

## ABSTRACT

Title of Document:                   SPIRITUALITY IN THE LABORATORY:  
  NEGOTIATING THE POLITICS OF  
  KNOWLEDGE IN THE PSYCHEDELIC  
  SCIENCES.

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In this study I argue that psychedelic substances served as a doorway through which spirituality entered the scientific laboratory to an unprecedented degree given their traditionally demarcated relationship by making spirituality more amenable to scientific paradigms and accessible to scientific methodologies. I conduct a feminist discourse analysis of the politics of knowledge enacted in this unique intersection of spirituality and science in the psychedelic sciences. I draw on feminist theories of science and knowledge which conceptualize science as a dominant knowledge constituted through and productive of the intersecting and historically hierarchical systems of power of race, class, gender and nation. Using discourse analysis techniques, I analyze a documentary archive I created through a theoretically driven sampling of the psychedelic sciences of spirituality from the 1930's to the present.

In Chapter 2, I analyze how spirituality was brought forward and negotiated in these sciences. I argue that psychedelic scientists utilized a range of what I call

*tactics of legitimation* to justify the scientific study of these peculiar substances and the spirituality with which they are associated vis-à-vis dominant scientific knowledges and I analyze the attendant epistemological costs of this assimilation. In Chapter 3, I analyze the efforts to integrate psychedelic substances and the spiritual experiences they induce into western therapeutic assumptions and practices. I argue that their efforts to scientifically determine the mysticity of mystical experiences and their pursuits of scientific liturgical authority over the administration of psychedelic sacraments resulted in the emergence of a would-be psychiatric clerical authority. In Chapter 4, I analyze the efforts to integrate and develop indigenous spiritual psychedelic knowledges and practices across each step of a bioprospecting model from plant identification to the determination of mechanisms of action and finally to drug development studies. I argue that in each step indigenous spiritual knowledges were assimilated into dominant scientific assumptions and practices reifying western scientific authority over indigenous knowledges and practices and reinforcing historically hierarchical colonial relationships despite the ‘good intentions’ of these psychedelic scientists. In the final chapter of this study I discuss future sociological and feminist projects analyzing these peculiar psychedelic sciences and spiritual substances.

SPIRITUALITY IN THE LABORATORY: NEGOTIATING THE POLITICS OF  
KNOWLEDGE IN THE PSYCHEDELIC SCIENCES

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## Dedication

I dedicate this project and all that it has entailed to the loving memory of my father and my grandfather. I am forever grateful for their gifts which have made so many things possible in my life. And I dedicate this project and all that it has entailed to the dear and beautiful friends and lovers who have blessed me and lifted me up through the many years of this long journey.

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Table. 5.1 Summary of Findings

# **Chapter 1: Spirituality in the laboratory: negotiating the politics of knowledge in the psychedelic sciences of spirituality**

In this study, I conduct a feminist genealogical discourse analysis of the psychedelic sciences of spirituality from the 1930's to the present. This study is grounded in the theoretical concerns of the sociology of knowledge and the related disciplines of the social studies of science. This interdisciplinary body of scholarship examines both how relations of power constitute science and vice versa.<sup>1</sup> Following these concerns, I draw on feminist theories of science and knowledge to analyze the intersection of scientific and spiritual knowledges in the psychedelic sciences; in particular, those feminist theories of knowledge which conceptualize science as a dominant knowledge constituted through and productive of historically hierarchical politics of location of race, class, gender and nation (Collins, 1998; Harding, 1991; Hartscock, 1987; D. E. Smith, 1990).<sup>2</sup> I also draw on the feminist theories of

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<sup>1</sup> The social studies of science, as a field of interrogation, have long been interdisciplinary. Within sociology, knowledge tradition emerged as a subfield which took constructions of knowledge, and especially constructions of scientific knowledge, as its primary theoretical concern. The sociology of scientific knowledge emerged subsequent to, and in dialogue with, the sociology of knowledge and studied scientific knowledge more critically. These sociologies of knowledge/scientific knowledge are also a part of a larger interdisciplinary interrogation of scientific knowledge. The social studies of science, of which the sociology of knowledge and sociology of scientific knowledge are but one part, include the formally identified discipline of science and technology studies (STS). Feminist theorists have also been part of the critical engagements of science and knowledge. Feminist critics of science have occurred inside of sociology, inside of STS (especially around science and the body), and in their own subfields such as Feminist Science Studies and feminist epistemology inside of feminist philosophy. (For discussions of the interdisciplinary relationships of these bodies of scholarship see: (, For discussions of these interdisciplinary relationships see : Association of American Colleges and Universities, 1999; Hess, 1997; Keller & Longino, 1996; C. Thompson, 2007)

<sup>2</sup> More specifically, feminist epistemologies and theories of knowledge which characterize dominant knowledges as hegemonic, and argue that that despite all the diffusion and multiplicity of power, it

subjugated knowledges which highlight subjugated knowledges not only as incommensurable, but as oppositional knowledges emerging out of communities of struggle (Collins, 1998; Fernandez, 2003). As such, I theorize this intersection of spirituality and science in this psychedelic research not as an intersection of two separate but equal knowledge systems, but as a collision between traditionally demarcated and historically hierarchical systems of knowledge.

This study is guided by the following research questions: How are relationships between science and spirituality, conceptualized as dominant and subjugated knowledges, brought forward and negotiated in the psychedelic sciences? More specifically: (1) What are the dominant assumptions and practices of knowledge production in the psychedelic sciences? (2) In what ways is spirituality legitimized and/or delegitimized according to those dominant assumptions and practices in the psychedelic sciences? (3) What are the epistemological, ontological and overtly politicized power-knowledge negotiations around science and spirituality in the psychedelic sciences?

I answer these research questions by analyzing a documentary archive I created through a theoretically driven sampling of the psychedelic sciences of spirituality from the 1930's to the present.<sup>3</sup> Using discourse analysis techniques, I analyzed this psychedelic scientific archive for the ways in which science, as a dominant knowledge, exercised power over spiritual knowledges in ways that

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still retains some level of structural cohesion (Collins, 1998; Haraway, 1991). In contrast, in science and technology studies there is an emphasis on the inherent multiplicity and contradiction in and amongst knowledge systems (Hess, 1997; Jasanoff, Markle, Peterson, & Pinch, 1995). As such these communities reject analyses of science as overdetermined and prefer diffuse and multilayered attention to science(s). I appreciate this care regarding the dangers of overdetermination and find it a useful counterpoint to temper any excesses in the more emancipatory feminist projects.

<sup>3</sup> The 'theoretical sampling' I use in this project is in line with the situational analysis as articulated by Clarke(2005). I will address my data sources in further detail in a subsequent section of this chapter. .

reinforced and reified historically hierarchical relationships of domination and subjugation.

## **I. Introduction: Spirituality enters the laboratory through the psychedelic doorway**

‘Psychedelic’ is a name for a group of plant-based or synthesized chemicals which induce altered states of consciousness typically characterized by marked changes in sensory experience and thought processes. These altered states of consciousness have long been considered akin to mystical experiences and therefore have been associated with spirituality. Scientific studies of psychedelics emerged in the 1930’s, when several prominent American and European scientists ‘discovered’ that indigenous communities in Mexico and South America were using psychedelic mushrooms. In the 1940’s, scientific research on psychedelics expanded considerably after the chemist Albert Hoffman ‘discovered’ LSD, the first synthetic psychedelic, while pursuing drug development research for the Swiss pharmaceutical company, Sandoz Laboratories. During this early period of psychedelic research, scientists often ingested these substances themselves, and their intense personal psychedelic experience frequently initiated a newfound interest in spirituality. Stanislov Grof, an early psychedelic psychiatrist, reported:

It would appear that everybody who experiences these levels [of psychedelics] develops convincing insights into the utmost relevance of the spiritual dimension in the universal scheme of things. Even positivistically oriented scientists, hard-core materialists, skeptics and cynics, uncompromising atheists and antireligious crusaders such as Marxist philosophers and politicians, suddenly become interested in the spiritual quest after they confront these levels in themselves (As quoted in Walsh & Grob, 2005, 245).

The fact that these experiences could be chemically facilitated and reliably induced reinforced their desire to study them scientifically, even though their personal experiences seemed to violate the very premises of their own scientific worldviews. And so scientists of the 1950's and 1960's took up psychedelics and the troubling spiritual experiences they potentiated with enthusiasm.<sup>4</sup> Walter Pahnke, one of these early psychedelic psychiatrists, captured this sentiment when he stated, "With these drugs, science stands on an awesome threshold" (Pahnke, 1966b, 21).

As such, I argue that psychedelic substances served as a doorway through which spirituality entered the scientific laboratory because their tangible materiality and chemical reliability made spirituality more amenable to scientific paradigms and accessible to scientific methodologies. However, it did not completely reconcile the inherent difficulties involved in integrating these incommensurable and historically demarcated knowledges.<sup>5</sup> As Pahnke reported, "Of all the varieties of psychedelic experiences, the type that has elicited the most enthusiastic interest as well as the most indignant rebuttal from both psychiatric and theological spokesmen is the mystical experience" (Pahnke, 1966b, 12).

Early researchers who advocated for psychedelic sciences of spirituality confronted considerable resistance. This was especially the case for research

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<sup>4</sup> According to Sessa (2005), by 1965, over 2000 papers had been published and that was just on the use of psychedelics as a psychotherapeutic drug. Research on LSD was particularly widespread.

<sup>5</sup> The problem of demarcation has long plagued the history and philosophy of science. Philosophers of science have sought to demarcate science from 'pseudoscience' (See especially Lakatos, 1976). Religion and spirituality have been characterized in these debates as the apotheosis of science and thus central to the demarcation of science as a special and privileged knowledge (Barbour, 1997). This problem of demarcation has been criticized as both arbitrary and power-laden by both philosophers of science themselves (Feyerabend, 1978; Laudan, 1996), as well as by science and technology studies scholars (Harding, 2006; Turnbull, 2003). I will address these issues in greater detail in a subsequent chapter of this dissertation.

emphasizing spirituality where scientists risked being denounced for their “messianic” interpretations of psychedelics for science (C. S. Grob, 1998). The firing of Harvard psychiatric researchers Timothy Leary and Richard Alpert in 1963, for example, represented the most public example of the official scientific stance regarding the psychedelic sciences of spirituality.<sup>6</sup> Leary and Alpert were especially interested in the spiritual dimensions of these substances, and, as part of their research, they regularly consumed psychedelic substances with their co-researchers, graduate students and research subjects (Alpert, Cohen, & Schiller, 1966; Leary, Metzner, & Alpert, 1964). Their studies became public controversy at Harvard and they were fired over accusations of violating scientific objectivity (Alpert & Leary, 1962; Russin, 1963; Russin & Weil, 1973).<sup>7</sup> As psychedelic researchers Grinspoon and Bakalar report in their psychedelic history: “The chairman of the Harvard Social Relations Department declared, ‘They started out as good, sound scientists, and now they’ve become cultists’” (Grinspoon & Bakalar, 1979, 66). Leary and Alpert

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<sup>6</sup> In the sociology of scientific knowledge, the scientific controversy is an important location for investigating the production of scientific knowledge (Hess, 1997). Of course, what the controversy teaches is always open to debate. In this project it is not about bad science versus good science but rather it is illustrative of Gordon’s point about such controversies in her *sociology of haunting*. She asserts ‘what is seemingly on the other side of their boundaries’, that which is most policed, is essential to how the truth-making discipline credits itself with having a privileged relationship to the ‘real.’ For a thorough (and entertaining) discussion of scientific controversy in science studies and this issue of arguments about claiming the ‘real,’ see: (Edwards, Ashmore, & Potter, 1995).

