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POLITICAL NEUROTHEOLOGY: EMERGENCE AND REVIVAL
OF A PSYCHEDELIC ALTERNATIVE TO COSMETIC PSYCHOPHARMACOLOGY

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The prominent role of the neurosciences in contemporary society is closely tied to the widespread discussion and consumption of psychoactive drugs. Personal drug experiences of millions of users of licit and illicit substances have powerfully facilitated the internalization of neuroscientific knowledge. Mediated by popularizations of brain science these experiences teach consumers what it feels like to elevate their serotonin level or to stimulate the dopamine system. Especially since the "psychopharmacological revolution" of the 1950s, the growing consumption of drugs has shifted the otherwise abstract philosophical doctrine of mind-brain identity into the realm of everyday life. Thus the neurohype since the 1990s, the so-called "Decade of the Brain," can partly be explained by the increasing sales and the corresponding ethical problematization of psychopharmaceuticals such as Prozac or Ritalin (Rose, 2007: 209-215).

This problematization was not limited to the assessment of adverse drug reactions and other medical risks, but was also cast in ethical, spiritual, and religious terms: Is the use of cognitive enhancers such as Ritalin fair? Is Prozac good for the soul? Do antidepressants make us happy or alienated? Is suffering a medical condition or an essential dimension of our existence that we need to take on instead of treating it with drugs? And does the biotechnological manipulation of human life not amount to "playing God"? This heated debate over the use and abuse of psychopharmaceuticals has reassembled science, politics, and religion as three domains separated by the grand narratives, but not by the lifeworlds of modernity.

The public image of contemporary drug culture has been one-sidedly informed by comparisons with Aldous Huxley's early dystopian novel *Brave New World* (1932). Even in positive accounts (e.g., Greely et al., 2008) the emphasis is usually on self-optimization for the sake of performance and efficiency in a disciplinary society rather than the good life. This chapter aims at complicating the picture of neuropsychopharmacology in society by recounting the story of psychedelic drugs. Their applications have often been inspired by a very different novel of the same author: the late Huxley's utopia *Island* (1962).

Neither hallucinogens nor *Island* have received much attention in the current bio-ethical debate. After their prohibition in the late 1960s and the waning of the counterculture, psychedelics gradually slipped out of public consciousness while other classes of drugs, especially stimulants (cocaine, methamphetamine, Ritalin) and antidepressants (Prozac) took center stage. Since the "Decade of the Brain," however, psychedelic drugs have experienced a quiet comeback in the neurosciences and psy-

chiatric medicine. This has also led to a renewal of the *Island*-inspired drug mysticism at the heart of the *Kulturkampf*, which had led to the drugs's illegalization.

The chapter examines the emergence and transformation of the "political neurotheology" underlying this conflict. The term associates the concept of political theology, i.e., the analysis of the religious underpinning of politics (here: drug policy), and the concept of neurotheology, first introduced in Huxley's *Island* as the science of the relationship between physiology and spirituality. Captioned with the composite political neurotheology, this paper provides an inquiry into the politics of neuropsychopharmacologically induced religious experiences. Thereby, it contributes to a genealogy of contemporary neurotheology and illuminates a neglected aspect of the Huxleyan matrix, which, from the sixties until today, has served to frame, problematize, and make sense of drug use in both mainstream society and the psychedelic counterculture in the United States. In conclusion, the chapter will point to an alternative psychopharmacology that does not reduce drug experiences to neurochemistry, but situates them in a more complex socio-cultural context.

Dystopian (Mis-)Readings of the Present

In 1932, the British writer Aldous Huxley published the negative utopia *Brave New World* describing a totalitarian social order preventing political unrest by controlling its subjects's brain chemistry making them content with their docile condition. For this purpose, citizens are urged to use the fictive drug *soma*. The effects of *soma* are supposed to vary with dosage: from producing euphoria (like stimulants) and hallucinations (like hallucinogens) to calm and sleep (like sedatives). Consumption of the drug does not cause bodily harm. But it lulls the citizens of *Brave New World* into a false sense of happiness and imprisons them in a gilded cage. Huxley remarked:

Religion, Karl Marx declared, is the opium of the people. In the *Brave New World* this situation was reversed. Opium, or rather *soma*, was the people's religion. Like religion, the drug had power to console and compensate, it called visions of another, better world, it offered hope, strengthened faith and pomoted charity. (Huxley, 1959: 100)

Among the most prominent and politically influential readers of Huxley's novel are Leon Kass and Francis Fukuyama. During the presidency of George W. Bush, from 2002 to 2005, the conservative physician and public intellectual Kass served as Chair of the President's Council on Bioethics. The philosopher and political economist Fukuyama was also a member of this advisory body. Both Kass (2002, 2008b) and Fukuyama (2002) have presented *Brave New World* as a mirror of current biopolitical developments. They are particularly worried that the most recent advances of biotechnology – from genetic engineering to brain implants and from cloning to neuropsychopharmacology – will seduce us to lead shallow dehumanized lives devoid of dignity. This concern guided their calls for strict political regulation of the life sciences and their applications.

In Kass's and Fukuyama's readings of Huxley, two peculiarities are striking. First of all, both ignore the fact that *Brave New World* describes a totalitarian system. They present the novel as a mirror of bioethical developments in liberal democracies. Unlike Huxley, they do not warn against the emergence of a particularly perfidious regime of mind control by the state, but against the temptations of new technologies (Fukuyama, 2002: 5-6; Kass, 2002: 9; Morgan et al., 2005). The citizens of Kass's and Fukuyama's *Brave New Worlds* resemble present-day Americans applying "cosmetic psychopharmacology" in their "pursuit of happiness." In 1776, the United States Declaration of Independence defined the latter as an inalienable right of man. In Kass's view, however, secularization and pluralism have since corrupted the liberal principles at the heart of America's political identity (Kass, 2002: 13). In this world of mere appearances, cognitive performance is improved by Ritalin, but the results are not the subject's own achievements. Prozac makes people feel "better than well," but their happiness is false, and so on. Therefore, Kass and Fukuyama are convinced that non-therapeutic uses of psychopharmaceuticals cannot contribute to and may even impede a flourishing life.

Following the philosopher Michael Sandel (2002), another member of the President's Council, the practicing Jew Kass (2003, 2008a) advocates the development of a "religious sensibility" resonating "beyond religion" that acknowledges the giftedness of life. "[R]espect for a being created in God's image means respecting everything about him, not just his freedom or his reason but also his blood," Kass (2002: 21) writes. Any attempt to overcome the limits and burdens which God or nature have imposed on the individual entails a loss of humanity and human dignity. Human nature is to be protected against its biotechnological transgression and deformation. Consequently, non-medical interventions into body and mind lead us onto a slippery slope to Huxley's dehumanized *Brave New World* (as understood by Kass and Fukuyama).

