

# *Drug-Enabled Mystical Experiences*

with Virginia Ballesteros, “*Applied Mysticism: A Drug-Enabled Visionary Experience against Moral Blindness*”; and Richard H. Jones, “*Limitations on the Scientific Study of Drug-Enabled Mystical Experiences*.”

## APPLIED MYSTICISM: A DRUG-ENABLED VISIONARY EXPERIENCE AGAINST MORAL BLINDNESS

by Virginia Ballesteros 

*Abstract.* Intellectuals such as William James and Aldous Huxley have thought it possible to develop a technique to apply to this world the mystical-type insights gained during drug-enabled experiences. Particularly, Huxley claimed that the visionary experience triggered by psychedelics could help us rethink our relationship with technology and promote a much-needed cultural change. In this article, we explore this hypothesis. To do so, we build a philosophical framework based on Günther Anders’s philosophy of technique, presenting human beings as morally blind when facing technological development. Mystical experiences are then proposed as a means to improve our moral faculties—and psychedelic drugs as tools to enable them. We finally explore the empirical feasibility of such a hypothesis by thoroughly reviewing the recent scientific literature on the nature of the psychedelic experience, concluding that the long-term effects in the personality domain openness and in nature relatedness point to the emergence of a morally improved agent, thus providing substance to an application of mysticism.

*Keywords:* Günther Anders; imagination; morality; mysticism; psychedelics; technology

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The use of psychedelic drugs has been linked to religious and spiritual practices for millennia (Escohotado 1999). However, the scientific or intellectual interest in these substances did not rise in the Western world until the end of the nineteenth century (Sessa 2012). The term *psychedelic* was introduced in the mid-twentieth century by Humphry Osmond, pointing to the *mind-manifesting* effects exerted by certain psychoactive substances. Psychedelics are naturally occurring or chemically designed substances, usually agonists of the serotonin 2A receptor—such as lysergic

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acid diethylamide (LSD) or psilocybin—known for their ability to alter cognition and perception, and more importantly to induce altered states of consciousness (ASCs). Nowadays, psychedelic drugs are increasingly attracting attention because of their potential therapeutic applications in the field of psychiatry (Nichols et al. 2017). This therapeutic potential is connected to psychedelics' alleged ability to induce mystical-type experiences when given in a supportive environment: experiencing what is known as *oceanic boundlessness*—a term that refers to Freud's *oceanic feeling* (Parsons 1999) and that has been found to encompass four classical elements of mysticism, namely, insightfulness, a blissful state, experience of unity, and experience of spirituality—seems to be a predictor of a positive therapeutic outcome in mental health (Roseman et al. 2018).

However, the question of whether the experience enabled by drugs is of a genuine mystical nature has generated much debate for a long time, with positions for and against it (Smith 1964). Some of the early supporters of the thesis that drugs can actually induce genuine mystical experiences also suggested the hypothesis that such an experience could have some field of application beyond strictly religious purposes. In this regard, two well-known intellectuals, William James and Aldous Huxley, subscribed to both the thesis that drugs can induce experiences of a mystical nature and the hypothesis that this capability could have its own field of application, a sort of *applied mysticism*. Huxley in particular thought that the visionary experience triggered by psychedelics could be of help in reshaping our relationship with technology and rethinking the negative aspects of our culture.

The aim of this article is to explore such a hypothesis, arguing for mystical-type experiences enabled by psychedelic drugs as a means of widening our moral faculties in the realm of technology-related challenges and threats. We will provide a philosophical framework by drawing on the work of Günther Anders and some contemporary transhumanist philosophers, involving an anthropological outlook according to which human beings have become morally blind and obsolete, surpassed by the rapidly growing technological development we have been witnessing since modernity, and in need of some self-transformation tools to overcome our limitations. In order to explore the empirical plausibility of psychedelics being such tools, we will review an extensive body of scientific literature on the nature of the experience enabled by psychedelic drugs and its long-term effects on personality, beliefs, and behavior. It is important to emphasize that, although we will resort mostly to the work of Günther Anders, our intention is not to defend that he himself would have supported our proposal, but more humbly to use his anthropological framework to explore the hypothesis that the experience enabled by psychedelics could be useful in the search for an *immanent transcendence*.

Thoroughly addressing the philosophical and ethical problems—mainly concerning freedom of action or will, and moral responsibility—that may arise around a technique aiming to produce personality and behavioral changes is beyond the scope of this article. Nonetheless, the critical context sensitivity of psychedelic drugs’ effects will be highlighted, distancing ourselves from narrowly biological conceptions that could pose problems with regard to the causation and authenticity of the changes elicited by them.

Finally, one last caveat cannot be overlooked: the fact that psychedelics remain under strict legislation. In accordance with that, this article is to be understood merely as a theoretical inquiry. Nonetheless, due to the advances being made in the therapeutic field, at least the legislation that concerns therapeutic use is expected to change in the foreseeable future (Rucker et al. 2018).

#### THE QUEST FOR AN IMMANENT TRANSCENDENCE

In his celebrated work *The Varieties of Religious Experience*, William James noted that the experience induced by anesthetics, particularly by the inhalation of nitrous oxide, can stimulate the mystical consciousness to such an extent that the inhaler feels that deep truths have been revealed to him—subscribing, thus, to the thesis that drug-enabled experiences can be of a meaningful and even mystical nature. Moreover, he had the intuition that experiencing what today would be dubbed as altered states of consciousness could have its own field of application:

Our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from it by the filmiest of screens, there lie potential forms of consciousness entirely different. We may go through life without suspecting their existence; but apply the requisite stimulus, and at a touch they are there in all their completeness, definite types of mentality which probably somewhere have their field of application and adaptation. . . . How to regard them is the question—for they are so discontinuous with ordinary consciousness. Yet they may determine attitudes though they cannot furnish formulas, and open a region though they fail to give a map. (James [1902] 2012, 292–93)

A few decades later, Aldous Huxley argued that mystical experiences can be triggered by different means—drugs being among them. In “Visionary Experience,” a lecture delivered in 1961 and included in the book *Moksha*, Huxley examined the different means that humanity has long employed in searching for visionary or mystical experiences (Huxley [1961] 1999a). Visionary experiences can occur spontaneously, but given their enormous value humanity has long sought to induce them: hypnosis, yoga, systematic breathing, fasting, sleep deprivation, self-flagellation, and drugs have all been used as means to trigger experiences of a mystical nature.

