which she had stored in the fridge. She felt that she needed rest and skipped her rehabilitation. She felt 'lighter than usual', and her usual self-accusations were absent. It was 'easier to let unpleasant thoughts go'. In a park, she was swinging fast, thinking of 'how it would feel if she was no one and would not care what other people think' about her. This made her laugh, enjoy the sunlight on her skin, and become 'filled with joy'. She realized that during the experiment, her usual constant need to snack or eat candy had been absent. Instead, she had cooked salads and mushrooms dishes and drank enough water. Regardless, on that day she did eat a few cookies but was able to stop it. There was a slight headache.

On the sixth day, she prepared mushroom tea again. She visited a supermarket, but her usual feelings of anxiety and overwhelm were absent. Instead, she 'felt the same kind of relief as in a forest'. She 'tolerated sensory stimulation much better, without getting stuck or anxious, and got her business done'. She experienced slight aches in her stomach, possibly related to her period or the snacking last evening. After eating a salad and mushroom tacos, the stomachache disappeared.

After midnight, she felt 'an inner energy rising, as if it wanted to be dispelled from her'. She 'accepted her restlessness and surrendered to

it'. As she had experienced similar feelings before, she was not scared of them. At times, she acted 'like a werewolf growling in the dark night and speaking a foreign language, a creature of the night forest'. She 'let it all come out of her'. Her body was moving; its movements resembled convulsions. The 'voice of the creature was scary and aggressive'. During the whole episode, she was 'observing herself, knowing that she was still in her right mind'. She considered that the movement was trauma-related, originating from a part of her that 'wanted to become seen'. After 'releasing enough movement and sound out from inside her', she relaxed to sleep.

On the seventh day (the last day in her diary notes), despite the stomach pains the previous day, she decided to continue the experiment and drank some more tea. On the previous day, she posted about her experiment on social media. Replies made her feel that Amanita muscaria was 'as misunderstood as she herself had been'. She hoped that awareness of it would increase. Otherwise, the day 'went well, with slight, cozy tiredness taking over', of the kind that 'could have allowed her to take a nap'. Usually, relaxing for a nap had been difficult for her.

All in all, she wrote that on the positive side, her anxiety and depression had been alleviated, getting over things was easier, sleep was improved, mornings were 'easier', memory had significantly improved, mood was more stable, and social situations were easier to handle. On the negative side, there had been slight stomach pain and a slight headache around the eyes. Tiredness and the possibility of traumatic memories emerging were considered neutral.

The most noticeable effect was a complete disappearance of cravings for sugar. She had been addicted to the daily consumption of candy and processed foods. Suddenly, she felt no desire for candy or sugar, and processed foods began appearing 'suspicious' to her, causing an embodied sensation of slight repulsion. Subsequently, she began cooking her meals using only fresh ingredients. After the first week, her stomachaches and headaches were alleviated.

She continued the process by taking small pieces of the dried mushroom daily, about the size of the tip of her thumb. After three weeks of daily dosing, her friends began to worry about the possibility of kidney and liver damage. To rule out this possibility, she contacted a municipal health care clinic, describing her experiments. When asked for central nervous system (CNS) symptoms such as euphoria, hallucinations, or disorientation, she reported none of those but added that her anxiety and sleeplessness had been notably alleviated. A surprised nurse consulted an apparently equally surprised doctor, who contacted the national poison information center.

Current public advice on the center's website stated that fly agaric was poisonous to the central nervous system, with typical symptoms being fatigue, disorientation resembling alcohol intoxication, sweating, increased salivation, vomiting, and diarrhea. If the ingested amount was less than two cubes of sugar, the patient could be monitored at home. If the ingested amount was greater, medical assistance was recommended.

A basic blood panel was prescribed, and an 'immediate discontinuation of consumption of toxic mushrooms' was 'strongly advised'. The results,

however, came back uneventful. During the consumption of psychiatric medication a few years before, her alanine aminotransferase value had been over 500 U/l. Nine months before the experiment, it had been 79 U/l. After three weeks of dosing, alanine aminotransferase was 13 U/l (reference range 0–35), alkaline phosphatase 44 U/l (35–105), creatinine 66 µmol/l (50–90), estimated glomerular filtration rate (CKD-EPI) 107 ml/min/1.73 m^2 (≥ 90), C-reactive protein <1 mg/l (< 4), hemoglobin 140 g/l (117–155), leukocytes 7.4 x 10^9/l (3.4–8.2), and trombocytes 303 x 10^9/l (150–360).

As she continued the experiment, the purgative emotional process was continuously repeated. Occasionally, instead of eating the dry piece, she made tea of it. She 'tried to find her own way of consuming the mushroom'. Her daily anxiety and depression continued to ease. Mushroom tea consumed in the morning energized her, whereas tea consumed in the evening sedated her. She felt as if Amanita muscaria was 'amplifying her body's natural needs'.

The dosing had 'helped her to observe and recognize the limits of her endurance'. Currently, her 'resources and boundaries were very clear'. She considered the changes caused by fly agaric as 'one of the two most influential improvements in her life' (the other was related to drumming and its vibrational effects). She had become 'more authentic', expressing herself more freely, with increased trust in other people.

Concerning ADHD, referring to a person with the condition living 'as if with multiple televisions on simultaneously', she currently considered that to be 'a natural part of herself that she did not want to suppress in order to focus on just one aspect'. Lisdexamfetamine had 'suppressed the inner child' and attenuated her natural shyness. She was currently being evaluated for autism-spectrum disorders. She felt that under the influence of the medication, she had not been allowed to be herself: the intention of the medication had been to adapt her to society by reducing her sensitivity to 'external loads'.

The dosing was no longer daily but based on intuitively observed need. She was no longer trying to suppress symptoms of anxiety and depression; instead, she had 'accepted them'. This had alleviated their severity. She experienced the effect of the mushroom as 'gentle holding'. Instead of suppressing issues, it brought them up. Subsequently, she was better able to process them, 'whatever was coming up', utilizing 'a gentle connection to her inner feelings'. The improved connection to the inner child had caused adverse childhood experiences to surface more on an emotional level.

In the process, she 'had grown an inner intuition' about the timing of dosing: she 'just knew' when to take the next dose. After the first time, she had not utilized liquid. Eating the mushroom dry appeared to produce an effect faster, while tea appeared more sedative.

For a week, she had also experimented with similar 'microdosing' of psilocybin mushrooms but had considered them inferior in comparison. Although psilocybin had appeared to 'produce more joy', for the whole time she had 'hoped that the week would be over' so that she could return to using Amanita muscaria instead.

A later one-gram session with psilocybin mushrooms had produced no visions but had 'clarified what she wanted from life'. As a result, she had ended a 'dysfunctional relationship'. The session had also clarified to her that she did not want to work further with psilocybin, as she felt that 'Amanita was more suitable for her' and psilocybin was perhaps 'less effective'.

She had found videos on social media platforms useful in the beginning but was currently not interested in books about the subject as she 'trusted more in her own intuition'. She utilized intuition 'a lot in her life', also in, for example, cooking with intuition instead of with recipes.

Currently, she was a single parent of a small child, and taking care of the child took almost all her resources. During the day, the child was in a daycare. In addition, she participated in rehabilitation for one day per week. Similar to working, one evening of socializing with other parents exhausted her so that she needed to rest the following day. To the question of how she assumed the dosing would affect her ability to work in the long term, she said that she had not thought about it because, due to motherhood, her life had been 'so hectic' recently. Currently, motherhood was her first priority.

When asked what was the most relevant issue, she replied that she had found Amanita muscaria 'to have the potential to be a universal medicine for many indications'. She had had panic disorder 'as long as she could remember'. Currently, if she felt a panic arising, she took a small piece of mushroom, chewing it and 'focusing on the taste'. She felt the panic abating almost immediately, with the attack over in 'maybe five minutes'. The mushroom had seemed to be 'a precision medicine' for this indication. She applied the same procedure for sleeplessness.

Openly talking about her experiences without fear and expressing herself more freely had created 'a certain kind of freedom and peace of mind'. She considered that 'an extreme mercifulness towards oneself had been the best medicine'. This involved 'treating herself as a small child and not demanding too much from herself'. Sensitivity predisposed her to overloading, which in turn triggered symptoms, after which social or work-related issues could escalate.

In the last few years, her parents 'had changed a lot'. They had realized the harm caused by the violence in her childhood and apologized to her, saying that they had 'done wrong'. To her, their admission indicated 'significant personal growth'. Subsequently, she had forgiven them. She commented that this was 'good enough for her'. Regardless, this 'did not eliminate' her traumatic early experiences: she still 'had to live with those traumas'. They could not be hidden or pushed away; one just had to accept that they had happened and live with them 'every day'.

She did not want to talk about this subject too much, as she felt it would have been blaming. She wanted to protect her parents, as they were, after all, her parents. In her view, they had been ignorant of the consequences of their actions, and had they known that she likely ended up unable to work, 'they probably would not have done it'. Their issues were due to transgenerational trauma, which had 'circulated'. Her parents had also suffered from domestic violence in their childhoods. In addition,

the culture of not seeking help in time and ignoring mental health issues had likely contributed to the continuation of violence.

In summary, she had found Amanita muscaria to be 'a tool for clarifying her boundaries'. In the long term and in the future, she assumed it would continue to help her. Her social workers had accepted her practice, considering her 'brave' for taking care of herself in such a way.

10.3 Discussion

Maté investigated the interconnections between childhood developmental trauma and attention deficit disorder, concluding that ADD was not an inherited illness but a reversible impairment and developmental delay in which brain circuits responsible for emotional self-regulation and attention control failed to develop in infancy due to environmental factors [42]. The resulting distractibility was thus considered to be a psychological product of adverse early life experiences.

[42]: Mate 2019

Depending on the severity of early trauma, its consequences may manifest themselves in such ways that traumatized individuals are assigned various psychiatric diagnoses in the current diagnostic systems (ICD-10, ICD-11, or DSM-5). Alternatively, such individuals may be labeled as HSP or 'being on an autistic spectrum'. In severe cases, the applicable diagnosis, focusing more on etiology than symptoms, may be complex post-traumatic stress disorder (C-PTSD; ICD-11 6B41).

In the Internal Family Systems (IFS) therapy terminology [43], 'treating oneself as a small child' could be interpreted as the Self taking care of exiled child parts, producing corrective emotional experiences, and/or updating the child parts.

[43]: Schwartz 2021

With regard to the advice to ingest Amanita muscaria having emerged in a dream, as an example, some indigenous tribes in the Amazonian area believed that after the use of mind-altering substances, the information received during their acute effect was not a priority; instead, what was to be relied on was the information received afterwards in dreams. As another example, many inventors have stated that their ideas originated from similar, unconventional sources [44, 45].

[44]: Raami 2015 URL
[45]: Raami 2019 DOI

A reasonable conclusion about indications of Amanita muscaria might be that it is unsuitable for applications where a psychedelic effect is desired, but it may be suitable for applications where a sub-psychedelic effect is sufficient or more desirable. While classical psychedelics have appeared suitable for psycholytic, 'regular', or high dosing, muscimol may be primarily useful with psycholytic dosing [46, 47], i.e., dosing that causes mild but noticeable acute effects, in comparison to 'microdosing' understood as producing no noticeable acute effects. In addition, whereas non-psycholytic doses of psychedelics may be best used intermittently (rarely) or for a short period only, psycholytic dosing is typically utilized for longer periods. The lack of a follow-up period in this study did not allow for the determination of whether C-PTSD-related symptoms could gradually fully resolve in the course of, say, a few years.

[46]: Passie et al. 2022 DOI
[47]: Passie 1997

As the current experiment may be considered more psycholytic than 'microdosing', studies of actual microdosing, such as the self-blinding

[48]: Szigeti et al. 2021 DOI

citizen science study by Szigeti et al. [48], may not be directly relevant. With regard to the placebo effect, it could be noted that, as long as the outcome is favorable, the cause of the effect may not really matter. Regardless, in this case, the initial effect appeared real, and the subsequent effects were based on that. The first experience with Amanita muscaria was stronger and significantly different from the interviewee's usual daily experience. The taste of the mushroom would then remind the person of the original experience, functioning as a cue, causing the person to return to the state of mind of the initial experience (also, for example, the music played during a psychedelic experience could later function as a cue). In this case, without an initial 'trip', such a cue would not work. When asked about this possibility in a follow-up, the interviewee commented that in her experience, the taste was so significant that it alone reminded her of the first time, calming her down, 'so this may well be the case'.

The effect may be similar to the 'reactivation' phenomenon associated with 5-MeO-DMT use (see, e.g., [49]). Reactivation refers to 'a re-experiencing of certain elements of the drug-induced state after the drug's effects have worn off'. They could appear days or months after the session, typically in conjunction with the use of low doses of other psychedelics such as LSD, but occasionally also without an obvious trigger. Reactivations could thus be interpreted as a continuation of a long-term process of realignment of the nervous system or the body as a whole.

[50]: Plant Medicine Podcast 2022 URL

Szigeti mentioned that 'triggering one's own placebo effect either through microdosing or some other practice can be transformative' [50]. In the IFS context, one's own placebo effect would correspond to 'an innate healing capacity of the Self'. In, for example, craniosacral therapy (CST) context (see, e.g., [51, 52]), it might be called an intrinsic, embodied intelligence of the client, aimed at releasing, restructuring, and integrating what is necessary for healing. In this process, the role of a therapist or a substance would be limited to initiating and supporting such an innate mechanism. In this interpretation, muscimol would not be strictly a 'cause' of healing but a facilitator of it. Thus, the idea of a substance as a 'cause' of an 'effect' might appear to be a counterproductive oversimplification.

[53]: Rajamäki 2023 URL
[54]: Aalto 2023 URL
[55]: Aalto 2023 URL

[56]: Kheriaty 2023 URL

If the current psychiatric care system is considered to have already failed [53–55], attempts to maintain a failed system will only lead to the development of independent, parallel systems that will be more functional and efficacious while simultaneously being significantly more affordable, as described by Kheriaty [56]. This case featured an example of a grassroots initiative: an innovative, out-of-the-box, no prescription or appointment needed approach. As also illustrated by three previous case studies [37, 57, 58], such initiatives may be the key to functional, affordable healthcare based on self-empowerment.

[37]: Turkia 2022 DOI
[57]: Turkia 2022 DOI
[58]: Turkia 2023 DOI

10.4 Conclusions

This study investigated the initial stages of self-treatment with Amanita muscaria, a legal and relatively abundant psychoactive substance in the Northern Hemisphere. The interviewee engaged in unsupervised psycholytic dosing, reporting notable improvements in various aspects of daily life. These included a heightened sense of self-awareness, introspection into subconscious thought patterns, and the facilitation of

processing traumatic past events. Furthermore, she reported a reduction in sleeplessness, anxiety, and depression.

No notable somatic or psychological adverse effects were observed. Amanita muscaria compounds appeared to exhibit potential synergy, suggesting a role as a 'universal psychopharmaceutical'. This implied its potential as a cost-effective alternative to synthetic psychopharmaceuticals. An initial experience with a slightly higher dose might have been necessary for the subsequent lower doses to function as a cue, facilitating a return to the mental and physiological state of the initial psychedelic experience.

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Ketamine in severe, highly treatment-resistant depression

11

Ketamine is a well-known and widely available general anesthetic from the 1960s that, in sub-anesthetic doses, has been adopted in a limited manner for the treatment of acute suicidality and treatment-resistant depression. Its short onset time and short duration of action make it feasible for use at outpatient clinics. In the US, it has a long history of off-label use and was officially approved for depression treatment in 2019. In Finland, it has been administered to selected hospitalized patients in the public healthcare system since 2010 and became available at a private outpatient clinic very recently. In Norway, it has been administered off-label at a private clinic for approximately 500 patients since mid-2010s and at a public clinic for approximately 300 patients since 2020, with plans on opening more clinics in 2024. In the US, the treatment has been administered to hundreds of thousands of patients.

The retrospective ethnographic inquiry part of this study features a Finnish woman in her twenties who suffered from treatment-resistant depression, rooted in her insecure childhood and having been bullied at school, as well as income insecurity and excessive workload in adulthood. Eventually, she was violently raped, which induced an obvious post-traumatic stress disorder and exacerbated her depression, incapacitating her. In the course of approximately five years, she was prescribed ten different anti-depressive medications and seventeen other medications, including various antipsychotic medications and lithium. These failed to provide an anti-depressive effect but resulted in 'massive' adverse effects instead, including 60% weight gain and psychotic hallucinations. Eventually, esketamine spray treatment at a private outpatient clinic resolved her depression in a single session. A weekly re-administration process was ongoing.

In this case, repeated esketamine administration alleviated depression by producing accumulating corrective emotional experiences without the need to re-experience previous traumatizing events. In a few months to a year, the transient but accumulating anti-depressive effect typically leads to the resolution of depression in most cases, if the patients' living conditions no longer constantly re-traumatize them. It is necessary to adopt ketamine more widely as an emergency measure while more effective, non-addictive alternatives and complements are prepared for adoption. The cost of this specific pilot program implementation was unscalable, but costs can be reduced by approximately 90% by modifying the implementation details. Ketamine and its more effective alternative, 5-MeO-DMT, can serve a major role in facilitating a rebirth of public and private mental healthcare systems, with treatment efficacy multiplied and treatment costs simultaneously reduced.

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11.1 Introduction

In 2019, the OECD noted that Finland had the highest estimated incidence of mental disorders in the European Union (EU), with close to one in

five being affected [1]. The economic cost, including the cost of treatment, social security programs, lower employment, and lost productivity, added up to an estimated 5.3% of GDP, approximately 15 billion Euros per year, or approximately 2800 Euros per capita per year. Finland ranked 9th on a list indicating the rates of depression in 180 countries, with 5.6% of the population, or over 300 000 people of the population of approximately 5.6 million, suffering from it [2].

[1]: Organisation for Economic Cooperation and Development (OECD) 2019 URL

[2]: World Population Review 2024 URL

In 2010, the head of the section of neuropsychiatry at the Turku University Central Hospital (TYKS), psychiatrist Tero Taiminen, introduced the treatment of hospitalized patients presenting with treatment-resistant depression and acute suicidality with sub-anesthetic doses of intravenous ketamine infusion in Finland [3]. However, access to this treatment, applied as a 'last resort' when everything else has failed, has been very limited.

[3]: Naakka 2023 URL

Taiminen reviewed the history of ketamine and described in detail the treatment process at TYKS [4]. The process involved a prescreening that included: a review of unconditional contraindications (pregnancy, lack of the use of contraceptives, schizophrenic psychosis, strong catatonic symptoms, hematouria of unknown cause, suspicion that the patient could not tolerate the return of depression after discontinuation of use); a review of conditional contraindications (somatic disease that could be exacerbated by ketamine, liver disease, history of drug abuse, increased tendency for psychosis, catatonic features of depression); acquisition of informed consent from the patient; measurements of ECG, blood pressure, drug screen, and liver tests; estimation of the severity of depression with MÅDRS interview and BDI self-evaluation.

[4]: Taiminen 2017 URL

Treatment sessions involved a psychiatric nurse administering an infusion of physiological saline solution with 0.5 mg/kg of racemic ketamine for 40 minutes while monitoring blood pressure. After this, the patient was monitored in the hospital for at least four hours. If the patient exhibited a clear treatment response, reinfusions could be administered twice a week for the first two weeks. Usually, treatment sessions were administered once a week. If there was a clear response after three sessions, the treatment was continued for three months, for a total of 12–14 sessions. The duration or intervals could be adjusted individually. The initial laboratory tests were repeated monthly. Observed adverse effects could lead to the discontinuation of the treatment. In treatment processes lasting longer than three months, EEG, memory, neuropsychological, and a few other tests were delivered once a week. Some patients had been treated for up to 1.5 years, without notable adverse effects. After the end of the treatment, an obligatory waiting period of at least six months was required before considering another series of sessions.

Taiminen noted that two days after a single infusion, depression ratings showed 50% decline but after seven days, only 25% decline with respect to the baseline. However, the twice-a-week procedure led to a continuous decline of up to approximately two thirds from the baseline after two weeks. Possible long-term adverse effects remained unclear but possibly included risk of psychosis, cognitive decline, loss of treatment efficacy, induction of drug abuse, and psychological stress after discontinuation of the treatment. Taiminen stated that a more active treatment of depression was needed, and ketamine treatment should be applied more widely

for both unipolar and bipolar depression as well as suicidality and concomitant pain.

Regardless, the police in the same city still complain that they are powerless in the face of having to deal with over five suicide candidates per day on average and 'cannot understand how these people cannot get treatment' [5]. They often have to deal with the same person again in a few days, or even multiple times on the same day. An attempt to get one case admitted to the emergency room might take from one to several hours for a team of two policemen. The current state of psychiatric healthcare has been described as 'not about to collapse but already collapsed' [6]. Patients' mothers say that psychiatric hospitals only function as short-term storage facilities, leaving the patients' issues unchanged [7, 8]. Treatment guidelines are biased, reflecting only psychiatrists' interests, with other professions and viewpoints excluded from guideline committees [9].

[5]: Rönkä 2024 URL

[6]: Rajamäki 2023 URL

[7]: Aalto 2023 URL
[8]: Aalto 2023 URL

[9]: Service 2023 URL

In January 2024, treatment with intranasal esketamine spray was made available at a private outpatient clinic in Helsinki, Finland. Two other clinics had either started a similar operation or were in the process of starting one.

In Norway, off-label administration of ketamine was initiated at a small district psychiatric outpatient clinic of the public Østfold Hospital in Moss municipality in the last quarter of 2020 [10–12]. The price of a single dose is around EUR 4. The patients also pay a small, deductible consultation fee. Several private clinics in Oslo also offer the treatment for the price of EUR 400–700 per session, not including consultations before and after. The Norwegian Institute of Public Health (FHI) opposed approval of this indication, arguing that effectiveness and safety were not well documented, and waiting for 'more and better studies'. In February 2024, the first ketamine conference was organized in Norway [13].

[10]: Jakobsen et al. 2023 URL
[11]: Kvam et al. 2021 DOI
[12]: Blossom Analysis 2023 URL

[13]: Sykehuset Innlandet and Sykehuset Østfold 2024 URL

According to a US/Norwegian ketamine therapy pioneer, a regional director of private ketamine clinics, specialist emergency physician Lowan H. Stewart, Norwegian clinics utilized racemic ketamine either by infusion or intramuscular injection. Esketamine was not used due to its cost. A typical process consisted of four to six treatments over two to six weeks, costing about EUR 3 000. About a third of patients continued with once-monthly maintenance treatment from six months up to a few years, costing EUR 400–700 per month.

In the US, ketamine is commonly prescribed for self-treatment at home, with online video call consultations only [14]. Stewart commented that the practice was relatively safe and worked fine, although not as well as infusions or injections for people who were really sick.

[14]: Hull et al. 2022 DOI

An in-between model was the combined outpatient clinic infusion and at-home self-therapy maintenance treatment with oral ketamine, currently carried out at the Oxford ketamine clinic, so that in between monthly infusions, patients were given oral ketamine to take if necessary [15]. In 2022, the cost of one infusion treatment session was GBP 225, and that of oral ketamine was GBP 60 per month.

[15]: Oxford Health NHS Foundation Trust 2022 URL

According to Stewart, the Oxford model is the future of ketamine treatments. In Norway, this protocol is legal but had not yet been implemented due to pushback from the medical board and the psychiatric association,

who were 'very worried about everybody becoming addicted to ketamine' or it becoming 'the new opioid epidemic'. Stewart attributed this to 'conservatism, fear, misunderstandings, misconceptions, and stigma about using a powerful psychoactive drug'. He pointed to a discrepancy between not being ready for ketamine yet and 'not having any problem with giving everybody amphetamines for ADHD'. The situation was changing, however: there were four active public ketamine units in Norway, and the practice was spreading, with more units opening in a year.

Ketamine is on the World Health Organisation (WHO) List of Essential Medicines, and it is the only psychedelic substance in the focus of clinical trials in Asia, especially in China [16]. Ketamine is available in two forms: the traditional (R/S)-ketamine, i.e., racemic or generic ketamine, and the patented (S)-ketamine or esketamine (Spravato™). Due to its excessive cost, the esketamine product was not approved as a medicine in the UK and Canada [16]. The average annual drug costs were estimated at approximately CAD 300–800 for generic ketamine and CAD 19 000–46 000 for esketamine, an approximately 60-fold difference [17]. Also, a US study concluded that esketamine was unlikely to be cost-effective [18].

[16]: Wolswijk 2023 URL

[16]: Wolswijk 2023 URL

[17]: Canadian Agency for Drugs and Technologies in Health 2021 URL

[18]: Brendle et al. 2022 DOI

Passie et al. found no significant differences between (S)-ketamine and (R/S)-ketamine in the reduction of psychopathological symptomatology or with respect to neurocognitive impairment [19]. In addition, they found that (S)-ketamine produced somewhat more 'negatively experienced' effects, suggesting that the (R)-enantiomer might be associated with protective effects. They wrote that the antidepressant effect might depend on pleasantness and the absence of anxiety. Preclinical data also indicated that (R)-ketamine was more potent and longer-acting. Clinicians in both Finland and Norway have attempted to promote the use of the affordable (R/S)-ketamine over (S)-ketamine [10, 20].