The Failed Realization of a Utopian Drug Culture

The second peculiarity in Kass's and Fukuyama's frequent references to Huxley's work is their omission of the fact that Huxley had not only written a dystopian, but also a utopian novel in which drug use figures equally large.¹ *Island* was published in 1962, thirty years after *Brave New World*. In contrast to Huxley's earlier book, *Island* presents a spatialized, not a temporalized utopia (Koselleck, 2002). It conjures up a contemporary alternative rather than a foreshadowing of socio-technical developments to come, located on a remote island rather than in a distant future. Thereby Huxley suggested that, in principle, the paradisaical Buddhist society of

1 In Kass's case, this omission appears particularly striking when taking into account that he has been dealing with Huxley's work extensively ever since the 1970s. See the essays collected in Kass's *Toward a More Natural Science* (1985).

Pala described in the novel was already possible without any science fiction technologies. The islander's use of the drug moksha for spiritual purposes was modelled on Huxley's own experiences with the hallucinogens mescaline and LSD as described in his essays *The Doors of Perception* (1954) and *Heaven and Hell* (1956). Unlike soma, moksha neither serves escapism nor does it rob its users's lives of authenticity.

Quite the contrary. In an initiation ceremony, the drug is administered to young people with the goal of "ceasing to be what you ignorantly think you are and becoming what you are in fact," as one inhabitant of Pala puts it (Huxley, 1962: 173). The insights gained under the influence of the drug help them to obtain true happiness. Whereas the superficial cheerfulness induced by soma is the outcome of a "holiday from the facts" (Huxley, 1932: 280), a purely subjective sense of happiness ignoring the subject's actual situation of repression and alienation in the *Brave New World*, the happiness and the insights provided by moksha are presented as real. Their reality consists in a correspondance with both the paradisiacal social life described in *Island* as well as with a spiritual reality transcending individual psychology. A Palanese explains to the European protagonist of the novel that his people do not dismiss their drug experiences as mere hallucinations because they presuppose a different neurology:

You're assuming that the brain produces consciousness. I'm assuming that it transmits consciousness. . . . You say that the moksha-medicine does something to the silent areas of the brain which causes them to produce a set of subjective events to which people have given the name "mystical experience." I say that the moksha-medicine does something to the silent areas of the brain which opens some kind of neurological sluice and so allows a larger volume of Mind with a large "M" to flow into your mind with a small "m". (Huxley, 1962: 140-141)

Moksha does not provide quick fixes. Instead the drug initiates a lasting spiritual transformation. To be effective it does not have to be taken continuously like soma. The Palanese use the drug once or twice a year. But the resulting mystical experiences of unity with the cosmic mind and boundless compassion pervade their whole worldview and way of life.

In the course of the 1960s, Huxley's novel became one of the most influential books in the so-called counterculture – a utopian blueprint for a psychedelically enlightened society (Stevens, 1987: 184). Especially among the hippies, *Island* inspired a drug culture differing sharply from the use of drugs in "the Establishment." After the "psychopharmacological revolution" of the 1950s, the consumption of performance-enhancing and euphoriant amphetamines and tranquilizers alleviating anxiety spread rapidly in the American population. The anxiolytic Miltown, for example, first helped businessmen to cope with job-related stress and then soothed exhausted housewives (Pieters and Snelders, 2007; Rasmussen, 2008; Tone, 2007). The non-therapeutic employments of psychopharmaceuticals by the white middle class can be described as cognitive enhancement and cosmetic psychopharmacol-

ogy *avant la lettre*. When the hippie movement emerged in the mid sixties they rebelled against the lifestyle of these "plastic people," including their use of drugs to improve professional efficiency and to stabilize bourgeois family life (Miller, 1991: 23-50).

Ironically, central elements of the hippies's social critique have also entered into the discourse of conservative bioethicists such as Leon Kass. Both Kass and the hippies reject an alleged dehumanization pervading technological society in general and express contempt for middle-class drug use for the purpose of self-optimization. Like the youthful rebels of the sixties, the self-identified "old-fashioned humanist" defends the notion of an authentic human existence (Kass, 2002: 3-4, 15-17, 2008a; Miller, 1991: 30). In *The Making of a Counter Culture*, the radical historian Theodore Roszak described the movement named after his book primarily as an opposition to "technocratic society." As a sympathetic observer, Roszak (1968: xiii) adopted this anti-modern concern and predicted: "If the resistance of the counter culture fails, I think there will be nothing in store for us but what anti-utopians like Huxley and Orwell have forecast." Likewise, Kass identifies technology as the greatest problem of modern society and warns against its dehumanizing powers, which, especially when used to intervene in the human body and mind, will make Huxley's dystopian vision come true (Kass, 2002: 29-53).

But, despite their convergent diagnoses, Kass and the flower children could not have differed more profoundly on how to prevent their debauched American society from sliding down the slippery slope toward the realization of *Brave New World*. Whereas Kass (2002: 277-297) sees the solution in a restrictive biopolitics guarding the natural limits of humanness against their biotechnological transgression, the hippies put their hopes on overcoming the confines of the human mind with the help of consciousness-expanding drugs. Unlike Kass, the hippies did not conceive of human nature as an unchanging moral landmark, but as a vast realm of unexplored spiritual potential. Even though they were against pharmacological self-optimization for the sake of the "growling machinery" of capitalism they did not object to facilitate human flourishing as a realization of novel and more fulfilling forms of life with the help of drugs (Miller, 1991: 34-50).²

Just like the "straight" majority of white middle-class Americans the hippies were children of the psychopharmacological revolution, which had not only produced Miltown, but also LSD. They, too, believed in the power of drugs. Like their prim and proper fellow citizens they distinguished between good drugs and bad drugs – except that they largely reversed the psychopharmacological order of things. Alcohol, legally available stimulants, and sleeping pills were conceived of as bad

2 The distinction between technical optimization (as a maximization of existing capacities for the purpose of personal or instrumental gains) and flourishing (as a pursuit of the good life that does not presuppose that human capacities are already known in advance) has been borrowed from Paul Rabinow and Gaymon Bennett (forthcoming).

drugs. Especially the so-called heads propagating contemplative mind-expansion also disapproved of the use of heroin and stimulants (the former being popular among veterans of the fiercely rejected Vietnam War; the latter among the so-called freaks, i.e., hippies more interested in hedonistic kicks than in spiritual insights). Although illegal, these bad substances allegedly only enabled their consumers to bear “cheap, neon, plastic, ugly Amerika” (quoted in Miller, 1991: 46). The good drugs collectively referred to as “dope” comprised marijuana and hallucinogens. They were meant to give rise to authenticity, human warmth, and a spiritual life. This put them at the center of a counterculture modeled on *Island* rather than *Brave New World* (Davis and Munoz, 1968; Miller, 1991: 25-27, 45-47).