Huxley believed that the transformative powers of such experiences should be employed to develop a technique of *applied mysticism*. He thought that psychedelics were an outstanding tool to trigger visionary experiences from which to gain valuable insights. In a letter written to Albert Hofmann in 1962, Huxley characterized *applied mysticism* as “a technique for helping individuals to get the most out of their transcendental experience and to make use of their insights from the ‘other world’ in the affairs of ‘this world’” (quoted in Hofmann 1999, xv). As Hofmann himself recounts in a preface to *Moksha*, “It was the endeavor of Aldous Huxley to show how the inward power of these sacramental drugs could be used for the welfare of people living in a technological society hostile to mystical revelations” (Hofmann 1999, xiv). Huxley thought it possible—and urgent—to use psychedelic drugs to rethink and reshape our relationship with technology and keep it under control—thus delineating the *field of application and adaptation* foreseen by James:

Unprecedentedly rapid technological and demographic changes are steadily increasing the dangers by which we are surrounded, and at the same time are steadily diminishing the relevance of the traditional feeling-and-behavior-patterns imposed upon all individuals, rulers and ruled alike, by their culture. Always desirable, widespread training in the art of cutting holes in cultural fences is now the most urgent of necessities. Can such a training be speeded up and made more effective by a judicious use of the physically harmless psychedelics now available? On the basis of personal experience and the published evidence, I believe that it can. . . . We must discover, and discover very soon, new energy sources for overcoming our society’s psychological inertia, better solvents for liquefying the sludgy stickiness of an anachronistic state of mind. (Huxley [1963] 1999b, 255–56)

Huxley’s concern about technological changes was in tune with the *zeitgeist*. After World War I, reflection on technique became a popular philosophical subject; after World War II, critique of technique, reason, and industrial societies—as developed by the intellectuals of the Frankfurt School—attracted much attention. Huxley’s positions were close to those of critical theory, particularly to Herbert Marcuse’s widely influential critique of advanced industrial societies where technology and consumer capitalism have become so omnipresent that they structure both labor and leisure, shaping each individual’s thought and behavior and thus creating one-dimensional persons (Marcuse [1964] 1991). His ideas also resonated with the psychedelic movement, where the thesis that the psychedelic experience could facilitate a much-needed cultural change was supported to different degrees. Perhaps the most committed thinker to that thesis was Timothy Leary, who often adopted a messianic delirious tone in arguing about the benefits of psychedelics (Leary [1968] 2018)—which presumably ended up being a setback for the movement. By contrast, Huxley’s thinking was more nuanced, as is proven by the fact that he

wrote novels such as *Brave New World*, a dystopia that highlighted the conflicts between chemically induced happiness and freedom, but also *Island*, a utopia built around drug use, where psychoactive substances were employed to gain knowledge and redesign industrialization processes. When Huxley asked himself whether this was a utopian dream, he replied: “Experiment can give us the answer, for the dream is pragmatic; the utopian hypotheses can be tested empirically. And in these oppressive times a little hope is surely no unwelcome visitant” (Huxley [1963] 1999b, 256).

At that time, another intellectual—although not a very well-known one—raised his voice to warn about the dangers of rampant technological development, blatantly obvious after the dropping of the nuclear bombs and the Cold War. He was Günther Anders, a philosopher and antinuclear activist born in 1902 in Breslau. Anders’s relationship with academic philosophy was never easy, although we can find figures such as Martin Heidegger and Edmund Husserl among his professors—and figures such as Theodor Adorno and Herbert Marcuse among his colleagues (Van Dijk 2000). His philosophy was, like Huxley’s, close to critical theory. In 1956 he wrote his major work, *The Obsolescence of Human Beings*, where he argued that human beings’ moral faculties had become outdated in comparison to their productive ones. He coined a term to refer to this gap between moral and productive abilities, *the Promethean gap*: “I call ‘Promethean’ the discrepancy in the fundamental gap; that is, the gap that exists between our ‘Promethean ability’—the products made by us, the ‘sons of Prometheus’—and all other abilities; the fact that we are not up to the ‘Promethean in us’” (Anders [1956] 1961, 270). He defended the existence of a moral imperative to try and overcome it: in Anders’s view, expanding our moral faculties in order to keep technology within our moral scope is the imperative of our time:

Unless everything is to be lost, the decisive moral task today consists in the education of moral fantasy, i. e., in an attempt to overcome the “gap”, to adjust the capacity and elasticity of our imagination and feeling to the dimensions of our own products and to the incalculable extent of what we can cause; in other words, to assimilate our ability to imagine and feel at our level as doers. (Anders [1956] 1961, 273)

Similar to Huxley’s proposal, Anders argued for a kind of *human engineering* shaped after mysticism, a technique aiming at a *real awakening of the faculties*: “moral dilatation exercises, hyper-extensions of [the] usual capacities to imagine and feel” (Anders [1956] 1961, 274). Those exercises could be shaped after the model provided by mysticism, understood as “an attempt to gain access to states, realms, or objects, from which one otherwise remains excluded, by means of self-transformation techniques” (Anders [1956] 1961, 275). Although he did not support the thesis that drugs can induce meaningful experiences (Anders 1980, 380–82), he did believe, like

James and Huxley, that the insights provided by mystical-type experiences could have a field of application in this world, in what he considered “an immanent transcendence,” that is to say, in gaining access to the artifacts that we human beings have produced and whose consequences exceed our moral faculties. It is necessary to highlight the *immanent* character of the transcendence sought by Anders: the transcendence that he proposes should not be understood as a way of going beyond this world, of escaping from this world—an exercise criticized by him, given that it can, according to Anders’s point of view, lead to a fatal optimism (Alvis, 2017)—but of gaining access to the mundane realities that naturally elude our senses and our perception. Whether this is possible or not was seen by Anders as an empirical question that can only be decided by actual experimentation.