[19]: Passie et al. 2021 DOI

[10]: Jakobsen et al. 2023 URL
[20]: Kantonen 2023 URL

Codron, who suffered from suicidal depression, provided a patient's perspective in an online presentation [21]. Before being admitted to an esketamine clinic, he self-medicated with street ketamine. The price of street ketamine was around EUR 12 per gram, while one 84 mg dose of esketamine cost approximately EUR 580. In his view, the dissociative nature of ketamine helped put things in perspective and balance again, and 'looking at yourself as a distant spectator could often help discover deeply rooted bad habits'. He commented that classical psychedelics, being non-addictive, were a safer alternative than (es)ketamine to provide big 'breakthroughs' with permanent outcomes. Similar 'aha-erlebnissen' were definitely possible with higher doses of ketamine, but the problem of addiction then loomed around the corner. Synergy could emerge from combining ketamine with classical psychedelics.

[21]: Codron 2023 URL

Palmer, who experimented rather comprehensively with most of the known psychedelics, noted that he recognized 'the enormous therapeutic potentials of ketamine in treating many serious conditions such as depression and addiction . . . the effects of ketamine are often unparalleled . . . ketamine is perhaps the most underrated synthetic psychedelic compound with perhaps the most potential value to humans' [22]. He did not, however, find it therapeutically useful for himself, and warned about the addiction potential of high doses in daily use.

[22]: Palmer 2014

Concerning safety of combinations, online harm reduction materials suggested that combining ketamine with common psychedelics and

SSRIs had low risk with possible synergy [23]. Caution was suggested with amphetamines, cocaine, benzodiazepines, and MAOIs. Combining ketamine with alcohol, GHB/GBL, opioids, or tramadol was dangerous. With regard to effects, Turner briefly described his early experiments about combining ketamine with other substances [24].

[23]: Tripsit.me 2024 URL

[24]: Turner 1994

With regard to the history of ketamine for depression, in the 1990s, it was accidentally noticed that when patients were treated with ketamine for pain, their depression also dissipated [4]. In 2000, Berman et al. published the first, very small, placebo-controlled, double-blinded trial that assessed the treatment effects of a single dose of ketamine in patients with depression, finding significant, over 50% decreases in the Hamilton Depression Rating Scale scores [25]. In 2009, Mercer reviewed the use of ketamine in many of the major armed conflicts under difficult and stressful conditions, often with basic equipment and resources [26].

[4]: Taiminen 2017 URL

[25]: Berman et al. 2000 DOI

[26]: Mercer 2009 URL DOI

In 2016, a book edited by Mathew and Zarate reviewed the first decade of progress of ketamine treatment for treatment-resistant depression [27, 28]. The book covered the history, the basic and clinical pharmacology of ketamine, clinical studies, suicide risk, safety, tolerability, impact on neurocognition, preclinical and clinical evidence of mechanisms of rapid antidepressant action, comparisons with electroconvulsive therapy, and emerging data for ketamine in obsessive-compulsive, stress-related, and substance use disorders. The Multidisciplinary Association for Psychedelic Studies (MAPS) published another book that, in addition to therapy aspects, also included accounts of first person journeys, personal recollections, and discussions on ketamine dependence and how to make ketamine work in the long run [29].

[27]: Mathew et al. 2016 DOI
[28]: Stewart 2018 DOI

[29]: Wolfson et al. 2016

In 2017, a Lancet article by Singh et. al. stated that ketamine use for severe, treatment-resistant depression did not violate ethical principles [30]. Three primary ethical concerns included: the genuine need for treatment of patients with severe, treatment-resistant depression; the insufficient safety and efficacy data for off-label use of ketamine; and the misuse potential of ketamine. A key difference in clinical as opposed to recreational use of ketamine was the dose (several grams per day vs. milligrams) and frequency of use (daily vs. weekly or monthly). Less than daily use was not associated with the most serious side effect, i.e., ketamine-induced ulcerative cystitis ('ketamine bladder'); see [31]. The balance of risk and benefit was such that new restrictions concerning off-label use (in the UK) were not needed. Singh et al. hoped that their recommendations enabled the innovative use of ketamine.

[30]: Singh et al. 2017 DOI

[31]: Misra 2018 DOI

In 2019, the United States Food and Drug Administration (FDA) approved ketamine's enantiomeric compound, esketamine, for both treatment-resistant depression (TRD) as well as major depressive disorder (MDD) with suicidal ideation [32].

[32]: Evans et al. 2024 DOI

In 2020, a larger trial by McIntyre et al. found that patients with treatment-resistant depression and bipolar disorder presenting with prominent anxiety receiving intravenous ketamine exhibited a significant reduction in depressive, suicidal ideation, and anxiety symptoms [33]. In 2020 and 2023, Kadriu et al. reviewed ketamine-related research, also comparing ketamine with classical psychedelics [34, 35].

[33]: McIntyre et al. 2020 DOI

[34]: Kadriu et al. 2020 DOI
[35]: Johnston et al. 2023 DOI

A pilot study by Kheirabadi et al. (n=45) compared the rapid antidepressant and anti-suicidal effects of intramuscular ketamine, oral ketamine, and electroconvulsive therapy (ECT) in patients with major depressive disorder [36]. They concluded that oral and intramuscular ketamine probably had an equal antidepressant effect and a better antisuicidal effect compared with ECT. Ketamine also induced fewer cognitive adverse effects and was preferred by patients.

[36]: Kheirabadi et al. 2020 DOI

In 2021, an article in Forbes magazine stated that ketamine-assisted therapy had gone mainstream [37]. This was because it was effective, legal, and short-acting. The best part of psychedelic therapies was that they gave patients hope. Just one chain of clinics was about to treat 65 000 patients in that year. A retrospective analysis on a naturalistic sample by O'Brien et al. found that a higher prevalence of childhood physical abuse correlated with a robust response to ketamine [38].

[37]: Yakowicz 2021 URL

[38]: O'Brien et al. 2021 DOI

A Cochrane review by Dean et al. discussed ketamine and other glutamate receptor modulators for depression in adults with unipolar major depressive disorder, concluding that ketamine and esketamine may be more efficacious than placebo at 24 hours [39]. In search of biomarkers for dissociation, Chamadia et al. found that ketamine was associated with structured electroencephalogram power and global coherence signatures [40].

[39]: Dean et al. 2021 DOI

[40]: Chamadia et al. 2021 DOI

The consensus view in the field of conventional biomedical psychiatry considers ECT to be currently the most effective therapy for depression. Ekholm et al. conducted a randomized, open-label, non-inferiority trial comparing racemic ketamine to electroconvulsive therapy (ECT) for unipolar depression [41]. They concluded that, despite being inferior to ECT, ketamine could be a safe and valuable tool in treating unipolar depression.

[41]: Ekstrand et al. 2021 DOI

Veraart et al. reviewed pharmacological interactions, between ketamine and psychiatric medications used in the treatment of depression [42]. Benzodiazepines and probably lamotrigine reduced ketamine's treatment outcome. There was evidence for an interaction between ketamine and clozapine, haloperidol, and risperidone.

[42]: Veraart et al. 2021 DOI

In 2022, Bowdle et al. noted that ketamine had psychedelic and analgesic effects; the historical labeling of ketamine as a 'dissociative' had been arbitrary and was not the best descriptor of its subjective effects [43]. Hull et al. published findings from a large, prospective, open-label effectiveness trial (n=1247), indicating that at-home, sublingual ketamine telehealth was a safe and effective treatment for moderate to severe anxiety and depression [14]. With respect to depression and anxiety, three patient subpopulations emerged, presenting either with improvement (79.3%), delayed improvement (9.3%), or no improvement (11.4%).

[43]: Bowdle et al. 2022 DOI

[14]: Hull et al. 2022 DOI

Lopez et al. stated that ketamine exerted its sustained antidepressant effects via cell-type-specific regulation of the Kcnq2 gene [44]. They suggested that this was a novel mechanism underlying the sustained antidepressant effects of ketamine. Adjunctive treatment with retigabine, a KCNQ activator, augmented ketamine's antidepressant-like effects. Yavi et al. provided another review of ketamine treatment for depression [45].

[44]: Lopez et al. 2022 DOI

[45]: Yavi et al. 2022 DOI

VanderZwaag et al. reviewed the role of microglia in the therapeutic role of ketamine and psychedelics [46]. They wrote that the role of microglia was largely under-investigated, and detailed sigma-1 receptors, serotonergic and γ-aminobutyric acid signaling, and tryptophan metabolism as pathways through which these agents modulated microglial phagocytic activity and inflammatory mediator release, inducing their therapeutic effects.

[46]: VanderZwaag et al. 2022 DOI

Carter et al. published a case report about intranasal esketamine for severe major depressive disorder with psychotic features [47]. After two sessions within a week, her depression was reduced from severe to moderate. Over 14 sessions, she had no significant adverse effects, including no psychotic symptoms, and was stabilized to mild depression without suicidal ideation. One year after treatment, she continued to be stable, with an absence of auditory hallucinations since the first session.

[47]: Carter et al. 2022 DOI

A book chapter by Nikayina and Sanacora reviewed ketamine treatments, concluding that there was overwhelming evidence of the short-term clinical benefits of treatment with both ketamine and esketamine, but large, longer-term controlled studies examining the safety and efficacy of the treatment remained limited to esketamine intranasal treatment [48]. A book by Siebert featured two descriptions of ketamine experiences and an overview of the therapy [49]. Pompili et al. presented three cases of esketamine treatment, resulting in a rapid reduction of depressive symptoms and a subsequent complete resolution of suicidal ideation and intent in the two patients with such risk [50].

[48]: Nikayina et al. 2022 DOI

[49]: Siebert 2022

[50]: Pompili et al. 2022 DOI

Focusing on esketamine, Borentain et al. commented on the Cochrane review by Dean et al. [51]. They concluded that esketamine improved response, remission, and depressive symptoms as early as 24 hours post-first dose among patients with TRD and among patients with MDD and active suicidal ideation with intent.

[51]: Borentain et al. 2022 DOI

In 2023, Lii et al. presented a preprint of a trial in which ketamine's acute psychoactive effects were masked by administering it under general anesthesia [52]. Both ketamine and general anesthesia alone approximately halved the MÅDRS depression scores on day 1, and the outcome persisted through all follow-up time points up to day 14. Zaki et al. published interim results of a study about the long-term safety and maintenance of responses with esketamine, identifying no new safety signals [53]. Also, two patient-oriented books were published [54, 55]. A report by NBC News discussed the proliferation of ketamine clinics in the US [56].

[52]: Lii et al. 2023 DOI

[53]: Zaki et al. 2023 DOI

[54]: Dow et al. 2023

[55]: Lassalle 2023

[56]: Dunn et al. 2023 URL

Arrighi et al. published a case report about long-term remission in a patient with severe and highly treatment-resistant depression, with no response to 14 different antidepressants and several neurostimulation techniques [57]. Over 20 biweekly esketamine sessions, she had no significant adverse effects and was stabilized into remission. During the maintenance phase and a year later, she continued to be stable.

[57]: Arrighi et al. 2023 DOI

Singh et al. published an observational study (n=62) about the comparative effectiveness of intravenous ketamine and intranasal esketamine, concluding that the number of treatments required to achieve remission was significantly lower with intravenous ketamine compared to intranasal esketamine [58].

[58]: Singh et al. 2023 DOI

Assumedly the first case report on an adolescent, Skala et al. reported a case of a suicidal 17-year-old female with TRD treated with esketamine (28 mg, i.e., one third of a full dose) for seven weeks, resulting in modest gains in objective assessments but clinically insignificant improvements; the treatment was prematurely discontinued [59]. It was unclear why Skala et al. chose to undermedicate.

[59]: Skala et al. 2023 DOI

Rayburn et al. noted that anyone with MDD remained at risk for suicide completion after several days from the last dose of esketamine, and precautions were necessary during and especially after treatment, even among those who admit no intent [60].

[60]: Rayburn et al. 2023 DOI

In 2024, Evans et al. presented a primer for primary care clinicians that reviewed relevant research and therapeutic applications [32]. Sumner et al. stated that ketamine's antidepressant properties were related to $GABA_A$ and AMPA receptors rather than the traditionally assumed NMDA receptor antagonism [61]. In a historical cohort study (n=52), Singh et al. suggested that patients with baseline suicidal ideation required more treatments to achieve a therapeutic response with ketamine or esketamine [62]. Intravenous ketamine and intranasal esketamine did not differ in this aspect. Rawat et al. discussed the accumulation of the antidepressant effect, suggesting that it was associated with changes in bone morphogenetic protein signaling [63].

[32]: Evans et al. 2024 DOI

[61]: Sumner et al. 2024 DOI

[62]: Singh et al. 2024 DOI

[63]: Rawat et al. 2024 DOI

In summary, several hypotheses related to the treatment's mechanisms of action from various perspectives and on various levels of abstraction have been presented. The research has focused predominantly on the brain, approaching the issue from the perspectives of molecular mechanisms, neuropharmacology, and bioelectromagnetism. The 'mechanism of action' thus remains undefined, but is irrelevant for clinical practice. The relevant aspects include safety, efficacy, and cost. Based on the above data, the safety of all administration methods may be considered adequate. Concerning efficacy and cost, intravenous or intramuscular administration of racemic ketamine was superior to esketamine administration.

Concerning the bioelectromagnetic approach to the treatment of depression, the most well-known method is electroconvulsive therapy (ECT) [64]. A frequent adverse effect of ECT is retrograde amnesia. Because of such concerns, ECT was not utilized in the present case. Another method for the treatment of depression is repeated transcranial magnetic stimulation (rTMS) [65]. It is focused and bypasses the impedance of the skull and superficial tissues; these are considered advantages over ECT. The method involves the use of a small, battery-powered device with electrodes attached to the patient's forehead. A similar method, transcranial direct current stimulation (tDCS), utilizes low levels of electric current to stimulate the brain [66]. The latter method was utilized in the present case.

[64]: Rojas et al. 2022 DOI

[65]: Saini et al. 2018 DOI

[66]: Mutz et al. 2019 DOI

In general, psychiatry is plagued by excessive vagueness. What is actually being treated and how is often fundamentally unclear. Attempts to overcome this state of affairs often result in equally problematic, simplistic interpretations. For one, the concept of depression remains unclear. Various perspectives on depression have been proposed by, among others, [67], who suggested that depressive episodes could be classified into discrete subtypes that were induced by infection, long-term stress, loneliness, traumatic experience, hierarchy conflict, grief, romantic relationship

dissolution, post-partum events, season, chemicals, somatic diseases, and starvation. Most of these aspects are typically ignored, leading to treatment failure. Treatment-resistant patients are typically affected by multiple of these causes simultaneously.

With regard to psychiatric diagnostics, typical diagnostic systems consist of consensus committee-devised pairs of labels associated with symptom sets [68, 69], where both the labels and the sets originate from a long history of subjective perspectives and opinions, meaning that they are rather arbitrary. At the clinic, self-reported and/or observed symptom sets are then matched with these predefined sets, resulting in a label, i.e., a 'diagnosis'.

[68]: World Health Organization 2010 URL
[69]: World Health Organization 2024 URL

Another set of predefined pairs controls the rest of the process: those associating diagnoses with medications. After a diagnostic label has been assigned, one of the corresponding medications is prescribed. As a whole, this chain of events, supplemented with various degrees of post-medication oversight, constitutes a 'treatment'.

TRD has been defined as a failure to respond to a varying number of different treatments with SSRIs, SNRIs, and other common pharmaceuticals with unspecified dosing and duration [70]. As the diagnosis of TRD depends on treatments, and treatments depend on a diagnosis of depression, TRD criteria appear not only vague but somewhat circular.

[70]: McAllister-Williams 2022 DOI

To complement this simplistic framework, perhaps originating from the treatment of viral infections, there exists the concept of 'psychotherapy', which is assumed to fill in the gaps; for example, take into account the life history and personal characteristics of the patient. Currently, this model rarely functions.

The details of the case have been acquired from two semi-structured retrospective online interviews with a total duration of 2.5 hours conducted in February–March 2024, as well as medical record excerpts and a written timeline of past prescriptions and diagnoses provided by the patient. Due to the excessive length of the medical record of this patient, only selected parts from the period between December 2018 and February 2024 were included in the analysis. A review of the manuscript was conducted afterwards. Additional details about ketamine treatments in Norway were acquired from a short online interview with Dr. Lowan H. Stewart.

11.2 Case description

A woman in her late twenties felt insecure during her childhood. Her family was middle-class, perhaps slightly below the average. Although both of her parents had jobs, they were emotionally unstable and suffering from chronic alcohol dependence. Her relationship with her mother was 'very difficult', and she felt emotionally abandoned. Around the age of six, she 'had to grow up, become an adult, be responsible for herself', as well as be responsible for handling—or suppressing—her emotions. Alone in her room, she had tried to handle her 'difficult emotions and depressive thoughts' on her own by keeping a diary. Her main strategy was to avoid or please aggressors (the 'fawn' reaction; see [71]).

In her family, 'showing any emotions was not the habit'. According to her medical record, her mother either criticized her or 'refused to talk to her for months'. Her parents hid their alcoholism from outsiders, but it 'felt very unsafe to live at home'. She was afraid of her parents when they were drunk. At night, she was afraid of the dark, afraid that someone would break into their house and kill them all. She suffered from insomnia. On many occasions, she stayed awake at night, monitoring her parents, who had passed out on the floor, and ensuring that they were still breathing. In retrospect, she considered that she 'had not received the required care'.

At the age of seven, she started comprehensive school. At the age of eleven, she overheard how her father planned suicide. Around the age of thirteen, her peers pressured her to use alcohol and tobacco, which she refused and became a target of bullying. She felt betrayed and abandoned by her best friend, who 'recruited the whole school into bullying and excluding her'. She described it as 'a very confusing period . . . I no longer knew myself. I could no longer kind of recognize myself'. She was diagnosed with mild depression and referred to a school social worker.

At the age of 16, as she moved to secondary school (i.e., gymnasium or preparatory high school), the bullying stopped. She felt relieved, and her situation improved. At the age of 19, she enrolled at a vocational university (polytechnic university), occasionally visiting a psychologist. She described the time as 'one of the best times of her life'. Around this time, her father quit drinking. Towards the end of the studies, she began stressing about the uncertainty of her future, becoming anxious. She had two short relationships, the latter of which ended suddenly 'for unknown reason'.

At the age of 22, she completed the vocational degree. For one and a half years, she worked as a solo entrepreneur in a relatively low-income business sector. Due to her low income, she took on two additional part-time jobs.

At the age of 23, the stress of juggling three precarious jobs, occasionally for 16 hours a day, led to burnout. She gave up entrepreneurship and, for the next few years, frequently changed jobs in the hope that a new job would improve things, each time ending up on sick leave, with her depression gradually deepening.

At the age of 24, an occupational health clinician diagnosed her with insomnia and mixed anxiety and depressive disorder (ICD-10 F41.2). She was initially described as 'generally in good condition but dispirited'. First, she was prescribed escitalopram, a selective serotonin reuptake inhibitor (SSRI) antidepressant. The clinician told her that escitalopram was for insomnia; she did not know that it was an antidepressant. She visited a psychologist a few times.

A month later, another psychiatrist diagnosed her with recurrent depressive disorder (ICD-10 F33), commenting that she 'did not seem severely depressed' but had social anxiety and, although she was 'beautiful with a normal body weight', had issues with her body image but no eating disorder. She was not close with her siblings. Her mother was still suffering from alcoholism. An intense period of experimenting with various pharmaceuticals was initiated. A four-month escitalopram experiment

with an escalating dose scheme (10 mg, 15 mg, 20 mg) resulted in nausea but no improvement in mood. Instead, each dose escalation triggered a decline in her mood. Zolpidem (10 mg) and melatonin (3 mg) were prescribed for insomnia. She was diagnosed with recurrent depressive disorder, current episode moderate (F33.1) and nonorganic insomnia (F51.0). Her status had worsened. A decline in her mood and a notable increase in anxiety were considered a transient effect of the dose escalation of escitalopram, and her mood was expected to 'improve soon'. She was 'depressed, tearful, anxious, and hopeless', but not suicidal. She was given a week of sick leave.

After the sick leave, she was unable to show up at the workplace due to severe anxiety. She was diagnosed with recurrent depressive disorder, current episode moderate (F33.1) and agoraphobia (ICD-10 F40.0). Escitalopram was discontinued. A six-month period with duloxetine, a serotonin-norepinephrine reuptake inhibitor (SNRI) antidepressant, immediately followed (30 mg, 60 mg, 90 mg, 120 mg), resulting in dizziness, sweating, and insomnia, but no mood improvement. A gradual de-escalation of dosing of duloxetine resulted in tachycardia, dizziness, and strong 'electric shocks' felt in the body. Alprazolam (0.25 mg), a benzodiazepine with a fast, potent tranquilizing effect of moderate duration, was prescribed for anxiety. It was later switched to oxazepam (15 mg), a short-to-intermediate-acting benzodiazepine. Doxylamine succinate (12.5 mg), an antihistamine, and mirtazapine (15 mg), an atypical tetracyclic antidepressant, were prescribed for insomnia.

At the age of 25, she was violently raped in her apartment by a man who choked her almost unconscious. The experience was about pain and fear of death. She dissociated and had an out-of-body experience. Afterwards, she felt like she had been on the edge of dying. She became afraid of her own apartment and moved away. She 'went into shock', tried to deny that the event ever happened, and never reported it to the police. According to a general practitioner, her latest employment contract was 'unexpectedly terminated'.

One month after the rape, she was granted a state allowance for twice-week cognitive-analytic psychotherapy for three years, with a diagnosis of mixed anxiety and depression disorder. For the following two years, she could not bring up the issue of rape during her psychotherapy sessions.

For the first time, she was diagnosed with severe unipolar depression by a general practitioner (ICD-10 F32.2: severe depressive episode without psychotic symptoms), with a BDI score of 33. She felt the loss of her job was her own fault and had suicidal thoughts and panic attacks. She was described as a perfectionist. Energy drinks were consumed daily. A three-month period with venlafaxine, another SNRI antidepressant, followed (37.5 mg, 75 mg, 150 mg, 225 mg, 300 mg). Dose escalations caused 'electric shocks', and the maximum dose caused 'really strong sweating', a hypomanic period of a month with 'an oddly artificial feeling of happiness', followed by a 'crash'. De-escalation again induced tachycardia, dizziness, and strong 'electric shocks'. Amitriptyline (10 mg, 25 mg), a tricyclic antidepressant, was prescribed for insomnia.

In her view, the hypomania was clearly an adverse effect of venlafaxine. She communicated that at a psychiatrist's appointment, but her view was dismissed. Instead, the psychiatrist diagnosed her with a suspected

bipolar disorder (ICD-10 F31.8: other bipolar affective disorders). Her medical record claimed that she had chronic depression with mild suspected hypomania even before antidepressant use. Her response to SSRIs and SNRIs was poor. Lamotrigine was proposed as a primary medication, with doses between 50 mg and 400 mg. It was mentioned that it 'might also alleviate migraine'.

According to her, she had 'never presented with even a trace of bipolarity'. Notes from another psychiatrist indicated that she had been 'shocked' about the suspicion of bipolar disorder and stated that neither her neurologist nor her therapist agreed with the suggestion. There was no history of bipolar disorder in her family or extended family.

The predefined maximum of 300 days of sick day allowance was reached. She was granted rehabilitation allowance for one year (it had been continued, one year at a time, up to the time of the interview). Her friends could not understand her situation. Excessive sweating made her feel 'dirty' and avoid people. Gradually, she began alienating from people and what she referred to as 'normal life'; she felt she deviated from the norm too much.

She was prescribed lamotrigine (25 mg to 100 mg) for five months. She was informed that it was for the treatment of migraine; there was thus uncertainty about informed consent. Lamotrigine is typically used as a mood stabilizer in bipolar disorder, and a trial in 1997 indicated that lamotrigine is ineffective for migraine prophylaxis [72]. It was eventually discontinued because it induced eczema.

[72]: Steiner et al. 1997 DOI

Another psychiatrist diagnosed her with recurrent depressive disorder, current episode severe without psychotic symptoms (ICD-10 F33.2). According to the medical record, her childhood was 'extremely traumatizing', she was 'clearly unable to work', and before hypomania induced by venlafaxine, she had never experienced similar symptoms.