It was no accident that the interpretation of the effects of hallucinogenic drugs that became prevalent in the course of the sixties was highly reminiscent of the fictive drug *moksha*. *Island* had been inspired by Huxley’s self-experimentation with LSD and mescaline since the 1950s. When the hippies came to call these substances and a whole aesthetics “psychedelic,” they adopted a term originally coined in a correspondence between Huxley and the psychiatrist Humphry Osmond (Huxley, 1980: 107). Intellectually, psychedelia had been prefigured by Huxley’s literary work.

With the neologism “psychedelic” Huxley and Osmond turned away from an older medical terminology referring to LSD and Co. as “hallucinogenic” (producing hallucinations) or “psychotomimetic” (mimicking psychosis). In psychiatric research, hallucinogen intoxications had been used as a model of schizophrenia since the 1920s – initially to allow physicians to experience and phenomenologically explore their patients’s condition at first hand, later to study the biochemistry of psychosis (Beringer, 1927; Langlitz, 2006). “Psychedelic,” on the other hand, meant mind-manifesting. But what was to be revealed was not only the mind of an individual (as in hallucinogen-facilitated “psycholytic therapy” practiced by some European psychoanalysts). Huxley (1954: 26) was convinced that psychedelic drugs opened a “cerebral reducing valve” usually filtering out all sensory stimuli that were irrelevant for biological survival. Its pharmacological disruption enabled human beings to gain access to a stream of cosmic consciousness exceeding their own by far.

This image of man as a being whose biological makeup normally blinds him to the true nature of the universe did not lead Osmond and Huxley to deny a nexus between hallucinogenic drug action and psychosis. “The schizophrenic is like a man permanently under the influence of mescaline, and therefore unable to shut off the experience of a reality which he is not holy enough to live with,” Huxley (1954: 56) contended. In contrast, most people taking the drug only experienced the “heavenly part of schizophrenia” catching a glimpse of the “paradise of cleansed perception, of pure one-sided contemplation” for usually bearable eight to ten hours (*ib.*: 54). This reconfiguration of humans as spiritual animals continues to subject

them to the logic of the normal and the pathological. But in a deeply meaningful cosmos the experiences induced by hallucinogens and mental illness are simultaneously dysfunctional and revelatory disclosing the world as it really is: exhilarating and overwhelming, awe-inspiring and terrifying. As psychedelics these drugs were understood to uncloak “the burning brightness of unmitigated Reality” (*ib.*: 56). Like William James (1902) before him, Huxley transvalued the 19th-century topos of religious experience as mental disorder into the notion of mental disorder as religious experience.

Such a psychology geared toward transcendence (looking for the supra- rather than the subconconscious) soon became a key element of the Human Potential Movement concentrated on the East and West coasts of the United States, especially in the San Francisco Bay Area. Members of this movement sought to liberate the mind from the oppressiveness of culture and to develop the almost infinite and so far unexplored capacities of human beings through a whole range of technologies of the self (Stone, 1976). In this context, hallucinogenic drugs were frequently used for the purpose of “consciousness expansion” and spiritual self-improvement.

Neurotheology and Culture-controlled Trials

To study the relationship between physiology and spirituality the inhabitants of Huxley’s *Island* (94, 144) established a scientific discipline called “neurotheology”. It is in this work of fiction that the term was coined in 1962 (Horgan, 2003: 74). Considering that the academic discipline of theology traditionally studies and elaborates a rational system of religious beliefs it is debatable whether the biological investigation of spiritual experiences is aptly characterized as neurotheology. But, since this is the way in which this actors’s category has been used ever since, the present chapter adopts the concept of neurotheology to describe this emergent discourse instead of replacing it by the possibly more appropriate designation “neurospirituality.”

Huxley’s utopian conception of neurotheology was almost immediately translated into experimental practice. The Harvard psychology professor Timothy Leary (1970: 13-14) interpreted his own first hallucinogen experience in 1960 as “the deepest religious experience of my life.” The conversion, which he subsequently underwent, led him to study “the revelatory potentialities of the human nervous system.” Following William James’s (1902: 298-299) association of drug-induced mind states and divine illumination, Leary and his doctoral student Walter Pahnke administered psilocybin, the psychoactive ingredient of “magic mushrooms,” to twenty theology students attending the Good Friday sermon at Boston University’s Marsh Chapel. Subsequently, they compared the participants’s experience reports with experiences described in the mystical literature and concluded that hallucinogens could facilitate genuine mystical experiences (Pahnke and Richards, 1966).

But Leary and his coworkers (1964: 11) emphasized: "Of course, 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." The term set referred to the subject's mind-set, his expectations, and psychological predisposition at the time of drug ingestion. Setting, on the other hand, included the physical space, social relations, and atmosphere, in which a drug was taken. Accordingly, the mystical experiences elicited in Pahnke's experiment were not only due to the neuropharmacological properties of psilocybin, but also a result of the church service and the subjects's religious bent of mind.

The claim that the effects of hallucinogenic drugs could not be explained in neurochemical terms alone, but had to be looked at in the socio-cultural context of drug use had first been put forward by the anthropologist Anthony Wallace in 1959. Wallace studied Native American cultures. At the time, however, he served as Director of Clinical Research at the Eastern Pennsylvania Psychiatric Institute overseeing research with hallucinogenic drugs. He noticed that the experience reports from the laboratory and the accounts of Indians who had ingested the hallucinogenic peyote cactus in religious rituals were significantly different. Whereas Whites were reported to experience extreme mood shifts, Indians initially maintained a relative stability of mood followed by religious anxiety and enthusiasm and, finally, personal satisfaction when achieving a vision. White test persons suffered from a breakdown of social inhibitions and started to behave inappropriately while Native American peyotists displayed proper behavior. Experimental subjects often felt threatened by a loss of contact with reality while Indians welcomed feelings of contact with a new, more meaningful, and higher order of reality prefigured in doctrinal knowledge and implying more, rather than less social participation, and so on. Accordingly, Wallace (1959) postulated that the experiences induced by hallucinogens – and presumably by all psychoactive drugs – were molded by psychological, social, cultural, and environmental factors. At a time when placebo-controlled studies were only beginning to be established as the gold standard of pharmacological research Wallace suggested to supplement placebo-controlled studies by "cultural and situational controls." In such culture-controlled trials, what varied was not the substance, but the surrounding experimental space, social interactions with laboratory staff, the test subject's expectations, her cultural background, etc. The goal was to come to a better understanding of the impact of these non-pharmacological factors on drug action.