<sup>7</sup> According to Andrew Weil’s description of the firing, Leary was fired for a missed lecture and Alpert for supposedly giving psychedelics to an undergraduate student (Weil, 1963). However, as is often the case with controversial firings (in the academy and outside of it), there is the official reason and then there is the actual reason for the firing. Both Leary and Alpert assert, and many psychedelics practitioners accept, that they were fired because of the controversial nature of their psychedelics research and their refusal to comply with the disciplinary rules of the scientific game (Dass, 1974; Grinspoon & Bakalar, 1979; Leary, 1995).

became icons of the dangers of these substances and the undesirability of mixing science and spirituality.<sup>8</sup>

The outright criminalization of these substances in 1966, as well as their increasing political stigmatization due to the well publicized emergence of psychedelic countercultures, made the study of such substances increasingly difficult to legitimize.<sup>9</sup> As the psychedelic researchers Grinspoon and Bakalar describe in their psychedelic history:

Then the debate received an infusion of irrational passion from the psychedelic crusaders and their enemies. The revolutionary proclamations and religious fervor of the nonmedical advocates of LSD began to evoke hostile incredulity rather than simply natural skepticism about extravagant therapeutic claims backed mainly by intense subjective experiences. Twenty years after its introduction it was a pariah drug, scorned by the medical establishment and banned by the law (Grinspoon & Bakalar, 1979, 232).<sup>10</sup>

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<sup>8</sup> For example, psychedelic psychiatrist Ralph Metzner, from the original Harvard projects, reported that, “some observers have blamed Tim Leary, with his admittedly passionate advocacy of psychedelic drug use, for the clamp down of government authority on scientific research” (Metzner, 2004, 35).

<sup>9</sup> This criminalization resulted in the bifurcated presence of psychedelics in Western culture, where research waned and illegal recreational use emerged. Psychedelics remained an important part of 60’s counterculture and dissident movements even as all research ground to a halt (Grinspoon & Bakalar, 1979; Lee & Shlain, 1985). Psychedelic use in countercultures and other progressive circles in the US continued into the present. While it was illegal and severely punishable to take these substances, the music, art, cultural histories of the time are all testament to their continued presence and influence. Even more recently, the progressive countercultural use of psychedelics has once again become prominent. The late 1980’s and the 1990’s saw the rave scenes; techno and house music and trance dance cultures that emphasized the place of psychedelic drugs as part of what they saw as a political and spiritual practice (Saunders, 1995). Currently, psychedelics are still important in a variety of communities of White leftist and spiritually oriented cultures of resistance; for example, the current articulations of rave culture and trance dance cultures, a variety of other festival cultures, pagan movements, neo-shaman movements, and neo-tribal movements. See (Pinchbeck, 2002; Walsh & Grob, 2005). See also: (<http://www.rosencomet.com/about.html>; <http://www.burningman.com/>; <http://www.realitysandwich.com/>)

<sup>10</sup> Psychoactive substances are regulated in the United States in a system of schedules. These schedules were established with the 2001 Controlled Substances Act. There are five schedules, with Schedule I the most rigorously controlled and Schedule V the least controlled. All psychedelic substances including LSD, MDMA, Marijuana, DMT, Peyote, Psilocybin, and Mescaline are classified as Schedule I drugs. Schedule I drugs are defined in the following manner: The drug or other substance has a high potential for abuse; the drug or other substance has no currently accepted medical use in treatment in the United States; there is a lack of accepted safety for use of the drug or other substance under medical supervision. Schedule I drugs may not be prescribed. The US Controlled Substances Act may be accessed online at [http://uscode.house.gov/title\\_21.htm](http://uscode.house.gov/title_21.htm)

By the early 1970's, the tumultuous political and cultural climate surrounding these substances, combined with the criminalization of psychedelics, put an end to most psychedelics research.

Psychedelics research wouldn't find traction again until the beginning of the 1990's,<sup>11</sup> when several scientists succeeded in obtaining permission to conduct clinical studies of these substances.<sup>12</sup> As the contemporary psychedelic psychiatrist Charles Grob asserted, "After a hiatus of several decades, there are encouraging signs that hallucinogen research is beginning to receive the sanctions necessary to move forward again. The promising findings of a previous generation of researchers now need to be replicated using contemporary state of the art research methodologies" (C. S. Grob, 2007b, 214). Contemporary psychedelics researchers, such as Grob, are extremely sensitive to the precariousness of their work. They emphasize 'state of the art research methodologies,' so that their scientific rigor cannot be in any doubt. They keep all of their discussions of the significance of these potent substances well inside the bounds of dominant scientific epistemology and ontology. They are especially careful to avoid the most denounced aspects of the controversial first wave sciences such as a seemingly 'messianic' or 'evangelical' message (C. S. Grob, 1998; Lee & Shlain, 1985). While studies of spirituality or mysticism do still appear in contemporary psychedelic research, these studies attempt to engage spirituality

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<sup>11</sup> The psychedelics sciences have two relatively distinctive phases of research. The very earliest of these sciences emerged in the late 1930's and lasted until the early 1970's, a time period I refer to as the "first wave." I refer to the post-1990's research as "second wave" or "contemporary."

<sup>12</sup> Psychiatrist Rick Strassman obtained approval to conduct psychopharmacological studies on the pathophysiology tolerance and dose-response effects of the psychedelic chemical DMT (Strassman, 1996; Strassman, Qualls, & Berg, 1996; Strassman, Qualls, & Uhlenhuth, 1994; Strassman, Qualls, Uhlenhuth, & Kellner, 1994). Neurochemist Deborah Mash obtained approval to conduct studies of the possible effectiveness of the psychedelic plant, Ibogaine (Mash et al., 1998). Psychiatrist Charles Grob obtained permission to study the possible therapeutic potential of psilocybin mushrooms with terminally ill cancer patients (C. S. Grob, 2007b).



without violating the underlying assumptions and practices of the disciplinary authorities of their respective scientific domains.

While the pragmatic necessity of such strategies is understandable, they also run the risk of eliminating that which is most compelling about these substances. Langlitz (2007) asks of psychedelics research, “Confined and domesticated in the psychopharmacological laboratory these seemingly transcendental experiences are studied as an immanent, if erratic, part of nature. But what is their status? Do they reveal a deeper truth or are they nothing but hallucinations and delusions?” (Langlitz, 2007, 35-36) Langlitz worries in his own analysis of the neuroscience of psychedelics that these strategic moves lead to the “domestication of psychedelics” (Langlitz, 2007). He points out that while scientists rigorously make sure their research follows all of the most conservative research protocols, they too are frustrated by how the limitations of their scientific practice misses most of what they themselves find most important about psychedelics. In their personal practices it has led them, like the denounced scientists before them, to meditation, spirituality, mysticism, shamanism, etc. (Grinspoon & Bakalar, 1979). However, due to fears of scientific denunciation, not to mention possible criminal prosecution, these spiritual pursuits are scrupulously kept outside of the academy, safely in the demarcated realm of the ‘private’ and the ‘subjective. Such tensions between science and spirituality have long characterized psychedelics research, dividing “those accused of drug ‘mysticism’ from those denounced as ‘materialists’” (Langlitz, 2007, 188). In his own investigation of psychedelic neurosciences, Langlitz (2007) characterizes these positions as epistemic differences. He does note that the materialist position is the one with more funding and more clout, but argues that there is now more room for the

“mystics.” However, I think he overstates the acceptance of the mystical position and understates the domestication of spirituality in both past and present psychedelic sciences.

Sociologically, I would not describe these differences as merely epistemic. This intersection of spirituality and science is not merely an intersection of two separate but equal knowledge systems, but a collision between traditionally demarcated and historically hierarchical systems of knowledge. It is no coincidence that the actors on the psychedelic stage continue to be elite, White men. It is also no coincidence that even though they speak about spirituality and mysticism, as subjugated as this might make them in the ranks of neuroscientists, they still participate in scientific discussion and are certainly taken more seriously than the mystics and spiritual teachers who have been saying the same thing for centuries. These politics speak to broader concerns with the continuing power of science to determine whose stories are accepted, and whose are rejected, assimilated, appropriated, domesticated, and otherwise, subjugated. In this regard, these efforts to bring spirituality into the scientific laboratory have had some troubling epistemological and political consequences. These efforts at scientific assimilation problematically reinscribe and reify other aspects of power and privilege constituted through the intersecting systems of race, class, gender, and nation, which are central to all knowledge production, including scientific knowledge.<sup>13</sup> From this perspective, the contested and hierarchical intersections in these psychedelic sciences of

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<sup>13</sup> In this study, I draw on feminist theories of knowledge which theorize science and knowledge as constituted through and productive of historically hierarchical politics of location of race, class, gender and nation (Collins, 1998; Harding, 1991; Hartscock, 1987; D. E. Smith, 1990). I will address this in more detail in a subsequent section of this dissertation.

spirituality enact a politics of knowledge wherein the relationships between dominant and subjugated knowledges are negotiated and contested.

## II. Feminist studies of science and knowledge

As feminist theorists of science have argued, modern science evolved out of a conceptual structuring of the world, including assumptions about what can be known, how it is known, and how to evaluate what is known such that it incorporates and replicates particular and historically specific ideologies of race, class, gender, sexuality and nation (Keller & Longino, 1996, 2). These assumptions may be “methodological assumptions, assumptions with empirical content, metaphysical assumptions, and valued laden assumptions” (Grasswick & Anderson, 2006, 16). In all cases, these assumptions are theorized as co-constituted via intersecting systems of power organized around race, class, gender, sexuality and nation (Collins, 1990; Haraway, 1991).

From this perspective, feminist analyses of science move beyond judging the accuracy of the content of science to evaluating how such knowledge production reflects and replicates relations of domination and subjugation.<sup>14</sup> As feminist philosopher of science Sandra Harding, theorizing the implication of science for relations of power, argued, “We need to learn how to identify cultural features in our scientific assumptions and how to sort out those that encourage unaccountability,

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<sup>14</sup> Feminist ethnographer Nancy Naples discusses the feminist emphasis on justice over truth. She describes how “In their responses to Susan Hekman’s (1997) assessment of feminist standpoint theory that appeared in *Signs*, Nancy Hartsock, Patricia Hill Collins, Sandra Harding and Dorothy Smith all emphasize that feminist standpoint theorizing is designed to investigate how power works rather than some apolitical or abstract truth” (Naples, 2003, 69).

irresponsibility and limitations on knowledge from those that do not” (Harding, 2006, 63).<sup>15</sup> With that in mind, to analyze these psychedelic sciences of spirituality and clarify the power-laden implications of the intersection of dominant and subjugated knowledges, I will draw upon feminist theories of science and knowledge. I will use the analytic framework of dominant knowledges and subjugated knowledges while attempting to avoid overdetermining them as a simple binary. Both Foucault and the anti-essentialist feminisms which inform my use of these terms argue that they are co-constitutive, contradictory and multivalent. I do not embrace the notion of a ‘pure’ subjugated knowledge such as is sought in some Marxism, some versions of standpoint theories, or many forms of New Age escapism. I also do not theorize dominant knowledges as monolithic Orwellian totalitarianism. However, something must be said about domination and subordination, oppression and resistance. I use the terms much as many sociologists and feminists continue to use micro and macro or structure and agency. Even though they are theorized as co-constitutive and interpenetrating, neither term is merely an empty referent.

