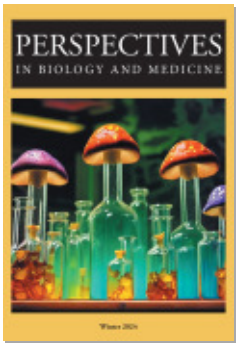
Are Psychedelic Experiences Transformative? Can We Consent to Them?



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Are Psychedelic Experiences Transformative?

can we consent to them?

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ABSTRACT Psychedelic substances have great promise for the treatment of many conditions, and they are the subject of intensive research. As with other medical treatments, both research and clinical use of psychedelics depend on our ability to ensure informed consent by patients and research participants. However, some have argued that informed consent for psychedelic use may be impossible, because psychedelic experiences can be transformative in the sense articulated by L. A. Paul (2014). For Paul, transformative experiences involve either the acquisition of knowledge that cannot be obtained in any other way or changes in the self. Either of these characteristics may appear to undermine informed consent. This article argues, however, that there is limited evidence that psychedelic experiences are transformative in Paul's sense, and that they may not differ in their transformative features from other common medical experiences for which informed consent is clearly possible. Further, even if psychedelic experiences

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can be transformative, informed consent is still possible. Because psychedelic experiences are importantly different in several respects from other medical experiences, this article closes with recommendations for how these differences should be reflected in informed consent processes.

Psychedelic substances—such as psilocybin, ayahuasca, LSD, mescaline, and others—might have great therapeutic potential for mental disorders, including major depressive disorder, obsessive-compulsive disorder, substance use disorders, posttraumatic stress disorder, and perhaps others (Bogenschutz et al. 2015; Carhart-Harris et al. 2016, 2018; Garcia-Romeu, Griffiths, and Johnson 2014; Goodwin et al. 2022, 2023; Mitchell et al. 2021, 2023; Moreno et al. 2006). As exciting as this potential is, however, the potency of psychedelic compounds and their capacity for producing subjective experiences that are very unlike those produced by conventional psychological and psychiatric treatments—the hallucinogenic "trip"—raise ethical questions. In particular, some suggest that because these substances produce subjective experiences that are radically different from those of normal life, it might be challenging, even impossible, to obtain valid informed consent for psychedelic use in clinical or research contexts (Egerton and Capitelli-McMahon 2023; Jacobs 2023). This would have a chilling effect on psychedelic science, as informed consent is ethically necessary for participation in most kinds of research and treatment.

This worry is sharpened by recent work—following feminist philosopher L. A. Paul (2014)—about transformative experiences. Transformative experiences, according to Paul, are experiences that produce radical change in what we know ("epistemically" transformative) or in who we are, especially with respect to personal values or core preferences ("personally" or "evaluatively" transformative). Examples of transformative experiences, according to Paul, include having a child, getting married, or—more fancifully—becoming a vampire. In these cases, Paul and others argue it is difficult to make a rational and fully informed decision about whether to have the experience. Because the experience itself changes our knowledge and undermines personal continuity, we are unable—in principle—to anticipate whether the outcomes will be good or bad, desirable or undesirable. The power and uniqueness of psychedelic experiences, and the fact that they are sometimes regarded as personally transformative in a nontechnical sense, suggest that psychedelic experiences could sometimes be transformative in Paul's sense. This could make informed consent for such experiences difficult or even impossible (Jacobs 2023).

In this article, we argue that while consent processes for psychedelic research and treatment should emphasize the unique risks of psychedelics, worries about transformative experiences are overstated. This is for two reasons. First, it is unclear whether psychedelic experiences are really transformative in Paul's sense. Indeed, it is unclear whether *any* experiences are truly transformative when the definition is rigorously applied. Second, even if psychedelic experiences are trans-

formative, it seems likely that one can still provide valid informed consent for transformative experiences. We will provide several reasons for this claim, but our overarching point is that on any plausible conception, informed consent requires neither full understanding nor ideal rationality. We conclude by providing practical recommendations for consent procedures in psychedelic treatment and research.

Are Psychedelic Experiences Transformative?

The most basic version of the argument that informed consent for psychedelics is impossible—what we call the "transformation argument"—is this: psychedelic experiences are often transformative, so one cannot understand them without already having had them. Since understanding is necessary for valid informed consent, one cannot provide informed consent for these experiences without already having had them. This argument is valid, but it has several problems. The first is that there are good reasons to be skeptical of the claim that psychedelic experiences are transformative in a sense that distinguishes them from other experiences for which informed consent is clearly possible.