A ten-month period with vortioxetine, another antidepressant, followed (5 mg, 10 mg, 15 mg, 20 mg). Initially, there was nausea, after which vortioxetine slightly improved her mood for a while. The slight antidepressive effect soon faded, despite dose escalation. In the first two months of this period, another significant adverse effect emerged either because of vortioxetine, other prescriptions, or their interactions. Her weight had been stable for years, with a body mass index (BMI) of 22.9 kg/m^2. In two months, her BMI increased to 36.6 kg/m^2, although according to her, neither her appetite nor eating habits had changed. She brought the issue up at the psychiatrist's appointment, but it was ignored without further comment. According to her medical record, a BMI of 33 kg/m^2 had been measured and labeled as 'normal'. She was afraid of discontinuing the medication by herself, considering it possibly dangerous. After discontinuation of vortioxetine, her BMI dropped to 31.6 kg/m^2, remaining at that level since.

Another psychiatrist diagnosed her with bipolar affective disorder, current episode mild or moderate depression (ICD-10 F31.31), and referred her to a public healthcare psychiatric outpatient clinic specializing in bipolar disorder. Quetiapine (25 mg), an atypical antipsychotic, was prescribed for insomnia; it caused severe day-time tiredness and 'brain fog'. Trazodone (50 mg), an antidepressant medication, was prescribed

instead. Pregabalin (20 mg), an anticonvulsant, analgesic, and anxiolytic medication, was trialed for anxiety, but it caused 'brain fog', tiredness, and nausea. Subsequently, aripiprazole, an atypical antipsychotic, was also trialed; it induced akathisia and severe suicidal ideation.

As she was constantly either being introduced to a new medication and suffering from adverse effects or being phased out of a medication and suffering from withdrawal symptoms, her everyday life had little in common with those of her friends, who could not understand her situation. Her energy levels and moods were fluctuating, and as her insomnia was severe, she was often too tired or in too much pain to attend social events or function normally at them. Her social anxiety and alienation from social life constantly increased.

Due to not feeling heard or understood, she was switching from one private outpatient clinic psychiatrist to another, meeting perhaps nine different psychiatrists. The total number of visits covered by her private insurance was notable.

Two years after the rape, she mentioned something about the event to a friend who 'made her realize that it had been sexual abuse'. Before that, she had either tried to deny it ever happened or blamed herself for it. Subsequently, she also brought the issue up in psychotherapy; the therapist seemed to 'take it seriously'.

The referral to the psychiatric outpatient clinic had disappeared; she negotiated with the secretary of the clinic. Her diagnosis of severe unipolar depression did not qualify her to be treated at public psychiatric outpatient clinics but at community general practice clinics only.

At the age of 27, because of the suspected bipolar disorder, she was eventually enrolled at a psychiatric outpatient clinic. According to the medical record, she had 'one friend and a few online acquaintances'. She had suspected or mild Crohn's disease, migraine, allergies, hypertension, and a BMI of 33 kg/m^2, labeled as 'normal'. The ECG revealed inverted T waves. Her venlafaxine-induced hypomanic period was not considered to qualify as actual hypomania. A pharmacogenomic screen [73] revealed abnormal metabolism of at least escitalopram, citalopram, and atomoxetine. Her test scores included: BDI 39 (severe depression); Patient Health Questionnaire (PHQ-9) 22/27 (severe depression); Clinical Outcomes in Routine Evaluation (CORE-OM) 24.4; Overall Anxiety Severity and Impairment Scale (OASIS) 17/20; MÅDRS 29/60 (moderate depression); Generalized Anxiety Disorder 7 (GAD-7) 14/21 (moderate); Obsessional Compulsive Inventory Revised (OCI-R) 14/60; Epworth Sleepiness Scale (ESS) 16/24 (severe excessive daytime sleepiness); Insomnia Severity Index (ISI) 19/28 (clinical insomnia of moderate severity). Suicidal thoughts were transient, without an actual plan. She was diagnosed with severe depressive episode without psychotic symptoms (ICD-10 F32.2).

[73]: Brown et al. 2022 DOI

To her disappointment, the treatment was 'for the most part, only about forcing medication on me'. A three-week experiment with bupropion, an atypical antidepressant, resulted in strong, all-day fatigue and nausea and was discontinued. A three-month period with agomelatine (25 mg, 50 mg), another atypical antidepressant, resulted in slight fatigue with no other change. Sertraline (50 mg), a SSRI antidepressant, caused nausea

and a severe decline in her mood and was discontinued after a month. Propranolol (10 mg), a beta blocker, was prescribed for anxiety.

During a five-month period with no medication, the state allowance for psychotherapy ran out, but her private insurance covered the costs for two more years, allowing her to continue it. In addition to depression, investigations at the psychiatric clinic revealed signs of post-traumatic stress disorder (PTSD), generalized anxiety disorder, panic disorder, and agoraphobia, but she was not officially diagnosed with these. In the medical record, it was mentioned that she 'had not felt heard' and 'had high expectations about various anti-depressive medications but was disappointed, eventually becoming desperate and hopeless'. She did not fulfill the criteria for bipolar disorder. There were no signs of psychotic features.

Once, she mentioned the rape to a psychiatric nurse, but it was ignored, and there were no further discussions about the issue. She never mentioned the rape to the psychiatrists because 'it would not have felt good' due to a lack of trust.

Moclobemide (300 mg), a reversible inhibitor of monoamine oxidase A, was prescribed. It effectively alleviated her anxiety but had no effect on depression; she experienced 'strong suicidal ideation' during this period. In the middle of this period, she was concurrently prescribed another SSRI, sertraline (50 mg), resulting in vomiting and strong nausea. She considered this prescription to have been malpractice.

Doxepin (1 mg), a tricyclic antidepressant, was prescribed for insomnia. Later, temazepam (20 mg), a benzodiazepine, was prescribed. Despite that, her insomnia became intolerable, with her 'not sleeping at all'. An earlier, concise nocturnal polygraphy in the public healthcare system had revealed mild obstructive sleep apnea. Private health insurance enabled her to attend a nighttime Level 1 polysomnography (PSG) in a private clinic. It revealed moderate sleep apnea, and she was prescribed a continuous positive airway pressure (CPAP) device, resulting in 'a change for the better' with respect to insomnia.

Regardless, severe depression remained, and around the middle of this period, her MÅDRS score was 32/60 and her BDI score was 40. There was a mention of her possible upcoming discharging from the psychiatric clinic due to being treatment-resistant. Her reality testing was intact, and she was not suicidal. With the coverage afforded by her private health insurance, she also trialed transcranial direct current stimulation (tDCS) for two months, five times a week for half an hour, feeling that it somewhat alleviated her depression. Her psychiatrist considered the decline in her BDI scores (from 49 to 40) insufficient and discontinued the treatment. She indicated interest in ketamine treatment and was referred to another psychiatrist for the planning of that method. An addition of sertraline (50 mg) was proposed but not started.

Moclobemide was discontinued and switched to duloxetine (30 mg, 60 mg), a SNRI antidepressant, for five months; the outcome was excessive sweating and another period of hypomania.

At the age of 29, two months before discontinuation of moclobemide, she was also prescribed lithium (300 mg, 900 mg) for four months, even though she opposed the idea and, excluding the hypomanic phases

induced by venlafaxine and moclobemide, had not presented with bipolar symptoms. Eventually, she agreed to the treatment because she thought that 'there was no longer anything to lose'. Despite the serum lithium concentration being in the treatment range, lithium induced 'symptoms of poisoning': constant severe visual and auditory hallucinations, complete insomnia, exacerbation of suicidal ideation, anxiety, and exhaustion—something that she described as a 'really bad situation'. Clothes hanged to dry appeared to her as dogs. Transient, delusionary visions emerged as confusing flashes. At night, she woke up, convinced that she was a shelf, and began organizing various items on the illusory shelf, i.e., on top of her body. Her field of vision was narrowed because peripheral vision was persistently either blurred or filled with 'a mass of shapes'.

Regardless of these adverse effects, the public health psychiatric clinic refused to discontinue the treatment. Instead, for some reason unclear to her, the psychiatrist wanted to increase her lithium dose. For her part, she did not know whether discontinuing the medication by herself would have been dangerous, and was accustomed to any changes in medication being carried out under the supervision of clinicians.

In any case, at this point, plagued by psychotic hallucinations and 'brain fog', she was too confused to think clearly and did not even fully realize the nature of her condition. Instead, her friend noticed it and essentially forced her to find another psychiatrist. Again, with the help of her private healthcare insurance, she was able to find a psychiatrist at a private outpatient clinic who agreed to cancel the lithium prescription. She characterized the lithium experiment as 'a total failure'.

For two months, she remained without antidepressive medication, but her depression worsened. With psychophysical physiotherapy, vocational therapy, antidepressants, and almost five years of psychotherapy traversed without much progress, she was 'on the verge of giving up completely'.

She did not want to attend electroconvulsive therapy (ECT) because she was afraid of the adverse effects: memory loss, learning difficulties, and an exacerbation of her chronic migraine. She applied for ketamine infusion treatment in the public healthcare system, but the application was denied due to her refusal of ECT. At the psychiatric clinic, she was treated by the same psychiatrist for most of the time, until the psychiatrist quit and she was referred to another one. She did not trust either one.

All in all, in approximately five years between the ages of 25 and 29, she was treated by more than ten different psychiatrists and was prescribed 26 different pharmaceuticals, including SSRIs, SNRIs, anxiolytics, antipsychotics, and lithium; a period she characterized as 'exceedingly difficult'. According to her, the medications and the depression had severely damaged her memory. The medication-induced periods of hypomania and the following crashes felt detrimental, complicating the situation. For the last four years, she was unable to work. She described being 'desperate' and failing to believe in 'any kind of future' for her. She did not attempt to commit suicide, but suicidal ideation was persistent, with plans to overdose on the medication.

According to her therapist, her depression had progressed to a near-catatonic state. Her MÅDRS score was 47/60. Eventually, a neurologist treating her for chronic migraine informed her about the possibility

of esketamine spray treatment at a private clinic. Three months before the interview, she was enrolled in a pilot esketamine program at a private outpatient clinic. She was prescribed fluoxetine (10 mg) because concurrent medication with SSRIs was an obligatory condition to get special, personal permission for state reimbursement of esketamine from the Social Insurance Institution of Finland (Kela). After two weeks, it was granted. She paid for her esketamine prescription at a pharmacy, which delivered the medication to the private clinic.

Before the first session, her body was 'very tense'. With the nurse present, she lay down on the medical exam table and sprayed the medicine herself in her nose. The onset of the effect was rapid, and her body numbed. The experience was not scary, but the uncertainty of what was happening kept her slightly alarmed. Soon, a peaceful feeling descended on her. The first session involved her 'visiting a verdant park'. During that time, she was half awake, talking with the nurse.

The first session felt 'as if someone had turned on the lights in her brain'. Compared to the baseline, 'a completely different person walked out of the clinic'. The shift was 'radical—difficult to comprehend'. Her mood issues were resolved on the spot, resulting in happiness and love for life returning. Her ability to take initiative and function were restored. The change was so swift that after years of severe depression, it was 'difficult to adjust to feeling good'. Her post-session MÅDRS score was 6/60, down from 47/60.

Physically, during the sessions, her body numbed, often from the chest down. Sometimes her nose or mouth also numbed. She attributed this to the anesthetic effect and did not, for example, see a connection between numbing and the sensations during the episode of sexual violence, which were about pain and fear. In general, ketamine did not appear to cause traumatic events to surface. In fact, it had the opposite effect: it induced calmness and serenity and 'cleared up her mind': the constant stream of 'fearful, dark, chaotic, depressive thoughts' dissolved, replaced by a peaceful state of serenity, clarity, and happiness. Compared to the 'fully artificial' nature of venlafaxine-induced hypomania, the ketamine-induced state felt 'real, authentic', with a sensation of 'inner peace'. The newfound inner peace then allowed for everyday functioning.

Additional sessions were all similar, with calming 'hallucinations' of visiting pleasant locations such as sunny summer beaches and the simultaneous feeling of numbing in the body. Interestingly, each hallucinatory vision was connected to a specific color. On one occasion, she felt 'covered with feathers or cotton wool'. The calming visions were always imaginary, with the exception of one real memory from a few years ago, but that memory had also been about a moment of happiness. It was always clear to her that these 'hallucinations' were just mental images, not actual reality.

The role of the nurse consisted of writing down notes of what she talked about during the session. There were no questions or therapeutic interventions. She also listened to music during the session with headphones. Sessions were predominantly just 'relaxing', not tiring.

The initial sessions took three hours, but for the last few sessions, she had been able to reduce the process to two hours, with the last hour

preparing to leave. Blood pressure was measured before and after the sessions. After a session, she often felt slightly dizzy. Just in case, she had an escort to make sure she got home after the session. At home, she typically felt tired and needed to rest for the remainder of the day. By the next morning, she felt normal.

At the time of the interview, she had attended ten esketamine treatment sessions in five weeks and was the first and only patient at the private outpatient clinic receiving the treatment. After nine sessions, fluoxetine was considered inconsequential and discontinued. The maximum duration of the ketamine treatment was planned to be between 9 and 12 months. Her current diagnoses were recurrent depressive disorder, currently in remission (ICD-10 F33.4) and nonorganic insomnia (ICD-10 F51.0).

A remaining issue was a fear of social interactions; it was difficult for her to meet friends or maintain interpersonal relationships. Also, ketamine had a slight negative effect on sleep; regardless, insomnia felt 'less of an issue than before the treatment', and did not incapacitate her.

The insurance coverage of her psychotherapy was ending, and she felt sorry about the sexual trauma remaining partly unresolved. She was sad that now, when she was more receptive and more capable of psychotherapeutic work, the resource had been used up and partly wasted. She considered therapy 'a big help' in supporting her, but because she had been 'in such a bad shape all the time', it had 'mostly been about extinguishing fires', i.e., about handling acute crises, often caused by the adverse effects of medications.

Before the start of ketamine treatment, she had been granted occupational therapy once a week, intended to help her with everyday tasks. Initially, the therapy consisted mostly of 'visualization-trance exercises'. After her ability to function had improved, it had changed into supporting interpersonal activities and everyday tasks. Remaining problematic issues included cooking and eating, which she tended to avoid. With regard to relationships, her mother had also quit drinking during the last few years, and her relationship with her parents had improved.

With regard to possible modifications to treatment practices, she did not consider group treatment suitable for her because of her social anxiety; previously, a group psychotherapy trial had failed. She commented that for some others, group sessions might be feasible. She did not consider the idea of ketamine sessions carried out unsupervised at home adequate. The idea of a nurse supervising a session at her home 'might be ok'; although she had never had any problems during a session, being at the outpatient clinic felt safer, 'just in case something might happen'. The feeling of safety was essential. She also mentioned that it might be interesting to combine the visualization-trance exercises of occupational therapy with a ketamine session.

She considered the conventional treatment practices she had been subjected to 'quite old-fashioned'. She did not understand why patients could not choose ketamine over ECT. In the interviews, she appeared normal, with no observable signs of depression.

11.3 Discussion

Some general observations could be derived from the above case description. Her childhood environment was unsupportive and damaging. The precarious nature of her working life exceeded her level of resilience. A medication later proven unsuitable for her by a pharmacogenomic screen increased her anxiety and deepened her depression. She became unable to show up at the workplace due to that. Other medications caused adverse effects that caused her to lose almost all of her friends. No one noticed that she was raped during treatment, or asked about such events. When she mentioned it to a nurse, she was ignored. Yet another adverse effect of medication was interpreted as a more severe psychiatric disorder. It was unclear whether there was an attempt to medicate that condition without informed consent. A sudden weight gain of 60% was ignored. Another antidepressive medication also induced suicidal ideation. She was pressured into the use of lithium for a reason unknown to her. It caused persistent psychotic hallucinations, the importance of which was downplayed, and dose escalation was recommended. As a direct result of medication, she began losing her reality checking ability and becoming immersed in psychotic delusions. She had no previous history of psychosis. Her medical record included no rationale for lithium treatment, but it was probably considered an augmentation strategy [74]. A friend and private health insurance were needed to rescue the situation.

[74]: Nuñez et al. 2022 DOI

In this context, childhood trauma and adult-life sexual trauma faded in importance in comparison to the adverse effects of unsuccessful medication with 27 different pharmaceuticals. During the treatment, her health constantly deteriorated. Adverse effects were the predominant cause of her increasing social alienation. Recurrent disappointments deteriorated her trust in medicine and medical professionals. The efficacy of psychotherapy was insufficient, but its cost was enormous.

Excluding ketamine and additional resources provided by private health insurance, the described process is not untypical or extreme in the Finnish healthcare system. Instead of resolving pre-existing trauma, treatment often exacerbates it and accumulates new traumatic events directly caused by treatment. In this case, treatment appeared to not only accumulate emotional trauma but also exacerbate the symptoms that the medication was supposed to alleviate.

The case history might easily lead a reader to conclude that psychiatric clinics are dangerous places for patients. The responsibility for obvious harm and inefficacy resides effectively nowhere. As harm is the norm rather than the exception, it is considered normal, providing no ground for complaints. In the worst case, patients are blamed for it. In any case, patients rarely possess the resources or skill to neither recognize malpractice nor complain about it, as also illustrated by the present case.

Concerning current practices, the chief of forensic psychiatry at Niuvanniemi hospital, Markku Lähteenvuo, put it plainly in an interview in 2022, stating: 'It is plain stupid to try a similar medication for the third, the fourth, and the fifth time' [75]. He added that patients have the right to demand effective treatment.

[75]: Ekholm 2022 URL

If treatments are planned to be given in some order and the patient refuses a specific treatment along this path, instead of hopping over that treatment, the whole process stops. Patients experience this as punishment. Due to her refusal of ECT, she was refused the ketamine infusion treatment and was essentially forced to remain ill. Despite the illusion of 'evidence-basedness', current practices result in negative treatment efficacy, i.e., harm, and negative net utility, i.e., burning money and wasting time for no purpose.

Clinicians implement an external committee-devised set of 'evidence-based recommendations' and are afraid of deviating from them because of uncertainty about the consequences. Fear stifles clinical innovation. Perhaps to ensure 'equal treatment', the enforcement of the same guidelines for all often results in a treatment adequate for no one. Some psychiatrists consider somatic causes out of the scope of psychiatry. Somatic clinics attribute all symptoms of psychiatric patients to psychiatric causes. Cases of endometriosis, bone fracture, cancer, and pulmonary embolism have been dismissed and left undiagnosed and untreated because of that.

In the field of cybersecurity, there is a concept of 'security theatre' that refers to procedures that 'provide the feeling of improved security while doing little or nothing to achieve it' [76]. Most of the current psychiatric treatment practices could be considered 'psychiatric care theatre': a lot of dabbling around with no substance. In addition to an enormous financial cost, the unnecessary delay in implementing ketamine treatments has produced a lost generation of TRD patients.

[76]: Schneier 2003

11.3.1 The problem of overcompliance

Even in the face of severe adverse effects such as persistent psychotic hallucinations, the patient did not cease self-administering the medication responsible for these effects. It is difficult to predict what would have happened if she had not had friends or private insurance allowing her to obtain a second opinion.

The problem of overcompliance appears to be at least fourfold. First, an unrealistic belief in the competence of authority figures is very common: patients cannot believe that a clinician or a psychiatrist could be wrong. Typically, such a belief would endanger their basic emotional security or take away their last hope for improvement. Second, patients may consider self-initiated discontinuation of medication possibly dangerous and are afraid of doing it by themselves; they may not know the basic principles and properties of psychiatric medications or even what their medications actually are for. They are thus unable to make informed decisions. Third, although the law grants patients the right to self-determination [77], many medical professionals react very negatively to the non-compliance of psychiatric patients, resulting in often subconscious negative attitudes or other punitive consequences towards the patient. Fourth, almost all chronic patients depend on sick pay or rehabilitation allowances controlled by psychiatrist-issued medical certificates, and losing the allowances would cause them financial ruin. The resulting fear keeps them from making independent decisions.

[77]: The Finnish Parliament 2024 URL

11.4 Economic considerations

11.4.1 The pilot program treatment costs

In 2024, in Finland, there was an annual maximum limit of approximately EUR 630 on out-of-pocket reimbursable medicine costs for the patient. After the maximum was reached, each additional prescription of a reimbursable medicine cost the patient EUR 2.50 only.

As the price of one full dose of esketamine (84 mg) approximately matched the annual maximum, the annual cost for a patient undergoing the described kind of treatment process was approximately EUR 800 (1 x 630 + 51 x 2.50), and for the state, around EUR 30 000 (4 weeks x 2 x 200 + 48 weeks x 600 - 800).

The clinic fee for a session with a nurse was approximately EUR 300 per session, resulting in an annual total of around EUR 17 000 (4 weeks x 2 x 300 + 48 weeks x 300). For her, these costs were covered by her private health insurance package, which was purchased by her parents when she was a baby. Without it, she would have been unable to attend the treatment.

In summary, the approximate annual costs were EUR 800 for the patient, EUR 30 000 for the state, and EUR 17 000 for the private insurance company; in total, approximately EUR 48 000. The psychiatrist's appointments were not included in the calculation. From the perspective of cost efficiency, the main factor was the cost of esketamine. As discussed, choosing it over generic ketamine is clearly unsustainable. Also, the level of supervision might be excessive.

11.4.2 Comparison to the Oxford model

In the Oxford model, infusion sessions were not individual but in shared rooms with several patients, supervised by one nurse [15]. The cost of one infusion treatment was approximately EUR 300 per session, and the cost of oral ketamine was EUR 80 per month. With this model, an initial period with four to six infusions at an outpatient clinic over two to six weeks would cost about EUR 1200–1800, and a month of maintenance would cost EUR 380, giving an annual total cost around EUR 6 000.

[15]: Oxford Health NHS Foundation Trust 2022 URL

Compared to this esketamine pilot implementation, an implementation resembling the Oxford model should be approximately 90% cheaper and thus scalable and sustainable on a population level, as the cost of no treatment or treatment with the current practices is the same or higher. Instead of a clinical setting, ketamine group sessions could be organized along the lines of psychedelic group session practices [78]. One potential extra-medical context for such groups could be the church.

[78]: Turkia 2022 DOI

With regard to prescreening and regulatory considerations, a situation involving a suicidal patient unable to get adequate care should be paralleled with a battlefield situation. If healthcare facilities are overloaded or unwilling to adopt new treatments and the police are overwhelmed with suicidal people, ketamine treatment could be organized by the police by hiring an on-call clinician or nurse to administer intramuscular or intranasal racemic ketamine either on the spot or at the police station,

with the nurse left to supervise the patient until the session is completed. Later, if needed, the patient could call the police nurse directly.

Even one such on-call nurse might suffice to resolve the issue city-wide. The financial cost would be equal to the nurse's wage, and the arrangement would result in significant savings as well as an improvement in job satisfaction in the police force. It is essential to ensure that the patient feels safe and comfortable in the chosen environment, i.e., that the person supervising the session is able to 'hold space' for the patient (see, e.g., [79]).

11.4.3 The economic burden versus treatment costs

In 2022, Taipale et al. identified 15 405 people from nationwide registers diagnosed with TRD in Finland during 2004–2016, and matched them one-to-one with comparison persons with depression who initiated antidepressant use but did not have TRD at the time of matching [80]. They compared healthcare utilization, costs, and productivity losses between TRD patients and the comparisons. The annual economic burden for TRD patients was EUR 16 000 versus EUR 8 000 for the comparisons.

[80]: Taipale et al. 2022 DOI

The annual economic burden of such a TRD group as a whole would thus be around EUR 250 million, and the one-time treatment cost would be around EUR 100 million. Assuming that the economic burden of a non-depressed person would be zero, a response rate of 50% would reduce the burden to EUR 125 million. The cost of treatment would thus be covered in one year, and for the following years, the burden would be halved.

If these treatment costs are considered too high, they can be lowered to zero by decriminalizing or legalizing self-treatment with psilocybin mushrooms and other classical psychedelics, with the treatment self-organized along the lines described in these case studies [81–83]. Assuming that 10% of patients with MDD or TRD would self-organize and respond to such treatment, a 10% reduction in the economic burden could be achieved for free. Psilocybin-containing plants are not controlled under the 1971 United Nations Convention on Psychotropic Substances [84, 85]. Since they are under domestic law, adopting the presented kind of self-treatment would be straightforward. Currently, according to a precedent issued by the Supreme Court of Finland in 2017, psilocybin is considered comparable to cannabis [86].

[81]: Turkia 2023 DOI
[82]: Turkia 2022 DOI
[83]: Turkia 2022 DOI

[84]: Schaepe 2001 URL
[85]: Schaepe 2001 URL

[86]: Supreme Court of Finland / Korkein oikeus 2017 URL

Rodgers et al. investigated why low-cost ketamine remained inaccessible to patients in need in Australia [87, 88]. As there was no commercial gain for pharmaceutical companies in supporting a listing of off-patent ketamine as a treatment for depression, it was not listed by the national regulatory authority for such use and thus could not attract state funding for the treatment. For two decades, public funding to support research and patient access had been slow, uncoordinated, and underfunded. The costs of session supervision were prohibitive to most. They concluded that there was 'an urgent need for structural reforms'.