Whereas placebo-controlled trials won out, Wallace's suggestion never really caught on – presumably because it conflicted with a number of scientific, political, and economic interests to be analyzed elsewhere. The psychopharmacologist and historian of science Richard DeGrandpre (2006) coined the term pharmacologicalism to describe the prevailing view of drug action as solely determined by the neurochemical properties of a substance. The fact that not only Leary, but many

scientists studying hallucinogenic drugs were convinced that set and setting were crucial determinants of the drugs's effects made their research controversial from the start. Effects observed in therapeutic applications could often not be reproduced under rigidly controlled experimental conditions. Whereas many psychedelic researchers attributed this variability to a drug-induced increase in sensitivity to environmental influences their critics called into question the scientificity of their observations (Dyck, 2008: 73-77). This scientific opposition to psychedelic research already arose in the late 1950s – that is, several years before the hippies appeared on the scene and before hallucinogenic drugs became a bone of contention between counterculture and Establishment.

Drug Mysticism vs. Pharmacological Calvinism

But this clash of cultures was to follow soon. In 1963, Leary decided that he was "through playing the science game" and left Harvard (Stevens, 1987: 189). Acting on the religious interpretation of his own hallucinogen experiences, he began to fashion himself as the prophet of a pharmacologically revitalized religious movement (Leary, 1968). "Drugs are the religion of the twenty-first century," Leary (1970: 44) announced. He propagated hallucinogens as a psychopharmacological cure for all social ills:

It seemed to us that wars, class conflicts, racial tensions, economic exploitation, religious strife, ignorance, and prejudice were all caused by narrow social conditioning. Political problems were manifestations of psychological problems, which at bottom seemed to be neurological-hormonal-chemical. If we could help people plug into the empathy circuits of the brain, then positive social change could occur. (Leary, 1983: 49-50)

This optimism resonated with the high hopes inspired by the psychopharmacological revolution of the 1950s. A decade or two earlier, drugs had hardly been accepted as remedies of mental disorders. But since the mid 1950s, Americans had grown convinced that no illness was beyond the capacities of pharmaceutical science (Tone, 2007). Leary took this new confidence in biological psychiatry one step further, from the clinic to society at large, which he declared a suitable target of pharmacotherapeutic intervention. Moving from scientific detachment to social activism, Leary (1983: 50) plotted a "neurological revolution:" "Bolshevik bomb throwing was out. The new bombs were neurological. You don't blow up the Czar's palace. You blow minds" (quoted in Greenfield, 2006: 333).

The rhetorics of Leary's "politics of ecstasy" were radical and new. New because of the abundance of brain metaphors and neuro-prefixes. They might appear less striking against the background of the current hype around the neurosciences. But when Leary invented this vocabulary he was among the first to introduce such loose brain talk into popular discourse. His biologizing manifestos and sermons were also radical in that they advocated the liberation of people's "divine bodies" from a repressive "robot society" (Leary, 1965: 141). Consciousness-expanding drugs

were meant to facilitate the “opening” of the cortex and its “liberation from the cultural self” (Leary, 1965: 69, 93).

Despite this neurotheological agitation, Leary’s agenda was almost apolitical. He followed the worldview underlying Huxley’s utopia *Island* that all evils were the product of imperfect social relations and not of human nature. Leary’s anthropological optimism was – like Huxley’s – religious, not political assuming that even within a bad society happiness was possible by turning inwards and seeking mystical revelations (Meckier, 1978). “The choice is between being rebellious and being religious,” Leary declared. “Don’t vote. Don’t politic. Don’t petition. You can’t do anything about America politically” (quoted in Greenfield, 2006: 303; Leary, 1965: 6). He was convinced that militant opposition as practiced by student activists (whom he dismissed as “young men with menopausal minds”) only led to further subjection to the alienating and oppressive “games” of society. He told an audience in San Francisco: “My advice to people in America today is as follows: If you take the game of life seriously, if you take your nervous system seriously, if you take the energy process seriously, you must turn on, tune in, and drop out.” (Leary, 1965: 133) And taking LSD – short for “Let the State Desinegrate!” – appeared to be the fastest way of reaching this goal. Like early Christians, Leary invoked spiritual transcendence to distance himself from and passively resist the political powers that be (Adam, 2006). Of course, this kind of theology represented a political stance of its own right.

In the United States, the political turbulences of the 1960s went hand in hand with a far-reaching reconfiguration of the religious landscape. This decade marked the beginning of the so-called fourth great awakening in American history. In contrast to the previous three revitalizations of religious life dominated by asceticism and subordination to biblical authority, this still ongoing revival has been described as a turn toward unusual experiences taken as instances of direct and personal contact with the divine. It affected mainline churches and gave rise to contemporary evangelical movements. But it also led to the emergence of alternative forms of spirituality syncretically combining the appreciation of Eastern religious thought, a rediscovery of natural rather than revealed religion, and the mystical illuminations induced by psychedelic drugs (Fuller, 2000: 84-89; Luhrmann, 2005; McLoughlin, 1978: 179-216).

This transformation did not fail to provoke opposition. The mixture of “psychotropic hedonism” and “instant mysticism” associated with the use of hallucinogens conflicted with the widespread attitude of “pharmacological Calvinism” rejecting the use of drugs to achieve pleasure or enlightenment. The term pharmacological Calvinism was coined in 1972 by the psychopharmacologist Gerald Klerman (1972). Since the 19th century, Calvinism had come to be associated with “un-American” tendencies such as the oppression of freedom of thought, religious intolerance, fatalism, etc. (Davis, 1996). Thus Klerman’s use of the term pharmacological Calvinism was not purely analytic, but also served a polemical purpose. He

criticized the under-prescription of psychiatric drugs by physicians and psychotherapists relying solely on the therapeutic effects of verbal insight (Healy, 1997: 226-231; 1998: 535; Klerman, 1972). Even though biological psychiatry was already on the rise and pharmacotherapy was quickly gaining support, Klerman identified the youth culture of the early 1970s as the most serious challenge to Puritan reservations about drugs.