### **A. Subjugated spiritual knowledges**

I conceptualize science as a dominant, even hegemonic,<sup>16</sup> system of knowledge (Collins, 1998; Harding, 1991; Hartscock, 1987; D. E. Smith, 1990)<sup>17</sup> and

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<sup>15</sup> The diagnostic identification of important and emergent structures of power and forms of domination has been an important perhaps even definitional project of critical sociology. For example, I would argue that a sociological diagnosis of domination is perhaps at the core of the lasting legacy of scholars and critics such as Marx and Foucault. With his identification of capitalism, Marx identified the emergence of a system of power that was to fundamentally transform the face of domination over the next 200 years (Marx, 1977). Similarly, Foucault’s conceptualization of power-knowledge and his ‘turn to discourse’ helpfully articulated another important shift in the forms of domination (Foucault, 1972, 1977a). Thus, while there are certainly dangers in overdetermining structures of power, and endless debates on this very issue regarding both Marx and Foucault, there is also considerable utility in identifying significant shifts in forms of domination.

<sup>16</sup> Hegemony has been an influential concept in both science studies and in feminist theories of knowledge. In both cases, the term can generally be traced back to Gramsci’s (1992) articulation. As it is generally used and as I use it here, it implies that a culture (values, beliefs, assumptions, practices,

I theorize that spirituality represents a quintessential Foucaultian subjugated knowledge.<sup>18</sup> Foucault (1977b) offers two conceptualizations of subjugated knowledge; first, those knowledges which were outside of scientific conceivability, incommensurable with standards of scientificity (Foucault, 1977b). That is, any knowledge that does not follow its assumptions, methods and or ontologies is by definition disqualified (Foucault, 1977b). Second, those knowledges that emerge out of marginalized communities as sites of struggle against expert or dominant knowledges (Foucault, 1980b, 81-83). Feminists who theorize spirituality articulate spirituality both in terms of incommensurability and oppositionality. They articulate that both of these dimensions are part of the potency of spirituality as an emancipatory intervention into contemporary relations of scientific domination and subjugation.

Spiritual knowledges, as articulated by feminists, are often conceptualized in ways that are epistemologically and ontologically incommensurable with scientific assumptions, methods and truth criteria. For example, Patricia Hill Collins discusses spirituality as an emancipatory subjugated knowledge for African American women.

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meanings, etc.) that supports the status quo garners support from the middle strata of that status quo, some support from the oppressed, and stabilizes itself by eliminating or repressing critics, not through overt repression, but through co-opting resistance or otherwise marginalizing or stigmatizing resistances so that it is ineffective (Hess, 1997).

<sup>17</sup> This question of hierarchal power-knowledge relations implies a debate within feminism on how (or even whether) to name subjugated versus dominant knowledges and/or people. Some argue that these very terms replicate problematic binaries of us versus them and such 'identity politics' or 'essentialisms' should be rejected. (Butler, 1990; Gatens, 1996; Grosz, 1994; J. Scott, 1992; Spelman, 1988; Wittig, 2003) Others argue that while they should not be conceptualized in the simplistic or reductive binary of 'us' versus 'them,' it cannot be denied that the politics of knowledge situates groups differently (Collins, 1990, 1998; Harding, 1998, 2004; hooks, 1990a, 1990b; D. E. Smith, 1987; Spivak, 2000). For myself, while I agree about the dangers of essentialism, I cannot agree with the notion that since all is constituted then all is somehow equal. I would say that much depends on which end of the billyclub one stands. Subjugation, for all its complexity, cannot be summarily denied.

<sup>18</sup> After all, spirituality (or religion) has historically formed the demarcative 'other' to science, whereby science claims its special truth over and against other lesser knowledges (Barbour, 1997).

She states, “Noting the difficulty of discussing spirituality using the language of Western intellectual discourse, Richards observes, ‘Spirit is, of course, not a rationalistic concept. It cannot be quantified, measured, explained by or reduced to neat, rational, conceptual categories as Western thought demands’” (Collins, 1998, 247). As another example, Leela Fernandez asserts, “When I speak of spirituality... I am also referring to a transcendent sense of interconnection that moves beyond the knowable, visible material world. This sense of interconnection has been described variously as divinity, the sacred, spirit, sacred, spirit or simply the universe” (Fernandez, 2003, 10; Keating, 2005). Finally, in her definition of spirituality, Gloria Anzaldúa emphasized what she called ‘conocimiento,’ or consciousness, or deep awareness (Anzaldúa & Keating, 2002). She argued that, “Consciousness is as fundamental to the universe as matter and energy” (Anzaldúa & Keating, 2002, 573), and argued that dominant scientific knowledges needed to become as attentive to consciousness as they were to matter and energy.

However, Leela Fernandez warns, “in this regard, intellectuals need to understand the ways in which such dominant distortions of spirituality violate the mystical teachings of the very religious traditions invoked, a viewpoint which is often overlooked” (Fernandez, 2003, 14). She contrasts this with her own perspective where she states, “In effect, this book departs from conventional social and feminist analyses by taking the realms traditionally classified as the sacred, the spiritual, the divine and the mystical as real” (Fernandez, 2003).<sup>19</sup> However, given the historically

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<sup>19</sup> Anzaldúa also advocates a perspective which honors spiritual ways of knowing. She advocated for new ‘stories’ and new ‘sciences’ which would “explore aspects of reality—consciousness, hope, intention, prayer—that traditional science has ignored, deeming these nonexistent as they cannot be

hierarchical relationships between spirituality and science, epistemological incommensurabilities associated with notions of transcendent mystical consciousness and ontological incommensurabilities associated notions of spirits and divinity present difficulties in this regard.

Feminist scholars of spirituality have also emphasized the oppositionality of spirituality and have argued that spiritual knowledges offer emancipatory potentials in relation to dominant Western sciences. For example, feminist theorist bell hooks asserted the long-standing connection between spirituality and emancipatory commitments. She stated, “All around the world, liberation theology offers the exploited and the oppressed a vision of spiritual freedom that is linked to struggles to end domination” (hooks, 2000, 74). Feminist theorist Ana Louise Keating asserts that spirituality is a “weapon and means of protection” for oppressed people (Keating, 2000, 98). The feminist scholar and Voodoo Priestess Luisah Teish, “who has been in a range of intersecting struggles, links the political to the spiritual in these terms: ‘we were political because we were spiritual’” (Alexander, 2005, 323). She also explains how her own spiritual tradition of Voodoo is grounded in a history of emancipatory struggle, “Voodoo has been misunderstood, mislabeled and exploited. The very word inspires fear in some people and folly in others. Let the truth be known: it is a science of the oppressed, a repository of womanknowledge” (Teish, 1983, 334).<sup>20</sup>

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tested in a lab. In the new stories, post modern science shifts its orientation, no longer holding itself to what can be validated empirically by the senses” (Anzaldúa & Keating, 2002, 561).

<sup>20</sup> Teish also makes the notion of spirituality as a ‘weapon’ more directly in her discussion of the history of Voodoo. She states, “It must be remembered that when these people were owned as property, poorly fed, whipped, and mated like breeding animals for sale, what they needed most was the spirit of the warrior to counteract the savagery of slavery. Consequently, a large body of Voodoo

While spirituality is a weapon in the hands of the oppressed, what happens when such weapons of opposition attract the interest of those institutions whose existence necessitates the opposition in the first place? Given that dominant scientific knowledge establishes legitimacy, truthfulness, and conceivability, then spiritual knowledges are likely to seem illegitimate, untrue, and certainly inconceivable if they are approached according to the *a priori* dominant logic of scientific conceivability. Unfortunately, when scientists do turn to spiritual knowledges, they often find them difficult to take seriously, easy to dismiss or at least more palatable when assimilated into their own worldviews. However, assimilating spiritual knowledges according to dominant scientific standards only further reinforces historically hierarchical relations of domination and subjugation.

**B. Scientific and spiritual collisions: Discovery, assimilation, co-optation, and appropriation**

While feminists emphasize the oppositionality of spirituality, and argue that it provides an important intervention into dominant knowledge, this intervention is not always straightforward. After all, spirituality is not a realm that is free from questions of power (Fernandez, 2003). Knowledge relations are constituted in and through relations of domination and subjugation surrounding race, class, gender, and nation; so too spirituality must be practiced inside of a matrix of domination, making the politics of location central to the complexity of retaining emancipatory dimensions of subjugated spiritualities (Collins, 1990). This is especially relevant when subjugated

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magic is directed toward: (1) protecting oneself from physical abuse; (2) hexing and killing enemies; (3) attracting luck in financial matters; and (4) getting and keeping a lover” (p. 340).



knowledges intersect with dominant institutions. As Collins warns, “Subjugated knowledges, such as a Black women’s culture of resistance, develop in cultural contexts controlled by oppressed groups. Dominant groups aim to replace subjugated knowledges with their own specialized thought because they realize that gaining control over this dimension of subordinate groups’ lives simplifies control” (Collins, 1990, 228). Thus, while feminists share Foucault’s framing of subjugated knowledges as connected to struggle, they emphasize the power-laden difficulties involved in his genealogical goal of “a painstaking *rediscovery* of struggles” (Foucault, 1980b, 83, emphasis added ).<sup>21</sup> Such a ‘rediscovery’ of subjugated knowledges is not necessarily clear-cut or without its own power dynamics. Feminists have expanded the discussion to include cautions about what such a process might entail. In this regard, there are several ways in which such ‘rediscovery’ of subjugated knowledges represents a process of (re)subjugation where the emancipatory possibilities inherent to a subjugated knowledge are contained or neutralized, thereby contributing to the reinscription of relations of domination and subjugation.

First, the word ‘rediscover’ implies that such knowledge has been lost; it only needs to be rediscovered if it has gone missing. However, since such knowledges are to be ‘found’ in the possession of the subjugated, then it is the dominant who have lost something, and they are the ones looking for something to ‘rediscover.’ And to do this ‘rediscovering’ they have, in principle, to ‘rediscover’ them from the subjugated. However, perhaps there are good reasons that subjugated knowledges

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<sup>21</sup> Foucault stated, “With what in fact were these buried, subjugated knowledges concerned? They were concerned with historical knowledges of struggle.” (Foucault, 1980b, 83)

have been ‘lost’; perhaps they are not so much lost as hidden. James Scott (1990), whose work focuses on the tactics of oppressed groups in managing their variously subordinated situations, describes such subjugated knowledges as ‘hidden transcripts.’ These are knowledges and practices that remain below the radar of the dominant systems.<sup>22</sup> As Voodoo practitioner and feminist theorist Luisah Teish articulates about Voodoo, “because they were under constant surveillance by the overseer, the master, and a hostile government, the art of deception became a virtue and magical works came to be called tricks” (Teish, 1983, 34). If this is the case, then scientists, researchers, or other representatives of the ‘regimes of truth’ are not necessarily doing anyone any favors by outing the subjugated or revealing their secret hideouts.<sup>23</sup> Further, such representatives have too often assumed that not only are they doing the subjugated a favor by stealing their secrets and reading their diaries, but believe that the subjugated should help in the project of ‘rediscovery’ of these knowledges.<sup>24</sup> They should be happy to answer personal questions, bare their souls, or perhaps even help dig up their own ancestors.<sup>25</sup>

Second, once the unruly subjugated knowledge is ‘rediscovered,’ its oppositionality can be neutralized through *assimilation*. In this scenario, other ways

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<sup>22</sup> He uses a variety of examples, a few of which I find particularly illustrative; The subtexts of African American literature and music, the façade of obedience especially of servant classes, including their seeming loyalty or inscrutability. I might add mother tongues, witchcrafts and household magic, or even black market networks.

<sup>23</sup> The term, “regime of truth,” is credited to Foucault. In his influential lecture entitled *Truth and Power*, he states, “Truth is linked in a circular relation with systems of power which produce and sustain it, and to effects of power which it induces and which extend it. A ‘regime’ of truth” (Foucault, 1977b, 133).