First, whether an experience is either epistemically or personally transformative is not merely a philosophical question; it can be studied scientifically. The data about psychedelic experiences suggests that they can have powerful, life-changing effects. Psychedelics are often associated with profound mystical experiences that are described by their recipients as extremely meaningful; in some cases, participants even report changes in their values and approach to life (Garcia-Romeu, Griffiths, and Johnson 2014; Griffiths et al. 2006, 2008, 2011; Liechti, Dolder, and Schmid 2017). For example, in an influential double-blinded study of psilocybin, Griffiths and colleagues (2006) reported that recipients of psychedelics not only described acute perceptual changes, but also lasting personal behavioral changes rated as positive by community observers, even up to two months after the experience. Several reviews document the pharmacology and hypothesized mechanisms of action of these psychological effects (Carhart-Harris 2019; Johnson et al. 2019; Nichols 2016). However, none of these studies have specifically examined the relevant attributes of a transformative experience; none have explicitly measured whether, for whom, under what circumstances, or how often such attributes are exhibited; and none have explored their objective or subjective impact on understanding and decision-making.

A second problem with the transformation argument is that it posits that transformative experiences are different *in kind* from non-transformative experiences. Consider the "epistemic" version of the transformation argument, which supposes that psychedelic experiences convey knowledge that is otherwise inaccessible. That supposition might be true, but at least at some level, all experiences convey knowledge that is otherwise inaccessible—namely, knowledge of just

what it is like to have that specific experience. One can't know exactly what it is like to have appendicitis without already having had appendicitis, nor what it is like to have a knee replacement without having had one. Presumably, however, this does not mean that appendicitis and knee replacements are transformative in the relevant sense.

Even if some experiences are new, there are many ways to approximate what they would be like without having them directly. When children are afraid to get a vaccination, we console them by saying "It will just feel like a little pinch." Similarly, when trying to understand what a cholecystectomy is like, we might think about what it was like to have an appendectomy. These experiences are not identical, but they share enough relevant characteristics to help us grasp what the new experience will be like. Indeed, by extrapolating from previous experiences, we can set expectations for new ones. This also seems to be possible for putative transformative experiences—including, we think, a psychedelic experience (Harman 2015; Krishnamurthy 2015). Even if we cannot know *exactly* what it is like to have a psychedelic experience until we have had one, we can still gather information about such experiences from film, books, and—importantly—others' first-hand accounts. Accordingly, we think that whether an experience is transformative is actually a matter of degree; all we can say is that some experiences are epistemically more transformative (one might say, epistemically more *informative*) than others. But if that is correct, the transformation argument is unpersuasive, as being transformative seems trivial.

It might seem that one feature that makes psychedelic experiences different from other medical experiences, and so potentially transformative in a way the others are not, is that there is greater variability in the phenomenological content of psychedelic experiences, making prediction on the basis of others' observations much more difficult. That psychedelic experiences are highly variable is well documented (Masters and Houston 2000), but we think the problem of variability can be overcome by gathering additional third-party testimony, or simply through acknowledgment of the variability and associated uncertainty themselves within the consent process. The epistemic transformation argument makes a stronger claim: that important features of psychedelic experiences cannot be understood without having them, not because individual experiences are variable, but because they involve phenomenological content (subjective experiences) that can only be understood through direct acquaintance.

We are similarly skeptical about personal (evaluative) transformation, or the idea that the psychedelic experience might, in a fashion that is distinct from most ordinary experiences, radically change a person's values. Again, the main problem is that even if psychedelics can change values (Kious, Schwartz, and Lewis 2023), many ordinary experiences can also do so. Watching the news, reading a classic novel, or having a meaningful conversation with a stranger could each result in a chain of events that deeply changes who we are. Proponents of the transfor-

mation argument would likely not regard these experiences as transformative. But it is still plausible that new preferences can emerge from such experiences. A key point is that we don't know a priori which experiences will be evaluatively transformative. It's only after we have had and processed the experience that we recognize how it changes us. This suggests that personal transformation is also a matter of degree: all we can really say is that some experiences cause greater changes in our values than others.

For the transformation argument to work, proponents need to specify a priori which experiences will be transformative and which will not. This would allow for a meaningful analysis of the criteria for informed consent. Yet it appears that no experience can be classified as transformative until one has it; all experiences are possibly transformative, and to varying degrees. This suggests serious problems in the scope of the "transformation" concept. If all experiences can possibly be transformative, then the concept marks a distinction that makes no difference.