Finally, our topic would not be properly introduced without making reference to a contemporary movement which sees human beings both as obsolete and in need of moral enhancement. We are referring to some moral transhumanist philosophers, such as Ingmar Persson and Julian Savulescu, who in recent years have opened a burning debate around the topics of moral enhancement and the imperative to morally enhance ourselves, that is, the imperative to use technological means in order to make us more virtuous, more responsible, more empathic, and so forth (Persson and Savulescu, 2014). Although they have not directly argued for an applied mysticism—and, in that sense, their approach to moral enhancement could hardly fit under the rubric of a quest for immanent transcendence—psychedelic drugs and substances with similar effects, such as MDMA (commonly known as *ecstasy*), have also caught transhumanists’ attention and have been presented as potential tools for the enhancement of human morality (Tennison 2012; Earp 2018). Although there are undoubted and important differences between Anders and the current moral transhumanist movement, we can appreciate certain similarities in the analysis of the current situation of humanity in the face of technology (Ballesteros, forthcoming): the existence of a gap between moral human faculties and technological—destructive—capabilities, the characterization of moral human nature as obsolete in this technological paradigm, and a certain moral imperative that seems to follow from our alarming situation, that is, the widening of our moral abilities. The general interpretation of our situation is very similar to the one we have been presenting: humanity, equipped with deficient moral faculties, is surpassed in the actual hypertechnological environment, where the consequences of our technological capacities are of long temporal and spatial scope—contrary to the scope of human moral faculties, which evolved in small communities with very rudimentary technology. According to some transhumanist philosophers, given the fact that humanity is *unfit for the future*, a moral imperative to morally enhance ourselves seems to follow (Persson and Savulescu 2008, 2014).

On the other hand, in the transhumanist discourse numerous references to cognitive psychology, neuroscience, and the theory of evolution usually set the tone for an anthropological account—which distances itself from the tools used by Anders to build his anthropology and shape his proposal. In the transhumanist view, the obsolescence or unfitness of human beings is mostly understood through a biological perspective—and so is the solution: drawing on a naturalistic view of morality, transhumanists often aim to directly affect the biological basis of moral dispositions via genetic interventions, transcranial magnetic stimulation, or, more usually, altering biochemistry by increasing serotonin or oxytocin levels. It should be noted that, although the proposal for an application of mysticism we are delineating here also makes use of biochemical resources—that is, psychedelic drugs—it does not need to rest on a naturalistic or reductionist view of morality, given that the purpose of using the drug is nothing more than to set the conditions of possibility for a transcendental experience. In spite of this, some concepts and the analysis of the contemporary moral transhumanist movement may be useful to us in delineating our proposal. But before we address that issue, let us now describe in a little more detail our anthropological account and begin to outline what an application of mysticism to improve human moral faculties might consist of.

#### WE CAN MURDER THOUSANDS, CONCEIVE OF TEN, AND GRIEVE FOR ONE

Perhaps one of the most eloquent ways of picturing our current situation in the face of technological development can be found in Anders's words in *The Obsolescence of Human Beings*: “Today, we can easily plan the destruction of a big city and carry it out with the help of the means of annihilation produced by us. But to imagine that effect, to conceive of it, we can only do it in a very poor way. And yet, the little we can imagine, the indistinct image of smoke, blood and debris, is always too big compared to the minimum quantum which we can feel or take responsibility for in the idea of the annihilated city” (Anders [1956] 1961, 267).

Anders wrote *The Obsolescence of Human Beings*, his major work, deeply shaken by World War II and the ongoing Cold War; and he became almost obsessed with the actual possibility of self-annihilation enabled by nuclear bombs. What tormented him most was the lukewarm reaction that humanity had had regarding nuclear weapons—his thesis being that we human beings are affected by an *apocalyptic blindness*, which prevents us from properly representing, feeling, and taking responsibility for the perils and destruction caused by nuclear weapons. In this sense, Anders gives the apocalypse an immanent character: total self-annihilation. As Babette Babich puts it: “Far from any symbolism, the apocalypse for Anders could henceforth have nothing whatsoever to do with any kind of second coming,

any sort of new Reich, any last judgment, or anything at all that one might need to ‘interpret’” (Babich 2013, 159). In addition to the nuclear menace that pushes us into the apocalypse, technology-related threats have multiplied alarmingly in recent decades—climate change being the most worrisome, followed by biological weapons and other risks posed by genetic engineering, electronic surveillance, and so forth. Technology has placed us in the path of threats of varying severity, but it does not seem that human moral responses are proportionate to them.

The image of human moral blindness drawn by Anders in the 1950s appears to be very contemporary. One of its roots has already been presented and sharply portrayed in the preceding quote: the Promethean gap—the chasm existing between our productive faculties and our moral ones. In examining it, we realize that each of our faculties (to do, to think, to imagine, to feel, to take responsibility for) operates on a particular scale, becoming inoperative beyond it and remaining insensitive to variations of magnitude. This very reflection has also been made by contemporary moral transhumanist philosophers, who resort to the cognitive psychologists’ notion of *scope insensitivity*, which points to the fact that the greater the number of people affected in a disaster, the less likely we are to provide aid—thus acknowledging the inoperability of moral faculties after a certain threshold has been reached (Persson and Savulescu 2014, 30).

Anders regarded the Promethean gap as inherent to our biology and, although he didn’t explicitly frame it in an evolutionary paradigm—as is common in the current literature—he asserted that its existence is probably a response to a biological design that conferred on us some advantage in the past: the gap is not *per se* a defect; it has become problematic only after recent unprecedented technological developments. The problem, therefore, as Huxley also put it, is that “our physiological make-up has remained very much what it was 10,000 years ago” (Huxley [1931] 1999c, 8). The fact that our moral psychology evolved in an environment of small communities and scarce technological power makes us “personally and temporally ‘myopic’” in this new environment: mostly concerned about our personal and immediate surroundings, we neglect what’s beyond our sight (Persson and Savulescu 2014, 4). However, it does not mean that we do much better when we deal with vast amounts of suffering right in front of our eyes—moral limitations are still there: “we are unable vividly to imagine the suffering of hundreds, let alone thousands of subjects even if they are in sight” (Persson and Savulescu 2010, 664). Anders also noticed this phenomenon and came to the conclusion that the image we have to form in order to acknowledge such an amount of suffering is not a function of our perceptive faculties or of our capacity for abstraction. The same appreciation is also valid for imagining the consequences of our technological development: not only an act of perception is required, but also paramountly an act of imagination. Perception is no longer at



the level of what we produce: “*Senses distort sense. Fantasy is realistic*” (Anders 1962, 497)—and that is why imagination becomes indispensable today: because it understands more truth than perception. “We need to mobilize imagination precisely to continue being at the empirical level, no matter how paradoxical it may sound. Imagination is today’s *perception*” (Anders [1979] 1995, 80). In the past, we lived under the impression that our imagination could make up devices and techniques impossible to materialize; today, we live under the impression that we cannot imagine where progress is taking us, we are “incapable of mentally realizing the realities which we ourselves have produced” (Anders 1962, 496)—and, most importantly, we cannot even imagine an ending of the world.