<sup>24</sup> Science and technologies scholar Cory Hayden describes how bioprospecting researchers operate with a faith that inclusion in scientific and biomedical research would itself be a transparent and desirable proposal to which indigenous peoples would consent, if only they understood what the benefits ‘to humanity’ would be (Hayden, 2003, 34).

<sup>25</sup> These questions about the power dynamics of research have been searchingly addressed in feminist anthropology and feminist ethnography. (For more on these issues see: Behar, 1993; Lugones, 1987; L. T. Smith, 1999; D. Wolfe, 1994)

of knowing are translated into the logics of the dominant knowledge so that they conform to those same logics. The knowledge claims are then incorporated into the dominant knowledge system. In the negative rendition, the subjugated knowledge is an interesting if lesser way of knowing; here, we have the stuff of the backward, primitive and savage, as well as quirky folk wisdoms and old wives tales.<sup>26</sup> These are all interesting to study, but beneath dominant standards (be they urban, cosmopolitan, Western, or scientific). In the positive rendition, the subjugated knowledge is placed upon a pedestal, usually a romanticized and/or essentialized one. While this may seem an improvement over the negative gaze, as Gloria Steinem points out, “The pedestal is still just another small place.”<sup>27</sup> This rendition is where the backward barbarian becomes the noble savage and the primitive third world woman becomes the long suffering Virgin of Victimhood. Both leave the dominant gaze unchallenged by leaving the “rediscovered” subjugated knowledge intact as an object of the scientific gaze, to be despised or desired as the dominant sees fit.<sup>28</sup>

Third, a further (re)subjugation occurs when subjugated knowledges are not only prevented from challenging dominant knowledges constructions, but also *co-opted* by those in power, stripping them of their original emancipatory potency. This is especially problematic because subjugated knowledges emerge out of marginalized communities as sites of struggle against dominant knowledge systems and as such are

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<sup>26</sup> For example, Collins asserts, “Elites simultaneously derogate the social theory of less powerful groups who may express contrary standpoints on the same social issues by labeling subordinate groups’ social theory as being folk wisdom, raw experience, or common sense” (Collins, 1998, xiii).

<sup>27</sup> Or to quote interviewee Nancy White on her mother’s metaphor, “My mother used to say that the black woman is the white man’s mule and the white woman is his dog... but he ain’t gon’ treat either one like he was dealing with a person” (As quoted in Collins, 2004).

<sup>28</sup> For a discussion of western feminist constructions of the third world women as abject victims see (Mohanty, 2003). For a discussion of western imperial constructions of indigenous peoples as noble savages (ala Rousseau) and as primitive and savage see (L. T. Smith, 1999).

invested with emancipatory politics and practices. Subjected knowledges often represent an important tool of survival and practice of resistance. When it is co-opted, these communities of struggle are weakened by the loss of an important strategy of resistance in their ongoing liberation struggles (Collins, 1998; hooks, 1990a; L. T. Smith, 1999). Luisah Teish provides an apt example of this problem with her own attempts to resist such co-optations in her own spiritual traditions of Voodoo:

In this paper you will find information this is contrary to the opinions of 'scholarly authorities.' Of special importance is the information on Marie LaVeau, the Voodoo Queen of New Orleans. For years I have read statements about her. All too often the writers use the words 'notorious', 'shameless', and 'debauch' to describe her. At the same time I have heard older women speak lovingly of her and I have encountered at least one source which depicts her as 'saintly' ... As I began working on the New Orleans section of my book, I received a message from a spirit... she made a serious effort to communicate with me. She told me that in writing my book it was important to clear Mam'elle's name... I identified deeply with this sentiment. I know from experience, that a JuJu woman is the favorite target of slanderers. I tried, nevertheless, to explain to the child that a writer is obliged to document her information. Her response was, 'I'm telling you the truth.' Anytime I am given a choice between the word of spirit and that of a white man writing a book about Black Women in the 1800's, I will listen to the spirit and face the consequences. So... You will find in this paper two types of information: that which can be sourced from books and that which is in direct result of my spirit contact experience. In the first kind scholars contradict each other, in the second we contradict the scholars (Teish, 1983, 334).

Teish demonstrates here, that when such subjugated knowledges are sought out by dominant institutions, they risk being contradicted and their emancipatory potency slandered and co-opted.

The final process of (re)subjugation complements the previous in that the secret knowledges once discovered are then *appropriated* and actively used to benefit the dominant in some way. In this regard, the suspicions of the subjugated of anyone

in a white coat with a clip board asking too many questions are justified.<sup>29</sup> This ‘rediscovery’ of the subjugated knowledge is not in fact in their interest, but the interest of the dominant. Such quests often involve the essentializing of the subjugated as the keepers of the dominant’s missing virtues. This may be the Orient as the keeper of spiritual ointment for Western materialist malaise; it may be the “authenticity” of the commodified black ghetto providing needed rhythm and color to the vanilla suburbs; it may be women as keepers of tradition and culture where men may be reminded of the continuity of the laws of their fathers; it may be in the inspiring purity of the poor, the workers, or the long suffering Third World woman. In all these scenarios, the subjugated knowledge remains as nothing more than a muse, the angel in the master’s house (V. Wolfe, 1966).<sup>30</sup> Appropriation does not always imply the explicit use of subjugated knowledge for the benefit of those in power, although that often seems to be the case. They can also simply be taken to be displayed and enjoyed by virtue of their subjugated status; indeed it seems to be the display of subjugation that is part of the point of the appropriation (J. C. Scott, 1990; L. T. Smith, 1999). In this move the exoticized Other’s (whether indigenous, Oriental or authentic peasant) private cultures of resistance become testament to their subjugation via their very possession by the dominant. What was once a subjugated emancipatory practice is now a testament to domination on display in museums, archives, collections and over mantels.<sup>31</sup>

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<sup>29</sup> For a discussion of this issue of justified suspicions of researchers see Linda Tuhiwai Smith (1999) or Maria Lugones (1987).

<sup>30</sup> For a discussion of orientalism see (Said, 1978). For a discussion of commodified blackness see (hooks, 1990a)

<sup>31</sup> For a discussion of the politics of museums and archives for indigenous peoples see (L. T. Smith, 1999).

Feminist theorist and spiritual practitioner Gloria Anzaldúa emphasized the problem of appropriation for spirituality particularly.<sup>32</sup> She argued that the West, and especially the Western/White left, had lost their connection to spirituality to their own detriment but cautioned about how they should go about ‘rediscovering’ spiritual knowledges. She asserted:

Whites, along with a good number of our own people, have cut themselves off from their spiritual roots, and they take our spiritual art object in an unconscious attempt to get them back. If they’re going to do it, I’d like them to be aware of what they are doing and to go about doing it the right way. Let’s all stop importing Greek myths and the Western Cartesian split point of view and root ourselves in the mythological soil and soul of this continent. White America has only attended to the body of the earth in order to exploit it, never to succor it or to be nurtured in it. Instead of surreptitiously ripping off vital energy of people of color and putting it to commercial use, Whites could allow themselves to share and exchange and learn from us in a respectful way. By taking up *curanderismo*, Santeria, shamanism, Taoism, Zen and otherwise delving into the spiritual life and ceremonies of multi-colored people, Anglos would perhaps lose the white sterility they have in their kitchens, bathroom, hospitals, mortuaries and missile bases. It is in this spirit, in the spirit of multi colored rituals to banish sterility that I seek affinity with the many witches and scholars that also seek to conjure a *conocimiento* that might “divert the indifferent, right-handed, ‘rational’ suicidal drive, that unchecked, could blow us into acid rain in a fraction of a millisecond” (Anzaldúa, 1987, 69).

As Anzaldúa asserts, scientists (and other dominant group members) should find a way to ‘rediscover’ spirituality, but they should not do so by continuing the colonial tradition of stealing other people’s idols and appropriating their sacred knowledges and practices.

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<sup>32</sup> Anzaldúa is a foremother in spiritual feminisms and I would argue that she is one of the most exquisite examples of seriously examining both the destabilizing of the social science’s disciplinary codes of rendering the world, and the post-structural implosion of the scientific and the literary. Anzaldúa pursues her intellectual writing, her activism and her spiritual and cultural disciplines as one practice. The themes of consciousness, power, knowledge, practice and feminism informs all of her work but so to does her reliance on mysticism, vision and hallucination. She mixes poetry and prose and languages and metaphors to create a tapestry whose gestalt is somehow an example in black and white.

In many ways the psychedelic sciences represent a moment where spirituality entered the white sterility of the scientific laboratory. Negotiations over the challenges spirituality posed as a subjugated knowledge, represent a unique opportunity to investigate the dynamics around such power-knowledge relationships. Using feminist theoretical frames this study aims to analyze how spirituality was brought forward and negotiated in the psychedelic sciences and how dominant and subjugated knowledge relationships were variously challenged and reinforced in and around those negotiations.

### **III. Crafting a theory-methods research Design**

Many qualitative researchers articulate a theory-methods package rather than disarticulating methods from theoretical commitments.<sup>33</sup> This is especially the case in feminist research.<sup>34</sup> In her book *'Feminism and Method'*, feminist ethnographer Nancy Naples describes a multidimensional approach to feminist research. Drawing on feminist philosopher of science Sandra Harding, she distinguishes between epistemology ('a theory of knowledge'), methodology ('a theory and analysis of how research should proceed'), and method, ('a technique for . . . gathering evidence') (Naples, 2003, 3) Following this model, I describe in this section the theory-methods package which organized this study. I begin by describing the set of epistemological commitments which orient my approach to analysis which I call 'feminist genealogy.'

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<sup>33</sup> From a post-structural and qualitative approach in general, the distinction between theory and method is in many ways seen as arbitrary and impossible. From the selection of the topic to the research questions, the assumptions about what constitutes legitimate inquiry to the very goal of the inquiry, all methodologies are already theoretical and are underpinned epistemological and ontological assumptions (Fairclough, 2003; Wetherell, Taylor, & Yates, 2001).

<sup>34</sup> As feminist ethnographer Adele Clarke states, "Because epistemology and ontology are joined at the hip, 'methods' needs to be understood as 'theory/methods' packages" (Clarke, 2005, xxxiii).

Second, I describe discourse analysis, the methodology of my project. Third, I describe the methods which I used to organize my data sources and evidence collection. Finally, I describe the data sources which I analyzed using this feminist genealogical discourse analysis.

### **A. Feminist genealogy**

A feminist genealogical discourse analysis centers a post-structural examination of relations of power-knowledge while theorizing those relations as constitutive of and through the intersecting axes of domination of race, class, gender and nation. In feminist genealogy,<sup>35</sup> I combined the critical sensibilities of post-structural genealogy with the emancipatory commitments of feminism.<sup>36</sup> I used the genealogical tools of historical and contextual analysis while centering feminist criterion for emancipatory evaluations. As Nancy Naples described with her similar approach, “The dynamics of gender, race, and class are brought into the frame more effectively than is possible with a non-feminist Foucaultian approach” (Naples, 2003,

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<sup>35</sup> I use the framing of genealogy for my discourse analysis because it speaks so directly to my object of study and theoretical concerns. As Adele Clark explains, “Foucault is known for two distinctive approaches to historical questions: archeology and genealogy... in his later genealogical projects Foucault (1978, 1979) proceeded by tracing changes in discourses (including the meanings of terms) back to their beginning. Discourses of a particular interest are those that seek to tell us what to see/what can be seen/how to be” (Clarke, 2005, 264).