It seems questionable whether the moral rejection of medical and non-medical drug applications can be accurately described as Calvinist. But this label is suitable for conceptualizing the opposition to drug mysticism insofar as Calvin was convinced that spiritual experiences were illusionary: faith was not to be proven by mere feelings, but through “good works” (Weber, 1904-5: 114). The this-worldly orientation of Calvinism entailed a spiritual dignification of mundane activities including the pursuit of economic gain, which, according to Max Weber’s famous thesis, eventually inspired the development of capitalism. Pharmacological Calvinism is part of the Protestant work ethic of capitalism in that it rejects drug use to experience pleasure or religious ecstasy while advocating more industrious routes to a salvation.

The opposition of pharmacological Calvinism and psychedelic pharmacospirituality mirrors Weber’s distinction between two ideal-types of religious ethic: asceticism and mysticism. The asceticism characteristic of the Protestant ethic has played a particularly important role in the formation of American capitalism. Through work it seeks to master the original depravity of man transforming the quest for salvation into a worldly business. Mysticism, on the other hand, aims at contemplation and ecstasy. Progress in the inner life requires detachment from narrow materialistic pursuits. Following Weber, it cultivates a “world-denying love” at odds with the unbrotherly spirit of capitalism. Mysticism conceives of the hustle and bustle of working life not as the way to heaven, but as a soteriological obstacle. The contrast to the asceticism of the Protestant work ethic could not be any starker (Bellah, 1999; Weber, 1917).

Already in the 1960s, sociologically informed observers and self-reflexive members of the American counterculture described drug mysticism against the background of Weber’s work. For example, the Stanford psychologist Richard Blum (1964: 283) noted: “For the user [of LSD] who does move in the direction of contemplative mysticism, there is a fleeing from the world and the re-establishment of the ethic of brotherhood, symbolized in becoming more loving.” And the countercultural activist Jerry Rubin explained: “Drug use signifies the total end of the Protestant ethic: screw work, we want to know ourselves. But of course the goal is to free oneself from American society’s sick notion of work, success, reward, and status and to find oneself through one’s own discipline, hard work, and introspection” (quoted in Jonnes, 1996: 239). This blend of drug mysticism and the desire for self-knowledge was articulated in opposition to the Protestant spirit of capitalism (Davis and Munoz, 1968).

Representatives of the psychedelic movement presented their conflict with the so-called Establishment as a fight over religious values. This framing enabled them to defend the use of "sacramental biochemicals like LSD" (Leary, 1970: 18) by claiming their constitutional right of religious liberty. In a Senate hearing, one of them even warned against a "religious civil war" that would break out if Leary were arrested for drug possession (Greenfield, 2006: 274). In the course of the 1960s, the struggle over hallucinogens became a political struggle over the spiritual foundations of America's social and economic order. Soon Leary's political neurotheology became so influential that the Nixon administration came to see him as public enemy number one in its "War on Drugs" – even though the opponents of the counterculture preferred to present the situation as a moral threat and a public health crisis rather than a religious conflict (Davenport-Hines, 2002: 265; Greenfield, 2006: 343).

The attribution of a political neurotheology to Leary and the psychedelic movement does not only evoke the late Huxley's sense of biospirituality, but also Carl Schmitt's *Political Theology*, originally published in 1922. Of course, politically and theologically, the far right catholic jurist from Germany and the libertarian high priest of the American psychedelic movement could not have been further apart. Schmitt's famous dictum that "all significant concepts of the modern theory of the state are secularized theological concepts" (*ib.*: 36) led him to embrace authoritarianism. In his eyes, Hitler restored a dimension of political transcendence by reoccupying a position of sovereignty above the law – analogous to the omnipotent God of theist theology.

Leary, on the other hand, drew from an anti-statist tradition equally inherent in Christianity. Here, God did not appear as celestial king throning in heaven. Instead of identifying Him with a position in a symbolic system ordering the social-political world, Leary (2001) proclaimed: "Your brain is God!" The divine was to be found as inner experience and psychedelics served as chemical keys to this God within: "Religion is consciousness expansion, centered in the body and defined exactly the way it sounds best to you." (Leary, 1965: 9) Antithetical to Schmitt's authoritarian politico-theological order, Leary (1965: 7) called for anarchist drug mysticism: "You must start your own religion. You're God – but only you can discover and nurture your divinity. No one can start your religion for you." This was both spiritual and legal advice followed by numerous "dope churches" quoting the freedom of religion to defend their use of illicit drugs (Leary, 1965: 12-15; Miller, 1991: 31-34).

But only members of the Native American Church were granted the right to use peyote for religious purposes (Fuller, 2000: 45-46, 177-190; Stewart, 1987: 213-238). The spreading consumption of hallucinogens among white middle-class youth, a growing number of drug-related accidents, and their scandalization in the media resulted in the gradual illegalization of hallucinogens between 1966 and 1970. Although their scientific investigation was not directly prohibited, a subtle microphysics of power also led to an almost total breakdown of hallucinogen research (Langlitz, forthcoming). Consequently, the utopian visions of an alternative

drug culture, which Huxley's novel *Island* had inspired at the beginning of the decade, were shattered.

Psychedelia since the "Decade of the Brain"

It took about twenty years until a second attempt was made to integrate hallucinogenic drugs into Euro-American culture. In 1986, the psychedelic entrepreneur Rick Doblin founded the Multidisciplinary Association for Psychedelic Studies (MAPS), a non-profit organization assembling and supporting a network of drug researchers. The year before, MDMA (Ecstasy) had been prohibited as well, but Doblin was determined to bring MDMA and other psychedelics back into the legal domain. For this purpose, he raised funds from private donors to sponsor safety and efficacy studies of these drugs. He also made a sustained effort to develop a respectful relationship with the Food and Drug Administration (FDA) to improve communication between researchers and regulators. MAPS's ultimate goal was to test MDMA and other psychedelic drugs in clinical trials to register them as prescription medicines.