In order to understand our apocalyptic blindness, not only biological factors have to come into play, but also historical ones. In this regard, according to Anders our ability to imagine an ending of the world has been stolen from us by faith in progress. Since modernity, the Western world has been witnessing the replacement of a religious cosmivision by a naturalistic, scientifically based, worldview—which includes a new faith, that of technological progress. In this context, the idea of a doomsday has gradually vanished from the popular imaginary, replaced by an ever-ascending progress. Paradoxically, the idea of eternity has remained among us: while in the Religions of the Book we find the promise of eternity after life, in the paradigm imposed by progress eternity becomes materialized in life, made possible by technological progress—and thus concealing the possibility of a *final bad ending*. To make matters even worse, even those that if questioned would rationally respond that they do not *believe in* eternal technological progress, in fact usually *act as though* technoscience were ultimately going to save the world—which points to another gap: that existing between our beliefs and our actions.

Nearsighted and unfit or blind and obsolete, the image of human beings drawn by all these authors points in the same dismaying direction. Regardless of whether it entails the imperative to morally enhance ourselves, the search for useful tools to undertake such a task seems at least desirable.<sup>1</sup> In that sense, our proposal is that the mystical-type experience enabled by psychedelic drugs can be of help in expanding our moral imagination and, thus, alleviating our moral blindness.

The kind of improvement we are seeking through mysticism might fall into what has been regarded as *an agential approach*, an enhancement aiming at a higher order capacity to respond flexibly to different scenarios, where the agent would be able “to employ or tap into different cognitive and emotional resources as necessary to arrive at the motives, decisions, and behaviors that are morally desirable given the context” (Earp et al. 2018, 169). Providing content to this thesis, we could specify that what is morally desirable given the current context would be that which would

allow us to take back the reins of technological development—more specifically, as we will see below, this has to do with rehabilitating our fear and imagination of the apocalyptic risks of technology, being able to confront those who consider us cowards because of our fear, to carry out concrete actions of resistance, and to cultivate love for future generations. This kind of agential approach has also been labeled as *indirect*, since “it focuses on improving the processes by which moral ideas, motives, and behaviors are generated” (Schaefer 2015, 274), rather than on directly implanting ideas and motives, or determining behaviors. As George Schaefer argues, indirect moral enhancement could point to two different aspects: improving moral reasoning and reducing *akrasia*. Concerning reasoning, he proposes an improvement in logical reasoning and conceptual understanding, as well as a reduction in biases. By reducing *akrasia* he mainly refers to the lessening of someone’s weakness of will, to conforming one’s will to one’s moral beliefs. The notion of an agent with a better moral understanding and a stronger will to act on his beliefs seems to fit within the rubric of moral enhancement in the *agential* or *indirect* sense—and it can also fit with the Andersian proposal to rehabilitate fear and imagination in the sense mentioned above. Thus, we will argue that the experience enabled by psychedelic drugs confers on the agent that kind of flexibility by presenting her with a new outlook on life and nature: the insights gained during the experience are regarded as valuable knowledge, and the deeply felt emotions leave a pervading imprint on the subject. Moral reasoning becomes improved not by means of a narrow boost in *rational* abilities, but by an improvement in imagination and feeling capacities. Drawing on the Andersian thesis that imagination is today’s perception—regarding technology-related challenges and threats, given their broad and unforeseeable scope—and considering that for moral reasoning to take place, a moral object to deliberate on must be represented and acknowledged—it seems plausible that the mind-expanding experience enabled by psychedelics could be of particular help in addressing technology-related threats.

#### *Not Only Drugs: Set, Setting, and Matrix*

The first thing to be highlighted about psychedelics is that they are better characterized as *tools*: their effects are not only attributable to the drug itself, but also to a series of extrapharmacological factors. In 1958, the World Health Organization defined psychedelics as nonspecific amplifiers—pointing to the fact that the same drug, in the same dose, in the same subject, produces different results depending on the subject’s interpersonal and motivational situation (Riedlinger and Montagne 2001, 265). This idea is still valid today: to account for the effects of psychedelic drugs it is necessary to attend to *set* and *setting*. As Timothy Leary, who popularized both terms in the 1960s, wrote:

The drug does not produce the transcendent experience. It merely acts as a chemical key—it opens the mind, frees the nervous system of its ordinary patterns and structures. The nature of the experience depends almost entirely on set and setting. Set denotes the preparation of the individual, including his personality structure and his mood at the time. Setting is physical—the weather, the room’s atmosphere; social—feelings of persons present towards one another; and cultural—prevailing views as to what is real. (Leary et al. [1964] 2008, 3)

Regarding setting, an important element has long been highlighted: music. According to Leary, when listening to music under the influence of psychedelics “unforgettable revelations about the nature of reality occur” (Leary et al. [1964] 2008, 47). Music is usually a key part in psychedelic sessions: it is believed to be useful in many aspects, from helping the subject enter more fully into her inner world of experience, to facilitating the release of intense emotionality and directing the experience (Bonny and Pahnke 1972). In this regard, it should be noted that besides pointing to mystical exercises, Anders also elaborated on music’s ability to dilate the soul. In an appendix titled “On the plasticity of feelings,” he reflected on the effects conferred by a Bruckner symphony in the emotions of its listeners, arguing that, like art, music has the ability to enlarge the soul and to create feelings that would not otherwise exist. When listening to music, the subject–object dichotomy is overcome—the soul having to enlarge itself to accommodate the artistic object (Anders [1956] 1961, 309–16). Recently, music’s importance to the quality of the psychedelic experience and its outcome has been supported by research: the results of an experiment aiming to correlate personality changes, brain dynamics, and the subjective experience under LSD indicated that “music helped to establish the kind of (entropic) brain dynamics that are required for the occurrence of profound and potential transformative psychological experiences” (Lebedev et al. 2016, 3211).