<sup>36</sup> In this section I will emphasize Foucault’s articulation of power-knowledge and his discussion of genealogy as a methodology for analyzing power-knowledge relationships (Foucault, 1994). However, there are several other general philosophical assumptions that also inform this project. Post-structuralism emphasizes the role of knowledge production in co-constitutive relations of power and as such the focus of such analyses is on power-knowledge relationships (Dreyfus & Rabinow, 1982; Foucault, 1977b, 1994; Hoy, 2004; Sarup, 1988). It is generally anti-essentialist and argues that subjects are produced via discourses and thus there are no pure or *a priori* subject positions (Butler, 1990; Hall, 2001; Hoy, 2004; Sawicki, 1991; Stevens, 2003; Tamboukou, 1999; Weedon, 1987; Weeks, 1998). Further, post-structuralism implies social constructionism, relativism (as opposed to positivism), at least an agnosticism if not an outright relativism regarding ontologies (as opposed to the philosophical realism underlying positivism) and most critically, and in my emphasis, feminist emancipatory politics (Hartscock, 1990; Hess, 1997; Hoy, 2004; Sarup, 1988; Sawicki, 1991; Stevens, 2003; Tamboukou, 1999; Weedon, 1987; Weeks, 1998).



28-29). In this section I describe the two primary epistemologies of analysis which were particularly important to my deployment of feminist genealogy in this study.

First, for a feminist genealogy, power-knowledge remains an important site of analysis for relations of domination and subjugation. However, in contrast to Foucault's theories, that power is not disembodied or unspecified. Power is seen as organized via an interlocking matrix of domination whereby some groups dominate others and these relations pervade the entire social body (Collins, 1990). This is not to say that these groups are not variously constructed, overlapping or historically specific. Nor am I saying that groups do not matter (See Chapter 6: Collins, 1998). In this regard, the relationships between power and knowledge may better be conceptualized as situated knowledge rather than power-knowledges, and more specifically, situated knowledge where the 'situation' is a matrix of domination (Haraway, 1991).<sup>37</sup> In a matrix of domination, relations of power are constituted through the interesting axes of race, class, gender, and nation (Collins, 1990). These axes are not read as natural, inevitable or essential despite the fact that such axes have been historically central to the current constructions of power and relations of force across the global present. Instead, they are to be read as socially constructed. If, as Foucault says, that such relations take the 'form of war', then who lives and who dies has as much to do with race and class and gender as with any disembodied notion of

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<sup>37</sup> Feminist ethnographer Nancy Naples discusses the relationship between these two terms, as both have been important to feminist theories of knowledge and power. The political scientist Sonia Kruks points to Haraway's work on 'situated knowledges' to demonstrate the usefulness of 'certain post-modern sensibilities' for 'acknowledging a multiplicity of different epistemological locations for a non-dominative feminist' (Kruks, YEAR?, p. 113). By arguing for the development of multiple standpoints that derive from what she terms the 'matrix of domination,' Collins' (1990) approach to standpoint epistemology evokes Donna Haraway's notion of 'situated knowledge'"(Naples, 2003, 19). Both terms emphasize what Naples articulates, "The significance of locating and analyzing particular standpoints in differing contexts to explicate relations of domination embedded in communities and social institutions" (Naples, 2003, 21).

‘knowledge.’<sup>38</sup> From this perspective, it is important to attend to these ever important axes around which power-knowledge continues to rotate as they bear directly on sciences’ continuing implication in “the problem of domination and subjugation” (Foucault, 1980b, 96).

The second epistemology that was important to my analysis was that feminist genealogy is grounded in emancipatory commitments. Feminist theories of knowledge have argued that is not sufficient to merely describe power laden assumptions but rather they must also be contested, destabilized and challenged (Collins, 1998; Haraway, 1991). However, there is debate about how best to evaluate knowledge and how to incorporate such emancipatory assessments and interventions into feminist projects.<sup>39</sup> Some feminists advocate empiricism and argue that the point of a feminist analysis of science is to improve the would-be objectivity of science through attention to politics and values (Harding, 1986; Longino, 1990). Others argue that the bottom line assessment must be a political, moral or ethical platform because any such notions of objectivity are impossible and undesirable (Collins, 1990, 1998; Haraway, 1991). It is this latter emphasis that orients this project. In this regard, feminist theorist Kathy Ferguson aptly describes my intended feminist deployment of genealogy, “The interpretivist envisions a more enabling alternative toward which we are invited to struggle, while the genealogist insists that those structures and processes that we take to be thoroughly liberating will also be

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<sup>38</sup> He argues, “The history which bears and determines us has the form of a war rather than that of a language: relations of power, not relations of meaning” (Foucault, 1977b, 114).

<sup>39</sup> For example, Collins book, *Fighting Words: Black Women and the Search for Justice*, explores this question of emancipatory assessments for knowledge at length (Collins, 1998). As another example, Sandra Harding’s edited volume, *The Feminist Standpoint Theory Reader: Intellectual and Political Controversies*, focuses on the these debates within standpoint theory, and documents considerable debate over feminist criteria for, and theorization of, knowledges (Harding, 2004).

constraining. The interpretivist holds up for us a powerful vision of how things should be, while the genealogist more cautiously reminds us that things could be other than they are” (Ferguson, 1991, 7).

## **B. Textual pattern analysis**

My analysis followed closely the steps of discourse analysis, a qualitative methodology with a broad range of deployments (Denzin & Lincoln, 2002; Wetherell et al., 2001).<sup>40</sup> In the broadest sense, discourse analysis attempts to analytically connect ‘texts’ to the larger social world, to understand how meaning constructs social worlds and vice versa (Clarke, 2005; Fairclough, 2003; van Dijk, 1997).<sup>41</sup> Qualitative researcher Denzin Lincoln defines discourse analysis as, “The analysis and understanding of the patterned conduct and social processes of society” (Denzin & Lincoln, 1998, 11). In this regard, discourse analysis is pattern analysis, an inductive process for finding, describing and interpreting the patterns constructing the discursive field at hand (Glaser & Strauss, 1967; Silverman, 1993; Strauss & Corbin,

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<sup>40</sup> Discourse analysis involves the examination of a wide range of materials including media content, scientific knowledge, books, interviews, narratives, historical documents and everyday practices. However, textual analyses predominate (Denzin & Lincoln, 1998, 2002; Fairclough, 2003; Wetherell et al., 2001). As Adel Clarke articulates, “It is usually (but not always) the analysis of particular sets of texts or narratives chosen because they are produced by a particular group of social world in which the researcher is interested, or because they are about a particular group or social world of thing(s) in which the researcher is interested... The conceptual tools of discourse analysis are brought to bear on this data” (Clarke, 2005, 150). Qualitative researcher Norman Fairclough also emphasizes the importance of texts for discourse analysis. He states, “Texts constitute a major source of evidence for grounding claims about social structures, relations, and processes... it is increasingly through texts (notably, but by no means only those, of the media) that social control and social domination are exercised (and indeed negotiated and resisted)” (Fairclough, 1999, 203-205).

<sup>41</sup> In discourse analysis, ‘text’ has a wider meaning than ‘document,’ which is more limited to paper with words. As qualitative researchers Peter Manning and Betsy Cullum-Swan assert, “Structuralism sees ‘documents,’ once viewed as actual physical or concretely assessable objects, as ‘texts,’ analytic phenomena produced by definitions and theoretical operations ” (Manning & Cullum-Swan, 1998, 254). In this perspective, ‘meanings’ are important but only insofar as they connect to a larger social world involving constructions of reality and relations of power that pre-exist and make them possible and conceivable (Fairclough, 2003; van Dijk, 1997).

1990).<sup>42</sup> These ‘patterns’ include ideas, statements and meanings (content).<sup>43</sup> But more importantly, they also include underlying ideologies, assumptions, relations of power and social realities which co-constitute the ideas, statements and meanings (context) (Fairclough, 2003; van Dijk, 1997).<sup>44</sup>

Beyond ascertaining the content of the text, a discourse analysis must disarticulate the power-laden patterns connecting content and context in order to interpret relations of power (Clarke, 2005). Feminist researcher Adele Clarke (2005) asserts that in order to find and interpret these patterns, texts should be analyzed repeatedly until the researcher begins to see important patterns in the data (Clarke, 2005). Relevant discursive themes emerge as particular theoretical lenses repeatedly travel over the texts and documents at hand. This allows the researcher to bring the theoretical concerns driving the study to bear on the texts, and allows theoretically

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<sup>42</sup> I do not mean the formal analytic induction of Znaniecki (1934) . I also do not mean to invoke the formal inductive methods associated with Glaser and Strauss’s (1967) grounded theory but rather the spirit of their inquiry. I use inductive in the general sense of inductive versus deductive. I use it in the sense that much of qualitative methods embrace inductive approaches. In deductive approaches, the researcher has a hypothesis and then seeks to confirm or fail to confirm that hypotheses in the data. In an inductive approach, the researcher approaches the data with questions and then identifies themes, patterns or ‘answers’ through ongoing contact with the ‘data.’ Also, for an excellent discussion of these issues see (Online document: Ratcliff, <http://www.vanguard.edu/uploadedFiles/faculty/dratcliff/qualresources/analytic.pdf>, accessed 7-7-07)

<sup>43</sup> An analysis for ‘content’ is usually referred to explicitly as ‘content analysis’ (Denzin & Lincoln, 1998; Fairclough, 2003; van Dijk, 1997). Content analysis in its most traditional form involves the quantitative analysis of metric units consistently coded via a formal rubric of analysis (Fairclough, 2003; Manning & Cullum-Swan, 1998). It involves a close reading of the texts themselves with an emphasis on textual structures. However, content analysis can also imply an analysis of discursive patterns of meaning viewed in intersection with power (Clarke, 2005; Fairclough, 2003; Manning & Cullum-Swan, 1998). This involves asking the questions of who wrote it, with what resources and under what conditions. But it also involves a closer reading of the texts themselves. I do not mean so much the linguistic form of content analysis which centers on semantics, grammar, structure of language but rather to meanings, patterns, rhetoric, logics, and especially how these are in relation to the larger social concerns of power and social location (Clarke, 2005; Naples, 2003).

<sup>44</sup> As qualitative researcher Norman Fairclough asserts, “Meaning making only takes place inside larger structures, relations of power, etc. and thus must be connected to a larger analysis which accounts for this larger context” (Fairclough, 2003, 16). Qualitative researcher Ian Hodder makes a similar point in his discussion of discourse analyses of material culture. He asserts, “In both texts and artifacts the problem is one of situating material culture within varying contexts while at the same time entering into a dialectic relationship between those contexts and the context of the analyst” (Hodder, 1998, 113).

informed interpretation of the texts to emerge in order to build contextualized answers to the research questions (Clarke, 2005).

In this study, I analyzed psychedelic scientific texts recursively until I was able to identify content as well as context and begin to see power-laden relationships between them.<sup>45</sup> In the beginning of this analysis, I emphasized breadth to better understand the context of these psychedelic scientific communities of practice. While research that included spirituality was my primary focus, I also examined research which did not focus directly on spirituality in order to gain a broad understanding of the history of psychedelic research. However, as I gained a broader mapping of this field I began to focus on research which specifically dealt with spirituality and I examined that research to identify the dominant scientific and medical paradigms into which spirituality was brought forward. As I traced these negotiations, I compared the first wave and second wave research to examine how the negotiations shifted to accommodate newly emerging scientific standards and ascendant research paradigms. This historical comparison was particularly important given the criminalization of these substances and their controversial reputation which necessitated the continuing efforts to legitimize psychedelic research.

### **C. Coding and memos**

As an analytic aid to this interpretive analysis of texts and in order to attend as rigorously as possible to these relations of power, I organized my documentary analysis using the situational analysis techniques of coding and memos (Clarke,

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<sup>45</sup> See Appendix B: Data Sources for a complete listing of the documents I analyzed in this study organized by chapter.