But MAPS did not remain the only organization promoting the revival of hallucinogen research. On both sides of the Atlantic, further associations emerged for MAPS to collaborate and compete with. In the United States, the Heffter Research Institute entered the stage in 1993. Named after the German chemist who had first isolated mescaline and founded by David Nichols, a professor of medicinal chemistry, this virtual institution connected laboratories and research groups at various universities in America and Switzerland. In contrast to MAPS's focus on clinical applications of MDMA, Heffter concentrated on psilocybin and, at least initially, emphasized basic research rather than medical uses. Like MAPS they tried to spread a spirit of optimism to attract private funding:

We are at a historic moment. Old social orders are rapidly changing. Economic powers are restructuring for the future. There is widespread popular interest in the brain and the mind as never before. Interest in research with psychedelics seems to be growing, and yet organized financial support for this work is on the wane. The Heffter Research Institute is uniquely poised to be THE key player in the revival of psychedelic research. (Heffter Research Institute, n.d.: 1)

It is no coincidence that the renaissance of hallucinogen research coincided with U.S. president George W. Bush's (1990) announcement of a "Decade of the Brain." As in the sixties, the biology of the mind was presented as the last great frontier (Crick, 1990: 17; Farber, 2002: 29). Psychonautic self-exploration had been replaced or supplemented by brain scanners and other new technologies, but drugs continued to serve as probes of the neurochemistry of consciousness. The Heffter members used this opportunity to promote their pet molecules. "Research with psychedelic substances offers an unparalleled opportunity for understanding the relationship of mind to brain in ways not possible using other methods," they claimed (Heffter Research Institute, n.d.: 1). Heffter used the neuroscience hype of the 1990s strategically to relegitimize human research with hallucinogenic drugs (Grob, 2002: 280).

The Politics of Disenchantment and Spiritualization

Even though MAPS and Heffter pursue different scientific and political agendas, one of the things both organizations agree on is that hallucinogen research must not lapse back into the antagonism between “culture” and “counterculture” (Doblin, 2007a). Their common objective is to return hallucinogens to mainstream science and society.

Heffter has been working toward this goal by pursuing what one of its members calls “the dispassionate approach of mainstream science” (Mark Geyer, personal communication). They present themselves as free of religious and political fervor. Heffter founder Nichols emphasizes the disenchantment of hallucinogenic drugs through neuropsychopharmacological research:

The tools of today’s neuroscience, including in vivo brain imaging technologies, have put a modern face on the hallucinogens. Scientists can no longer see them as “magic” drugs but rather as 5-HT_{2A} receptor-specific molecules that affect membrane potentials, neuronal firing frequencies, and neurotransmitter release in particular areas of the brain. (Nichols, 2004: 168)

The message is that psychedelics are ready to inconspicuously join the modern psychotropic pharmacopoeia.

This sense of value neutrality and the neuroscientific mechanization of human beings is incompatible with the religious zeal which dominated the public perception of psychedelia in the 1960s. A pharmacologist from the Heffter lab in Zurich told me that their generation differed from Leary’s in that they lost a sense of mission. They gave up the messianic hope that mind-altering drugs would revolutionize society. The psychedelic experience is no longer presented as a catalyst of nonconformism and rebelliousness. If, as ethnologists have shown, the ritual use of hallucinogens in tribal societies can also serve to “validate and reify the culture” (Furst, 1976: 16), then, another Heffter member argues, Westerners should also be able to use them to reinforce “cultural cohesion and commitment” (Grob, 2002: 283). Following these cues, it was the neuroscientific disenchantment and depoliticization of hallucinogen research, which rendered its revival possible. This narrative of the psychedelic renaissance – from the idealistic and revolutionary sixties to the pragmatic and civil nineties – would confirm historian of science Michael Hagner’s (2009) diagnosis of a “neuroscientific Biedermeier.”³

But the moral terrain of contemporary hallucinogen research is too rugged to fit into any epochal *Zeitgeist* diagnosis. First of all, like Leary’s withdrawal from politics into the spiritual realm, the alleged depoliticization qua scientification is itself a political maneuver. The intended rapprochement between psychedelic drugs, bio-

3 Hagner (2009) coined this term to describe the transformation of the concept of the unconscious in brain research. Whereas, in the 19th century, the unconscious emerged as a motor of artistic production always working on the brink of madness, contemporary neuroscience has turned unconscious neural processes into mechanisms easing the burden of consciousness. The unconscious used to be seen as conflictive and potentially subversive to the social order, but is regarded as harmless and useful.

medicine, and the authorities is supposed to change the legal status and the social acceptability of hallucinogen use. Thus instead of abandoning the psychedelic revolution for good, it has rather been transformed into a reform movement, in which Heffter is playing a cautious role as well.

MAPS, on the other hand, presents itself as avowedly political. In a special issue of the MAPS Bulletin dedicated to the organization’s vision Doblin first laid out a five-year, five-million dollar plan for developing MDMA into a prescription medicine to assist the psychotherapeutic treatment of PTSD (Doblin, 2002). MAPS is particularly interested in the treatment of soldiers or police officers: “We want to show that MDMA can be helpful for people in the heart of the power structure, in the mainstream,” Doblin (2007b) explained their strategy in an interview.

A second article of the special issue represented MAPS’s politico-spiritual vision. Significantly, the latter was not written by Doblin or any other member of the psychedelic community. To emphasize the reconciliation of psychedelia with “the Establishment,” MAPS reprinted a speech delivered by a member of the United States House of Representatives. “[T]hrough definitely not written as a psychedelic manifesto,” MAPS introduced Dennis Kucinich’s talk as “one of the clearest examples of the political implications of mystical experience” also reflecting MAPS’s own utopian hopes:

There is an idealism at the core of the psychedelic community that is difficult to explain. It’s based in part on the conviction that even partial unitive mystical experiences, whether or not catalyzed by psychedelics, can have a transformative effect. The hope is that the lasting effects of these experiences include more tolerance and appreciation of diversity of all kinds, enhanced environmental awareness, solidarity with the poor and oppressed, and a willingness to work through difficult emotions rather than project them onto an external enemy or scapegoat MAPS’s lead-in to. (Kucinich, 2002: 19)

Thereby, MAPS took up Leary’s psychobiologization of political problems and his advocacy of the psychedelic experience as a way out. Pharmacospirituality is meant to promote peace: “Societies more open to psychedelic experiences are likely to be less blind to their own demons and prejudices, and perhaps less-likely to wage wars of all types” (Doblin, 2003).

It is certainly questionable whether MAPS’s politicized drug mysticism harmonizes with either mainstream science or society. But the casting of psychedelia’s countercultural identity has engendered a new ethos less antagonistic toward the Protestant ethic of capitalism. It is a this-worldly mysticism, which no longer requires to “drop out” of society. Instead it aims at translating the experience of unity and transcendence into forms of “active citizenship” (Kucinich, 2002: 19). Rather than turning their backs on the entrepreneurial spirit and wealth generated in the American economy the resources of capitalism are now used in the service of advancing the psychedelic agenda. MAPS presents itself as a “membership-based non-profit pharmaceutical company” (Doblin, 2002) and raises money for its pro-

jects from successful business people. In this respect, the culture vs. counterculture conflict has indeed been overcome.