Regarding set, individual intentions also form a part of it and they are crucial to the outcome: intentions affect experiences during the session, and the intentions then acknowledged and affirmed affect long-term outcome (Metzner and Adamson 2001). Also, in considering long-term outcome one has to keep in mind a concept introduced by the psychedelic pioneer Betty Eisner, the concept of *matrix*, which does not strictly refer to the subject, but to the environment from which the subject comes and to which he or she returns (Eisner 1997). To obtain the best outcome, this environment has to be supportive and entertain personal change and growth—and we will see this is confirmed by recent research. In conclusion, in the psychedelic paradigm, drugs are only partially responsible for the outcome. This is far from yielding a reductionist explanation and that could be positive when considering issues regarding individual freedom, since the nature of a technique developed to improve

morality would not be deterministic, but mediated by self-reflection and reasoning. An applied mysticism would encompass three steps: preparation, experience, and integration. This high context-sensitivity helps in making the case for psychedelics as tools to enhance moral faculties: there's room for the experience to be directed toward that goal through the subject's intentions, expectations, and a supportive setting and matrix.

Proposing a method based on mysticism is somehow elusive because, among other reasons, being ineffable or hardly describable is one of the features of mystical experiences. Although giving a detailed account of the workings of the mystical consciousness is a difficult task, it does not prevent us from learning how to direct and integrate these experiences in order to orient them toward the goal we are striving for. To illustrate this, Anders uses a familiar case: when we dispose ourselves to undertake a great endeavor—or to accept a stroke of fate—we do not know exactly what it is that we are doing, but we realize that we have put something in motion inside of us. And, again, whether or not it works can be empirically established.

Where should we focus the application of mysticism? If we are seeking to put a remedy to our blind relationship with technology, following Anders's analysis, rehabilitating fear in the face of the more real than ever self-destructive consequences of our technological development is seen as a priority. To alleviate our blindness and expand our imagination is to understand the complexity and long-term implications of our actions, given this hyperglobalized world, and to learn to refrain from acting when we cannot correctly represent their consequences. In addition, to alleviate our blindness we must expand our soul so that it can harbor the imagination of *nothingness*—the possibility of ultimate destruction, of all life and the entire world, of every frame of reference—for *nothingness is the effect of not-imagined nothingness*: “we are capable of actually producing nothingness, we cannot surrender to the fact of our limited capacity of imagination: the attempt, at least, must be made to visualize nothingness” (Anders 1962, 496). In the same way that the religious carried out exercises to visualize the consequences of their actions, which would take him to heaven or hell in eternal life, Anders encourages us to exercise our imagination to apprehend what could be an apocalypse caused by technological excesses. These exercises could be valid both for apprehending the destruction caused by nuclear weapons, and the ecological collapse that climate change could lead us to—for which we all have some responsibility, although it is extremely complex to delineate and understand how our individual actions affect such processes globally. In general, it would be about reshaping our relationship with technology and nature, abandoning our faith in eternal progress and visualizing the possibility of an end. To have access to this point of view would be an improvement insofar as it would present us with

an object that otherwise seems to elude our moral faculties: “We must strive to increase the capacity and elasticity of our intellectual and emotional faculties, to match the incalculable increase of our productive and destructive powers. Only when these two aspects of man’s nature are properly balanced can there be responsibility, and moral action and counter-action” (Anders 1956, 153).

Despite the fact that there is no scientific literature specifically on the use of psychedelics as tools to improve our moral faculties in the sense meant by Anders, we suggest that the current literature already makes the hypothesis plausible, since there is solid evidence of psychedelics’ ability to trigger meaningful life-changing experiences, being valuable to improve moral imagination, and actually reshaping our relationship with nature. In the next sections, we review the scientific literature upon which this proposal is based. First, we review the evidence on the mystical nature of the psychedelic experience. Then, we turn to the evidence on the long-term effects of the experience.

#### CHEMICALLY ENABLED MYSTICISM

The first experiment designed to test the hypothesis that psychedelics can induce genuine mystical experiences given a supportive environment was the Marsh Chapel Experiment, more commonly known as the Good Friday Experiment (Pahnke 1963). In 1962, Walter N. Pahnke conducted this experiment as part of his PhD thesis, under the supervision of Timothy Leary and Richard Alpert. In his own words, “this dissertation was an empirical study designed to investigate the similarities and differences between experiences described by mystics and those enabled by psychedelic (mind-manifesting) drugs such as d-lysergic acid diethylamide (LSD), psilocybin, and mescaline” (Pahnke 1963, 9). Pahnke relied on different theoretical studies on mysticism to carry out his research, but as he himself noted the most influential work was that of Walter T. Stace (1960). The Good Friday Experiment was based on the presupposition that mystical experiences share some universal features, not restricted to any particular culture or religion—a thesis argued in Stace’s work. In this regard, Stace held that, although no pure experience exists, some phenomenological elements can be distinguished from its interpretation. He argued for a core of the mystical experience, not in an essentialist fashion, but in a Wittgensteinian way, having in mind family resemblances: no feature is regarded as essential, in the sense that no feature is shared by all mystical experiences, but they all resemble each other by sharing one or another feature. Stace was criticized by those who believed that all experiences are mediated by cultural factors, preventing experience to be isolated from personal interpretation and making it impossible to find a universal mystical core (Katz 1978). In response to such critiques, Stace held that the question was ultimately to be solved

on empirical grounds rather than by theoretical reflection—a disposition shared also by Pahnke.

Given the fact that at that time there were no rating scales or questionnaires developed to empirically assess mystical experiences, Pahnke had to design his own measurement instruments—and he did that by relying on the work of Stace, and also on William James's ([1902] 2012) and Evelyn Underhill's ([1911] 2002) work, among others. He delineated a phenomenological typology of mystical states of consciousness based on nine categories: (1) unity, (2) transcendence of time and space, (3) deeply felt positive mood, (4) sense of sacredness, (5) objectivity and reality, (6) paradoxicality, (7) alleged ineffability, (8) transiency, and (9) persisting positive changes in attitude and behavior.

On Good Friday, psilocybin was given to ten Christian theology students, while another ten students served as control subjects. All of them had been psychologically prepared to maximize confidence and positive expectation. During the drug session, they listened over speakers to a religious service held in the Marsh Chapel for two and a half hours. Results showed that “those subjects who received psilocybin experienced phenomena which were apparently indistinguishable from, if not identical with, certain categories defined by our typology of mysticism” (Pahnke 1963, 234). The six-month follow-up showed life-enriching effects similar to those described by mystics: the experience had made them appreciate more deeply the meaning of their lives and motivated changes such as being more sensitive to the needs of others and feeling more love toward others. One experimental subject claimed at the follow-up that the experience with psilocybin gave her an ability to enter “into experiences dealing with that beyond one’s usual consciousness” (Pahnke 1963, 205); and another experimental subject appreciated that psilocybin provided a recognition of the role of the mystical, but “this attitude seemed not as an escape from the world, rather giving me a greater sense of concern for the here and now” (Pahnke 1963, 205). This seems to be in line with immanent transcendence—in Anders’s terms—or applied mysticism—in Huxley’s words—where an expanded consciousness facilitates dealing with the affairs of this world.