Do Transformative Experiences Preclude Informed Consent?

While there are reasons to doubt whether psychedelic experiences are truly transformative, there are also several reasons for thinking that, even if they are transformative, it does not create special problems for informed consent.

Informed consent involves three components: (1) that consent is voluntary, meaning it is free and uncoerced; (2) that consent is informed, meaning that the individual has adequate knowledge of the facts pertaining to the choice; and (3) that the individual has decision-making capacity, meaning that they have the abilities to appreciate the relevance of medical facts for themselves, to understand those facts, and to reason adequately with them (Beauchamp 2011; Beauchamp and Childress 2013; Grisso, Appelbaum, and Hill-Fotouhi 1997). The epistemic transformation argument suggests that consent cannot be informed, because a person cannot have adequate knowledge about what the experience will be like before having the experience; thus, the second required component of informed consent cannot be met.

One reason to doubt the epistemic transformation argument is that it proves too much. Let's assume that some other medical experiences are epistemically transformative. We can imagine some good candidates: taking ordinary antidepressants, receiving psychotherapy, having a deep brain stimulator implanted for Parkinson's disease, or having a limb amputation. All things being equal, it is uncontroversial that patients can decide whether to have these experiences in an adequately informed fashion; a decision to have a deep brain stimulator or to receive a life-saving amputation can be respect-worthy, fully autonomous, and, typically, not morally problematic. But the transformation argument entails that patients are not able to provide valid informed consent in such cases, simply be-

cause they cannot fully appreciate what things will be like after the experience. Why should we regard the psychedelic experience as being any different than these other medical procedures?

Proponents of the epistemic transformation argument might argue that consent is questionable in these cases, too. But this assumes that to provide consent to an experience, one must know *exactly* what the experience will be like. It is, however, unclear just *how much* one must know to be adequately informed. For consent to an endoscopy to be valid, how much information must be provided to the patient, and what is the burden for ensuring that the patient not only understands the information provided but also appreciates its relevance to them?

One influential view, advanced by Benjamin Freedman (1975), is that patients needn't be given a "mini lecture" in the relevant area of medicine to provide consent. Rather, a physician is required only to disclose information that is relevant to the patient in making a reasonably responsible decision. Similarly, research participants often feel that they have provided true informed consent even if, by objective measures, there are large gaps in their understanding of their role in the research—suggesting that there is a difference between "adequate" (good enough) understanding and "complete" understanding (Robinson et al. 2013). Indeed, informed consent clearly never requires full knowledge of a medical procedure: consent is not about training patients to have a professional level of medical knowledge, nor would this ever be possible, even for the best-characterized choices. This is reflected in the Common Rule (Odwazny and Berkman 2017), where the "reasonable person standard" is used to determine what information should (or should not) be included in consent documents (Sugarman 2017).

This reasonable person standard raises a problem for the epistemic transformation argument. It would be unreasonable for a patient to demand that they know exactly what a medical intervention will feel like prior to the experience, or exactly what effect it will have on his life, including his values and preferences; no physician could possibly provide this information, transformative experience or not. In contrast, the reasonable person might conclude that she does not need to know about all aspects of a medical intervention for consent, but that her understanding could be informed by other sources, like the testimony of others, or statistics about adverse events. All of this information is still available even if the experience remains transformative and mysterious.

We should note, too, that adequately informed consent can sometimes involve very little information. Sometimes a decision must be made in the absence of any knowledge of the likelihood of two or more outcomes. This can occur because of a lack of general medical knowledge or because of a limited ability to apply existing knowledge to a patient's specific circumstances. While the absence of this knowledge might preclude *rational* choice, it is still possible to consent *arationally*—that is, to autonomously pick something (Ullmann-Margalit and Morgenbesser 1977). Choices made arationally, in the absence of decisive reasons, should

not be confused with choices that are deeply *irrational*, or made against available reasons. If psychedelic experiences are sometimes transformative, choosing them may be arational, but not necessarily irrational. So transformative experiences, if they exist, may not lead to irrational decisions.

More generally, we should note that informed consent is possible even in the face of the numerous ways in which human decision-making tends to be irrational. We know from behavioral economics that we are not rational decision-makers—we are influenced by bias, shrouded in uncertainty, and terrible at forecasting. Still, we often respect each other's decisional authority and accept that they can provide informed consent. Paul (2014) argues that transformative experiences problematize fully rational decision-making. But even if true, this is not sufficient to show that transformative experiences undermine informed consent.