Today drug mysticism can also connect more easily with elements of the Protestant ethic because, in the wake of the 1960s, American Protestantism has changed as well. The discrepancy between the Protestant focus on the Scriptures and the drug mystics's emphasis on intense spiritual experience is less pronounced than 40 years ago. Not just the counterculture, but the baby boomer generation more broadly turned toward experience-centered forms of spirituality shared, for example, by evangelical Christianity and the New Age Movement (Luhmann, 2003). In his book on the impact of the counterculture on mainline denominations, Mark Oppenheimer (2003: 6) went so far as to argue that "by the mid-1970s, the counterculture had become the culture."

This new appreciation of religion as experience (rather than a normative order) has inspired a growing number of attempts to bridge the gap between science and spirituality. Under the rubric of neurotheology, brain researchers have begun to study the neural correlates of the altered states of consciousness induced by meditation or prayer (Joseph, 2002). The growing attention paid to this area has two roots. On the one hand, meditation is looked at as a work on the self leading to increased concentration, heightened cognition and awareness, as well as emotional control. As such it is part of a broader interest in enhancement technologies. The culture of self-improvement provides a common matrix for both neurotheology and cosmetic psychopharmacology. On the other hand, the burgeoning neuroscientific interest in spiritual practices in the last decade also reflects the changing role of religion in certain corners of the life sciences. Some of the brain researchers who came of age during the fourth great awakening and followed the turn toward unchurched forms of spirituality have by now become powerful figures in their fields setting their own research agendas. In the last ten or twenty years, the traditionally materialistic field of brain research has become significantly more accommodating toward scientists publicly expressing their belief in a "spiritual reality" (Monastersky, 2006).

In fact, such avowals can even help to obtain funding from private organizations. The Mind and Life Institute, for example, finances experiments, conferences, and retreats that explore the mental activities of Buddhist meditators. The Fetzer Institute founded by a radio and television magnate funds scientific projects fostering "the awareness of the power of love and forgiveness." And the John Templeton Foundation run by an evangelical philanthropist promotes the employment of scientific methods to discover "spiritual realities" (Schüle, 2006).

In an academic milieu providing hospitable niches to those interested in the scientific investigation of religious experiences, a number of researchers have come to apply the tools of cognitive neuroscience, especially neuroimaging technologies and electroencephalography, to spiritual practices. Hallucinogen research has also profited from this assemblage of science, religion, and philanthropy. Fetzer, for instance, has co-funded a number of psychedelic research projects together with

MAPS and Heffter (e.g., Cahn, 2006; Walsh and Grob, 2005). Such neurotheological studies of the physiological correlates of the *unio mystica* rescue spiritual experiences from the realm of the subjective (or even imaginary) endowing them with some kind of reality, which is interpreted in two contradictory ways: either as reducing spirituality to an epiphenomenon of neural processes or as proof that the brain can be turned into a sense organ capable of perceiving the immaterial, but nonetheless real dimensions revealed in such altered states.

In contemporary neurotheology, an experience-centered spirituality and the heuristic individualism of cognitive neuroscience meet in the abstraction of experience from its social and cultural context. Mysticism is narrowed down to peak experiences and isolated neural events. Thereby it is also stripped of cultural difference and antagonism. This is certainly no big loss if one continues to pursue "the liberation from the cultural self," as Leary (1965: 93) called it in a homage to Huxley. What falls into oblivion though is, first of all, that mystical (drug) experiences, pace Leary himself, depend on the partly cultural conditions of experience, namely set and setting. Secondly, it has been argued that mysticism does not consist of mystical experiences alone, but is a whole way of life and a highly cultured one at that (Kellenberger, 1978).

The neurotheological assumption of the universality of mystical experience has been inherited from Huxley's *Perennial Philosophy* (1944). The notion of *philosophia perennis*, which Huxley popularized in the 20th century, is rooted in a tradition even predating Gottfried Wilhelm Leibniz's early modern quest for religious unity (Schmitt, 1966). At present, this much contested doctrine is transformed by its reception in the neurosciences. In a public lecture on the neurobiology of spiritual experience, the Heffter pharmacologist Felix Hasler announced a reductionist turn from *philosophia perennis* to an emergent "neuro-perennialism":

The *philosophia perennis* discussed by theologians since Leibniz, i.e., the idea that all religions share the same core of absolute truth, is currently undergoing a modern neurobiological reinterpretation. Maybe the spiritual experiences of people from different cultures aren't alike because they refer to the same God or some universal truth, but simply because the brains of human beings function identically. No matter whether it is temporal lobe stimulation, drugs, meditation, or an epileptic seizure – the brain can only respond to this unanticipated state of exception with a very limited repertoire of experiences. And, for thousands of years, the hallucination of a higher spiritual truth has been among the most popular. (translation – NL)

But independent of the contested veridicality of drug-induced mystical revelations their supposed transcultural nature lends itself to a politics of confessional reconciliation, which had already been the goal of the *philosophia perennis* in 17th-century Prussia (Jordan, 1927; Otakar, 1934). Whereas Leibniz and his contemporaries responded to interconfessional tensions between different Protestant sects (as well as Catholics and Jews), today MAPS promotes psychedelics in America in the face of the political antagonism between liberals and the Religious Right. Doblin advo-

cates a “global spirituality” that is meant to bridge the divide between organized religion and a scientifically enlightened liberal lifestyle open to drugs:

There is a rise in religious fundamentalism at a time when that world view is more and more difficult to sustain. . . . The fundamentalists are scared that psychedelics might delegitimise their particular religion, but I think psychedelics can reinvigorate religion and make people appreciate their traditions. Global spirituality is not inherently anti-religion. (Doblin, 2008: 43)

The political neurotheology of the present oscillates between disenchanting, but politically cautious atheism, and mystically inspired libertarian activism. In accordance with the mainstreaming strategy characterizing the renaissance of hallucinogen research Doblin de-emphasizes the marked ideological differences between the reanimated psychedelic movement and the powerful advocates of American conservatism also dominating the Kass Council (Briggle, 2009).