[87]: Rodgers et al. 2023 DOI
[88]: Gilbert 2023 URL

Many aspects of these counterproductive practices remain difficult to understand. There is no actual need for additional studies on ketamine for TRD. The constant demand for ever more research appears to be

driven by the fear of uncertainty and the unwillingness to take action and learn by doing. However, 'action is the magic word'. The addiction to an illusion of safety is typically a symptom of complex trauma, which in this case is society-wide. The procrastination or unwillingness to act may be another symptom: a 'freeze' reaction.

Regulatory authorities could simply list off-patent pharmaceuticals for the necessary indications by themselves, without the need to involve pharmaceutical companies. More broadly, we could question the overall need for regulation based on an unserviceable patenting system whose effect has appeared to be net negative.

Not everyone is in need of supervision, or it can be arranged on a case-by-case basis outside the medical context. The absolute requirement that patients need to be monitored by a medical professional for hours after administration should be reconsidered in the context that suicidal patients are left on their own for months or years in any case. The suicidality of individual patients may only reflect the suicidality of society as a whole ('Humanity as a whole is like lemmings going off a cliff' [89]).

[89]: Rowland 2024 URL

11.5 Complements and alternatives

11.5.1 Clinical applicability of ketamine versus classical psychedelics

Comparing the clinical applicability, classical psychedelics, including psilocybin and LSD, are somatically safe, i.e., in practice, they cannot be lethally overdosed and do not induce an addiction [82]. In the clinical context, they have proved difficult to adopt for the following reasons: they are not legal or available in most locations; their duration of action varies from several hours in the case of psilocybin to a day in the case of LSD; they often produce visions that clinicians are rarely able to understand and interpret; clinicians don't have prolonged or any personal experience of their effects. Due to these reasons, classical psychedelics have mostly been applied in self-treatment [82, 83], often in psycholytic (i.e., low or 'half') doses. Alternatively, they have been successfully used in one-day or multi-day non-clinical group contexts [78].

[82]: Turkia 2022 DOI

[82]: Turkia 2022 DOI
[83]: Turkia 2022 DOI

[78]: Turkia 2022 DOI

An effective healthcare system should not adopt tasks that can be handled elsewhere. Ideally, every citizen should be able to heal themselves independently, without any external contributions. The current system rarely incentivizes this goal. Instead, it advertises the need for specialists and experts for nearly any purpose or indication, yet often fails to produce the advertised outcome or even the service itself. There is thus an obvious case and an immense need for a population-wide introduction of self-treatment practices. For this purpose, classical psychedelics may be superior to oral ketamine.

Concerning clinical use, ketamine appears superior: it is legal, established, and has a short duration of action. These characteristics make it practical for clinicians working at conventional clinics. Although ketamine may induce psychedelic effects, they are not as central to the process as with classical psychedelics. The clinician thus does not necessarily need to have similar personal experience with the substance or advanced skills in interpreting psychedelic visions.

With regard to the hesitation about the use of classical psychedelics in public healthcare, it could be noted that ketamine is also a psychedelic, although short-acting [43]. It has already been clinically used for the treatment of TRD for decades, although in psycholytic doses, without issues.

[43]: Bowdle et al. 2022 DOI

Although this patient experienced mild effects, higher doses may produce a typical psychedelic experience of a death-rebirth cycle. Stafford et al. provided a description of one experience that started with disorientation and visions: the world and the body disappearing, feeling horror, experiencing death, surrendering or yielding to it, entering a space without words, experiencing Buddha nature or oneness with the universe, feeling 'at home' in a state of unforeseen bliss, wanting to stay there, then re-emerging back from the experience [90]. The facilitator of this experience commented that 'what happened and happens to others is that you finally get rid of that heartbreak feeling that we carry from childhood. Finally, that's expunged somehow'. The patient agreed: 'That was the feeling: I was rid of my heartbreak. My heart was no longer broken. It was like, Whew!!! That was the long-lasting effect—what really lasts and gets supported by similar experiences—not necessarily on any drug at all. That floats and stays'. As with classical psychedelics, this kind of experience is likely to produce a more efficacious and permanent treatment outcome.

[90]: Stafford et al. 1992

According to Shulgin, another major difference between classical psychedelics and ketamine is that in high doses, ketamine may induce true hallucinations, defined as 'an extremely rare phenomenon, in which a completely convincing reality surrounds a person, with his eyes open, a reality that he alone can experience and interact with' [91].

[91]: Shulgin et al. 1997 URL

Comparing ketamine to MDMA, which is not a classical psychedelic but an 'empathogen', their acute effects differ, so that MDMA typically induces a euphoric state, while ketamine induces a more 'neutral', serene state with a clear mind. The MDMA-induced state might resemble hypomanic states, often with a sudden drop to the baseline or below it, unless a gradually decreasing dosing scheme is used. Post-session, the state may seem to have an 'artificial' nature to it. Regardless, MDMA treatment is often productive, with permanent results; two other case studies describe its use in alcohol addiction and occupational stress release [79, 92]. In treatment-resistant conditions, it is usually necessary to combine MDMA with LSD [93].

[79]: Turkia 2023 DOI
[92]: Turkia 2022 DOI
[93]: Turkia 2023 DOI

Cases of severe trauma may be treatment-resistant to classical psychedelics. Anecdotally, ketamine may transcend such resistance, subsequently allowing treatment with classical psychedelics. Further research on this aspect is warranted. Also, in order to release trauma-related tension encoded in the autonomous nervous system and the fascia [94], the administration method and the environment should be such that the patient's body can freely move without the risk of injury. For example, the patient could be administered either intramuscular or intranasal racemic ketamine and then lay on a large mattress on the floor. With respect to the treatment of C-PTSD, with the currently utilized low dosing, ketamine appeared to function in the same cumulative manner as classical psychedelics, resolving complex trauma gradually over a relatively long time.

[94]: Oschman 2006 DOI

11.5.2 Alternatives to ketamine

Psychedelics with similar efficacy and clinical feasibility appear to be rare; in fact, there may be only one obvious candidate for an alternative to ketamine. In his book published in 2018, Oroc presented the Oroc Entheogen Scale, an order of preference for various psychedelic substances [95]. Substances were listed in order of increasing toxicity and decreasing capacity to induce experiences of oneness. The substances are thus listed in order of their safety and the magnitude of their effect, the latter of which, to a degree, corresponds with therapeutic efficacy, but does not equal it. Oroc noted that the scale 'naturally descended by the chemical class of the compound—tryptamine, phenethylamine, opiates, amphetamines, alcohol—and that this corresponded to a noticeable increase in toxicity'.

[95]: Oroc 2018 URL

The first two substances on the list are endogenous tryptamines; that is, they occur naturally in the human body as well as in many animals and plants. They thus exist in the sphere of animals, or more specifically, in the sphere of mammals. Some other psychedelics, such as psilocybin, occur in mushrooms but not in animals. In Oroc's view, endogenous tryptamines had a central role in spontaneous altered states of consciousness, and as such, they were a fundamental aspect of being human.

The second item on the list is DMT (N,N-dimethyltryptamine). While it also has a short duration of action and intensive effects, its effects are typically hypervisual, with the induced visions being difficult to interpret. It is typically considered more suitable for the study of the mind than therapy.

The first item on the list is 5-MeO-DMT (5-methoxy-N,N-dimethyltryptamine, often colloquially called *bufo*), a less-known psychedelic with clinically feasible characteristics similar to ketamine. It is typically considered to represent the ultimate in efficacy in psychedelic therapy. In order to get perspective on its purposes in the body, it may be related to the 'white light' often reported in the context of near-death experiences. Figuratively, it could be assumed that it might prepare a person for 'life after death': eternal bliss. Since a treatment session with 5-MeO-DMT would produce the effect already before death, the outcome would essentially be 'Heaven on Earth', similar to the ketamine-induced death-rebirth cycle described above.

Oroc considered 5-MeO-DMT the least toxic of all psychedelic substances. Considering that it is an endogenous molecule, that would be logical. It is, however, also the strongest of the known psychedelic substances. From the point of view of cost-efficacy, it is superior and thus the obvious choice in the current situation, when, in order to end wars and manage the consequences of climate change, the societal goal must be a full, population-wide eradication of transgenerational complex trauma.

For the treatment of 'deep trauma', i.e., very severe or early complex post-traumatic stress disorder, sexual trauma, or war trauma, classical psychedelics often appear lacking. Slowly and gradually, they resolve a lot but not all; they essentially fail to go deep enough, at least with the conventional dosing (e.g., up to 600 µg of LSD). They are too slow in many cases, with the process taking several years. For this purpose, 5-MeO-DMT is likely superior to all others.

The rest of the items on Oroc's list relevant for this study were: LSD, psilocybin, ketamine, mescaline, 2C-B and 2C-I, THC, MDA, and MDMA, with the last two crossing the 'fatal overdose line'. With respect to patients who are treatment-resistant to classical psychedelics, 5-MeO-DMT likely possesses the same capacity as ketamine to transcend this resistance. 5-MeO-DMT is also likely superior to possible patentable alternatives to classical psychedelics or ketamine in development. Its cost would likely be comparable to racemic ketamine, i.e., irrelevant.

With regard to formal scientific research on 5-MeO-DMT, the majority of it has been conducted after 2010. Shen et al. reviewed the metabolism, pharmacokinetics, drug interactions, and pharmacological actions of 5-MeO-DMT [96]. Szabo et al. wrote that dimethyltryptamines could act as systemic endogenous regulators of inflammation and immune homeostasis through the Sigma-1 receptor [97]. Davis et al. stated that 5-MeO-DMT used in a naturalistic group setting was associated with unintended improvements in depression and anxiety [98]; the main subjective features were 'spiritual experience' and 'blissful state'. An observational study (n=42) by Uthaug et al. indicated that a single 5-MeO-DMT session in a naturalistic setting was related to sustained enhancement of satisfaction with life, mindfulness-related capacities, and a decrease in psychopathological symptoms [99, 100]. Ermakova et al. presented a narrative review on the history, pharmacology, pharmacokinetics, effects, drug interactions, and toxicology of 5-MeO-DMT [101]. Reckweg et al. presented a phase 1 dose-ranging study to assess the safety and psychoactive effects of a vaporized 5-MeO-DMT formulation in healthy volunteers [102]. Ragnhildstveit et al. presented a longitudinal case study of a patient who successfully self-medicated her PTSD with 5-MeO-DMT [103]. Concerning DMT, Timmermann et al. found 'a striking similarity between DMT-induced near-death experiences and actual near-death experiences (NDEs) [104]. Dean et al. showed in a rat model that the mammalian brain endogenously synthesizes DMT [105].

[96]: Shen et al. 2010 DOI

[97]: Szabo et al. 2014 DOI

[98]: Davis et al. 2019 DOI

[99]: Uthaug et al. 2019 DOI
[100]: Uthaug 2020 URL DOI

[101]: Ermakova et al. 2021 DOI

[102]: Reckweg et al. 2021 DOI

[103]: Ragnhildstveit et al. 2023 DOI

[104]: Timmermann et al. 2018 DOI
[105]: Dean et al. 2019 DOI

A significant overdose of 5-MeO-DMT might induce respiratory failure [106]; however, such doses would be neither necessary nor therapeutic. Adverse interactions could occur with MAOIs, lithium, benzodiazepines, some SSRIs, and tricyclic antidepressants [101]. This might limit clinical use in psychiatric patients, but ketamine could be used at the beginning of the treatment process instead. 5-MeO-DMT may induce 'reactivations', a perhaps unique property of 5-MeO-DMT. In a 'reactivation', the treatment process continues after the pharmacological effect has already subsided. A reactivation can be triggered by low doses of classical psychedelics. It may also may rarely occur spontaneously [107]. Regardless, the reactivation phenomenon can be utilized to extend and intensify treatment, so that a session with classical psychedelics can 'replay' features of the more effective 5-MeO-DMT session, but with lower intensity and for a longer duration. Thus, a 5-MeO-DMT session, augmented with a psycholytic session of LSD (e.g., 50 µg) a few days later, may produce an optimal combination treatment in which the psycholytic 'replay' session functions as a 'psychedelic integration' session for the more intense 5-MeO-DMT session. When extended in this manner, reactivations cease to occur. Reactivations might thus be best understood as a delayed release of accumulated trauma. These therapeutic possibilities warrant additional study.

[106]: Oroc 2009 URL

[101]: Ermakova et al. 2021 DOI

[107]: Dourron et al. 2023 DOI

A recent case study by the author demonstrated the efficacy of 5-MeO-DMT [108]. It featured a woman in her mid-thirties who witnessed her mother's violent suicide and its aftermath at the age of three. Before and after that, her childhood was characterized by domestic violence and sexual abuse perpetrated by several members of her family and extended family. In her twenties and thirties, she became involved with the local mafia with the intention of asking them to kill her father, who had been the main perpetrator of the sexual abuse and violence. This plan was eventually not carried out, but it reflected her deep bitterness and wrath.

[108]: Turkia 2024 DOI

A two-year process initiated in her early thirties involving four 5-MeO-DMT sessions and a few additional sessions with psilocybin and ayahuasca completely resolved her symptoms related to the abuse, to the extent that she could rebuild a functional relationship with her father and feel love and compassion towards him. This outcome, i.e., the complete reversal of her attitude and emotions towards her father, appeared highly unusual. For the last three years, the outcome had remained stable.

In 2023, Reckweg et al. presented the results of a phase 1/2 trial to assess the safety and efficacy of a vaporized 5-MeO-DMT formulation in patients with TRD, with the efficacy measured as the proportion of patients in remission (MÅDRS $\leq$ 10) [109].

[109]: Reckweg et al. 2023 DOI

In the phase 1 part with eight patients investigating the safety of a single dose of either 12 mg or 18 mg, two out of four (50%) of patients administered 12 mg, and one out of four (25%) administered 18 mg were in remission at day 7. The mean MÅDRS change from baseline to day 7 was -21.0 (-65%) and -12.5 (-40%) for the 12 and 18 mg groups, respectively.

In the phase 2 part, eight different patients were administered up to three increasing doses of 6 mg, 12 mg, or 18 mg within a single day, using an individualized dosing regimen. Seven out of eight patients (87.5%) achieved remission at day 7 ($p < 0.0001$). All remissions were observed from day 1, with 60% of remissions observed from 2 h. The mean MÅDRS change from baseline to day 7 was -24.4 (-76%).

Reckweg et al. concluded that the treatment was well tolerated and provided potent and ultra-rapid antidepressant effects. Individualized dosing with up to three doses on a single day was superior to single dose administration. In 2024, another phase 1 clinical trial was ongoing in the US (NCT05698095) [110].

[110]: Usona Institute 2023 URL

5-MeO-DMT administration could be significantly less frequent than ketamine administration, and the number of sessions could be significantly lower. If necessary, treatment processes could be initiated with ketamine and continued with 5-MeO-DMT. This would likely allow most of the cases currently estimated to be 'hopeless' to become relatively easily treatable. This would likely also open completely new perspectives on what is possible for societies and for humanity as a whole. In summary, 'treatment-resistant depression' only means 'current treatments-resistant depression'. Concerning cost-efficacy, compared to current practices, with 5-MeO-DMT, a 100-fold improvement might be realistic.

11.6 Conclusions

In the described case, intranasal esketamine spray treatment at an outpatient clinic was clinically feasible and effective in the immediate resolution of treatment-resistant depression, at least in the short term. The treatment represented an immense improvement over the preceding practices. A widespread adoption of racemic ketamine treatment is necessary as an emergency measure. Ketamine and its more effective alternative, 5-MeO-DMT, can serve a major role in facilitating a rebirth of public and private mental healthcare systems, with treatment efficacy multiplied and treatment costs simultaneously reduced to a fraction. Additional delay in the adoption of these methods is unethical from the perspective of patients and self-destructive from the perspective of society.

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5-MeO-DMT in the complete resolution of the consequences of chronic, severe sexual abuse in early childhood

12

5-MeO-DMT is a psychedelic substance with a short duration of action and intensive effects. Its therapeutic efficacy and practicality may significantly surpass those of classical psychedelics such as ayahuasca and LSD.

This retrospective ethnographic inquiry features a woman in her mid-thirties who witnessed her mother's violent suicide and its bloody aftermath at the age of three. Before and after that, her childhood was characterized by domestic violence and sexual abuse perpetrated by several members of her family and extended family. In her twenties and thirties, she dated a member of the local mafia with the intention of asking him to kill her father, who had been the main perpetrator of the sexual abuse and violence. This plan was eventually not carried out, but it reflected her deep bitterness and wrath.

A process initiated in her early thirties involving four 5-MeO-DMT sessions and a few additional sessions with psilocybin and ayahuasca in the course of two years completely resolved her symptoms related to the abuses, to the extent that she could rebuild a functional relationship with her father and feel love and compassion towards him. This outcome, i.e., the complete reversal of her attitude and emotions towards her father, appeared highly unusual. For the last three years, the outcome had remained stable.

The article also presents the perspective of a female facilitator of this treatment process. The article contributes to a better understanding of the use of 5-MeO-DMT in severe traumatization as well as exemplifies the possible positive contributions of actors who are not medical professionals in resolving deep collective traumatization in societies.

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12.1 Introduction

5-MeO-DMT is a less-known psychedelic with a short duration of action and intensive dose-dependent effects. It can be either synthesized or sourced from the venom of a toad belonging to the Bufo genus, the Colorado River toad, also known as the Sonoran Desert toad [1]. Its taxonomic name is *Incilius alvarius*, formerly known as *Bufo alvarius*. Naturally sourced 5-MeO-DMT is therefore often colloquially called *bufo*.

[1]: Davis et al. 1992 DOI

5-MeO-DMT may induce a gradual process of 'somatic opening' that continues long after a session, with the majority of the effects becoming permanent. In the process, chronic, asymmetric muscle tensions may be released, which allows for symmetry and alignment in the body related to a centerline (the spine) (see, e.g., [2]). The release of chronic tension may be related to the resolution of psychiatric disorders as well as the dissolution of behavioral patterns such as addictions. Healing-oriented altered states appear consistently related to relaxation and may dissolve through contraction (see, e.g., [3]).

Vaporizing 5-MeO-DMT is considered to be a recent practice initiated in the 1970s or early 1980s in the United States. A self-published booklet featured 'the psychedelic toad of the Sonoran Desert', briefly introducing the substance [4]. In 1997, 5-MeO-DMT was reviewed by Ann and Alexander Schulgin [5].

[4]: Most 1983 URL
[5]: Shulgin et al. 1997 URL

Several books written by people with first-hand experience have been published. Oroc, an extreme sports enthusiast who died in 2020 due to paragliding equipment failure, presented the Oroc Entheogen Scale, a list of common psychoactive substances listed in order of increasing toxicity and decreasing capacity to induce 'experiences of oneness' [6, 7]. Oroc considered 5-MeO-DMT the most potent and least toxic of the known psychoactive substances. Ball, a professor of religious studies, described his perspective, methods, and experiences, as well as the concept of nonduality [2, 8, 9]. Palmer also described his views [10].

[6]: Oroc 2009 URL
[7]: Oroc 2018 URL

[2]: Ball 2017
[8]: Ball 2009
[9]: Ball 2022
[10]: Palmer 2014

Shen et al. reviewed the metabolism, pharmacokinetics, drug interactions, and pharmacological actions of 5-MeO-DMT [11]. 5-MeO-DMT can be synthesized by various methods, including an Incilius alvarius cell-based synthesis method [12], and a microbial method [13]. The mammalian brain endogenously synthesizes DMT [14], and likely also 5-MeO-DMT [15]. Sepeda et a. emphasized the importance of administration in a safe and supportive context [16]. A recent narrative review by Ermakova et al. provided a look into the history of the substance, its pharmacology, pharmacokinetics, effects, drug interactions, and toxicology [17]. Ragnhildstveit et al. presented a longitudinal case study of a patient who successfully self-medicated her PTSD with 5-MeO-DMT [18].

[11]: Shen et al. 2010 DOI
[12]: Lerer et al. 2023 DOI
[13]: Friedberg et al. 2023 DOI
[14]: Dean et al. 2019 DOI
[15]: Barker et al. 2012 DOI
[16]: Sepeda et al. 2020 DOI
[17]: Ermakova et al. 2021 DOI

[18]: Ragnhildstveit et al. 2023 DOI

Lancelotta warned against concomitant use with MAOIs and ayahuasca [19]. Community-produced materials have listed known interactions [20, 21]. 5-MeO-DMT use in the US appears to have spread and increased significantly in recent years [22, 23].

[19]: Lancelotta 2022 DOI
[20]: Tripsit.me 2023 URL
[21]: Tripsit.me 2023 URL
[22]: Kuczynski 2022 URL
[23]: F.I.V.E. 2023 URL

The information was acquired through two semi-structured online video interviews. Initially, a one-hour interview with the facilitator was conducted in July 2023. In this interview, she mentioned a case involving her client. Subsequently, an interview with that client was conducted in September 2023. The duration of the interview was 1.5 hours. It was complicated by a lack of common language between the author and the interviewee. The facilitator provided a translation, but some details were excluded for brevity. A third of the recording was lost due to an error. AI-based transcription and translation of the rest of the recording failed due to an excessive error rate caused by the use of a dialect. The study was eventually completed within a narrower scope than originally planned.

12.2 The client's background and perspective

A woman in her mid-thirties described that her life history had been 'full of trauma since the beginning'. She was born into a disadvantaged family in the former Soviet Union just before its collapse. Physical, mental, and sexual abuse were prevalent in both her family, extended family, and community. In addition, there was alcohol and drug abuse in the family.

At the age of three, she witnessed her mother cutting her wrists and jumping down from the balcony of a four-story building. She also witnessed the aftermath of the fall. Her mother did not survive, and at the age of 29, her father became an overwhelmed single parent, lacking the necessary skills to raise her and her two brothers. The father 'did not know how to cook, not even how to make tea'. She described the father as 'very aggressive'.

She was haunted by these events, unable to properly understand her history. She 'asked herself every day why it happened'. Her childhood appeared to her as 'terrible': first her father had beaten and abused both her mother and her, then her mother had died, and after that the beating continued. Not only had her father beaten his three children, but they were also beaten by their extended family, including their uncle and aunts. They were 'beaten non-stop by everyone', their father's relatives as well as their mother's relatives.

She 'felt unloved', yet partially blamed herself for the events, especially for not being able to protect her two younger brothers. Life felt like 'agony'. Both of her brothers ended up in psychiatric care for two decades, with one of them diagnosed as schizophrenic. Her younger brother was 'tortured', including sexually abused by many males from outside the family; she said that this had caused the brother to become homosexual.

Around the age of twenty, she felt so much bitterness and hate towards her father that she acquired a partner who belonged to the local mafia. Her intention was to ask the mafia to kill her father. 'It came all the way to this', she commented, 'because he was the reason my life was ruined'. She felt 'tortured, sad, and bad', as well as guilty about what had happened to her brothers. In addition, she felt anger towards her mother for abandoning her and leaving her 'not in good hands'.

Eventually, in her early thirties, she left her country of origin with the intention of changing her life for the better. She was 'holding on to the idea of peace', as she 'knew that some day, forgiveness would come', that she 'had to forgive, and that one day she would, if possible'. Her intention was thus to somehow release herself from these traumatic memories and find forgiveness.

Soon after that, she encountered a female facilitator who worked with 5-MeO-DMT. Her first experience with psychedelics was with 5-MeO-DMT in 2018, five years before the interview. She described that in her first session she 'felt her lungs open, and for the first time in her life, she was able to take a deep breath, and since that moment, everything was different'. In the first session, she felt 'a terrible, ugly, heavy energy' that was related to the collective state of the world, 'the world of lies'. She saw how she had been a part of this oppressive collective energy without means to escape it, as if 'drowning in a pool of negativity from everyone around her'.

In the session, she could see her father's situation at the time of the death of his wife, having been left with three little kids. She acquired an understanding of her father's situation and perspective during her childhood. She could see how her father had been severely traumatized as a child, had not seen it or had not found 'a way out', and had ended up passing it on.

After she opened her eyes, 'the colors felt different and more intense, feelings were different, and she as a whole was different'. The session initiated a long process of 'integration', during which previously dissociated memories began appearing in her consciousness, 'on the surface'. She described that she 'naturally fell into the process of integration', during which she gradually processed these memories and the related emotions as she 'had to solve them'. She commented that it 'really helped, and after that came the forgiveness'.

The effect felt strong in the first three months after the experience, and particularly strong in the first month. During this time, she kept a journal of 'the very different and various kinds of emotions that were surfacing'. As she was writing, she felt 'electricity all over her body'. The process was 'long and extended perhaps even to the current day'.

The second session, carried out approximately six months later, produced a very different experience. She was taken into a space in which she felt 'light and warm inside'. The experience felt like 'a lullaby of the clouds, an embrace of kind energy and pure love'. She felt like she was 'in a dream' in which 'someone was calling her'.