We would also suggest that the transformation argument rests on a mistake about the concept and practice of consent. The importance of consent derives from the principle of respect for persons. It ensures that the individual offering the choice (the physician) treats the individual making the choice (the patient) in a way that (1) shows respect for their agency and (2) gives them the opportunity to make a good choice that reflects their interests and goals. Criteria for consent cannot be determined independent of these moral considerations (Kious 2015). When there is deep uncertainty about facts that could be relevant to a decision, valid informed consent is still possible, provided that the person seeking the consent does everything they can to support a good choice—even though *what* they can do is severely limited by the lack of information.

Consider an example: suppose that Dr. Smith offers her patient, Mr. Williams, a new treatment for diabetes. She provides him with all of the information she has available to her regarding the expected benefits, risks, and costs of the new treatment. Unfortunately, Dr. Smith does not know that all of the available supply of the new medication is contaminated with a toxin. Her ignorance does not entail culpability, since she had no reason to think the toxin was present. Mr. Williams takes the new medication and is poisoned, requiring acute medical care. The fact that the medication was contaminated was relevant to Mr. William's decision; if he had known, he would not have agreed. But this does not render his consent invalid. Dr. Smith did everything she could reasonably be expected to do to facilitate Mr. William's decision. The outcome is bad, but the consent was still valid and informed.

Similar problems arise for the evaluative version of the transformation argument. If we grant that psychedelic experiences can be evaluatively transformative, then when someone has a sufficiently powerful psychedelic experience there is a chance they will no longer value things they valued before taking the psychedelic, or that they will value new things after the experience. Again, however, there is nothing in this description that precludes valid informed consent. True, the

standard criteria for consent include voluntariness, which can be compromised by the values underwriting a person's consent: if the values are not really hers, but imposed by some other person or force, her consent might seem *inauthentic* and so not fully voluntary. This is the problem with consent for persons with motivational disorders like severe depression (Elliott 1997). Conventionally, however, this authenticity criterion involves an assessment of the decision-maker's current values. It does not consider what they might come to value in the future. If this were a standard of consent, then all decisions might be called into question, as, again, any experience could plausibly change a person's values.

Recently, Edward Jacobs (2023) has argued that it is impossible to make an authentic decision in the face of a transformative experience, because it involves setting aside one's own values in anticipation of some set of future values one does not have. For instance, someone who chooses to have a child despite her own current lack of desire for a child, simply because she knows that once she has a child she *will* want it, is being inauthentic. We agree that such a way of deciding would be problematic, but fortunately, this is not the choice confronting persons who are considering the clinical or research use of psychedelics. They are not, generally, setting aside their current values in anticipation of having their minds changed; rather, they are using their current values to appraise a set of possibilities that include having different future values. Nor is there anything unusual in that way of deciding. We often choose, on the basis of our current values, to have experiences that we think will give us values we don't currently have but want to have. Someone might, for instance, not now prioritize health, but want to be the sort of person who prioritizes health, and so he chooses to do things that will change his character in that desired way. Choosing to pursue treatment for addiction might be another example, wherein one might have a goal of eliminating the desire to use the substance of abuse, or at least acquiring other desires that counterbalance it.

It is worth noting that there is a different problem that might be confused with the evaluative argument: when would it be rational for me to choose to do something that will change my values, given that what I will value in the future may conflict with what I value now? This issue does seem to arise for psychedelic experiences. For example, one of the authors is not interested in ever having a psychedelic experience, largely because they like their current values and do not want them to change in the ways they think psychedelics would promote. The problem here is not that the psychedelic experience is transformative per se, but that it might cause them to adopt values they currently do not want to have. This is a puzzle, perhaps, but it is not a problem for consent, as valid informed consent does not require making decisions that ensure continuity of one's values over time.

Recommendations for the Informed Consent Process

Accordingly, we question whether psychedelic experiences are truly transformative in Paul's sense, and doubt whether the possibility that they may be transformative makes them qualitatively different from any other experience. We also doubt that transformative experiences—if they do occur—raise special problems for informed consent. Nevertheless, we think that the special characteristics of psychedelic experiences have implications for the structure and content of informed consent procedures. These include:

1. A need to educate psychedelic recipients about the possibility of profound, mystical, spiritual, or transcendent experiences, which could sometimes produce significant changes in their values or beliefs.
2. A need to educate recipients about the possibility of disappointing or even horrible experiences, in which they do not experience a sense of transcendence or associated changes in values, and while unlikely may experience trauma
3. In tension with (1), the need to avoid undue suggestion that alters the nature of the ultimate experience—for example, by providing too much speculative information about what is likely to happen. Here, the key is to focus on the uncertainty about outcome for that particular participant and to make sure they understand the range of possible experiences and are consenting with that in mind. This is akin to consenting to certain antidepressants: some people might benefit from antidepressants, while others don't. Still others might benefit but experience side-effects, while others don't. The range of possible outcomes is what matters for consent, not certainty about outcomes.
4. Developing educational materials to enhance the consent process, which utilize the testimony of persons who have had psychedelic experiences, ideally involving diverse individuals with a wide variety of experiences and outcomes.
5. Because psychedelic treatments often involve repeated sessions, reminding clinicians and participants that consent is a process, that it should be revisited before each session in the light of evolving knowledge, values, and preferences, and that it can be revoked at any time. Consent for future sessions and their elements can also be revised during integration sessions.

None of these provisions assumes that psychedelic experiences are likely to be transformative, but the provisions do assume that such experiences are different in some ways from other kinds of experiences in medicine (which might, in turn, have specific consent procedures).

Conclusion

While psychedelic experiences can be powerful, unique, and have far-reaching effects on the lives of those who undergo them, these characteristics do not create

problems for informed consent. Some have argued that psychedelic experiences can be transformative in Paul's sense, and suggested that this makes informed consent for psychedelic use impossible. We doubt, however, that these characteristics of psychedelic experiences make them transformative in any way that cannot also be claimed of many other common medical and nonmedical experiences. We also doubt that transformative experiences raise special problems for informed consent, largely because informed consent is not necessarily incompatible with a lack of knowledge or with changes in a person's preferences over time. Despite this, we still believe that informed consent for psychedelic treatment and research deserves special care, at least in the early days while empirical data are still being generated on the types and qualities of psychedelic experiences and the subjective and objective impacts of those experiences on decision-making, including informed consent and decision regret.

References

Beauchamp, T. L. 2011. "Informed Consent: Its History, Meaning, and Present Challenges." *Camb Q Healthc Ethics* 20 (4): 515–23.

Beauchamp, T. L., and J. F. Childress. 2013. *Principles of Biomedical Ethics*. 7th ed. New York: Oxford University Press.

Bogenschutz, M. P., et al. 2015. "Psilocybin-Assisted Treatment for Alcohol Dependence: A Proof-of-Concept Study." *J Psychopharmacol* 29 (3): 289–99. DOI: 10.1177/0269881114565144.

Carhart-Harris, R. L. 2019. "How Do Psychedelics Work?" *Curr Opin Psychiatry* 32 (1): 16–21. DOI: 10.1097/yco.0000000000000467.

Carhart-Harris, R. L., et al. 2016. "Psilocybin with Psychological Support for Treatment-Resistant Depression: An Open-Label Feasibility Study." *Lancet Psychiatry* 3 (7): 619–27.

Carhart-Harris, R. L., et al. 2018. "Psilocybin with Psychological Support for Treatment-Resistant Depression: Six-Month Follow-Up." *Psychopharmacol* 235: 399–408.

Egerton, K., and H. Capitelli-McMahon. 2023. "Transformative Experience and the Principle of Informed Consent in Medicine." *Synthese* 202 (65): 1. DOI: 10.1007/s11229-023-04258-4.

Elliott, C. 1997. "Caring About Risks: Are Severely Depressed Patients Competent to Consent to Research?" *Arch Gen Psychiatry* 54 (2): 113-116.

Freedman, B. 1975. "A Moral Theory of Informed Consent." *Hastings Cent Rep* 5 (4): 32–39. DOI: 10.2307/3561421. http://www.jstor.org/stable/3561421.

Garcia-Romeu, A., R. R. Griffiths, and M. W. Johnson. 2014. "Psilocybin-Occasioned Mystical Experiences in the Treatment of Tobacco Addiction." *Curr Drug Abuse Rev* 7 (3): 157–64. DOI: 10.2174/1874473708666150107121331.

Goodwin, G. M., et al. 2022. "Single-Dose Psilocybin for a Treatment-Resistant Episode of Major Depression." *N Engl J Med* 387 (18): 1637–48.

Goodwin, G. M., et al. 2023. "Single-Dose Psilocybin for a Treatment-Resistant Episode of major Depression: Impact on Patient-Reported Depression Severity, Anxiety, Function, and Quality of Life." *J Affect Disord* 327: 120–27.