2005).<sup>46</sup> The first technique that I utilized was thematic coding. In this procedure, the researcher begins with some codes in mind. Others are added as the researcher becomes more familiar with the data and texts, and as new themes and important categories become apparent (Clarke & Olesen, 1999; Prior, 2003).<sup>47</sup> The researcher codes single texts as well as theoretically informed juxtapositions and constellations of texts. Qualitative researcher Lindsey Prior asserts that it is when these related codes begin to merge with theoretical analysis “we begin to move over from indexing to coding. For what we do when we code data is to arrange and organize data according to social scientific perspectives and interests” (Prior, 2003, 161). As these codes become more analytically elaborate, “these [codes] are ultimately integrated into a theoretical analysis of the substantive area” (Clarke, 2005, xxxi).<sup>48</sup> The second technique on which I relied was the situational analysis technique of writing ongoing memos.<sup>49</sup> Memos are used to keep track of emerging analytic understandings.

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<sup>46</sup> ‘Situational Analysis’ is Adele Clarke’s (2005) postmodern interpretation of Strauss and Corbin’s (1990) grounded theory. Like discourse analysis generally, situational analysis also involves an inductive process for identifying patterns, both ones the researcher intended to look for when developing the study, as well as those that emerge over the duration of the analysis. In ‘Situational Analysis,’ Clarke develops several tools for formalizing this process whereby theoretical frames are used to interpret the social world vis-à-vis particular theoretical concerns.

<sup>47</sup> Prior asserts that in such coding, “Coding terms are terms that have been read into the interview by the researcher” (Prior, 2003, 160). Prior (2003) points out that while grounded theory scholars usually assert that by allowing the codes to emerge from the data that greater objectivity (meant loosely) is achieved. However, from a Foucaultian perspective, even this process is still another layer of construction. There is no meaning in the text, as such, waiting to be discovered, no matter the rigor of the technique. For an interesting discussion of these positions surrounding grounded theory, see Charmez (2000).

<sup>48</sup> Clarke describes coding as follows: “In this method, the analyst initially codes the data (open coding)—word by word, segment by segment—and gives temporary labels (codes) to particular phenomena. The analyst determines whether codes generated through one data source also appear elsewhere, and elaborates their properties. Related codes that have endured are then densified into more enduring and analytically ambitious ‘categories,’ and these are ultimately integrated into a theoretical analysis of the substantive area” (Clarke, 2005, xxxi).

<sup>49</sup> This process of memoing is not exclusive to situational analysis. In a more general sense, memos are like the field notes that any qualitative researcher might use in the ‘field.’ Here they are used for text, whereas in most qualitative studies they would be used for participant observation, interviews, or some other ‘field’ based situation.

Memos are written across the research process beginning with basic memos such as notes taken for a particular text, figure, or theme.<sup>50</sup> They then become more complete as analytic work is furthered and becomes formal enough to be incorporated into the theory building project (Clarke, 2005, 102-103).

The chapters in this study emerged out of this iterative process of coding, memoing, more coding and more memoing. I found that I coded and memoed materials in several waves each time adding specificity and depth. At first I surveyed the literature with broad categories. Eventually, I began to come back to particular themes over and over as they seemed the most prevalent and the most analytically important. These more comprehensive memos became the seeds of chapters where I formalized answers to my research questions. The most difficult part of this process was weaving my coding of my documents with my theoretical literature. In order to keep my analysis tied closely to both my object of study, my framings and research questions I found it useful to code and memo my theoretical literature just as I did with my research documents.

I found that I relied increasingly on this formalized system of coding and memos over the course of this study.<sup>51</sup> I analyzed all of the psychedelic studies with

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<sup>50</sup> Clark describes this process: “At early stages of analysis, memos can and usually should be partial and tentative, full of questions to be asked and answered about the nature and range of particular sets of social relations, rather than being answers in and of themselves. Such memos thus help plan theoretical sampling strategies. They can also act as analytic ‘placeholders’ to remind the analyst to return to particular relational questions later in the research process and to then ‘complete’ the memos through further analytic work if it then seems worthwhile” (Clarke, 2005, 103).

<sup>51</sup> My one methodological regret is that initially I was not sufficiently organized in my handling of documents. I wish I had taken more organized, detailed, and systematic notes from the beginning. There were times at the end of the project where I would return to my older notes and had to completely redo them. However this illustrates both the risks of an inductive process and the necessary pitfalls of learning how to conduct research. Adel Clarke gives fair warning of this problem in her methodology book stating: “I cannot walk you further through this stage here, aside from reiterating that using exquisite care now in organizing both your primary and secondary data is crucial”

‘content’ codes. These were codes where I noted the presence of any discussion of spirituality or scientific knowledge. I also coded all of the documents I analyzed with ‘context’ codes. These were codes where I noted important contextual information which helped me to sort and make sense of the content. The context codes I used most consistently were the time period, the discipline and general methodology. In addition, I developed a set of thematic codes which emerged as I analyzed these texts repeatedly and in theoretically informed juxtapositions. These thematic codes emerged through iterative theoretical analysis which I developed into theoretically informed answers to my research questions and eventually into the chapters of this study.<sup>52</sup>

#### **D. Data sources**

In this study, I analyze a documentary archive I created through a theoretical sampling of the psychedelic sciences of spirituality from the 1930’s through the present.<sup>53</sup> In constructing this documentary archive, I chose the writings of prominent scientists in the field, especially those that characterized important areas of the psychedelic sciences and shaped dominant narratives of the scientific history of psychedelics. This was to bring the dominant discourses into greatest analytic relief. I do not claim to have identified the only definitive historical narrative of these

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(Clarke, 2005, 267). Would that I had heeded her advice. I do not feel this learning curve jeopardizes the rigor of my project but it did contribute to the length of time it took me to complete it.

<sup>52</sup> See Appendix B: Table of Codes for a listing of the codes that I used in this analysis.

<sup>53</sup> This sort of theoretical ‘sampling’ is in line with situational analysis as articulated by Clarke. She states, “‘Sampling’ is driven not necessarily (or not only) by attempts to be ‘representative’ of some social body or population or its heterogeneities, but especially and explicitly by theoretical concerns that have emerged in the provisional analysis to date. Such ‘theoretical sampling’ focuses on finding new data sources (persons or things- and not theories) that can best explicitly address specific theoretically interesting facets of the emergent analysis” (Clarke, 2005, xxi).



sciences. Other projects could be conducted that focus on the fractures and the contradictions in the rich histories of these sciences.<sup>54</sup> However, for the purposes of this study I sought to articulate what some of the dominant knowledge practices have been in these undertheorized and recently expanding sciences.

I included both scientific publications, as well as non-peer reviewed documents targeting a ‘public’ audience, such as memoirs of key figures, interviews, anthologies, conferences proceedings and cultural histories. I found that these documents were an important supplement to the strictly scientific psychedelic literature because these researchers seemed to speak more freely and broadly about their work with psychedelics while off the scientific record.<sup>55</sup> I also included secondary sources such as social scientific, historical and cultural/political discussions of and within the psychedelic sciences. I relied on these secondary analyses of psychedelics as analytic tools much the same way I drew on the history of science and medicine literature to understand the emergence of historical trends in science and medicine more generally. However, the analytic work of this study lies

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<sup>54</sup> Representing a widespread view within science and technology studies, Adele Clarke emphasizes just such a perspective, which contrasts with this project’s emphasis, on what she would call ‘the master discourse’. She states, “In very sharp contrast, in situational analysis, analyzing discourse through situational mapping instead seeks to represent all the major discourses related to the situation of interest—not just what could be called ‘the master discourse,’ that which usually trumps the others. This is radically different. By not analytically recapitulating the power relations of domination, analyses that represent the full array of discourses turn up the volume on lesser but still present discourse, lesser but still present participants, the quiet, the silent, the silenced” (Clarke, 2005, 175).

<sup>55</sup> In one description of his firing, psychedelics pioneer Richard Alpert/Ram Dass jokingly says that when he was fired from Harvard, he turned in his science ‘badge’ because he no longer needed it (Dass, 1974). Once he was fired from Harvard, his publications were by definition ‘public’ because without his ‘badge’ he lost his scientific authority; he was no longer a ‘scientist.’ And yet of course, the day before he turned in his badge, he was indeed a scientist. What then is a scientist? Is a scientist who loses his badge but still engages science a scientific vigilante? To me, these stories are rich with such intersections of power and science.

in my analysis of scientific discourses and practices to be found in the textual records of these psychedelic sciences of spirituality.<sup>56</sup>

#### **IV. Organization of findings**

In Chapter 2, “*Experimental mysticism: Tactics of legitimation in the psychedelic sciences of spirituality*,” I address the question of how spirituality was brought forward and negotiated in the psychedelic sciences in relation to dominant assumptions of knowledge production. I analyze how spirituality, a historically demarcated and subjugated knowledge system, became legitimized in the context of these psychedelic sciences. Through my analysis, I identified the dominant scientific and biomedical paradigms in this field. I argue that psychedelic scientists utilized a range of what I call *tactics of legitimation* to justify the scientific study of these peculiar substances and the spirituality with which they are associated vis-à-vis those dominant knowledge assumptions. I show the ways in which this acquiescence to prevailing scientific standards restricted the radical potential of this research to challenge dominant models of scientific knowledge.

In Chapter 3, “*Neurotheology: Expanding scientific authority over spirituality in the psychedelic sciences*,” I extend my analysis of the ways that spirituality was negotiated in these sciences in the context of the epistemological authority of these dominant scientific and biomedical paradigms. In my analysis, I found that the western psychotherapeutic scientific and medical disciplines have long predominated in these efforts to integrate psychedelic sciences and spirituality. In

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<sup>56</sup> See Appendix B: Data sources for a listing of documents I analyzed in this study organized by chapter.

this chapter, I analyze the primary epistemological and ontological incommensurabilities that seemed most troubling to the efforts to reconcile these historically demarcated systems through integrating Western therapeutic scientific assumptions and practices with spiritual and mystical traditions. I found that scientific authority was often reified over and above spiritual knowledges such that science and medicine took on the authority traditionally associated with religion and spirituality. I conclude by discussing the emergence of a would-be clerical authority in the psychological disciplines, whereby scientists claim the liturgical roles and ecclesiastical authority typically wielded by spiritual or religious leaders, to the degree where they seek to administer psychedelic sacraments and scientifically determine the very *mysticality* of the mystical experience.

In Chapter 4, “*Neuroshamanism: The psychedelic sciences and the bioprospecting of spirituality*,” while I attend to various aspects of power relations across these chapters, here, I address the politics of location more explicitly. I analyze the psychedelic sciences of spirituality, which flowed out from the ‘discovery’ of psychedelic substances in the context of bioprospecting research in indigenous communities.<sup>57</sup> As a bioprospecting endeavor, the goal of this research was to identify and subsequently to develop psychedelic plants, and the spiritual knowledges associated with their use, into marketable medicines and psychotherapeutic protocols. However, given the spiritual belief systems that

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<sup>57</sup> Bioprospecting describes the increasingly profitable scientific and pharmacological drug development collaborations that emerged out of the post-World War II expansion in scientific, technological and medical developments and the associated growth in the pharmaceutical industry. As the pharmacology industries expanded, they collaborated with the field scientists of ethnobotany and anthropology, who conducted research on indigenous uses of plants and indigenous medicinal knowledge in order to obtain additional plant materials to develop into pharmaceutical drugs.

surrounded their use and the ability of these substances to induce intensely altered states of consciousness, these scientists grappled with the epistemological and ontological problems that arose. I analyze these epistemological and ontological impasses, and the attendant political dilemmas across these bioprospecting attempts, to scientifically assay the plants from the gods in the pursuit of therapeutic spirituality. I conclude by arguing that while these sciences represent a moment where scientists engage with spiritual knowledges from historically marginalized communities to an unprecedented degree, the politics of location and historically hierarchical relationships constitutive of bioprospecting are reinforced despite the ‘good intentions’ of these psychedelic scientists.