Furthermore, more than twenty years later, Rick Doblin conducted a long-term follow-up on sixteen of the subjects who had participated in the experiment (Doblin 1991). Despite the passage of many years, the opinions of the subjects about their experiences had remained the same. All of the experimental subjects described their experience with psilocybin as having had elements of a genuine mystical nature and as being one of the high points of their spiritual life. Surprisingly, results from the experimental group were even better in this follow-up than in the six-month follow-up.

There is another aspect that is important to point out, as Doblin (1991, 22) well indicates in his follow-up, and that is that, despite the positive

results in general, one of the subjects of the experiment experienced a crisis and had to be administered the antipsychotic drug thiorazine. This case serves as a general warning: a not negligible percentage of the subjects who have participated in trials involving psychedelic drugs go through moments of anxiety and other undesirable effects, which can range from moderate to severe—minimizing the risk of these incidents is part of the scientific agenda, for example, by careful volunteer screening and preparation, and by providing interpersonal support during and after the experience (Johnson et al. 2008).

Since Pahnke's experiment, work in the empirical assessment of mystical experience has continued. Pahnke's questionnaire, now known as the Pahnke-Richards Mystical Experience Questionnaire (Pahnke and Richards 1966), has been modified and expanded over the years (Doblin 1991). A factor analysis has revealed a four-factor structure: (1) unity, noetic quality, sacredness; (2) positive mood; (3) transcendence of space/time; and (4) ineffability (MacLean et al. 2012). These factors encompass components highlighted by classical mysticism, as in James's *The Varieties of Religious Experience*.

Perhaps the most used instrument to comprehensively assess psychedelic experiences is the Altered States of Consciousness Questionnaire (Dittrich 1998). First developed by Adolf Dittrich under the name of "Aussergewöhnliche Psychische Zustände" (APZ), it aimed to test the hypothesis that ASCs have a common denominator regardless of their means of induction. Among the ASC-inducing agents, Dittrich considered hallucinogens of first order, such as LSD or mescaline; hallucinogens of second order, such as scopolamine or nitrous oxide; reduction of environmental stimulation, as in sensory deprivation or hypnosis; and increase of environmental stimulation, as in sensory bombardment. Also sleep deprivation, hyperventilation, and combinations of different techniques can induce ASCs. His experimental hypothesis was that an ASC phenomenological core—very similar to that argued by Stace—was to be found regardless of its etiology. Nevertheless, it does not prevent each inducing agent from having its own specific dimensions: for example, the clouding of consciousness produced by second-order hallucinogens.

The experimental hypothesis was tested in several studies, where it was found that "etiology-independent characteristics of ASCs form a structure of mutual similarities, which is maintained when ASCs are induced by different means" (Dittrich 1998, 81). ASCs are characterized as transient nonordinary waking states that deviate from the subjective experience or psychological functioning of normal individuals, involving an unusual experience of oneself, one's surroundings, time, and space. Studies have structured ASCs into five dimensions (5D-ASC): *oceanic boundlessness*, which describes a state similar to mystical experience; *dread of ego dissolution*, which indicates a very unpleasant state, similar to a

“bad trip”; *visionary restructuring*, pointing to visions, illusions, and synesthesias; *auditory alterations*, encompassing alterations in acoustic and auditory experiences; and *reduction of vigilance*, related to reduced alertness and cognition impairment (Dittrich et al. 2010). Evidence clearly reflects that, when given in a supportive environment, psychedelics produce high ratings in oceanic boundlessness, typical of profound experiences with mystical or transcendental features.

In recent years, after an important hiatus, two more major experiments have specifically assessed the ability of psilocybin to induce meaningful or mystical experiences. In the first one, conducted by Roland Griffiths and colleagues in 2006, psilocybin was administered to thirty-six hallucinogen-naïve adults who were at least intermittently engaged in religious or spiritual practice. Participants attended psychological counseling sessions to prepare them for the experience and to integrate it. Drug sessions took place in an aesthetic living room-like environment, where participants were encouraged to lie down on a couch, wearing an eye mask and listening to classical music through headphones. Methylphenidate was used as a control. Results showed that 61 percent of the participants had a “complete” mystical experience—that is, an experience scoring more than 60 percent in all of the scales designed to assess its mystical features. In the second study, also conducted by Griffiths and colleagues, in 2011, eighteen participants were randomized to receive four active doses (5, 10, 20, 30 mg/70 kg) in four individual sessions, and another session where they received a placebo. They were also psychologically prepared to undergo and integrate the experience. Overall, 72 percent of the volunteers had a “complete” mystical-type experience when administered either or both 20 and 30 mg/70 kg.

In the follow-ups of both studies, psilocybin was shown to have had significant effects—as a function of dose in the second study—in ratings of attitudes about life and self, mood, and prosocial altruistic behavior (Griffiths et al. 2008, 2011). In the first study, 67 percent of the participants considered the psilocybin experience either as the most meaningful experience in their lives or among the top five—comparable, for example, to the birth of a first child. In the second study, 61 percent of participants considered either or both the 20 and 30 mg/70 kg psilocybin experience as the single most spiritually significant of their lives; 83 percent rated it in their top five and considered that the psilocybin experience had increased their well-being, while 89 percent considered that their behavior had changed because of the experience.

Furthermore, Griffiths et al. also assessed in 2018 the effects of psilocybin while receiving support for spiritual practice. Seventy-five healthy participants were enrolled in a 6- to 8-month program where psilocybin was given to them on two occasions. Three groups were arranged: (1) very low-dose psilocybin (1 mg/kg, functionally a placebo) with standard support for spiritual practice; (2) high-dose (20 and 30 mg/70 kg) psilocybin with standard



support for spiritual practice; (3) high-dose (20 and 30 mg/70 kg) psilocybin with high support for spiritual practice. Overall, 4 percent, 61 percent, and 64 percent of the participants in each respective group had a “complete” mystical experience; 12 percent, 76 percent, and 96 percent, respectively, rated the experience among the top five most spiritual experiences of their lives. The group receiving high-dose psilocybin with high support scored significantly higher than the other two in their perceived meaning or purpose in life, interpersonal closeness, and altruistic behavior, among others. As we have pointed out in anterior sections, these results reflect the importance of the set, setting, and matrix: psychological preparation for the experience, an adequate integration of it, and the existence of a supportive environment are components with a high impact in the long-term outcome—thus supporting the claim that psychedelic drugs are mere tools or catalysts.