As a result of this new perspective, she finally acquired an understanding of the entirety of her history of trauma, an understanding of her childhood as a whole, and an understanding of the reasons behind the death of her mother. She could see everything in perspective: what had been the causal relationships resulting in her childhood being as it had.

Also in the second session, memories of sexual abuse surfaced. She recalled having been chronically, for years, abused by the father, her schizophrenic brother, and a much older male outside the family. She described that before the session, the issue had been 'so unpleasant that she had completely blocked it from her mind'. Under the influence of bufo, she realized that 'a voice in her head' had incessantly been denying the issue.

> *I realized that in my mind, I had always been repeating to myself, 'That did not happen; it was not real; I want to forget it'. And then, suddenly, I remembered.*

Through understanding all this, she became 'able to forgive herself and find a bigger meaning'. In her view, psychedelics provided 'a fast lane to understanding complex issues'. They functioned as 'eye-openers but with closed eyes', allowing one to fully understand how everything was connected.

> *Every person who is traumatized or abandoned by their parents will necessarily traumatize others. Before the treatment, I was traumatized, and I would have traumatized others. I hadn't healed yet. Now it is different. I saw the childhood traumas of my father; they were heavy. Through this, I understood how he passed on all that to us, his children. If I had had a child before bufo, I am sure that I would also have inadvertently passed on my own traumas to my children. But now that I really am free and feel free from all of this, I know I could have a happy motherhood.*

There had been two additional sessions with bufo, but the most important ones had been the first two. The latter two had merely deepened the process and produced 'more opening' and feelings of love. In addition, she had stopped consuming milk and alcohol and given up tobacco. Her relationship to money had changed, and her 'ego had disappeared . . . it was now only necessary for employment-related issues'.

> *Bufo connected me with universal energy. Ever since the first session, I have always felt connected to it. Before that, life felt like a heavy struggle. Psychedelic experiences with bufo will definitely bring a change in life. Now I feel good non-stop. I feel connected and relaxed. In the last two sessions, love was flowing into me, making me feel refreshed. I found out that I don't need to push things. If something is not going as planned, then it is not meant for me, and I don't need to push it. That makes me feel very good because I'm always just going with the flow, relaxed.*

Of the other psychedelics, she had experienced psilocybin and ayahuasca. Psilocybin mushrooms had 'showed her that she had something to lean on, that she was protected, that she could feel safe, that she had a protector or a guardian'. Ayahuasca had simply 'teached her self-love: how to love herself and also how to care about herself'. With ayahuasca, there had also been processing of traumatic events.

She had also experienced *kambo*, an immune system activator or enhancer originating from Amazonian frogs [24]. Kambo 'cleared her of excessive reactivity to stress'. Before that, on encountering stressful events, she had started either crying or euphorically laughing. After kambo, this reactivity disappeared, and she felt 'calm and balanced'.

[24]: Brave et al. 2014 DOI

She commented that she had fully processed her traumatic memories. Had she not, she would not have been able to discuss them in this kind of interview, as she would have 'felt too stuck' and it would have been 'too hard to discuss them'.

12.3 The facilitator's background

The female facilitator in her early 40s had acquired approximately eight years of experience in using bufo in groups and by herself, as well as facilitating bufo sessions for clients. She considered bufo 'the awakening of queens and kings . . . an elixir to reawaken our royal consciousness'. It allowed one 'to return to reality, the knowledge of what it meant to be alive, into the consciousness of how life was like a symphony, working in synchrony'. It also awakened one to 'the abundance of existence itself, to its harmony and fulfillment'. Due to the immediacy of the effect, if one had an intention to recover something from one's subconscious, one could reach it in seconds.

Initially, she had experienced the medicine facilitated by others, but she soon discovered that it was more productive to do it on her own. Bufo excelled as a method of recovering 'subconscious hard stuff', including the imprints of sexual abuse. It was 'simultaneously strong but gentle', holding the space for a person 'in exactly the right way', producing 'amazing results'.

Children, being innocent and needing to believe in the goodness of people, pushed memories of early sexual abuse into their subconscious. Such memories only emerged as incomplete, incomprehensible flashbacks. Yet, the memories had effects on the children's behavior as adults: they felt blocked, and their relationships repeatedly failed, always in the same manner. While many psychedelics could make these memories surface, only bufo could 'really chop them off'.

In addition to the resolution of sexual abuse, bufo worked well for other kinds of subconscious blockage. In a person presenting with such a blockage, large doses caused a 'whiteout': after a session, they did not remember anything, and the subsequent integration process became 'mysterious'. This practice prevented them from 'receiving the gift of bufo in full'. Going through something without awareness of it did not facilitate the achievement of 'grounded clarity'.

Therefore, her way of working with bufo was gradual, step by step, with an appropriate dosage and intention. There needed to be clarity of what was being worked on and what the client wanted to transcend. With smaller doses, the facilitator could observe how clients' reactions to bufo differed. Later, the use of higher doses could be necessary. With experience of the process, clients could relax and 'let go, surrender', gaining benefit from higher doses.

For some, a bufo session once in a lifetime was more than enough. Regardless, each additional session with bufo gifted one with something extremely beautiful. When one really studied bufo and knew how to use it, it was 'an excellent tool and the best medicine to travel with'. It was not addictive and was actually used clinically to treat people addicted to other substances, such as synthetic drugs and cannabis. Yet it was also possible to abuse bufo by taking too much of it or too often. The proper way was to take it once in a few months at most in order to really ground the process.

Grounding a bufo experience meant 'actually building something on this Earth: new style, new habits, education, business, relationships, poetry, painting, whatever'. Something material needed to be born from the previous experience before returning to the nondual experience. Only then could one progress further. Manifestations of grounding could also be internal—something new built inside oneself. It could mean understanding oneself better, exploring previously hidden parts of oneself, understanding more dimensions, furthering one's self-knowledge, or exploring the limits of one's awareness or consciousness. It was 'the inner yoga of consciousness': about being able to work on consciousness itself.

Ways of working with consciousness differed by the individual. The facilitator was happy with her way; others' ways could also be great. Regardless, she had already seen a lot in her years, including ways that were too harsh and lacked sensitivity. Sensitivity, correctly understood, manifested as appreciation of the medicine. Bufo was intensive but precious—something to be truly respected.

Six weeks before the interview, she had experienced her most potent session ever. She attributed this to 'having achieved an increased capability of surrendering to the experience'. After taking a dose on the upper

end of the range, she resided in the nondual state for longer than usual. Her typical experience involved 'traveling through all the dimensions of being human: from conscious personality to subconscious and further onto the source of everything, and then back again'. The larger dose caused her to skip these dimensions and travel directly to the source itself. She 'fused with the source, which was emerging from itself but also collapsing into itself, while simultaneously also being static'. There were two polarities: inflow and outflow; regardless, it was also simultaneously unmoving. Everything known and unknown by then dissolved completely; it was a total dissolution of anything and everything, while she was still experiencing it and aware of it all happening. She did not exist, but she still recognized herself in a state of total surrender.

12.4 The facilitator's perspective on the present case

In the facilitator's understanding, the death of the client's mother was caused by her inability to stop the sexual and other abuse of her children. The children remained in that 'really toxic environment' and the abuse continued until their late teens. The events of abuse created 'an imprint' or 'an entity' of the events inside the client. For the facilitator, it was difficult to discuss the issue 'without getting drawn into that space'.

Such a situation caused one to 'lose their innocence and their inner self'. They became a shell—a personality without a core. Such a person was 'really in trouble', filled with 'so much fear that they were even afraid to talk', feeling as if they had lost all their power. With this client, the facilitator had 'really needed to get involved'.

Facilitating bufo sessions for less traumatized people was often about managing extreme energy and intensity. In contrast, for people who had lost their core and power, it was the opposite. Holding space for such a client was challenging because it was 'about working with the void'. The facilitator needed to 'intensively stay at the void, at the nothingness', and still do the surgery and the healing process. Each time she worked with the void, she learned more about it. The essential factor was trust: trust in the source itself, trust in 'the soul of the client', trust in the facilitator's capacity to connect with the soul of the client; her ability to say:

> *Hey sister, I'm here. Do you hear me? I'm here with you, holding your hand and saying, 'You still exist'.*

Since one still existed, one had a 'connection to Christ Consciousness, or the womb of the mother goddess'. One was still connected to a source of energy from which one could 'refill' oneself and regain one's wholeness and power. That power would then remove 'the cancer, or whatever it was, that strange entity'.

In the case of this client, the entity was 'also connected to past life memories' (which might be understood as a history of sexual abuse in her ancestors). The pattern of these memories had been replayed in her childhood. At the time of the abuse, the child had 'connected the dots together and created the entity by herself'. For the child, this solution, i.e., the creation of an entity, 'had been easier than not doing it, but not easy'. Subsequently, the child lacked 'any power to say no'.

Initially, the facilitator did not know the exact nature of the client's problems. In the first bufo session, the facilitator was unable to pinpoint the issue. The client appeared unable to experience the source itself; instead, she resided on the level of the subconscious. In the facilitator's words:

> *The first time, I didn't know what it was. I was like, 'Oh my God, this is something weird that she's digesting in her subconscious'. She definitely couldn't rise up to the source itself. I couldn't really recognize what it was about. I felt like a mother, simply holding space for her so that she could chew the stuff inside of her.*

In the second session, the facilitator recognized a behavioral pattern of a regression to a child-like state, complemented by expressions of disgust. Previously, she had recognized the same pattern in women who had been sexually abused. The session was extended; it took an hour for the facilitator 'to find a way to get inside her process and call her soul'. She tried to 'slowly call her up, ask whether she really wanted to remain in this state forever, and call her back to her true essence'. Eventually, the client 'separated from the entity'. However, she 'immediately re-merged with it, dissolved completely in the entity, soaked in it'. For the facilitator, it was the first time she observed such a process; it felt 'quite exhausting' because she could not foresee what was going to happen.

Eventually, she felt that it was time; she 'called her soul and worked there'. Slowly, together, they separated her from the entity, and she became aware that she was not dead. Although the entity was part of her, she was not dead. The entity was like 'an extra organ of her, but it was not her'. The extra organ could also reside outside of her body. In the end, they 'got rid of it; it was amazing'.

> *In the second session, she was more active and more open with regard to her body. I could definitely see that it was about something sexual that she felt disgusted about. She did not feel comfortable with it. There was no joy. It was as if she wanted to cover up something, hide from something she didn't want to do. It was about some sexual energy she did not want to receive but was incapable of saying no to. It was a really strong ongoing expression, lasting for about seven minutes.*
>
> *I simply witnessed the process, at times saying something to see if she would react, with the intention of increasing her awareness of what was going on in her process, in case she would be capable of making conscious decisions during the process. At one time she was crying, but at the end she was laughing, yet it was a very neurotic kind of laughter—the kind of laughter that tried to cover up something. Then again, it turned into crying. She remained tense about her situation; she could not relax.*
>
> *But by then, we had already identified the problem and talked about it afterwards. She initiated a very conscious process of eight months.*

The client recounted 'a clear memory of someone, perhaps a priest', who had suggested an experiment in which people first became separated and then learned how to reconnect. Initially, she had been against such an experiment, feeling that its emotional cost would be too high. Regardless,

the priest had initiated the experiment, with the process then 'proceeding on its own', leading to 'progressively more problematic situations'. She felt extreme anger for having been unable to stop this experiment on herself.

The facilitator described her impression about sexual violence to her client, who subsequently recognized the issue. The client required eight months to process or 'integrate' the session. She was estranged from her sister and father but eventually initiated a discussion with them about 'the very sick situation' as well as the death of their mother.

> *When she eventually returned, she told me, 'I have to tell you how far it went: the recovery of our relationship with my family'. I was crying when she told me what had happened. It was amazing. I couldn't believe it.*
>
> *She asked me, 'What is your intention now?' And I replied, 'Now we need to support your femininity, improve your self-esteem, so that you become a healthy woman who can dress yourself as a woman, put on some lipstick if you like, and open up for the male energy and start exploring healthy relationships with men, so that for the first time in your life, you can enter a relationship, discover who you are as a woman, approach a man, attract male energy, and feel free.*
>
> *And yeah, we did it, continued with bufo sessions, and it was so beautiful. It was really amazing to see how her emotions surfaced. The hard part was not that long. I saw her building the 'power of no' inside her, building up the recognition that enough is enough. In the later sessions, her body movement was different from the first ones. There was less resistance to experiencing life, but also less of the impression that she would be incapable of resisting something unwanted. It was about enforcing her boundaries. I saw her gradually arriving at her own power.*
>
> *After that, her laughter was different, and she could express joy. I saw it in her eyes. While she was still in the process, she opened her eyes really wide and looked around her, as if thinking, 'Oh, I am here, I am here, ah, ah!' Her breathing turned orgasmic. She was beginning to accept her sexuality and her orgasmic energy, feeling that it was okay. It was so beautiful to witness that. Her crying was no longer painful but releasing, peaceful. I realized that at that point, the imprint of her abuse had largely dissolved.*

In the course of two years, the client and the facilitator 'completely cleared her of all traces of the abuse'. The client could digest the issue to such a length that she, her sister, and their father 'became friends'.

> *Later, she reported to me how her life had changed. She and her sister had reconnected with her father. They recovered their friendship and became a family again. They live in different countries, but they can now have a regular discussion, discuss their past, and also visit each other. For one human being, I think this outcome was like, wow. I mean, people don't usually dissolve trauma imprints of this kind, so it was amazing.*

> *When a person is becoming whole, grounded, satisfied, recovering her self-esteem, capable of creating life and deciding for herself, feeling the power that she can manifest what she intends to manifest with the right steps, without frustration; it is royal.*

They also utilized non-pharmaceutical methods for relaxation and stress relief. Once, the client 'experienced group consciousness, connected to Christ Consciousness, and completely merged in love'. In that state, she had possessed 'no problem of being a single energetic body with others, one of the super-connected entities, experiencing a connection between brothers and sisters'.

In summary, the treatment was initiated approximately five years before the interview, and it spanned a period of two years. For the following three years, her situation was stable without further treatment.

12.4.1 The nature of entities

In the facilitator's understanding, an 'entity' was a personality structure that a person could create in an unacceptable and intolerable situation. The function of the entity was to cover feelings related to that situation. Young, undeveloped individuals were particularly vulnerable to developing them.

If there was a lot of internal monologue about an unsolvable situation, the monologue could 'build up its own identity', and subsequently 'have its own mind'. The core of the entity was emotional tension, i.e., a conflict. The entity was established by the energy of thought constantly focused on the issue. The focused thought consolidated the entity into 'a non-stop presence', and the entity became 'an energetic parasite'.

Such entities were thus self-produced internally. Their purpose was to be 'an answer' or a (suboptimal) 'solution to a hard problem'. The parasitic entities 'wrapped the inner dialogue into themselves'. They were not only emotional but also cognitive constructs. Under the influence of bufo, these entities could surface, and they could be scary.

Parasites could also originate from the outside; such cases could be particularly scary. Humans resided 'in dimensions that were like a jungle full of entities'. Also, humans themselves could be considered entities with internal power to influence their surroundings. The entities continuously interacted with each other; it was 'like chemistry'. All entities had the intention to influence others.

Interactions could be either collaboration or manipulation. When collaboration went too far, it became manipulation. It happened when someone wanted to be a guest in the space of another entity for too long or in an inappropriate way. The motivation for this was to obtain excess benefits. In an appropriate collaboration, both parties benefited from each other. An example of this was mutual love.

However, when benefits flowed in one direction only, the situation became exhausting for the other. The one receiving excess benefits became a parasite. Such a situation could involve physical goods, but it could also be about emotional benefits only: a parasitic relationship.

Besides happening on a physical or emotional level, a parasitic relationship could also exist 'in higher dimensions'. The one being exhausted could sense it but could not be consciously aware of it. Such draining happened subconsciously. Others could also sense it; it appeared as an unidentified issue, which implied that the person was not completely free because something was disturbing her presence.

However, 'under strong enough a light', these issues showed up. Bufo produced this light and functioned 'as binoculars or a microscope'. A bufo session equaled to putting oneself under the microscope. One could see all the parasites and perhaps 'freak out'.

Each medicine had 'its own spirit', i.e., its own specific characteristics in which subconscious aspects exactly it revealed and in which manner. Psychedelic therapy was 'sacred surgery', which could heal. Yet, not everyone attending psychedelic ceremonies was interested in healing themselves or supporting the healing process of others. They could merely be interested in exploration and finding things out. This could also be beneficial. However, at times, such people, or their entities, could also want to gain something from the others in the circle.

The facilitator had witnessed a male client being 'possessed by very active and energetic entities involved in creation on the physical level'. Some of them represented 'spirits of nature: strong and beautiful in their own structure, consciousness, and activity'. There were also 'very active entities related to fire and involved in processes of destruction'.

The facilitator conducted a 'meta-level observation using a circular container', enabling her to 'hold the space' without falling into the trap of fear. A higher dose of bufo caused the man to express the presence of these entities in him. She was aware that the entities could also 'come out' and was prepared for that.

The client's expression of the entities was intense, also in the physical sphere. He was not lying down on the floor but standing on his feet, being 'super active, like some kind of supernatural machine, with strong movements'. As different entities took turns taking over him, the nature of his movements changed each time. Also, the man's voice varied according to the 'shapeshifting'.

To her, the man's presence appeared as though there would have been 'a huge fire in front of me, wanting me to serve its needs'. She was astonished but also unmoved, 'like a statue or an archangel', just witnessing the process. The man's energy was trying to reach her through his eyes; she rejected eye contact. Her role was to remain nonreactive and to hold space for the man to decide what he wanted to do with these entities and to deal with them in any manner he felt appropriate.

In a discussion after the session, the man recognized these forces or entities in him. She mentioned that he needed to find the right relationship with these entities so that he could be beneficial to the world instead of being parasitic. Everyone 'needed to be useful to the Creation, together'. She left it up to the man to decide how to proceed. The man lived in another country and did not visit her again.

12.4.2 Christ Consciousness

In the facilitator's view, the future of humanity was characterized by a strong polarity. A part of humanity was 'approaching Christ Consciousness' [25, 26]; this was also what she personally craved. Nature was 'going its own way into the higher frequencies'. For those capable of joining this process, it was amazing, like 'telepathy on Christ Consciousness'. That consciousness did not refer to the stories of Christianity, which she considered 'beautiful romantic drama'. Instead, Christ Consciousness referred to 'the womb of the soul, where we nest in our purity and innocence', a state of being 'God-like in the shape of little entities'. Christ Consciousness loved itself through diversity. On the level of that consciousness, people had no problems relating to each other; it was the level of pure love.

[25]: Yogapedia 2020 URL
[26]: Barnard 2022 DOI

Humans possessed the innate capability of being in this state. Such a state 'had been achieved planet-wide multiple times', and many people had experienced it in smaller contexts. The state was 'like a radio station: you just catch the frequency and you are in it'. With effort, one could reach this level easier and more often. Entheogens, i.e., psychedelics, were one way of approaching it. With intentional, shared effort, the world as a whole could accelerate the process of approaching it.

Another part of humanity, however, was becoming increasingly disconnected from that wisdom or consciousness, involved in 'strange affairs; attempts to produce perfection with weird methods fully disconnected from the wisdom of the soul and nature'. They resided in deep unconsciousness. It appeared as if there was perhaps some all-encompassing entity 'with an appetite for life itself' that just wanted to embody it, merge with it, but 'without letting life be what it is'.

People under its influence appeared to lack the capability for self-reflection. They could not see themselves or their actions from an outsider's perspective. They were infiltrated with entities that were both destructive as well as self-destructive, but that still 'craved after holiness'. Regardless, they were 'so dark that they no longer believed in their ability to reach the light'. To counteract these entities, there was a need to set clear limits and strong boundaries, a need to say, 'No, you are not crossing this line'.

12.5 Discussion

In an ethnographic interview, whether conducted in person or through video, seeing the actual outcome, i.e., the person's behavior and 'energy', constitutes a convincing proof of the validity of the outcome. Unfortunately, the experience often translates poorly into textual form, with the readers only seeing a shadow of the person and the outcome. Hopefully, this case was obvious enough for its essence to be communicated clearly.

Medicalization has led to the general assumption that psychotherapy and related pursuits should belong to the spheres of academic biomedicine/psychiatry and academic psychology. This may be a mistake; medicalization itself may belong to the class of all-encompassing

entities that refuse to let life be what it is. The medical community often appears highly distrusting and biased against therapists without conventional medical education. This study featured a case in which conventional methods would likely have produced no effect whatsoever. Clinical practice may be at least a decade behind this facilitator in innovation and experience related to the treatment of severe early trauma propagated by transgenerational trauma prevalent in most societies. Such facilitators thus have an important role in society.

The essential factors in producing these outcomes include integrity, intuitive understanding, deep personal experience of the utilized substances, and mutual trust. Another central factor is the client's intention; in this case, it was to forgive. 5-MeO-DMT might be unique in its capacity to completely erase trauma triggers associated with memories of traumatic events. Regardless, the role of the facilitator may be essential. Two different scenarios were mentioned: the need for in-session intervention when working with 'the void', and the need to avoid intervention when working with expansive energy. While the presence of a facilitator might not be necessary for favorable outcomes to be reached with 5-MeO-DMT, it is certain that an incompetent facilitator can easily and routinely prevent favorable outcomes or induce adverse outcomes; numerous examples of this exist in the context of 5-MeO-DMT facilitation.

The concept of nonduality refers to an experience of radical unity with everything, so that the distinction between the self and objects dissolves; in other words, to an experience lacking the subject-object structure:

> *A genuine understanding of nondualism proceeds from experience, not rationality. Thinking itself is largely a dualistic enterprise. Dividing experience into categories, objects, systems, etc., is thoroughly dualistic. There is always an apparent divide between the subject who is thinking and that which the subject is thinking about. Every object of the mind is precisely that: an object that stands in contradistinction to the subject. Nondual experience, then, is not about thought. This also implies that nondual experience is not the result of any form of sustained study. You cannot learn nondualism. It is not a matter of sorting out your thoughts or beliefs. It is not about studying enough esoteric systems, learning new meditation techniques, or engaging in clarifying philosophical debates. Nondual realization is something that happens to you; it is not an accumulation of beliefs, thoughts, or ideas. In fact, it is the stripping away and relinquishing of all thoughts, beliefs, and ideas. In many respects, it is the complete opposite of sustained intellectual endeavor. Nondualism is the genuine discovery of how things actually are. It is a discovery that can only be made by individuals, for themselves, and by themselves. It cannot be learned. It cannot be taught. It cannot be transmitted from one person to the next in the way that concepts, ideas, and beliefs can. It can only be directly experienced.* [27]

[27]: Ball 2012

Nonconceptual experience could be considered to be outside the scope of conventional science. Currently, science is the dominant paradigm for understanding the world. Huge resources are spent refining concepts. Nondual experience may question this paradigm. If problems can be solved nonconceptually, concepts and science become redundant. The

assumption that everything is explainable on a conceptual level may be invalid. This also implies that the pursuit of explicating 'the mechanism of action' of 5-MeO-DMT may be futile. The utility of explanations based on conceptual abstractions, such as receptors or bioelectromagnetic phenomena, may be questionable.

The features of 5-MeO-DMT imply a 'minimalistic' perspective that differs from, for example, the culture around ayahuasca. A typical 5-MeO-DMT process with a sufficient dose consists of a near-immediate 'nondual' (nonconceptual) phase, followed by a gradual decline in intensity, during which 'dual' (conceptual) biographical-chronological processing may occur. With an overdose, a therapeutically counterproductive 'whiteout' may occur. With too low a dose, the nondual experience of 'connecting with the source' is not reached. Also, as described, somatic tension may prevent the effect, while somatic release, relaxation, or 'surrendering' may allow for the effect.

The client described biographical aspects typical of a 'dual' psychedelic experience. Similar biographical insights can be achieved in psychotherapy without the resolution of the related trauma triggers. Patients often gain a detailed understanding of all relevant causal relations, with practically no effect on their behavior or symptoms. Instead, such repeated, scheduled rumination often exacerbates their symptoms. The most consequential changes in the 5-MeO-DMT sessions were thus likely actuated on a purely somatic level during the nondual phase. Oschman has presented interesting hypotheses regarding possible mechanisms [28–30].

[28]: Oschman 2006 DOI
[29]: Oschman 2012 DOI
[30]: Oschman 2016

The 'dual' psychedelic experience typically consists of visions that give rise to thoughts. The validity of such visions is often difficult to determine, and it is easy to get lost in interpretations. The typical experience of 'oneness', as in 'being one with the ocean', also involves objects (the ocean). Nondual experience may transcend this, with a lack of concepts and visions in need of interpretation.