In the final chapter of this study, “*Spirituality in the Laboratory: Negotiating the politics of knowledge in the psychedelic sciences of spirituality*,” I provide a synthetic discussion of my findings. I demonstrated in this project how these psychedelic sciences of spirituality have traced a problematic history in ways which resulted in the reification of scientific authority, the assimilation and appropriation of spiritual knowledges, and the reinforcement of historically hierarchical relationships constituted via the politics of location. I analyzed these politics and problems across several tactics of legitimation and across scientific and medical domains, particularly those connected with the western psychotherapeutic disciplines and in the bioprospecting sciences. In this regard, I will enumerate the implications of my findings in these peculiar sciences for feminist and sociological theorists of science and knowledge and the relationship of domination and subjugation. First, this project speaks to the importance of articulating how relationships between dominant and

subjugated knowledges are both power laden and multiply (re)configured. Second, this project speaks to the importance of how such analytic attention to these (re)configurations have important emancipatory implications as yet under theorized in the sociology of knowledge and social and feminist theorizing of power-knowledge. Finally, I discuss possible future directions for continuing sociological and feminist projects on these peculiar psychedelic sciences and substances.

## **Chapter 2: Experimental Mysticism: Tactics of legitimation in the psychedelic sciences of spirituality**

### **I. Introduction**

In the history of western science since the enlightenment, scientists and philosophers of science have sought to ‘demarcate’ science from ‘pseudoscience’ (See especially Lakatos, 1976). Religion and spirituality have been characterized in these demarcation debates as the apotheosis of science and thus central to the demarcation of science as a special and privileged knowledge (Barbour, 1997). This ‘problem of demarcation’, as it has been called, has been criticized as both arbitrary and power-laden by both philosophers of science themselves (Feyerabend, 1978; Laudan, 1996) as well as by science and technology studies scholars (Harding, 2006; Turnbull, 2003).<sup>58</sup> Philosopher of science Larry Laudan, pointed to an important feature of this debate: ‘no one can look at the history of debates between scientists and ‘pseudoscientists’ without realizing that demarcation criteria are typically used as machines de guerre in a polemical battle between rival camps” (Laudan, 1996, 337; See also Swazo, 2005) Given this historically demarcative relationship between science and spirituality, in this chapter I analyze how spirituality was brought forward and negotiated in relation to dominant scientific assumptions and practice in the

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<sup>58</sup> For a now canonical example of a science and technologies studies (STS) treatment of the arbitrary demarcation of science and other ways of knowing including religion see (Shapin & Schaffer, 1985).

scientific study of psychedelic substances and the spiritual experiences they are thought to induce.

In order to determine how spirituality was brought forward and negotiated, I analyzed scientific studies of psychedelic substances that included spirituality in their research in some capacity from the 1930's into the present. As I traced this history I began by reviewing articles and studies on psychedelics that did not include spirituality in addition to those that did. In this way I was able to place the studies of spirituality into a broader context of psychedelics research. I then focused more specifically on those studies emphasizing the importance of spirituality and traced how they negotiated the additional complexity of spirituality on top of other controversial dimensions of psychedelic substances. In addition to psychedelic studies I also examined secondary sources including histories written by psychedelics scholars as they constructed dominant narratives of psychedelic scientific struggles to gain legitimacy.<sup>59</sup>

Through my analysis I identify the dominant scientific and biomedical paradigms in which these negotiations took place. Based on my analysis, I found that the scientists who studied spirituality through psychedelics relied on four *tactics of legitimation* in order to justify the scientific study of these peculiar substances and the spirituality with which they are associated vis-à-vis dominant scientific assumptions and practices. These tactics include (1) *accessing* spirituality through auto-experimentation, (2) *measuring* mystical experiences in research subjects, (3) *explaining* the effects of psychedelic substances and associated belief systems using

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<sup>59</sup> See Appendix B: Data sources for a listing of documents I analyzed in this study organized by chapter.

scientific methods, and (4) *applying* the substances to the domain of psychopharmacological therapy.<sup>60</sup>

In this chapter, I analyze these tactics of legitimation as they are used by psychedelic scientists to stake out turf for their sciences of psychedelics and spirituality. In my detailed analysis of these tactics of legitimation, I explain how each tactic drew on particular dominant scientific and biomedical paradigms in order to legitimize their scientific studies of spirituality. I argue that while these tactics were variously successful in claiming space for these unusual sciences, they often did so at a cost. On the one hand these tactics were a response to dominant institutions seeking to eliminate this research and in this regard they are both necessary and understandable. On the other hand, many of the most incommensurable and challenging dimensions of spirituality had to be made to accommodate the practices or assumptions of those same dominant institutions to whom the appeals of legitimacy were made. As such, I analyze the ways in which the acquiescence to dominant scientific knowledge and practice results in an assimilation of spirituality and a reinscription of their historically hierarchical demarcative relationship.

## **II. The psychedelic doorway and the politics of demarcation**

In the previous chapter I argued that psychedelic substances served as a doorway through which spirituality entered the scientific laboratory. The scientists

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<sup>60</sup> It is worth noting that these four tactics of legitimation are not mutually exclusive. These tactics represent general strategies for organizing a wide range of psychedelics research on spirituality; they represent only one way to characterize a wide ranging and transdisciplinary body of scholarship. Yet I argue that these four tactics characterize a majority of past and present research into the “spiritual” in the psychedelic sciences. In this regard these tactics are analytically useful (and justifiable vis-à-vis psychedelics history) for understanding spirituality in this world of research.



who first encountered psychedelics conceptualized a connection between psychedelics and spirituality. For example, Gordon Wasson, the amateur botanist who was credited with ‘discovering’ psychedelic mushrooms, argued for their importance for botany and simultaneously asserted their connection to spirituality when he referred to them as the ‘divine mushrooms of immortality’ (Wasson, 1957). Richard Alpert, the Harvard psychiatrist who became the new age guru Ram Dass, asserted that psychedelics allowed users to ‘visit’ with divinity and that “God came to the United States in the form of LSD” (Dass, 1974, 14). It is precisely such assertions that led some psychedelics researchers to theorize psychedelics as facilitating a merger of science and spirituality. For example, psychedelics psychiatrist Walter Pahnke hoped that psychedelics might lead to a new field he called “experimental mysticism” (Pahnke, 1966b). Similarly, Alpert and others advocated for what a would-be scientific mysticism led by psychedelic scientists. They stated, “Modern psychedelic chemicals provide a key to this forgotten realm of awareness . . . The secret is released once again, in a new dialect, and we sit back quietly to observe whether man [sic] is ready to move ahead and to make use of the new tools provided by modern science” (Leary et al., 1964, 30-31).<sup>61</sup>

Rather than legitimizing the study of spirituality through psychedelics such claims were disparaged as ‘messianic’ or evangelical’ or ‘cultist’ (Grinspoon & Bakalar, 1979; C. Grob, Greer, & Mangini, 1998; Lee & Shlain, 1985).<sup>62</sup> These

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<sup>61</sup> There are others who also advocate a psychedelic facilitated science of spirituality. For example, Mash advocates ‘neuroshamanism’ and Winkelman advocates a ‘neurotheology’ (Diamond, 2000; Winkelman, 2004). I will discuss these in more detail in a subsequent chapter of this dissertation.

<sup>62</sup> For example, Albert Hoffman (1979) comments on psychedelic history and asserts “After his expulsion from Harvard University, Leary was completely transformed from a psychology lecturer pursuing research, into the messiah of the psychedelic movement” (chapter 5 pg. 15).

denunciations are telling in that merely associating scientists or scientific claims with religion is sufficient to undermine their credibility. It is also implicitly insulting and one might as well call them unintelligent, simple minded or foolish. The implicit pejorative connotation of religious association in scientific discourse illustrates its subjugated status in that dominant secular worldview.

In addition to these problems of demarcation, psychedelic substances have a uniquely controversial political and legal history that also structures the trajectory of the psychedelic sciences. After psychedelics were criminalized in the United States in 1966, there were increasing restrictions on psychedelics research. Bowing to the increasing political difficulties Sandoz laboratories stopped providing LSD for scientific research (Hoffman, 1979).<sup>63</sup> Major scientific publications including the prestigious Archives of General Psychiatry and the Journal of the American Medical Association issued strong and absolute positions against psychedelic research and chastised the research as unscientific and indeed even irresponsible and as ‘threats to public safety and order’ (C. S. Grob, 1998). As Grinspoon and Bakalar report in their psychedelic history: “Unfortunately, human studies on psychedelic drugs, either for therapeutic or for research purposes, have been difficult to conduct for many years. The drugs are somewhat inaccessible because of this Schedule I status. The field is sometimes regarded as disreputable” (Grinspoon & Bakalar, 1979, xxi). Grinspoon and Bakalar assert “Some researchers have avoided the subject for fear of jeopardizing their careers and compromising their ability to do any scientific work”

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<sup>63</sup> Hoffman reported that the legal problems and growing safety concerns led to voluminous correspondence and inquiries and “all this meant enormous, unprofitable difficulties, which the business management of Sandoz regarded with disapproval” (Hoffman, 1979, 5).

(Grinspoon & Bakalar, 1979, xxi). Hoffman reports a similar paralyzing fear across the history in these sciences:

“All these legislative and official precautions, however, had little influence on LSD consumption in the drug scene, yet on the other hand hindered and continue to hinder medicinal-psychiatric use and LSD research in biology and neurology, because many researchers dread the red tape that is connected with the procurement of a license for the use of LSD. The bad reputation of LSD—its depiction as an "insanity drug" and a "satanic invention" - constitutes a further reason why many doctors shunned use of LSD in their psychiatric practice” (Hoffman, 1979, chapter 5 page 8).

Despite the ongoing scientific interest in psychedelics which blossomed through the 1960's, after these substances were criminalized and stigmatized this research ground to a halt.<sup>64</sup> It was not until 1990 that psychedelics research began again in a limited and highly controlled manner (Mash et al., 1998; Strassman, Qualls, & Uhlenhuth, 1994; Strassman, Qualls, Uhlenhuth et al., 1994).<sup>65</sup>

This renaissance of psychedelics research results from ongoing advocacy by scientists who argue that psychedelics and the spiritual experiences they induce warrant ongoing research. As one early example of such advocacy, Grinspoon and Bakalar address how psychedelics researchers continued to assert the value of this research despite the increasing difficulties:

“We quote letters sent to us by two psychiatrists in 1977. The first is from DR. Kenneth E. Godfrey of the Veteran's Administration Hospital in Topeka, Kansas: 'Resistance to this research has been continuous and increasing up to a point where we have decided that without some new personnel and finances, as well as administrative support, we will not reopen it, that we still have the licenses to do so. We strongly feel that responsible research in the area of

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<sup>64</sup> This criminalization resulted in a bifurcated presence of psychedelics in western culture. Psychedelics remained an important part of the sixties' counter cultures and dissident movements even while all disappearing from the worlds of research.

<sup>65</sup> Thus psychedelics research has two relatively distinctive phases of research. The very earliest of these sciences emerged in the late 1930's and lasted until the early 1970's, a time period I refer to as the "first wave." I refer to the post-1990's research as "second wave" or "contemporary".

psychedelic (sic) drugs should be done. We feel that many severely ill people can get well by the use of these drugs as adjuncts to psychotherapy” (Grinspoon & Bakalar, 1979, 234).