At this point, it seems difficult to question the ability of psychedelics to induce meaningful experiences whose effects can reach far into the future. Evidence indicates that some of their effects are phenomenologically indistinguishable from allegedly genuine mystical experiences. Therefore, following Stace’s *principle of causal indifference*, one should conclude that drug-enabled experiences are genuine mystical experiences:

If X has an alleged mystical experience P1 and Y has an alleged mystical experience P2, and if the phenomenological characteristics of P1 entirely resemble the phenomenological characteristics of P2 so far as can be ascertained from the descriptions given by X and Y, then the two experiences cannot be regarded as being of two different kinds—for example, it cannot be said that one is a “genuine” mystical experience while the other is not—merely because they arise from dissimilar causal conditions. (Stace 1960, 29)

Finally, before addressing the long-term effects of the psychedelic experience, we would like to turn for a moment to some anecdotal evidence on its nature and its relevance to the increase in moral imagination. Alexander Shulgin’s reports of his experiences with DOM (2,5-dimethoxy-4-methylamphetamine) and 2C-T-2 (2,5-dimethoxy-4-ethylthiophenethylamine) may be illustrative. In a qualitative comment on his experience with 3 mg of DOM, he wrote:

In the middle of the experience I found that I was able to separate components of complex things so as to evaluate them separately. There is no need to respect their normal purpose. The sharpness of observation is enhanced, but one can focus at every different depth of a thing or a concept. . . . A line of thought or a bit of personal history ties the thinker to the objects that had been thought of, or once experienced. It is this relationship that will prove productive. Not like in a movie which is circular in its totalness, but as in true life where the future is the result of your own involvement with everything about you. (Shulgin and Shulgin 1995, 639)

Likewise, about his experience with 12 mg of 2C-T-2—which he considers to be an excellent tool for introspection—he wrote:

I don't feel this for fully an hour, but when I do it is quite a weight. It feels good to work it through. It is OK to be with pain. You can't eliminate it. And it is OK to contact your deep pools of anger. . . . I am experiencing more deeply than ever before the importance of acknowledging and deeply honoring each human being. And I was able to go through and resolve some judgments with particular persons. (Shulgin and Shulgin 1995, 559)

In these reports we glimpse some important elements: (1) an improvement in the capacity to tackle complex objects, while being able to focus attention at different levels; (2) an increase in the depth and meaningfulness of the emotions felt; (3) an improvement in the sense of responsibility; and (4) an ability to apply the insights gained to the affairs of this world. All of these elements are valuable when it comes to outlining a self-transformation technique aimed at widening moral faculties—they are elements already identified as necessary to overcome moral blindness by several authors, pointing to an improvement of rational and emotional capacities, as well as volitional ones.

#### THE ENDURING EFFECTS OF THE PSYCHEDELIC EXPERIENCE

Now that we have shed light on the nature of the psychedelic experience, we can tackle its long-term effects. As already noted, we currently lack scientific studies specifically designed to assess the potential of psychedelics as part of a technique of applied mysticism to overcome moral blindness, but we can find some promising signs that seem to point in that direction. One of these signs points to the increase in the personality domain of *openness* after a profound psychedelic experience.

Openness is one of the five broad domains of personality structure according to the five-factor model (FFM) (Digman 1990, 199; McCrae and John 1992). The FFM—which is the most widely accepted model of personality structure (MacLean et al. 2011)—poses the existence of five broad domains of personality, each one encompassing several related traits: neuroticism, extraversion, openness, agreeableness, and conscientiousness (McCrae and Costa 1997). The dimension of openness—in which we are interested—encompasses six facets: fantasy, aesthetics, feelings, actions, ideas, and values. All of these facets are relevant to the kind of improvement that we are seeking—except for actions, which mostly refers to the engagement in new hobbies. Some sentences elaborated to assess these traits are: “I have a very active imagination” (fantasy), “I am intrigued by patterns I find in art and nature” (aesthetics), “I experience a wide range of emotions and feelings” (feelings), “I often enjoy playing with theories or abstract ideas” (ideas), and “I consider myself broad-minded and tolerant of other people's lifestyles” (values) (MacLean, Johnson, and Griffiths 2011).

Vivid imagination, aesthetic appreciation, predisposition for abstract ideas, a wide range of feelings, and broad tolerance are all elements that can help in expanding morality. Fantasy is crucial to our proposal, since a vivid imagination is required to gain access to the moral objects that by their excess elude our faculties; likewise, aesthetic appreciation is helpful in unraveling new outlooks, as we have seen in the case of music. Having a wide range of emotions and feelings also helps in the proper representation of moral objects and in responding to them in morally desirable ways. A positive predisposition to play with theories or abstract ideas is required given the complex nature of the moral challenges ahead of us. And, finally, tolerance also points to the ability to consider different points of view and value them. Remarkably, all of these traits have been found to improve after a profound psychedelic experience—which, by the way, is particularly outstanding because openness usually decreases with aging.

In 2011, a report combined data from two double-blind controlled studies with psilocybin mentioned above (Griffiths et al. 2006, 2011), in order to analyze changes in openness as well as in the other four broad personality domains using the Neo Personality Inventory (MacLean et al. 2011). Personality change was assessed in the midterm (1–2 months after a high psilocybin dose) and long-term (16 months after). The results showed that those who experienced a “complete” mystical experience significantly increased their ratings in openness—both after the experience and one year later—fantasy being the most enhanced trait. The enduring effects of the psychedelic experience on values and beliefs were also assessed by a cross-cultural naturalistic study, where psychedelic users scored significantly higher on mystical beliefs and concern for others (Lerner and Lyvers 2006).

Another experiment came to similar conclusions after testing the hypothesis that an increase in entropy of brain dynamics induced by LSD produces enduring consequences for openness (Lebedev et al. 2016). It found that the experience of ego dissolution—the experience of a disintegration of the sense of self or ego—is an indicator of subsequent personality change, positively correlating with increased ratings in the dimension of openness.