If the brain were, in a rough and simplistic manner, divided into three layers: the neocortical conscious-cognitive layer, the limbic subconscious-emotional layer, and the unconscious-instinctual layer, 'dual' experience involves mostly the first two, whereas 'nondual' might mostly involve the third layer, the 'lowest' or 'reptilian' one. On this layer, there might not be linear time, causality, or autobiographical memory. Instead, this layer might concern survival reflexes that do not subjectively form a continuum due to the lack of autobiographical memory. Subsequently, experiences on this level might appear random and 'flashback-like'. They might be triggered by external events and interrupt the processing on the upper layers. From the perspective of the upper layers, these reenactions might appear unexplainable or incomprehensible, as well as uncontrollable.

In this model, severe trauma involving life-threatening situations would concern the lowest layer responsible for maintaining low-level somatic homeostasis and fight-flight-freeze reactions and possibly also involved in the 'fawn' reaction (attempting to please the aggressor; see [31]). Regardless, instinctual reflexes also involve objects to a degree. The effect of 5-MeO-DMT might be related to anesthesia: a transient shutdown of all layers in order to reset the lowest layer, which may encompass not only the brain but the whole body through the fascia network or be spread throughout the body in individual cells [28, 32, 33]. Concerning

[28]: Oschman 2006 DOI
[32]: Burrill et al. 2010 DOI
[33]: Yehuda et al. 2018 DOI

this aspect, 5-MeO-DMT may have similarities to ketamine and general anesthesia; in one study, either ketamine or general anesthesia alone approximately halved MÅDRS depression scores [34]. Another study suggested that the psychoactive effects of 5-MeO-DMT were associated with the integration of waking behaviors with sleep-like spectral patterns in the local field potentials of the brain [35].

[34]: Lii et al. 2023 DOI

[35]: Souza et al. 2023 DOI

5-MeO-DMT may induce 'reactivations', a perhaps unique property of 5-MeO-DMT. Ortiz Bernal et al. discussed the phenomenon, noting that it may most often represent a neutral or positive byproduct of the acute 5-MeO-DMT experience [36]. The authors noted that reactivations may be a contributing factor to long-term therapeutic benefits.

[36]: Ortiz Bernal et al. 2022 DOI

According to the interpretation adopted in the current study, in a reactivation, the treatment process continues after the pharmacological effect has already subsided. A reactivation can be triggered by classical psychedelics but may rarely or briefly occur spontaneously. Regardless, the reactivation phenomenon can be utilized to extend and intensify treatment, so that a session with classical psychedelics can 'replay' features of the more effective 5-MeO-DMT session, but with lower intensity and for a longer duration.

When the treatment is extended in this manner, reactivations typically cease to occur. For example, a psycholytic dose of LSD (e.g., 50 µg) a few days after a 5-MeO-DMT session might produce an optimal combination treatment in which the 'replay' session functions as a 'psychedelic integration' session. Reactivations might thus be best understood as a delayed release of trauma accumulated on the instinctual layer (for comparison, see, e.g., [37]).

In this case, in addition to 5-MeO-DMT, ayahuasca and psilocybin sessions were used (for an overview of these substances, see, e.g., [38–42]). Reactivations or adverse events were not mentioned in the interviews. The case also illustrated how experienced facilitators diagnose clients' issues through behavioral pattern matching that is often instantaneous but occasionally requires prolonged observation, like in this case.

The Multidisciplinary Association for Psychedelic Studies (MAPS) founder, Rick Doblin, noted that his 5-MeO-DMT experience in 1985 made him realize that everyday life was largely about habitual patterns that narrowed our vision and were taken as fixed, but they were actually not fixed [43]. 5-MeO-DMT took him 'back to the moment of creation' and helped him 'realize that the new can enter at any moment'. He felt that this particular experience had played a large role in the current success of MAPS in furthering, among other projects, MDMA therapy, because the experience had helped him realize that whenever he felt blocked or stuck, he could try to find something new to enter the picture and that there was a perpetual ability to connect with creation.

[43]: Rogan 2023 URL

Research on 5-MeO-DMT has recently accelerated, with the current focus being especially on treatment-resistant depression. In 2023, Reckweg et al. presented the results of a phase 1/2 trial to assess the safety and efficacy of a vaporized 5-MeO-DMT formulation in patients with TRD, with the efficacy measured as the proportion of patients in remission (MÅDRS $\leq$ 10) (NCT04698603) [44, 45]. In the phase 1 part with eight patients investigating the safety of a single dose of either 12 mg or 18 mg,

[44]: Reckweg et al. 2023 DOI

[45]: Terwey 2020 URL

two out of four (50%) of patients administered 12 mg, and one out of four (25%) administered 18 mg were in remission at day 7. The mean MÅDRS change from baseline to day 7 was -21.0 (-65%) and -12.5 (-40%) for the 12 and 18 mg groups, respectively.

In the phase 2 part, eight different patients were administered up to three increasing doses of 6 mg, 12 mg, or 18 mg within a single day, using an individualized dosing regimen. Seven out of eight patients (87.5%) achieved remission at day 7 ($p < 0.0001$). All remissions were observed from day 1, with 60% of remissions observed from 2 h. The mean MÅDRS change from baseline to day 7 was -24.4 (-76%). Reckweg et al. concluded that the treatment was well tolerated and provided potent and ultra-rapid antidepressant effects. Individualized dosing with up to three doses on a single day was superior to single dose administration. Additional trials were ongoing [46, 47].

[46]: GH Research 2024 URL
[47]: GH Research 2024 URL

In the beginning of 2024, the Usona Institute was analyzing the data from their recently completed phase 1, first-in-human, randomized, double-blind, placebo-controlled, single and multiple ascending dose study to evaluate the safety, tolerability, and pharmacokinetics of intramuscular injection of 5-MeO-DMT in healthy volunteers (NCT05698095) [48].

[48]: Usona Institute 2023 URL

At the end of March 2024, Beckley Psytech announced positive initial data from Phase IIa study of BPL-003, a novel, synthetic 5-MeO-DMT benzoate salt candidate, for treatment-resistant depression (NCT05660642) [49]. The results indicated a 45% remission rate 12 weeks after a single, intranasally administered 10 mg dose of BPL-003. It thus appeared to align with the above data [44], suggesting both good initial efficacy and the need for an individualized multi-dose regimen.

[49]: Beckley Psytech 2024 URL

[44]: Reckweg et al. 2023 DOI

12.6 Conclusions

Uncommon outcomes may be achieved with uncommon methods. In the hands of experienced facilitators, 5-MeO-DMT may represent the ultimate efficacy in the treatment of extreme trauma. Facilitation of 5-MeO-DMT sessions requires high sensitivity and excellent judgment, which may only be achieved through years of personal experience. In many ways, such facilitation might be considered a form of art. Further experimentation and research are warranted.

The described method may allow for positive changes in societies that currently appear barely imaginable. Harmful patterns propagating from generation to generation that have been considered unchangeable—'set in stone'—may become plastic. Similar to how psychedelics induce neuroplasticity on the level of an individual, a widespread application of 5-MeO-DMT therapy may allow for 'socioplasticity', a societal reorganization that allows for unforeseen levels of well-being.

12.7 References

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13 The mechanism of action in a spontaneous resolution of chronic depression, anxiety, and burnout

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Keywords: altered states of mind, memory, spontaneous remission, burnout, depression, anxiety, insomnia, sleep disorders, sleep deprivation, love, self-compassion, forgiveness, grace, pivotal mental state

There is currently no generally agreed-upon definition of the mechanism of action of psychedelic therapy. Existing proposals have approached the issue from various perspectives, utilizing concepts on many layers of abstraction. Most commonly, mechanisms based on neurotransmitters have been proposed. From a clinical perspective, explanations on the psychological level would be more useful. This study provides one such explanation, focusing on the destabilization of trauma-related memories and their replacement with memories that allow for more adaptive behaviors. This mechanism is not specific to psychedelics, and the study therefore illustrates a non-pharmacological process involving it.

The study features a male entrepreneur in his early fifties who suffered from chronic but non-debilitating anxiety and depression since his teenage years. In his mid-30s, he suffered from severe burnout but partially recovered. The amount of alcohol consumed was constantly relatively high. More recently, due to simultaneous relationship and workplace stress, he experienced a more severe episode of burnout, depression, anxiety, and insomnia. He felt completely exhausted when trying to get something done and became fearful of the workplace. Psychotherapy and various pharmaceutical medications provided little benefit.

After three months on sick leave, a trip to the mountains triggered severe insomnia. Sleep deprivation likely contributed to a spontaneous experience of altered states of mind, including a two-day period of hallucinatory visions. There was the feeling of being a complete failure, but through a new relationship initiated just before the trip, he received love and validation from his new partner, which contradicted the feeling of worthlessness. The combination of an altered state of mind and love induced an alteration of identity that resolved his depression, burnout, and sleep disorders. After three more months of self-organized rehabilitation, he successfully returned to work.

Six months after the trip, financial decline caused by his absence and unchanged stressful conditions at the workplace led to disappointment, motivational issues, and stress, but his work performance remained good regardless. One year after the trip, although his work-related stress had increased rather than decreased due to the financial situation of his company being more demanding than before his burnout, the positive outcome prevailed, proving its long-term stability.

13.1 Introduction

[1]: Burback et al. 2023 DOI

In 2023, Burback et al. provided a comprehensive review of treatments for (complex) post-traumatic stress disorder, or (C-)PTSD [1]. In their discussion about research related to fear circuitry and memory, they described that memory reconsolidation theory states that remembering

an event could cause the memory trace to transition from a stable to an unstable state. A destabilized memory could be altered either pharmacologically or through new experiences before it was restabilized through protein synthesis-dependent memory reconsolidation processes [2]. Long-term memories could thus be updated, but only if new information contradicting the previous memory was present at the time of recall [3, 4].

[2]: Raut et al. 2022 DOI

[3]: Sevenster et al. 2013 DOI
[4]: Popik et al. 2020 DOI

Brouwer and Carhart-Harris introduced the concept of the 'pivotal mental state': a hyper-plastic state aiding rapid and deep learning that could mediate psychological transformation [5]. Chronic stress and neurotic traits were considered primers for a pivotal mental state, whereas acute stress could be a trigger. They noted that before the relatively recent advent of secular psychology, religious traditions provided useful resources to prepare and guide individuals through these states in order to achieve self-transformation and growth. They said that religions provided excellent narrative and infrastructural resources for dealing with such 'psychological rebirth'. Such support was mostly lacking in modern society. The authors proposed that psychological crises should not be interpreted as emergencies requiring immediate suppressive intervention but as opportunities for development and growth, provided that a supportive context was provided for the process.

[5]: Brouwer et al. 2020 DOI

The present case study exemplifies the above-described phenomena by illustrating how chronic stress and eventual near-total sleeplessness induced an altered or pivotal state, which likely destabilized the memory. Unexpected validation received in a new relationship provided the necessary new information for a new memory concerning his whole identity to become established and stabilized.

The information was acquired through a 1.5-hour semi-structured interview conducted two months after the period of hallucinatory visions, a short follow-up four months after the first interview, and a one-hour interview ten months after the first interview, or a year after the period of hallucinatory visions.

13.2 Case description

A man in his early fifties had been a successful entrepreneur for 25 years, had been married but divorced six years ago, and had two children currently in their teens. His own depression originated in his teenage years. It had not involved suicidality and could be characterized as major depressive disorder, recurrent, moderate (ICD-10 F33.1). He described it as having 'eliminated all happiness from ordinary life'. His background feelings involved self-hatred. The related anxiety led him to use significant amounts of alcohol for decades, although he remained employed.

His first burnout was in his mid-30s, when he was an employee at a company. There was too much work, conflicts with other people at the workplace, and he had small children at home. He took SSRI medication for a while but did not attend therapy or take a sick leave. The situation was resolved by a career change, i.e., becoming an entrepreneur and founding his own company. Regardless, a dissonance between his fundamental values and the type of business remained. He felt like he was in the

wrong field, forced to 'work for money'. Entrepreneurship eased the dissonance somewhat but did not eliminate it.

There were attempts to reduce the dissonance by changing his environment in a somewhat impulsive manner. For example, the family moved to different cities several times. Achievements failed to produce satisfaction. His method for coping with the lack of satisfaction was to take on progressively larger challenges, going further and further out of his 'comfort zone'. This method did produce noticeable financial and social success. In the end, he felt that he had achieved what could be achieved in the field, and 'nothing of interest' remained.

Coincidentally, he received funding to expand business abroad and founded a startup in another field, of which he knew practically nothing. He described it as 'a dream job', and although the work was very demanding, it progressed well. Despite succeeding, dissatisfaction in his life was 'in some way constantly accumulating'. This was largely due to a 'very turbulent' recent relationship, with the turbulence caused by the partner's (complex) post-traumatic stress disorder. The relationship did not reduce stress but increased it; it became even more stressful than work. His body got stuck in a chronic state of hyperalertness, and he lost sleep. Sedatives helped a bit. A year before, he had already enrolled in psychotherapy in order to discuss his dissonance issues and impulsivity, but therapy provided little benefit.

He commented that the exhaustion was not only related to work but all-encompassing—exhaustion towards life. He began experiencing bouts of obsessive, panicky anxiety. He woke up crying, feeling that he could no longer tolerate his life. To him, alcohol appeared as the only substance and method that could alleviate his anxiety: 'for a moment, it completely dissolved the anxiety, producing a hopeful feeling'. However, it gradually amplified his sleep disorder. He tried ending his relationship, but his partner refused.

At this point, the international conflict in Ukraine brought unprecedented uncertainty that stagnated financial markets and resulted in the unavailability of further rounds of financing and the failure of numerous startups, including his own. Despite there having been nothing that he could have done to prevent the failure, he felt like a failure regardless. The feeling of failure was also associated with his childhood and teenage uncertainties related to his relationship with his father and the father's demands (although the father had already passed away).

Three months before the crux of his burnout, he visited a psychiatrist, who put him on sick leave and prescribed vortioxetine (5 mg) for depression, oxazepam (15 mg) for anxiety, and mirtazapine for insomnia. He was also prescribed amitriptyline, but he never took it. He took oxazepam for insomnia for one month, but noticed its propensity to induce addiction and stopped taking it. For the last month, he took oxazepam again.

His hyperalert state caused his senses to be oversensitive. Colors appeared unnaturally bright, and he was 'extremely sensitive to receiving anything'. Several times during the three-month sick leave, he traveled to the mountains, spending half of his time there. He was too exhausted to maintain his relationship and met with his partner for only a few days during this period. The relationship finally ended, but instead of being

a relief, it caused a feeling that there was 'nothing to hold on to'. For 'three to six hours a day', he cried. Every morning, he woke up to 'an overwhelming anxiety'. He was completely exhausted, sleeping either too much or not at all. He was incapable of taking any initiative. There was an overwhelming feeling of hopelessness. He could not even think about working or planning anything. In order to briefly visit his workplace, he needed to take oxazepam. Regardless, he could not do anything at the workplace, becoming desperate about his condition.

During this period, mirtazapine helped somewhat, and his insomnia was not as bad. He was unable to perform cognitive tasks but was physically in good condition and trained hard in sports; it was the only thing that made him feel good. He was also able to handle his parenting tasks quite adequately for two weeks a month. However, when he was not with his children or doing sports, he could only rest and consume subscription video on-demand streaming services.

He felt that he would never recover and be able to work. Eventually, the only thing he could take care of was his role as a parent. Still having a relatively high social status and a good financial situation, he found numerous interested women on a dating app. However, one-hour meetings with them rendered him completely exhausted. He was also in contact with a former acquaintance and suddenly found an emotional connection with her. It led to a new relationship with strong feelings of infatuation, which, however, worsened his hyperalertness.

To overcome the quagmire, he took another trip to the mountains with the aim of going snowboarding. It was an 18-hour drive. During the last hour, his new date sent him a beautiful story she had written about him. This completely flabbergasted him, so much so that he could barely drive to his destination. Upon reaching it, he could not concentrate on anything and went to bed, finding that he could not sleep; his hyperalertness had exploded. During the next three days, he got only five hours of sleep. Mirtazapine had no effect on his insomnia.

His physical condition 'collapsed'. A week before, he had taken a 70-kilometer bicycle tour. Now, an attempt to walk 100 vertical meters up the mountain raised his pulse to 170 bpm, and he had lost his balance and coordination to such a degree that he could not stay standing on a snowboard. Doing sports was thus out of the question, and he remained at the cottage for the whole time.

For the first two days, there was a 'burning sensation' inside him, and he saw hallucinatory visions. His identity appeared to him as 'an old, stinking, sick hide', which he could no longer tolerate. He felt that he needed to get it off him, even though he would then be 'naked and defenseless'. The visions were associated with very concrete somatic sensations. He was afraid of 'going crazy'; on the other hand, the process appeared to him as 'a purification'.

Simultaneously, there was the 'accepting gaze' of his new date. It produced a feeling that he was not completely alone and allowed him to feel compassion towards himself. His base feeling was sadness about having ended up in such a state. There was sorrow about having tried so much but having failed regardless; he felt 'completely beaten up'. Yet

there was a simultaneous feeling of self-compassion; he wondered how he had been 'so hard on himself for so long'.

He 'intentionally delved into these issues for the whole time', forcing or 'autosuggesting' himself into a constant contemplation of his problems. He 'wanted to and needed to go through the whole process'. He was totally sick of his life and did not want to continue in the same way. It had to change; he had to release it all and give it all up. He also wrote a diary, documenting all his thoughts and 'describing the events to himself', in order to 'concretize what was happening'.

He described how he could 'clearly and concretely see himself from the outside, as if in a lucid dream'. He said that the process 'continued for very long, with the same visions repeatedly appearing'.

His visions included 'personifications' of the contents of his mind. Previously, these had been 'an undifferentiated mess'. In psychotherapy, he had recognized the demanding nature of his personality, but mostly in an undifferentiated way, although facing the demanding voice had been 'occasionally harsh; it was completely unforgiving'. Yet he had recognized it 'as himself', always considering every project a failure, no matter how well it had factually succeeded. It represented 'extreme pessimism about his overall competence, eating out all happiness from life'.

In the mountains, the demanding nature of his personality has emerged as a personified character: 'a punisher', always demanding or complaining about something. More importantly, two previously unrecognized characters had been differentiated (unblended). There was 'an impulsive guy', whose positive aspects included creativity, bravery, fearlessness in taking risks, and the capacity for taking initiative. Negative aspects included a tendency to give up easily in the face of adversity, as well as leaving the resulting chaos to others to sort out. His impulsivity had been a major problem for his partner in the previous relationship; he was now contemplating what impulsivity actually meant and why it had been such a problem for her.

There was also 'a wise man', but he was demanding and judgmental; only his opinion and his moral correctness were of importance. Previously, these two characters were in constant conflict. After the process in the mountains, these opposing parties no longer existed. Instead, 'his whole person was a dialogue'.

He described that 'having been good enough for someone' had been 'extremely empowering'. The acceptance had been provided 'in a very surprising situation', in which he had felt completely inadequate. This had produced a feeling of 'grace': that he could, after all, be good enough for himself and even for someone else.

Previously, he had been unable to name these characters, and they had appeared to him as 'forces which one could not fight'. One remained at the mercy of these forces. Naming them 'tamed them a bit'.

On the third day, the hyperalertness lessened a bit, and he was able to sleep three hours per night, although badly. Giving up the old beliefs, issues, and identity had felt 'so good', and the 'experience of solace' had appeared immense. He tried not to involve other people too strongly in the process, feeling that it 'might have been dangerous'. In the end,

forgiving himself by himself, without too much external influence, was likely 'the most important factor'. He had thought that he needed to forgive his father or his narcissistic colleague, but this was revealed to be a false conception. Instead, the essence was about forgiving himself.

In addition, there had been other snowboarders at the same mountain cottage, with whom he had had long discussions; he mentioned that this had also been a significant factor. The relationship with the new date, maintained on the phone, became more romantic. Due to all this, his anxiety lessened, but he assumed that the issue was not completely resolved and that at home he would feel anxious again. He also 'felt silly' about having such a childish crush on someone.

After nine days, he was able to drive back home, although 'barely'. Upon returning home, he 'felt as if peace had settled'. The anxiety was gone, and he slept for eleven hours on the first night. After that, he had no problems with sleep. In addition, his impulsivity, overreactivity, anxiety, and depression were 'simply gone'. The new relationship involved 'factors that were potentially hard', but in his new state of mind, these appeared inconsequential: there was 'calmness and a newfound trust that everything would go well'.

He emphasized the suddenness of changes. The eventual collapse had been sudden, and the recovery from the worst state of mind was almost as sudden. After returning home, insomnia disappeared, he slept slightly more than usual, and he had largely physically recovered after a week. The psychological and emotional recovery took three months and involved 'regaining self-confidence'.

The vortioxetine dose was also increased to 15 mg, in his view, 'post-recovery, or after healing'. At this point, he had been taking it for nine months. During the last month of the three-month recovery period, he began visiting the workplace a few times a week, a few hours a day, performing small, tentative tasks. After a sick leave of 7.5 months, he returned to full-time work, but it took a few more months to regain full productivity and partially relearn the line of business, as he had been involved in another field of business for two years.

He mentioned that the healing process resembled a conversion to religion, involving 'an experience of enormous forgiving', not by a higher power or God, but by oneself: 'inside oneself, one could find the strength to care for oneself'. Subsequently, 'a quiet consciousness about forgiveness having happened prevailed, and the outcome appeared permanent'. Seeing himself from the outside had been 'a powerful experience'; grace had followed from 'seeing oneself from the place of compassion'. An outsider's perspective had allowed for 'separating from the experience'. Normally, one was 'so locked in one's pains, impulses, and bad feelings that one was unable to gain an outsider's perspective'. While this was possible 'in theory', it could not be 'felt'.

He had become 'significantly more forgiving towards himself'. He still occasionally got frustrated, and the burnout had 'left its mark'; for example, his tolerance to stress remained low. In this sense, he 'had not completely turned into another person', but the depression had completely dissolved. He was able to go to work normally and had started two new projects. With the help of a two-month program supervised by

a personal trainer, his physical condition had improved so much that he was able to do sports normally. In short, 'before this, life was horrible; now it's wonderful'.

The resolution of his symptoms still appeared 'unbelievable' even to himself; some of his friends had been in similar situations but had failed to achieve similar outcomes. There was also a slight residual fear about the permanence of the outcome. While in his previous working life he had felt inadequate if he had failed to achieve '17 things a day', this feeling was now absent, and he was able to be satisfied with what he had gotten done. He had not regained the capability for 'hypereffectiveness', and assumed he never would, but could, regardless, work, and it was 'ok and enough'. In retrospect, he considered that his previous projects had been 'massive, maybe too large for one person'. They had been due to the 'demanding guy' personality in him, his 'father's voice' criticizing him for 'not having been able to do this or that better', a constant residing in inadequacy, something that could never be fulfilled.

He had discussed the events and the outcome with his psychotherapist as well as his psychiatrist. The latter interpreted the events in Freudian terms, focusing on his crush and comparing the situation to Freud's 1890 description of the case of the pseudonym Anna O. His psychotherapist, in turn, he described as 'unable to provide any tools for processing my issues', appearing overly unconfrontational and non-directive. He had 'needed to figure out everything by himself', mostly from books. The thought of forgiving oneself had 'appeared spontaneously'.

He was grateful for having had the financial resources to be able to take the time for the process. He was also able to see many positive aspects of his previous life, which he had missed or not been able to appreciate due to constantly feeling so bad. He now felt more capable of appreciating the many people and valuable things in his life. Previously, he had felt that happiness 'always resided somewhere else, never here, no matter how perfect the company or the surroundings'.

Six months after the trip, he described that, during his absence, the financial situation of the company had severely suffered. At the time, he had 'kind of ignored all that'. Regardless, after his return, he had been able to turn the situation towards the better, which he assigned to him 'being too good at his job'. Personally, however, the return to work had been 'a disappointment' as the motivational issues related to being in a personally unfulfilling type of business prevailed, and he had not been able to change the ways of working as he had envisioned. Despite that, his work performance had been good, and his new relationship was stable.

Nine months after the trip, he described that the financial situation remained difficult, the company was making a loss, and a complete reorganization of the management team and personnel was ongoing. The process was emotionally very stressful for him. The new relationship endured, however.

One year after the trip, i.e., ten months after the first interview, he described being 'relatively well but at capacity'. His working life was 'as bad as before', but he had been able to handle it without getting depressed, and the financial situation of the company had improved somewhat. His

emotional stability was 'surprisingly good', his relationship functional, and his emotional state calm.

However, he still had the propensity to get addicted to alcohol and could thus not consume it. He suspected that he remained more sensitive and that his resistance to stress had permanently lowered, but he was better able to control it, was more forgiving towards himself, and was better able to maintain personal boundaries. He occasionally felt anxious, but it was relatively slight and transient. He kept taking vortioxetine and had considered attending psychotherapy but 'done nothing about it'. Concerning the concept of burnout, he saw it as a combination of factors; in his case, the contributing factors had been the responsibility for children, the stress caused by his previous relationship, factors related to working life, and personal vulnerabilities originating from childhood and later experiences.