The Psychedelic Alternative in Hallucinogen Research Today

Significant parts of hallucinogen research continue to be based on strictly mechanistic conceptions including the model psychosis paradigm (Langlitz, 2006). But the current revival of the field has also reinvigorated the psychedelic alternative to this approach. Many research projects implicate the kind of neurospirituality practiced by the imaginary inhabitants of Huxley’s *Island*. The most prominent study so far adjusted the approach of the Good Friday experiment to current scientific standards. From 2001 to 2005, Roland Griffiths, a professor of psychiatry at Johns Hopkins Medical School, administered psilocybin or an active placebo, namely Ritalin, to healthy volunteers to test whether psilocybin could occasion mystical type experiences. The study was funded by both the National Institute on Drug Abuse and the Council on Spiritual Practices, a philanthropic organization dedicated “to making direct experience of the sacred more available to more people” (<http://csp.org>). The study design self-consciously exploited set and setting as two major factors shaping hallucinogen-induced experiences. The 36 carefully selected test subjects were all drug-naïve and indicated regular participation in religious or spiritual activities such as church services, prayer, or meditation. These “religiously musical” volunteers were given psilocybin in a living room-like environment where they were encouraged to lie down and direct their attention inwards while listening to classical music. No instrumental measurements were recorded. The data collected was based on two study monitors’ observations and ratings of the subjects’ behavior as well as subjects’ introspective accounts registered psychometrically by way of a whole battery of questionnaires and self-rating scales.

The reported results were striking. Under the influence of psilocybin and guided by an experienced psychedelic therapist, approximately 58% of the participants were said to have had a “complete” mystical experience and 67% rated their experience to be among the five most meaningful experiences of their lives (similar to the

birth of a child or the death of a parent). However, about one third also experienced extreme fear at some point during the session. Interestingly, many subjects also had significant, quasi-mystical experiences after the administration of Ritalin – even though they were less profound and did not have long-lasting behavioral effects as demonstrated for the psilocybin-induced experiences by a follow-up study. Reassessing their drug experience after 14 months, two-thirds of the participants reported that it had increased their sense of well-being and life satisfaction moderately or very much (Griffiths et al., 2008; Griffiths et al., 2006; Hughes, 2008). They felt better than well, so to say.

Griffiths’s team as well as psychiatric research groups associated with MAPS and Heffter have also launched psychotherapeutic studies treating anxiety and depression in end-stage cancer patients with MDMA, psilocybin, and LSD (Sessa, 2008). With the right kind of spiritual guidance the drugs are supposed to induce an experience enabling subjects to come to terms with their own death and to live more fully during the time they have left. Before hallucinogen research broke down, this palliative care approach was already practiced from the mid 1960s to the mid 70s at Spring Grove State Hospital in Baltimore (Grof and Halifax, 1977; Kast, 1966). But ultimately this use of drugs had also been prefigured by *Island* (1962) where one of the characters prepares for her impending death by taking moksha with her husband.

By following the late Huxley’s utopia, contemporary hallucinogen research paints a very different picture of non-therapeutic uses of psychopharmaceuticals than the sinister image, which Kass and some of his former colleagues from the President’s Council evoke with reference to *Brave New World*. Even though Kass and the psychedelic movement share a deep-seated revulsion vis-à-vis the alleged transmutation of the bourgeois lifeworld into Huxley’s dystopian scenario, Kass ignores *Island* because, in his eyes, no biotechnology – no matter what it is and how it is used – will ever contribute to the good life. The problem – or rather: the tragedy – is technology per se (Kass, 2002: 22).

By contrasting Huxley’s novels and their partial readings I do not wish to claim that reality resembles rather one than the other of these fictions. All warnings and promises that we were well on the way to either of them must be understood in the context of current medical, political, and ideological conflicts. References to Huxley’s novels serve less the purpose of representation than intervention in the social reality of psychopharmacology. But this reality cannot be brought down to a common denominator. Therefore, one purpose of this chapter has been to complexify the prevailing image of the psychopharmaceutical landscape by showing that, apart from the cosmetic psychopharmacology associated with Prozac and Ritalin, a very different drug culture has emerged around psychedelics.

Drug Ethics Beyond Pharmacologicalism

More importantly, however, the contrast between Huxley's two novels opens up a critical perspective on the technological determinism underlying Kass's bioethics. It is not simply soma and other biotechnologies, which have created the deplorable society of *Brave New World*, but also *Brave New World* as a totalitarian society, which turned soma into the drug described. At least at a particular dose, soma acts as a hallucinogen just like moksha. But, whereas the former is used to conjure up the illusion of a better world to pacify the population, the latter produces insights into a higher reality and a serenity presented as significantly different from dull contentment. And there is a whole list of other biotechnologies (contraception, assisted reproduction, etc.), which the inhabitants of *Brave New World* and *Island* have in common while using them for almost opposite ends. Unlike Kass, Huxley was well aware that the problem is not technology per se, but the cultural context in which it is put to use (Huxley, 1959: 108; Schermer, 2007).

This context-dependence of the value and significance of psychopharmaceuticals and other biotechnologies must also be taken into account in the "real world." Considering that the Greek term *pharmakon* means both remedy and poison it comes as no surprise that, at closer inspection, the effects and uses of most drugs turn out to be ambiguous. Whereas Kass (2003) conceives of MDMA – alongside Prozac – as a forerunner of Huxley's soma, its administration to dying patients by psychedelic researchers makes it appear more like moksha. Given to spiritually minded test subjects in the setting of Griffiths's psilocybin study, Ritalin also appears to be able to induce quasi-mystical experiences instead of serving as a cognitive enhancer. And even Prozac is not necessarily used as mere psychopharmacological makeup, but has come to play a role in spiritual or religious ways of life (Chambers, 2004; Slater, 1999; Squier, 2004).

However, remembering Leary's claim that it is not the drug which produces the transcendent experience, but its interactions with set and setting, it seems as if the renaissance of hallucinogen research provides an opportunity which has not been applied yet. Trying to bring hallucinogens back into the scientific mainstream, the actors are applying well established methods of neuropsychopharmacology to this marginal class of substances. Almost without exception, the research designs of these studies follow the model of placebo-controlled trials. In experimental practice, set and setting are taken into account but they are not studied systematically (Langlitz, 2010). The revival of hallucinogen research might not just offer the chance to reconsider a marginalized class of substances, but also to take a new look at the aborted methodologies that emerged in the vicinity of these drugs. Considering that the effects of Ritalin and Prozac also appear to be molded by set and setting, Anthony Wallace's (1959) suggestion to complement placebo-controlled trials by "cultural and situational controls" might well be worth a second look (Langlitz, in press).

Such a break with the doctrine of pharmacologicalism would also require new forms of bioethical drug assessment. The linear prognostics of slippery slopes and the technological determinism presupposed by Kass and many of his colleagues fail to consider the relative indeterminacy of drug action. Instead of dividing psychopharmaceuticals into good drugs and bad drugs, a contextualist bioethics of drug use would also have to consider the multitude of non-pharmacological factors co-determining psychopharmacological effects. Such an ethical rethinking of neuropsychopharmacology would be bound to affect its political and theological assessments as well. What had to be given a fresh ethical look would not be drugs, but entire drug cultures as one of the most important manifestations of neuroscience in society.⁴

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