Griffiths, R. R., et al. 2006. "Psilocybin Can Occasion Mystical-Type Experiences Having Substantial and Sustained Personal Meaning and Spiritual Significance." *Psychopharmacol* 187 (3): 268–83. DOI: 10.1007/s00213-006-0457-5.

Griffiths, R. R., et al. 2008. "Mystical-Type Experiences Occasioned by Psilocybin Mediate the Attribution of Personal Meaning and Spiritual Significance 14 Months Later." *J Psychopharmacol* 22 (6): 621–32.

Griffiths, R. R., et al. 2011. "Psilocybin Occasioned Mystical-Type Experiences: Immediate and Persisting Dose-Related Effects." *Psychopharmacol* 218 (4): 649–65.

Grisso, T., P. S. Appelbaum, and C. Hill-Fotouhi. 1997. "The MacCAT-T: A Clinical Tool to Assess Patients' Capacities to Make Treatment Decisions." *Psychiatr Serv* 48 (11): 1415–19. DOI: 10.1176/ps.48.11.1415.

Harman, E. 2015. "Transformative Experiences and Reliance on Moral Testimony." *Res Philosoph* 92 (2): 323–39.

Jacobs, E. 2023. "Transformative Experience and Informed Consent to Psychedelic-Assisted Psychotherapy." *Front Psychol* 14: 1108333. https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1108333.

Johnson, M. W., et al. 2019. "Classic Psychedelics: An Integrative Review of Epidemiology, Therapeutics, Mystical Experience, and Brain Network Function." *Pharmacol Ther* 197: 83–102. DOI: 10.1016/j.pharmthera.2018.11.010.

Kious, B. M. 2015. "Autonomy and Values: Why the Conventional Theory of Autonomy Is Not Value-Neutral." *Philos Psychiatr Psychol* 22 (1): 1–12.

Kious, B. M., Z. Schwartz, and B. R. Lewis. 2023. "Should We Be Leery of Being Leary? Concerns About Psychedelic Use by Psychedelic Researchers." *J Psychopharmacol* 37 (1): 45-48.

Krishnamurthy, M. 2015. "We Can Make Rational Decisions to Have a Child: On the Grounds for Rejecting LA Paul's Arguments." In *Permissible Progeny?: The Morality of Procreation and Parenting*, ed. S. Hannan, S. Brennan, and R. Vernon, 170–83. Oxford: Oxford University Press.

Liechti, M. E., P. C. Dolder, and Y. Schmid. 2017. "Alterations of Consciousness and Mystical-Type Experiences After Acute LSD in Humans." *Psychopharmacol* 234 (9): 1499–510.

Masters, R., and J. Houston. 2000. *The Varieties of Psychedelic Experience: The Classic Guide to the Effects of LSD on the Human Psyche*. New York: Simon and Schuster.

Mitchell, J. M., et al. 2021. "MDMA-Assisted Therapy for Severe PTSD: A Randomized, Double-Blind, Placebo-Controlled Phase 3 Study." *Nat Med* 27 (6): 1025–33.

Mitchell, J. M., et al. 2023. "MDMA-Assisted Therapy for Moderate to Severe PTSD: A Randomized, Placebo-Controlled Phase 3 Trial." *Nat Med* 29: 2473–80. DOI: 10.1038/s41591-023-02565-4.

Moreno, F. A., et al. 2006. "Safety, Tolerability, and Efficacy of Psilocybin in 9 Patients with Obsessive-Compulsive Disorder." *J Clin Psychiatry* 67 (11): 1735–40. DOI: 10.4088/jcp.v67n1110.

Nichols, D. E. 2016. "Psychedelics." *Pharmacol Rev* 68 (2): 264–355. DOI: 10.1124/pr.115.011478.

Odwazny, L. M., and B. E. Berkman. 2017. "The 'Reasonable Person' Standard for Research Informed Consent." *Am J Bioethics* 17 (7): 49–51. DOI: 10.1080/15265161.2017.1328540.

Paul, L. A. 2014. *Transformative Experience*. Oxford: Oxford University Press.
Robinson, J. O., et al. 2013. "Participants' Recall and Understanding of Genomic Research and Large-Scale Data Sharing." *J Empir Res Hum Res Ethics* 8 (4): 42–52. DOI: 10.1525/jer.2013.8.4.42.
Sugarman, J. 2017. "Examining Provisions Related to Consent in the Revised Common Rule." *Am J Bioethics* 17 (7): 22–26.
Ullmann-Margalit, E., and S. Morgenbesser. 1977. "Picking and Choosing." *Soc Res* 44 (4): 757–85.