Openness has important consequences for a wide range of social behaviors and points to a fundamental way of approaching the world: open individuals are imaginative, curious, and tolerant, while closed individuals display behavioral rigidity, social conformity, and conventionality in moral reasoning (McCrae 1996). Open personality traits have been related to measures of intellectual abilities (Ackerman 2009), and they seem to be associated with cognitive flexibility and a predisposition to exploration (DeYoung et al. 2005)—which seem to be two valuable elements in the pursued widening of moral faculties. On the contrary, individuals with high “need for cognitive closure,” a particular form of closedness, often resist persuasion, since they are inclined to believe that they already have enough

information to make a decision (Webster and Kruglanski 1994)—which may work against overcoming moral blindness, given that acknowledging our own cognitive limitations is a requirement of it.

Openness has also been positively correlated with antiauthoritarian worldviews (Trapnell 1994) and liberal political orientation (McCrae 1996), acknowledging the relevance of psychological traits in political orientation and other complex social phenomena (Caprara and Vecchione 2009). Environmental engagement is also linked with openness (Milfont and Sibley 2012), since it is related to higher levels of empathy, connectedness with others, cognitive ability, and flexibility of thought.

In this regard, an experiment conducted to test psilocybin as a treatment for treatment-resistant depression found interesting effects in participants' beliefs and attitudes (Lyons and Carhart-Harris 2018). In this case, psilocybin was administered on two occasions, at 10 mg and 25 mg oral doses—after the necessary usual psychological preparation of participants. Measures were taken one week after the second drug session and also 7–12 months later, and the observed personality changes remained almost the same: nature relatedness (NR) was increased, while authoritarian political views were decreased.

An increase in NR is particularly remarkable when looking for a technique to improve awareness of technological threats, since a good number of them are related to the environment. NR is assessed by a self-report questionnaire designed to assess the affective, cognitive, and physical relationship between individuals and the natural world, encompassing one's appreciation for and understanding of our interconnectedness with all other living things on Earth (Nisbet et al. 2009). Among the items found in the questionnaire are the statements "I always think about how my actions affect the environment," "I am very aware of environmental issues," "Humans have the right to use natural resources any way we want" (negatively scored), and "Conservation is unnecessary because nature is strong enough to recover from any human impact" (negatively scored). Thus, an increase in NR is particularly valuable in dealing with the environmental challenges ahead of us.

Pointing in the same direction, a general population online study found that lifetime experience with classic psychedelics is a predictor of proenvironmental behavior (Forstmann and Sagioglou 2017). According to the study, the perception of being part of the natural world that is heightened by the psychedelic experience with mystical features is largely responsible for increased proenvironmental behavior. Similarly, an anonymous Internet survey investigating the association between lifetime naturalistic psychedelic use and political perspectives, NR, and the personality traits of openness and conscientiousness found that psychedelic use negatively predicted authoritarianism and positively predicted liberalism, NR, and openness (Nour et al. 2017). It was also found that the degree of ego

dissolution experienced during one's most intense psychedelic experience was a negative predictor of authoritarianism and a positive predictor of liberalism, NR, and openness. Likewise, a pooled analysis of experimental studies with psychedelics also found that 38 percent of 110 subjects reported a positive change in their relationship to nature, while 37 percent reported enhanced appreciation of art and music (Studerus et al. 2011).

Taking all this evidence together suggests that the changes in personality, behavior, and beliefs promoted by mystical-type psychedelic experiences point to the formation of a morally improved individual, better equipped to deal with different moral challenges.

### CONCLUSIONS

Throughout the article we have argued that, in addition to alterations in perception, the psychedelic experience can have marked mystical features if it is properly directed and takes place in a supportive environment. It is precisely this mystical quality that is responsible for both the benefits in the field of mental health and the short-term and long-term changes that we have identified as morally desirable. The fact that psychedelic drugs are capable of enabling such experiences makes them valuable tools for Huxley's applied mysticism and Anders's immanent transcendence.

Building on an anthropological account according to which human beings are affected by an apocalyptic blindness—marked by a blind relationship with technique—we have suggested that an applied mysticism could revolve around harnessing the visionary power of these drugs in order to overcome such a blindness. This proposal is framed within what has been called an agential or indirect approach to moral enhancement, since it pursues the emergence of a better equipped agent to deal with moral challenges. Although the available scientific evidence is far from conclusive, it is nevertheless promising, as it could indicate that, in an appropriate context, the experiences enabled by psychedelic drugs could foster the emergence of this better equipped agent, through the changes elicited in the personality domain openness. This domain encompasses facets that have been deemed relevant to morality: fantasy, aesthetics, feelings, ideas, and values. In addition to that, the changes measured by the construct NR are also remarkable, considering the environmental risks posed by technology. However, because of the very nature of the psychedelic method—and even more so if we want to safeguard individual freedom—this approach can never be direct, because of the space left by the set and the setting in the conformation of the experience, and also because of the matrix and the personal integration of the experience. We can, however, learn to manage the experience and to achieve a positive integration—in the same way that is being done in the field of mental health, where much has been learned in recent decades. Therefore, the proposed method will not have the robustness

or guarantees of other types of direct intervention, but precisely because of this, in our view, it will also be less susceptible to the ethical problems that arise around self-determination and authenticity, among others—yet we should not lose sight of the unpredictable dangers to which this technique could lead us, as Huxley already showed us in his dystopian writings.

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#### NOTE

1. In this regard—and we are grateful to the referees for their emphasis on and references to the ethical issues that these kinds of proposals entail—it should be noted that there is currently a debate on the very desirability of this type of intervention for moral enhancement, on whether enhancement is an imperative, and even on whether it would be feasible. Interested readers can consult Specker et al. (2014), which contains a summary of the central arguments for and against moral enhancement. As one can see, this article revolves around arguments that consider that (1) human nature is defective in this context of technological development; (2) traditional means, such as education, are not sufficient—although this does not imply that they are not needed; and (3) moral enhancement would open a way to avoid great harm or major disasters. In our view, the most relevant arguments and criticisms that applied mysticism would face—although it may be susceptible to others—are to be found in (1) those directed at the possibility of unintended or unforeseen effects and (2) those related to the endangerment of freedom, self-determination, and individual identity.

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