13.3 Discussion

Psychedelic therapy aims at utilizing substance-induced altered states to achieve similar therapeutic outcomes [6]. The interviewee had occasionally smoked cannabis in his twenties, but had not experienced particular psychedelic effects from it, nor had he had any other experience with classical or other psychedelics. The presented case thus illustrates how the same outcome can occur without the use of substances by spontaneously 'becoming receptive' or destabilized. In the context of bipolar disorder, similar spontaneous inductions have been described [7]. The case may also suggest that a retreat, or 'dieta' type [8], continuous, intense process likely produces better results than occasional, short therapy sessions.

[6]: Read et al. 2021

[7]: Grof 1990

[8]: O'Shaughnessy et al. 2021 DOI

The case also illustrates that being in destabilized states is not enough unless subjectively believable new information is available to substitute for previous beliefs. Conversely, new information provided without destabilization, such as in psychotherapy, may have no effect on foundational, identity-related memories. Occasionally, the required kind of new, unexpected information may be produced endogenously, without social interaction, induced by substances and innate mechanisms of healing. Alternatively, it can be produced by specific nuances in music [9, 10]; the selection of music is thus essential. In practice, psychedelics may allow for recombination of memories in new ways, producing new interpretations, or allow for revisiting traumatic events and seeing them 'from a distance', giving an overall view of the past.

[9]: Mori 2009 URL

[10]: Verma et al. 2024 DOI

However, it is crucial to note that the wrong kind of social interaction or 'new information' in such altered states may be counterproductive and lead to negative outcomes having similar permanence as the positive outcome in this case. Thus, if therapeutic processes or clinical trials fail to take into account that people have very different needs and vulnerabilities, therapy may produce harm, and clinical trials may show no efficacy or adverse events, purely due to procedural failure instead of the properties of the substance.

Psychosis likely induces the same kind of trauma memory destabilization [11]. It is unfortunate that current treatment methods may produce 'new information' that is counterproductive and may thus induce permanent

[11]: Corlett et al. 2013 DOI

negative consequences. For example, patients are often told that they are permanently ill. This may create a permanent, counterproductive identity. Approaches that aim at creating more positive identities include the Open Dialog model [12, 13] and Christina Grof's paradigm of psychosis as a 'spiritual awakening' [7]; more recently, a similar attitude was also recommended by [5].

[12]: Mosse et al. 2023 DOI
[13]: Bergström et al. 2022 DOI
[7]: Grof 1990

In the present case, the entrepreneur had autonomous control over the process; he was free to relocate himself, regulate his social contacts, and decide on the methods and interventions. The process could run its natural course into its completion without external interference or attempts to stop the hallucinatory visions with, say, antipsychotics or strong sedatives. The social environment was fully supportive of the process. From the perspective of pivotal mental states [5], both chronic stress and neurotic traits were present as precursors, and acute stress functioned as the eventual trigger.

[5]: Brouwer et al. 2020 DOI

A Finnish psychiatrist, Juhani Mattila, considered that people were energized by meaningfulness, and burnout was due to a loss of meaningfulness and a repressed anxiety about this loss [14]. Meaninglessness was due to a loss of authentic human connections; authenticity was a prerequisite for meaningfulness. The solution to burnout was to find ways to authentically (re)connect with people.

[14]: Mattila 2021

In the current case, meaningless was due to the field of business being somewhat in conflict with the entrepreneur's personal ethics. His intention was to solve the most pressing problems in the world, yet the nature of his business was somewhat more mundane. The startup aligned better with his life goals but failed due to external circumstances. With regard to human connections, while he had a family, lots of friends, and social status, their meaningfulness was reduced by endogenous devaluation. Also, since his relationship before collapse was plagued by the transgenerational trauma, it failed to fulfill the need for an 'authentic connection'.

13.3.1 An interpretation based on the Internal Family Systems method

Internal Family Systems (IFS) is a therapeutic model that views the mind as composed of sub-personalities, or 'parts' [15]. Parts may be categorized based on their function: 'exiles' are dissociated parts that carry emotional burdens originating from traumatic events; 'managers' try to proactively keep things under control; and 'firefighters' react to overwhelming emotions. Proactive managers and reactive firefighters are protectors who protect against the unbearable emotions originating from exiles. 'Self' is not a part but the 'true essence' of a person that carries unlimited compassion, love, and healing powers; it is an innate healing mechanism.

[15]: Schwartz 2021

The entrepreneur was not familiar with the IFS model, yet he described his experience in compatible terminology. His 'named personifications' essentially corresponded to IFS parts and interacted in the same manner. His history of depression, self-criticism, and worthlessness pointed to the presence of exiles carrying childhood burdens, i.e., shame and the feeling of being a failure.

The 'punisher' or the 'demanding voice' resembled a protector, driving him towards achievement, likely with the intent to shield him from the pain of failure and the feelings of worthlessness carried within exiled parts. The 'impulsive guy' resembled a proactive manager, perhaps with reactive firefighter aspects. Impulsivity, i.e., chasing new experiences, may have attempted to fill the inner void and keep boredom and painful emotions originating from the exiles at bay. Workaholism appeared as an attempt to protect against feelings of worthlessness by achieving external validation to compensate. His use of alcohol appeared indicative of a reactive firefighter trying to numb the occasional overwhelming emotional pain. The nature of the rigid, judgmental 'wise man' appeared difficult to interpret; it may have represented a blend of an exiled part and his emerging Self-energy.

The characterization of his inner experience as an 'undifferentiated mess' indicated that, in general, his parts were blended with each other and the Self. The failure of managers and firefighters eventually led to collapse; the previously rigid protector system was destabilized. Simultaneously, he had the motivation to process the issues through self-reflection. Love and acceptance (new information, or 'corrective experience') from his new partner energized his Self, allowing it to take over and reorganize the parts into a more harmonious existence; a dialogue. Resolution of symptoms involved differentiating the parts, i.e., clarifying the boundaries and roles of the parts, as well as sorting out the conflicts between these parts with self-compassion, i.e., updating the parts working from the position of the Self (in the memory reconsolidation paradigm, [16] referred to this as 'self-reorganization'). He moved away from full identification with the parts and towards witnessing them with compassion from the position of the Self. The IFS interpretation thus contained aspects of destabilization of memory and the provision of new information but added some detail over the process, featuring another perspective or a layer of abstraction over the conceptualization of the process.

13.3.2 General perspectives

A few general observations could be derived from the interview data. Mental health challenges may be longstanding and prevail across the lifespan, with adolescence often serving as a critical period for their onset. Work-related stressors, such as high job demands and low autonomy, have been linked to an increased risk of burnout, but identity-related factors may be more essential. Traditional treatments possess limited effectiveness. A pivotal experience may lead to a breakthrough related to identity, which affects the fundamentals of the situation; in the end, identities appeared relatively fluid. Deep interpersonal relationships, particularly supportive romantic relationships, may be an essential factor that enables access to identity-level childhood trauma. The present case may be considered one of 'post-traumatic growth and resilience'. The environment may pose challenges to sustaining the gains, and there may be a breaking point that cannot be exceeded if the gains are to be sustained.

Central to the case was the theme of transformation and growth in the face of adversity, with an interplay between internal and external factors. The case illustrated the complexity of mental health care and the need

for comprehensive, holistic approaches to intervention and recovery, as well as the need for a transdisciplinary, synthetic perspective. The shifts between periods of struggle, breakthroughs, setbacks, and resilience emphasized the importance of the etiological perspective. Challenges faced by individuals vary and are individual depending on factors such as age, gender, occupation, wealth, and interpersonal relationships. The central theme of the case was existential exploration, i.e., meaning-making, or the construction of meaning and identity; specifically, the aim for subjectively meaningful outcomes through work. This happened in the context of specific societal norms, cultural influences, and systemic factors, reflecting the interconnectedness of humanity and the psychohistory of societies.

Case studies may also invite a contemplation of universal principles, such as the universality of the themes of struggle and growth. Due to its universality, the process of struggle and growth might be considered an 'archetype' belonging to the 'collective unconscious'. Also, harmony on all levels, including the social-interpersonal or even the 'cosmic', might appear as the eventual goal of the individual.

13.4 Conclusions

Personal identity can be altered by inducing an altered state of mind that destabilizes the mind while simultaneously providing new information to replace memories central to the identity. In the present case, a self-deprecating identity originating from childhood was substituted with an identity of being good enough. Psychiatric and other symptoms related to the previous dysfunctional identity dissipated as a result. The newfound resilience was strong enough to sustain a return to the same work environment.

The case illustrated that the mechanism of memory alteration can be utilized either non-pharmaceutically or pharmaceutically, but the pharmaceutical option, i.e., psychedelic therapy, is generally feasible whereas the non-pharmaceutical is not. However, the described kind of long, continuous, uninterrupted retreat-type process is likely more conductive for healing than processes divided into intermittent, short appointments.

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LSD and ketamine in schizoaffective paranoid psychosis involving childhood and war trauma

14

Currently, documentation on the effects of psychedelics on psychosis appears scarce. In the present case, a higher-dose LSD experience during acute paranoid psychosis before the initiation of antipsychotics induced feelings of love, which resolved the majority of the symptoms of the paranoid psychosis in one session, leading the person to reconnect with his family and seek treatment in a psychiatric hospital. The session did not resolve schizoaffective disorder, however. More than a decade later, while using the antipsychotic aripiprazole, concurrent self-administration of ketamine induced psychedelic effects that appeared to allow for practicing 'grounding' of psychotic thoughts. Immediately afterwards, daily self-administration of psycholytic doses of LSD for four weeks caused a mood-enhancing effect that enabled the patient to successfully discontinue aripiprazole without the return of psychotic symptoms. No psychotic or other noticeable symptoms could be observed during two interviews conducted in the two months following the discontinuation of the antipsychotic.

The mechanisms of action remain unexplored, and their possible generalizability to other cases remains unclear, but the observations may serve as a basis for further research. It may, for example, be that chronic use of LSD induces a tolerance to its psychedelic effects but not to its anti-inflammatory or other possibly unknown effects, which may be related to the observed mood-enhancing effect. A preclinical study from 1971 appeared consistent with the claimed effect.

In the present case, paranoia, i.e., the hypersensitivity to potential threats, was partly due to childhood trauma, partly intentionally induced by military training, and partly accentuated by war experiences. It could not be 'turned off'. Fear related to the uncertainty of survival formed the core of psychosis; without the fear, psychosis would likely not have existed. Paranoid psychosis presented itself as a biased estimation of probabilities of possible adverse outcomes, as a mismatch between the past and the present.

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14.1 Introduction

This study features a man first diagnosed with major depressive disorder, then with schizoid personality disorder, and eventually with schizoaffective disorder of the depressive subtype. Current diagnostic systems explicitly ignore etiology, cataloging symptoms instead. In this case, symptoms consisted of depression and a paranoid fear of being harmed by others, leading to avoidance and social isolation. Etiologically, these symptoms could be explained by his life experiences in a childhood environment filled with intimidation and domestic violence, as well as a war experience in his adult life.

The validity of the diagnosis of schizoaffective disorder has been questioned. Regardless, the term schizoaffective refers to a psychotic condition.

The concept of psychosis in itself remains largely undefined, but it typically refers to a condition and behavior that others consider illogical to a significant degree and possibly dangerous due to the difficulty of predicting the actions of the psychotic person.

In order to understand the phenomenon, one historical attempt to understand psychoses was to use psychedelics to simulate a psychotic condition. Friesen reviewed the history of research on psychosis and psychedelics, noting that in the 1950s and 1960s, research on psychedelics and psychosis was deeply entangled but became disentangled in the 1970s [1]. Psychiatric research funding shifted towards a biomedical framework, focusing on neurotransmitter hypotheses in psychosis, reflecting the reductionist approach in current psychiatry. Friesen advocated for a more integrative, holistic approach.

[1]: Friesen 2022 DOI

Haden et al. reviewed current and historical research and clinical reports on the relationship between psychedelics and schizophrenia [2]. They concluded that lower doses of psychedelics, mostly LSD, appeared to have a potential beneficial impact on the negative symptoms of schizophrenia. The term negative symptoms refers to a lessening or absence of normal behaviors and functions related to motivation and interest, or verbal or emotional expression [3]. Negative symptoms included asociality, reduced experience of pleasure, and reduced goal-directed activity due to decreased motivation.

[2]: Haden et al. 2023 DOI

[3]: Correll et al. 2020 DOI

Maćkowiak discussed possible neurobiological pathways relevant to the intersection of psychedelics and schizophrenia, also commenting that the recommended doses of psychedelics in schizophrenia treatment had not been established, sub-psychedelic dosing or microdosing had been considered, and exploratory studies were needed to determine the tolerability of treatment and appropriate dosing regimen [4].

[4]: Maćkowiak 2023 DOI

The present study predominantly aligns with the original discourse on psychosis and psychedelics, primarily aligning with ethnographic and object relations approaches [5]. The study was based on two semi-structured online video interviews conducted in May 2024, with a total duration of two hours. A review of the manuscript was conducted afterwards.

[5]: Tähkä 2006 DOI

14.2 Case description

The interviewee was a man in his late forties. His parents divorced when he was seven. After that, he lived with his father, who was 'a very difficult person'. The father often used intimidation to discipline his two sons and 'always belittled' them. The father was also physically violent; for example, he once tried to hit his other son in the head with a glass bottle.

At the age of thirteen, the father threw the interviewee into a wall. Subsequently, he moved to live with his mother. He started to act out; when challenged, he became angry and aggressive. Because of that, at the age of sixteen, he ended up hospitalized for the first time. At the psychiatric hospital, he 'wouldn't know what was happening . . . wouldn't recall what was happening'. Regardless, he was neither medicated nor diagnosed with anything.

By the time he was eighteen, he had gained 'enough self-awareness to kind of hold those anger impulses in'. He enrolled in college, became 'very depressed', and was diagnosed with major depressive disorder. He felt fearful towards people who were aggressive, insulting, or belittling, i.e., people who acted like his father. Gradually, he started to become paranoid, thinking that people, including his friends, were going to hurt him. When he visited someone's house, he was afraid that they were going to try to hurt him there. He began carrying a knife with him for protection, 'to protect himself from his friends'. Around that time, he became aware of the paranoia.

When his friends were talking, he would feel that they were making fun of him and belittling him. The friends were not aggressive or violent like his father, but they would make jokes that made him feel like he 'wasn't smart enough or didn't fit in' (before the interview with an explicit question about it, he had 'never thought about the connection' between his father's actions and his friends' actions).

The process involving the onset of paranoia started with him sinking into depression. Once depressed, he began questioning everybody's motives and feelings about him. It 'built up in his mind' until he started worrying that people were out to get him and trying to hurt him. Drinking alcohol could trigger the paranoia. He had consumed 'a lot of cannabis' during his later life, after becoming paranoid and while using aripiprazole. Cannabis was thus not the initial trigger of paranoia or psychosis, but it consistently triggered it. He no longer consumed cannabis. Also, being around his father triggered 'a lot of anger and anxiety', and he had therefore 'basically cut him out' of his life.

After graduating, he 'tried grad school' but ended up dropping out because of excessive drinking. Regardless, 'along the way', at the age of 25, he got married, and they ended up moving to another state for his wife to work on her PhD. He 'did not know what to do with his life'. A few years after the 9/11 attacks, a war in Iraq was started, and there was a lot of demand for people in the military in the US. He ended up joining the army and serving in Iraq. His best friend was serving with him.

In the military, he had a role as a scout, which was similar to infantry. The role was defensive, not offensive; he was not attacking other people but protecting his own troops. When someone important needed to move from, say, Kuwait to Northern Iraq, his team would escort them, making sure that they were not attacked. Other tasks could consist of moving important equipment without it being damaged.

> *When I first got there, I was afraid all the time. I didn't trust the equipment or myself. After a couple weeks, I just decided, you know, here I'm going to die or I'm not. The fear just went away. It's like it got turned off. I don't know how. And I didn't experience that fear again for the whole time I was in Iraq until the end of my time there, about a month before I got home. I started to feel fear again on missions because my thought was that it would really suck if I made it all this time and then died at the very end. It was a weird feeling to feel that, at any moment, you could blow up.*

His specific job was 'to go in front of everybody and to make sure there was nobody up ahead that was gonna attack us . . . I would drive ahead

in my Humwee and make sure the way was clear; make sure that there were no bombs on the road; things like that'. Checking was mostly visual, but the vehicle contained equipment for disabling radio signals so that roadside explosives could not be detonated remotely, and they 'were safe while looking for the bomb'. Regardless, it didn't always work, and one team member 'got blown up'.

His best friend became fearful, unable to man the gun up in the turret of his truck, so he told the friend to get down and drive while he would man the gun himself. A couple of weeks after the friend returned home from Iraq, he unexpectedly killed himself. He had been out drinking with a relative, and after the relative went to bed, the friend 'just went out to the backyard and hung himself from a tree'. He informed the sergeant of his team about what had happened; the sergeant's response was that the friend was weak. He considered the response 'not very helpful' and handled the aftercare of the incident 'mostly by drinking a lot'. He also had his own problems readjusting to society.

> *After the war, I was always hyperaware of what was around me, who was around me, and what they were doing. Always kind of on edge that someone might do something violent at any moment. In this part of the country, people carry guns all the time. That triggers me too. If I see someone walking down the street with a gun, I immediately become worried that something's gonna happen and that somebody's gonna do something violent.*

He could no longer do normal things, like sit in a movie theater, because he was always afraid that someone would walk in and start shooting people. He owned several guns and slept with one for several years. Occasionally, he hid in his attic for a week at a time. Approximately a year after returning home, he started re-experiencing paranoia in a more severe form. It became more visual; for example, people's faces would seem distorted, or he would see shadows. He began thinking that people in the army were trying to attack him and wanted to kill him. He went into hiding in the mountains for two months, living in his car, to protect himself from those who he thought were trying to hurt him. By accident, he met 'a hippie' who had liquid LSD with him. He described what was happening to him to the hippie, who decided to give him acid. The acid 'made him feel like all these overwhelming feelings of love', triggering a desire to return home.

> *He had a bottle of liquid acid and asked me how much I wanted. I said, I don't know; just give me enough for it to do something. Then I went back into the mountains by myself and took the acid. It was just like this feeling of love washed over me, and I realized that whatever I was experiencing was not real. I cried a lot and let the emotions move through me. It wasn't a super-visual experience or anything. There was some visual stuff, but it was mostly emotional. It felt like my heart had opened, and I wanted to be connected to people instead of wanting to run away from them. I wanted to check in at a hospital because I wanted to find healing for what was wrong. Whatever I was experiencing, I didn't want to feel it anymore. I didn't want to feel the fear and the paranoia. I wanted to feel like a normal human being. I wanted to be at home. I didn't feel that I needed to take more LSD, and at that point, I didn't know how to*

> *get it. It was totally by accident that I found that hippie. I never saw him again, and I don't know what happened to him, but I was grateful for him. I don't know why he thought it was a good idea to give me LSD. That's a good question. He was a smart hippie, I guess.*

Afterwards, he called his brother and told him that he needed to go to a hospital; he trusted that the hospital would help. The brother flew to the mountains to pick him up, drove him home, and checked him into a hospital. Once he got in, he immediately stopped trusting the personnel who 'kept trying to get him to take antipsychotics', telling him that he would feel better if he took them. He kept refusing them, saying that he didn't want the antipsychotics but just wanted to feel better. After a week, they finally convinced him to take the antipsychotics; he started to feel better and started to trust them again.

At the time, he was 32 years old. The hospital 'didn't prescribe acid' but risperidone and venlafaxine. The latter was then switched to duloxetine and later to various other SSRIs; 'it went on and on from there', with the medical personnel prescribing him various drugs along the way, trying to help him. After two months, he was discharged from the hospital. At home, risperidone 'helped a lot': the paranoia and delusions of being chased by the government and the army disappeared. At some point, he became afraid that he might shoot someone by accident and sold all his guns (he commented that currently, he 'actually no longer believed in violence). He felt normal enough to cope with his wife giving birth to their daughter, being honorably discharged from the army, moving to another state, and going back to work. He put most of his time into raising his daughter.

It took about a year for him to 'feel fully normal again', but in the end, things were 'pretty good'. His depression was relieved by antidepressants and his delusions by risperidone. However, the medications began inducing adverse effects. He started to develop twitches and trembles in his hands and to gain a lot of weight—approximately 30 kilograms. He described that at that point, 'the choice was between psychosis or taking the antipsychotics and dealing with the side effects, so I chose the side effects'.

Around the same time, he experienced 'a spiritual awakening or a religious conversion' and returned to his childhood religion of Lutheranism [6]. He hadn't been to church in many years but started taking part a lot, ended up going to seminary, and became a pastor. He was ordained in 2021 and became responsible for two churches.

[6]: Granquist 2016 DOI

For a period of three years, while on aripiprazole, he consumed cannabis for relaxation, feeling it made him calmer. It was fun to listen to music and relax, but the effect did not last. Instead, cannabis started triggering paranoid thoughts. He would 'sit in his bed and worry about everything' that was happening around him and suffer from insomnia. 'Lots of negative thoughts' about himself emerged, and he began seeing himself as a failure. As the cannabis use proved counterproductive, he eventually stopped using it about a year before the interview.

> *For a while, I tried to recapture that kind of relaxation, the joy that it gave me to listen to music and things like that, but it just became*

> *overwhelming. I couldn't smoke weed without becoming worried about what I was doing with my life, what the state of the world was, and whether or not my family was safe. All those kinds of things. So I had to stop.*

At this point, he had been on antipsychotics for about ten years. Because of the side effects, he was switched from risperidone to aripiprazole, but it made no difference with respect to either the weight gain or trembling. He asked whether he would need to stay on antipsychotics for his whole life. The psychiatrist responded that they could try weaning him off the antipsychotics and see what happens. In 2022, they started a program of gradually declining his dose. At first, he was doing well at the church, taking care of people, as well as doing well at home; 'everything seemed really happy'.

However, at the end of 2022, although he was still taking a small dose of aripiprazole, he began experiencing paranoia again, with thoughts of people being 'out to hurt him'. He thought this was due to overexerting himself at work, with 'too much taking care of people and not taking care of himself enough'. He took a month off and tried to rest. Regardless, a month after returning to work, the paranoia returned. One day, he saw a truck parked in their driveway. He thought maybe there was somebody with a gun there, broke into the truck, and searched it for guns. Finding nothing, he soon realized that he had broken into the truck of someone who posed no threat. At that point, he realized that there was something wrong with how he was thinking.

> *The first time I tried going off the antipsychotics, I felt the same fear that I was feeling in the war; I felt it a lot. I felt like, at any moment, someone was gonna attack me. All the time. Things would happen that would make me feel especially fearful. The part of the country that I live in is very conservative politically and religiously, so there's a lot of bigotry. I was wearing a shirt one day that said, like, science is real, love is for everyone, stuff like that in rainbow colors, kind of like a gay pride shirt. Somebody drove by me and yelled at me, 'Your shirt sucks!' That triggered me and sent me into a spiral for several weeks. I was worried that people were gonna attack my house out of hatred for people who were gay. Things like that would overwhelm me. Whereas usually I would think it was just some ignorant teenager, I didn't think that. I thought this is somebody who's gonna attack my family, and it would send me into a spiral.*

He became worried that he wasn't safe any more and temporarily resigned his position at the church to seek help. It took a while to get checked into a psychiatric ward at a Veterans Administration hospital. However, it was a lock-in ward, and as soon as he locked himself in, he became 'super paranoid that they were gonna keep me forever and wouldn't let me go'. Therefore, instead of working on getting help, he spent the whole time there trying to find a way out. After a couple of weeks, he was released and returned home, and the paranoia and delusions continued to build. He was worried that people were going to try to hurt him and his family.

In the spring of 2023, his wife told him that something was wrong and he had to go to the hospital. He asked whether the Veterans Administration (VA) could offer psychiatric help without a lock-in. The VA offered him

a 'domiciliary', a six-week program of 'basically living in a dorm with a bunch of other people who were going through similar things and undergoing intensive psychotherapy and group work all day long for five days a week', with weekends off. As he checked into the program, aripiprazole was reinstated. His paranoia was relieved, but he immediately started gaining weight again, as well as developing ticks, twitches, and other issues.

At the end of summer 2023, the program ended, and he returned home, spending 'a lot of time just trying to feel normal again'. He stayed at home for eight months, 'just brooding' by himself, 'wondering what to do' with his life, slowly feeling 'better and better and better'. Eventually, he started very openly talking to the bishop of his church about what had happened over the previous year. The bishop invited him to return to his work as soon as he felt better.

During the eight months at home, he had begun researching alternative treatments for schizoaffective disorder and schizophrenia. He found a lot of materials on using psychedelics for treating major depression, post-traumatic stress disorder, and other non-psychotic conditions. In contrast, on psychedelics in psychotic conditions, he could only find 'some old stuff from the sixties' and two recent case studies [7, 8].

[7]: Turkia 2022 DOI
[8]: Turkia 2023 DOI

Three or four months before the first interview, he had initiated talks about returning to work. Yet he felt he could not return to it due to the numerous side effects of antipsychotics, especially 'feeling foggy in his brain'. Because he wasn't feeling better at that point, he researched for solutions online in various places, the main one of which was Psychonaut Wiki (psychonautwiki.org). He ordered psilocybin capsules and decided to try them 'to see what they would do for him'. Due to the concurrent use of aripiprazole, 'psilocybin really didn't have much effect at all'. Therefore, the ordered DMT and tried that, observing that 'it would kind of shock me a little bit, but I wouldn't have hallucinations or anything. So that didn't work'. In his pursuit to further investigate how to induce a hallucinatory experience while on aripiprazole, he found that dissociatives worked. He tried ketamine and its analogue, 2-fluorodeschloroketamine (2-FDCK), observing that both induced a hallucinatory dissociative experience.

> *During one month, I used ketamine to induce a series of hallucinatory dissociative experiences, for which I kept some scattered notes of my experiences and thoughts while on the drugs. The experiences were personally profound and gave me insight into what has happened to me and where I am now. They were also very challenging experiences, as they were not euphoric like my experience with LSD in the mountains, and at times they became even a bit worrying given how strange the experiences became. Instead of euphoria and connection with others, they broke down logic and meaning in a way that made me think of life in a different way and made me appreciate being grounded in my body and in my life with my family. With that said, I have little desire to repeat those dissociative experiences and have moved on.*
>
> *In more detail, the experiences were very strange, disorienting, or 'dissociative', or whatever it is supposed to cause. It was as if logic and language would break down. My connection with my body would be broken down. I remember things like looking at my hands*

> *and wondering how to keep track of them in space, wondering how I was related to them. I was very careful not to move around a lot because balance became a real big problem. Sometimes, if I was too disoriented, it would become kind of worrying, and I would have to remind myself that this experience is going to pass in a little bit and that this is temporary.*
>
> *It's hard to explain. Everything felt very hard to make sense of. It would be almost like floating in space, grasping for some kind of handhold to pull myself back down to the ground. As I was going through these experiences, it led me to wonder: What do I need to feel meaningful. What do I need to feel grounded? It appeared that such things would be feeling centered in my body or being able to experience love for my family. These kinds of things would come to mind as the things that ground me, give me the ability to find meaning, and kind of give logic to my life, I guess. I would often come back to these thoughts, usually as I was 'coming out' of the experience back to being grounded.*
>
> *Ketamine wouldn't bring up memories so much, but it would trigger feelings. I would feel a lot of longing for affection and longing for connection, similar to my first LSD experience, but it wasn't as positive as the LSD experience. It was usually more about sadness than happy longing, I suppose. There was often some sadness about things that I had thought about.*
>
> *I did about eight such sessions, approximately twice a week, with doses escalating from 50 to 300 milligrams, but they are so disorienting, I really wouldn't want to repeat them. The process felt like I was getting deeper and having deeper experiences, but after a while, it started to feel too disorienting, and I didn't want to do it anymore.*
>
> *Afterwards, I guess it impelled me to want to connect to people in a loving and healthy way. That's what it felt like. I guess it impelled me to try to find ways to repair some broken relationships in my life. Not with my dad or my brother, but. . . well, I did end up reaching out to my brother occasionally to see how he's doing and things like that. But the experiences made me want to redouble my efforts to connect with my daughter.*

He described that paranoia featured itself as an embodied sensation, 'a warning system going off'. Grounding was required to balance that system—to restore the ability to make predictions about the world, which was a necessary condition for obtaining a sense of safety. Ketamine appeared to destabilize previously learned beliefs, neural pathways, or automated behavioral patterns that no longer matched the current living environment, allowing for a 'recalibration' of beliefs about safety.

> *When I start to feel the paranoia, I feel it in my gut, like feeling sick to my stomach. Sometimes I feel it in my torso, especially around my kidneys, almost as if I got beat up, like somebody hit me in the side. I start to feel sore. I don't know where that comes from—if I'm stressed out and squeezing my muscles or what. Those are the two main ways: feeling sick to my stomach and feeling a kind of soreness in my body, especially in my torso.*

> *The purpose of the grounding, I think, was a need for a coherent meaning and story in my life. The ketamine would totally break down everything that would seem logical or meaningful. Words would lose meaning. I would sit there sometimes and just wonder. I would say a specific word to myself and wonder, Is that even a word? What does that even mean? And I would be lost, totally disconnected from how the English language worked, from the logic of human language, and essentially unable to express myself.*
>
> *The only thing that seemed to have any meaningful content were my emotions. And so, being grounded restored my ability to see how the different parts of what I was seeing and feeling—no, sensing—how they all related to me. Sometimes in straightforward ways, like, This is my hand, and I can move it. Sometimes in more abstract ways, like, This is my house, and I feel safe in it.*
>
> *The grounding would restore those relationships between me and the world in such a way that I could make sense of them. I felt oriented again. As I came out of that experience, I started to realize that things are as I think they are; it wasn't a world I was totally unfamiliar with. It was a world that I knew how to get around in, that I could have some expectations about, and that I could trust.*
>
> *I think it shows me that I can trust my body, or that I want to trust my body and the feelings it gives me—the emotions I have—that they are an important part of the way I get around the world. But when I get paranoid, I feel it in my body. It's like a warning system is going off. Having the warning system go off all the time is almost like another way of being disoriented. It made me think I needed to find a way to balance that warning system. Ketamine did not balance that system, but it showed me a need for it. I feel like the LSD helps much more with the balance. It feels like that. I'm not sure.*

He was afraid of discontinuing aripiprazole because he didn't want the schizoaffective symptoms to come back. As a next step, he obtained LSD and had it tested with reagents to ensure its authenticity. Next, he took an assumed dose of 280 µg of LSD, which 'made him feel better' but he 'didn't have any psychedelic experience at all', although the same substance produced an LSD experience for another person.

He decided to do 'an experiment to see what would happen if he took LSD for a month', consuming 70 µg of LSD daily for a month. His wife commented that he 'seemed a lot better'; he himself also felt that he was 'starting to feel a lot better'. At the end of the month, he began taking a dose of 70 µg of LSD every four days for a few weeks, after which he stopped the experiment to see whether the mood-enhancing effect was lasting.

The effect lasted 'for a while', to the point where he was 'feeling good enough to call the bishop' and ask for his job back. Regardless, he was 'still trembling' and overweight. He asked his doctor whether they could experiment with discontinuing the antipsychotics again, and the doctor agreed. This time, however, he decided to use the regimen of daily administration of 70 µg of LSD. In contrast to the previous time, despite the continuous reduction in the dose of aripiprazole, the psychotic

symptoms did not return, and he successfully discontinued aripiprazole completely in three weeks.

> *From what I read, the tolerance builds up pretty quickly. I was not using big doses, so I was wondering if maybe building up that tolerance was doing something similar to aripiprazole, that is, activating but not overactivating my brain, but I'm not sure and don't know how to figure that out.*
>
> *I don't know whether LSD had a grounding effect. I would say the effect was more balancing and uplifting. Not significantly: I was not having 'body highs' or something like that. The effect was quite subtle, but it would make me feel capable of coping with the world and have a more positive or hopeful outlook, consistently, every day. It was pretty consistent. When I transitioned to not taking it every day, if I started to get down, my wife would say, Have you taken your acid? She can see the difference.*
>
> *Ketamine was interesting intellectually and caused me to try to reconstitute my world after it broke down. With ketamine, oftentimes the emotions it would dredge up had to be processed afterwards. In contrast, LSD simply gave me a balance where I could just go on living my life. So, LSD seems to be the most important. It gives me the balance that I want. In retrospect, I don't think skipping the ketamine part would be a significant loss. It doesn't feel like it was a necessary part of what I was doing. The reorganization might have been important; it certainly triggered me to think about how I was living my life and how I was relating to people. But I'm not sure that I needed those experiences to find that.*

At the time of the first interview, he had not taken aripiprazole for three weeks. Instead, he took 70 μg of LSD once every four days. He experienced neither psychotic symptoms nor psychedelic effects, was back at work, and felt good. He was wondering about the possible long-term effects of aripiprazole and was 'maintaining, monitoring, and making sure that nothing happened again'. Concerning challenges to that, between the first and second interviews he had a family crisis involving his daughter.

> *This has been very hard. Yet this time, even though it's a stressful time, it hasn't triggered any psychosis or anything like that. I do get a bit overhelmed and depressed at how hard things are, but I just keep going, I guess.*

Concerning the boundary between 'psychosis' and 'normalcy', he was unsure about the difference between psychotic fears and fears that were 'realistic'. Other people around him 'seemed to be able to cope with it better' than he did. He considered that the fear of someone walking down the street with a gun possibly being violent was legitimate, but other people didn't worry about it and didn't have the same fear. In his view, his fear was based on his experience with other people with guns in the war. The fear had not been present before the war.

He was not afraid of Iraqi people or Arabs; he 'actually had a soft spot for them in my heart'; he 'loved those people'. The fear was about people who seemed suspicious or carried a gun; he 'couldn't be around people like that . . . which, you would think, being a pastor, isn't that big of a

deal, but people do carry guns to church here. It doesn't make any sense to me, but they do it'.

> *I know that I was trained to be hyperaware of what was around me in order to see if there were bombs or people with guns up ahead as I was moving through Iraq. When I got home and was hyperaware, I knew why. I had been trained to do that, and I couldn't turn it off.*
>
> So, in a way, one might say that you were trained to be psychotic?
>
> *That's how it felt. That's a good way to put it. Right now, I'm kind of in a period where I'm learning how to turn off the fear.*

In his view, the connection between fear and psychosis was such that when the fear built up into a belief that there was actually some kind of plot to hurt him, it became delusional; fear turned into a psychosis, or the fear together with the belief formed a psychosis. It was about 'creating a story' in his head about what was happening.

Concerning diagnostics, his diagnosis had changed over the years. Initially, he was diagnosed with major depressive disorder. After the war, during hospitalization, he was diagnosed with schizoid personality disorder [9]. Since then, he had attended therapy, regularly visiting a psychologist and a psychiatrist. The psychiatrist later changed his diagnosis to schizoaffective disorder (ICD-10 F25). He did not know why the diagnosis was changed and felt that the doctors 'were just labeling things kind of willy-nilly [unplanned or haphazard] along the way'.

[9]: Winarick 2020 DOI

Concerning possible connections between the culture or typical mindsets in the United States and his personal paranoia, he commented that the culture indeed contained a lot of paranoid features, for example, people feeling the need to carry guns. He considered that the culture 'may have created the paranoia, and in any case, it definitely exacerbated it'. He was often avoiding the news because what was going on in the country scared him so much: people feared and mistreated each other. It was hard for him to 'live his life without walking around feeling full of fear'. Approximately nine months before, when he had been to a hospital, one of the things he had worried about was getting his family out of the United States and moving to another country, such as Canada, 'where they didn't have the same problems'. He had been 'so scared of what was gonna happen in this country and how people were going to mistreat each other that I felt like I couldn't live here anymore'.

14.3 Discussion

In contrast to classical psychedelics, concurrent administration of aripiprazole and the dissociative ketamine induced psychedelic effects that were perceived as somewhat challenging acutely but likely therapeutic afterwards. Regardless, it appeared that the possibly previously undocumented daily use of psycholytic doses of LSD in combination with gradually declining doses of the antipsychotic aripiprazole allowed for the resolution of paranoid symptoms previously diagnosed as a symptom of schizoaffective disorder (ICD-10 F25).

An in-depth study of psychosis may be complicated by the fact that, in order to fully understand the phenomenon, one would need to experience it. Yet, psychosis involves difficulties in reality testing, making objectivity hard to obtain. Obvious solutions might include being intermittently psychotic or studying psychosis after being healed from it, but both approaches may involve their own difficulties. Also, psychotic states appear to be very heterogeneous and related to personal history; thus, understanding one type of psychotic state may reveal little about different types of psychotic states.

Past approaches included simulating psychosis with psychedelics. However, experiences induced by classical psychedelics may lack the aspect of full subjective believability of the induced sensations, so that the actual 'psychotic' component is missing. A better simulation might be achieved with, for example, *Salvia divinorum*, but the very presence of believability may make that approach somewhat dangerous. It is therefore infrequently attempted, with Arthur and Siebert perhaps serving as rare examples [10, 11].

[10]: Arthur 2010
[11]: Siebert 2015

In the Jungian tradition, psychosis is often considered a metaphorical, dissociated representation of previous emotional trauma [12]. In the present case, there appeared to be little need for metaphorical interpretation, as the relationship between childhood trauma or adverse childhood experiences (ACEs), war trauma, and the cognitive psychotic contents appeared rather direct and obvious. With regard to depression, the description seemed to support the idea of unexpressed anger as a cause of depression. Also, the case illustrated the merely suppressive effect of antipsychotics concerning symptoms of unresolved trauma.

[12]: Hill 2021

Bentall and Sitko discussed the specific role of insecure attachment in paranoid delusions [13]. They pointed to paranoia as a continuum, noting that it was difficult to draw an unambiguous dividing line between clinical paranoia in psychiatric patients and non-clinical paranoia in the general population. Psychologically, paranoia could be modeled as an over-anticipation of social threats. From the point of view of attachment theory, damaged early attachment relationships could promote insecure attachment styles, which could, in turn, lead to the kind of beliefs about oneself and others that fuel paranoid thinking. In addition, cognitive impairment, including problems with the cognitive skills required to understand the intentions of others and difficulties in reasoning about sequential information, also contributed to paranoid thinking.

[13]: Bentall et al. 2020

Coltheart suggested that any model of delusional beliefs needs to include two components: an emotional component that explained the content of delusions and a cognitive component that explained why individuals could not persuade themselves out of their delusional beliefs [13, 14]. Bentall and Sitko noted that there was evidence that these two components were largely independent, and attachment seemed to provide the key to the emotional component [13]. They pointed out that there was a need to pursue a developmental approach to psychosis that included both emotional and neurocognitive elements, and that doing so required the use of longitudinal designs encompassing a considerable portion of the human life span.

[13]: Bentall et al. 2020
[14]: Coltheart 2007 DOI

[13]: Bentall et al. 2020

Desmet presented a theory of psychosis based on the presence of free-floating anxiety, frustration, and aggression [15]. Into this mindset, a

[15]: Desmet 2022

narrative could be introduced that would provide an external object for the anxiety, a strategy for controlling this object, and another object to serve as a target for the frustration and aggression. By providing an object, the free-floating anxiety was fixed into an object that could be controlled, and the anxiety could be reduced or eliminated. Typically, the narrative would involve anxiety about survival. The narrative could be presented to the individual from the outside.

In psychoses involving one individual only, the individual could perhaps construct the narrative internally, by himself, from past experiences. In the incident involving breaking into the truck on a driveway to check it for weapons, the external object was the truck, and raiding it was a strategy to control the object. An object serving as a target for frustration and aggression was missing; the role could have been assigned to someone trying to stop him from raiding the truck. Intensive fear possibly induced a trance-like state in which mental focus narrowed to such an extent that anything conflicting with the strategy was either ignored or perceived as a threat and could not be tolerated. Thus, the possibility of the truck not posing a threat was either not considered at all or dismissed as unlikely.

Cherniak et al. discussed attachment theory in the context of a psychedelic science of spirituality [16]. Interactions with caregivers were considered to create internal working models that determined later interpersonal and religious/spiritual relationships. Individual differences in attachment security predicted the phenomenology and integration of psychedelic experiences. Psychedelic interventions could modify these insecure attachment models. The current case aligned with these observations.

[16]: Cherniak et al. 2022 DOI

Werner and Coveñas discussed the role of classical neurotransmitters and neuropeptides in schizoaffective disorder, focusing on prophylactic medication [17]. They noted that aripiprazole was a partial agonist of the D_2 receptor, had a 5-HT_{2A} antagonistic effect, and a 5-HT_{1A} agonistic effect. Risperidone had a D_2 and 5-HT_{2A} antagonistic effect. Assumedly, the 5-HT_{2A} antagonistic effects would cancel the psychedelic, assumedly largely 5-HT_{2A} agonism-related effects of classical psychedelics. Reissig et al. suggested that the 5-HT_{1A} receptor had a significant modulatory role in the stimulus effects of LSD [18]. LSD also had a high affinity for other serotonergic receptors [19]. The mood-enhancing or antidepressant effect observed during the concurrent administration of aripiprazole and LSD might be explained by 5-HT_{1A} related interactions.

[17]: Werner et al. 2016

[18]: Reissig et al. 2005 DOI

[19]: Mastinu et al. 2023 DOI

Very limited information on possible interactions between aripiprazole and ketamine was found [20]. du Jardin et al. noted that imaging and behavioral data predominantly supported a role for 5-HT_{1A} or 5-HT_{1B} receptors in the antidepressant-like effects of ketamine [21]. Concerning other antipsychotics, Veraart et al. noted that the only study investigating patients with schizophrenia on and off a high dose of haloperidol did not find blunting effects on ketamine-induced psychosis, and the results suggested that the mechanism by which ketamine caused psychotic symptoms was not affected by D_2 blockade [22]. The data on the interactions of ketamine and risperidone appeared inconclusive. Maćkowiak noted that hypofunction of the NMDA receptor was suggested in schizophrenia [4] (ketamine is a NMDA receptor antagonist [23]).

[20]: Nawwar et al. 2022 DOI

[21]: Jardin et al. 2016 DOI

[22]: Veraart et al. 2021 DOI

[4]: Maćkowiak 2023 DOI

[23]: Zorumski et al. 2016 DOI

With regard to other pathways, Durieux found out that ketamine profoundly inhibited muscarinic signaling [24]. He noted that the effect

[24]: Durieux 1995 DOI

might explain some of the anticholinergic clinical effects of ketamine, both central (effects on memory and consciousness) and peripheral (prominent sympathetic tone, bronchodilation, mydriasis). A review by Foster et al. noted that muscarinic receptor subtypes could modulate the specific brain circuits and physiology that were disrupted in schizophrenia and were thought to underlie positive, negative, and cognitive symptoms; novel therapeutic strategies for targeting these receptors were being investigated [25]. Goodnick et al. noted that among common antipsychotics, aripiprazole displayed the lowest affinity for muscarinic M1 receptors [26]. Dean et al. noted that drugs targeting muscarinic receptors approach clinical use for the treatment of schizophrenia [27]; ketamine and LSD might provide more affordable alternatives to these, perhaps with lower toxicity.

[25]: Foster et al. 2021 DOI

[26]: Goodnick et al. 2002 DOI

[27]: Dean et al. 2023 DOI

An interesting aspect of the interviewee's experiments was the daily administration of LSD combined with his experience of an enduring, mood-enhancing effect. Unlike other psychedelics, including LSD, it is known that DMT is a rare example of not normally inducing tolerance [28], although some tolerance may be induced by extended administration [29]. However, in this case, the question was not about the psychedelic effects of LSD but about a slight mood-enhancing effect. The existing research on the buildup of psychological tolerance may have focused on hallucinatory effects and might not have looked for or noticed such a mild effect. Based on the current data, it cannot be ascertained whether such a phenomenon could be due to concurrent administration of aripiprazole, some kind of neurobiological abnormality or faster elimination of the substance, the placebo effect, or the anti-inflammatory effect of LSD. In theory, tolerance might also build asymmetrically with respect to different organs or receptors (see, e.g., [30]). Interestingly, a preclinical study from 1971 observed a persistent increase in brain serotonin turnover after one-month daily administration of LSD in rats [31]; this appeared consistent with the claimed mood-enhancing effect. Regardless, psycholytic administration once every four days would likely consistently produce the expected psycholytic effect. Similarly, the outcome of the initial higher-dose experience with the 'hippie' aligned with expectations.

[28]: Strassman et al. 1996 DOI

[29]: Luan et al. 2023 DOI

[31]: Díaz et al. 1971 DOI

With regard to earlier research on conditions involving early trauma-induced psychotic conditions, in the late 1960s, psychologist Gary Fisher and his team successfully administered LSD to children between the ages of 9 and 12 diagnosed with chronic schizophrenia-like psychotic disorders [32–35]; some details of the outcomes, which could occasionally be considered 'miraculous', have been described in a previous article [7]. It appeared that nonresponders may have suffered from neurological or autism-related issues, while responders suffered from deep early interpersonal trauma, such as sexual abuse, domestic violence, or neglect. Various other experimental psychedelic treatment programs for severely disturbed children also existed [36].

[32]: Fisher 1997 URL

[33]: Fisher 1970 DOI

[34]: Fisher 2005

[35]: Purdue University 2024 URL

[7]: Turkia 2022 DOI

[36]: Rhead 1977 DOI

The interviewee's early trauma was caused by an upbringing whose central feature was intimidation. Interestingly, in Chomsky's interpretation, the intention of the war in Iraq was largely to intimidate [37]; subsequently, the behavior of the US military was experienced as deeply insulting, for example concerning the methods used during the imprisonment of the enemy, most visibly in the case of Abu Ghraib prison. According to Rubin, the US had a policy of not negotiating; instead,

[37]: Chomsky et al. 2022

they 'wanted revenge' [38]. According to Chomsky, the intimidation and humiliation formed an emotional basis for an insurgency against the US. According to Ricks, through numerous mistakes, the US military largely created the insurgency by themselves [39]. Public support for the war was acquired through the use of 'propaganda and media distortion' and 'psychological warfare' [40].

[38]: Rubin 2021 URL

[39]: Ricks 2006

[40]: Miller 2004

The underlying cause of both the interviewee's childhood trauma and war trauma could thus be said to originate in a culture whose core values included a preference for intimidation, coercion, and violence. In addition to traumatizing the interviewee, the culture further traumatized the Middle East and, subsequently, a large part of the rest of the world. This kind of violent reactivity was not unavoidable or even necessary; it could be said to be a product of immaturity and shortsightedness. The same mindset could be said to have created and maintained the prohibition of psychedelic therapies.

With respect to a productive change in one's mindset, i.e., giving up the preference for violence, the interviewee provides a good example. Concerning his current profession, a relevant and notable pursuit in this context has been the Ligare network (ligare.org): 'an open network of people who desire legal and safe access and believe that Christianity and other existing religious traditions offer paths for preparing, experiencing, and integrating mystical experiences, including those occasioned by sacred plants and compounds'. The network was founded by Reverend Hunt Priest, one of the participants in a 2016 psilocybin study involving religious professionals [41].

[41]: Devlin 2017 URL

It was pointed out above that typically, psychedelic experience lacks the subjective believability of the visions or experiences of the psychedelic state; the subject is almost always aware that the experiences are 'not real'. The interviewee described that 'it was just like this feeling of love washed over me, and I realized that whatever I was experiencing was not real'. It might thus be that psychedelics could, in fact, introduce in the person the knowledge of the psychotic experience not 'being real'; this might represent an interesting mechanism of therapeutic action of psychedelics in psychosis.

[8]: Turkia 2023 DOI

In a previous case study about ayahuasca in bipolar psychosis, the same pattern of a feeling of love or support and a spontaneous rearrangement of counterproductive beliefs was observed [8]. Thus, while classical psychedelics might not function optimally for healthy people for simulating psychosis, they might function better for psychotic people for dissolving their psychosis by showing that the psychotic experience consists of excessive fear combined with models that do not fully accurately describe the current living environment; for example, they may be outdated or misinterpreted. In the case concerning ayahuasca, the situation was more straightforward, as the misleading belief was that childhood sexual abuse somehow was the fault of the abused child herself. In other cases, such as the present case, complications may emerge from the fact that sometimes they are exaggerated versions of the truth.

14.4 Conclusions

A high dose of LSD swiftly eliminated excessive asociality, a negative symptom of schizoaffective disorder, in acute psychosis and in the absence of antipsychotics, through reduction of fear and induction of feelings of love and social interconnectedness. Ketamine reorganized fixed, counterproductive patterns of thought in chronic psychosis and in the presence of antipsychotics. Psycholytic doses of LSD produced an antidepressive or mood-enhancing effect in chronic psychosis. The two substances thus appeared therapeutically useful as antipsychotics in various phases of disease and treatment.

It appeared that the core of paranoid psychosis involved an inability to reliably estimate the probabilities of adverse survival-related outcomes. No reliable cognitive method for differentiating 'unrealistic' fears from 'realistic' fears could be derived; the cognitive observation of safety was derived from instinctive, embodied sensations. Healing from such psychosis, i.e., a state of chronic fear, would thus require learning to tolerate the unavoidable uncertainty or eliminating the fear of death in the first place. Psychedelics have often been observed to facilitate the attainment of these goals.

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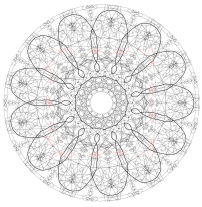

'Truth can only be found through quiet introspection,
and the right way is to stay still and observe.'

'Ikuinen jälki sinusta minuun jää
Mut kaunein on se tunne, miten mulle lauloit
Toivon, että itsestänikin jää
Yhtä kaunis muisto, samaa laulua laulan'

– Irina: Jälki. 2009