As a more contemporary example of such advocacy, the Multidisciplinary Association for Psychedelic Studies (MAPS) was founded in 1986 as a membership-based research and educational organization focusing on the development of beneficial, socially sanctioned uses of psychedelics.<sup>66</sup> While their primary focus is on the medicinal value of psychedelics they do include its spiritual potentials in their mission statement as well. It reads: “we assist scientists to design, obtain approval for, fund, conduct and report on research into the healing and spiritual potentials of psychedelics” (MAPS).<sup>67</sup> Contemporary advocates of psychedelic research argue that research should not be prevented due to drug war hysteria, bad press or the overly enthusiastic and controversial practices of some early psychedelic scientists (Grinspoon & Bakalar, 1979). They emphasize the significance of psychedelics spirituality as worthy of ongoing scientific investigation and clinical application. As Jonathan Ott, the psychedelic writer who translated Hoffman’s book on LSD articulates, “Surpassing its historical value is the immense philosophical import of this work. LSD, psilocybin, and the other hallucinogens do indeed, as Albert Hoffman asserts . . . constitute, cracks we would do well to explore and perhaps widen” (Hoffman, 1979, preface page 1 ). Psychiatrist Harriet De Wit, in her

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<sup>66</sup> See their website: <http://www.maps.org/mission.html> (last accessed: 4-15-10)

<sup>67</sup> One of the other primary funding and research advocacy organizations is the Heffter Intitute. The Heffter Institute was founded by David Nichols in 1993 in order to “conduct research of the highest scientific quality with psychedelic substances” (<http://www.heffter.org/about.htm>; accessed 2-4-10). Nichols is a pharmacologist considered an expert in psychedelics. His organization supports psychedelic research in the context of clinical pharmacology and has limited stated interest in spiritual dimensions other than including ethnopharmacological studies “designed to clarify our understanding of the role played by psychoactive plants in the religious, medical, and social institutions of other cultures”(Heffter, , accessed 2-4-10).

editorial introduction “*Towards a science of the spiritual*” which opens the edition of the journal *Psychopharmacology* in which a recent psychedelic study was reported asserted:

“It is time for psychopharmacologists to open their minds and their laboratories to the full domain of human drug experience. We would do well to be wary of our own preconceptions and prejudices, and to be prepared to consider the entire scope of human experience and behavior as legitimate targets for systematic and ethical scientific investigation” (de Wit, 2006, 267).

Despite this advocacy, the controversial history of psychedelics including their outright criminalization as well as their political stigmatization via drug-war-rhetoric has made the study of such substances—especially when connected to spirituality—difficult to legitimate.

In order to legitimate the study of such a historically demarcated subject matter, psychedelic scientists assimilate their psychedelic studies of spirituality into their respective scientific disciplines and established paradigms for scientific truth. This involves strategizing how to obtain approval to do any kind of psychedelic science at all. For example, contemporary psychedelic psychiatrist Rick Strassman, described his own laborious strategic efforts to obtain the necessary approvals to conduct the first approved psychedelic studies in the second wave. He stated, “Sitting up in the loft of his northern California home in August 1988, we spent a day sorting through a wide range of approaches with which to frame a human psychedelics research project. By sunset, we arrived at two relatively simple but solid conclusions.” (Strassman, 2000, 91). One was to study DMT using the biomedical model of clinical pharmacology. The other was to use the drug war research craze to justify their own investigations. He explained:

“any psychedelic research project must not conflict with, and in fact must be consistent with, the current concerns about drug abuse. The U.S. government was spending billions of dollars contending with the problems associated with out-of-control substance use. Surely some of that money could fund a human DMT study. Rather than fighting against the government by trying to remove legal restrictions, it made more sense to appeal directly to the scientific thinking that ultimately drives research” (Strassman, 2000, 92).<sup>68</sup>

Scientific attempts to assimilate psychedelic studies of spirituality into “the scientific thinking that ultimately drives research” also require successfully defending the scientific merits of such research even after initial permissions are obtained. For example, one contemporary neuropsychological psychedelic researcher was reported as stating “as a psychologist, if you didn’t do mainstream work methodology became a weapon which allowed defending oneself against hostilities” (Langlitz, 2007, 163). Contemporary psychedelic psychiatrist Charles Grob also emphasizes the legitimizing power of methodology when he argues, “there is hope that the application of state of the art research methodologies to this neglected area of investigation will allow the question of the hallucinogen’s capacity to facilitate healing to be reexamined in an atmosphere of objectivity by contemporary researchers” (C. Grob et al., 1998, 318). In this regard, the sciences of psychedelics cannot be divorced from a broader history of science and medicine characterized by shifting paradigms and contestations over dominant scientific knowledge and practice (Hess, 1997; Kuhn, 1996; Shapin & Schaffer, 1985). It is to these tactical negotiations and contestations that I turn in this next section.

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<sup>68</sup> The drug war is another tactical consideration that has informed this research since these substances were scheduled in 1970 and to an even greater degree as the drug war rhetoric of the 1990’s continued to escalate.

### **III. Tactics of legitimation**

#### **A. Accessing Spirituality: Autoexperimentation as a science of spirituality**

The first tactic for the study of spirituality emerged when scientists first found that ingesting psychedelic substances gave them personal *access* to spirituality and mystical states of consciousness. No matter the countless documentations of spiritual and mystical experiences reported by peoples around the world, it was only when these scientists who imbibed these substances and personally experienced such intense mystical states of consciousness that they became convinced of their importance and potential scientific significance. This now popular understanding that psychedelics potentiate spiritual states of consciousness emerged as a tactic for psychedelics research during the post World War II rise of pharmacology and psychopharmacology (Marks, 1997; Martin, 2007). The emerging psychopharmacological interest in manipulating states of consciousness provided a backdrop for psychedelics research whereby the study of even so seemingly extraordinary and typically demarcated experiences such as the psychedelic experience could find fertile ground. The scientists characterizing psychedelics as a way of accessing spirituality often grounded their claims in autoexperimentation and their own psychedelic experiences.<sup>69</sup> This proved to be extremely controversial and ultimately an infective way of legitimizing psychedelic sciences of spirituality. Rather than legitimizing these studies, autoexperimentation became one of the most

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<sup>69</sup> ‘Autoexperimentation’ simply means experimenting on oneself. There is a long history of autoexperimentation in psychedelic sciences. For an interesting analysis of this aspect of self-experimentation see Doyle (2002).

denounced practices of the psychedelic sciences and opened these sciences up to the very criticisms they sought to avoid.

Initially, the most common method scientists used to investigate these new substances was autoexperimentation whereby they personally experienced the affects of these substances.<sup>70</sup> In fact, psychedelic sciences began with first accidental and then purposeful laboratory autoexperimentation.<sup>71</sup> Albert Hoffman was a working to develop new pharmacological drugs for Sandoz laboratories when he was said to have invented LSD (Hoffman, 1979).<sup>72</sup> In 1943, Hoffman claimed he accidentally consumed a small amount of the substance through routine experimentation and became the first person to experience this new synthetic psychedelic (Hoffman, 1979).<sup>73</sup> Hoffman claimed that he was fascinated by both the intensity of the

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<sup>70</sup> Contemporary psychedelic psychiatrist Charles Grob (1998) reports a number of scientific figures in the early history of psychedelic research who began their interest by ingesting these substances: Louis Lewin, the ‘father’ of modern psychopharmacology took peyote from samples he obtained from the Parke-Davis pharmaceutical company in the late 1880’s. Arther Heffter, the German pharmacologist after whom the contemporary psychedelic science research organization the Heffter Institute is named, succeeding in identifying and extracting mescaline from peyote by ingesting each of them in the late 1800’s. Weir Mitchell, physician and founder of the American Neurological Association, documented his own self-study with peyote at around the same time during his research with Native Americans of the South-Western plains. As a final example, Havelock Ellis also reported a self-experiment with mescaline. Contemporary psychedelics researcher Rick Strassman reports that “Dr. Szara had discovered the psychedelic effects of DMT by injecting it into himself in his laboratory in Budapest, Hungary, in the mid-1950’s. (During the first phases of human psychedelics research, it was common for the researchers themselves to ‘go first’.)” (Strassman, 2000).

<sup>71</sup> They also begin with the ‘discovery’ of psychedelic mushrooms by amateur botanist Gordon Wasson who also engages in autoexperimentation. He publishes his experiences in Time magazine and helps to usher in the psychedelic revolution and the psychedelic sciences (Wasson, 1957). I will attend to his story in greater detail in a subsequent chapter of this dissertation.

<sup>72</sup> Hoffman was working with ergot, the alkaloid found in spoiled rye that is famous for causing mass outbreaks of ‘convulsions’ in medieval times. He was working with ergot due to its historical uses by midwives and folk healers for inducing childbirth and to control postpartum hemorrhage, subsequently called a uterotonic (Hoffman, 1979). From a science studies perspective, the origin of western psychedelics in pharmacology is important to interrogate and I will do so in subsequent chapters. From a feminist perspective, however, it is equally interesting to me that it also originates in midwifery and childbirth. This connection is beyond the scope of this paper but would certainly calls out for future attention.

<sup>73</sup> In psychedelics history, this day is affectionately called ‘bicycle day’ because Hoffman rode his bicycle home from the lab due to his extreme inebriation. He experienced intense anxiety and called his doctor fearing that his life might be in danger. His doctor found no problems with his physical



experience and how LSD seemed to be so specifically able to alter the human psyche and in such preposterously miniscule dosages. Intrigued, several days later he reported that he took LSD intentionally to find out more about the perplexing effects of this new substance (Hoffman, 1979). While autoexperimentation has occurred throughout the history of western science and medicine, with the increasing quantification of the sciences and medicine in the 20<sup>th</sup> century, it was falling ever further outside of legitimate standards for scientific practice (Altman, 1987). After World War II, there was increasing emphasis on human subjects research and laboratory experiments as the gold standard for scientific claims-making to the point of an “almost paranoid obsession of researchers in the 1950’s with purging subjectivity from controlled experiments” (Marks, 1997, 7). Even by the time that Hoffman was engaging in these experiments in the 1940’s in a ‘modern’ pharmacology laboratory, such self-experiments would have been deeply contrary to emerging models of scientific knowledge and practice (Marks, 1997; Timmermans & Berg, 2003).

Indeed, Hoffman described his own anxiety at the audaciousness of his choice to experiment on himself. However, he claimed he was so fascinated by the experience that he could not resist a purposeful, rather than accidental, self-experiment. He stated, “There seemed to be only one way of getting to the bottom of this. I decided on a self-experiment. Exercising extreme caution, I began the planned series of experiments with the smallest quantity that could be expected to produce some effect” (Hoffman, 1979, 11). During the course of the intense LSD experience

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health. After being reassured of his physical well-being, Hoffman was struck by the intensity of his psychedelic experience, an experience which would change the trajectory of his career.

that ensued, his fears regarding his autoexperimentation were amplified as he worried “Was I dying? I had not even taken leave of my family. . . would they ever understand that I had not experimented thoughtlessly, irresponsibly, but rather with the utmost caution and that such a result was in no way foreseeable?” (Hoffman, 1979, 12).

After recovering with seemingly no ill effect, he remained convinced of the radical implications of LSD-25 for scientific knowledge. He was also equally convinced that none of his colleagues would believe him unless they too personally experienced the profound effects of this new substance. Hoffman reported that he convinced several other scientists that he worked with that they must personally experience the effects of this new substance. Several of his colleagues agreed and together they conducted the second autoexperimental trial of LSD. Hoffman reported that his colleagues were as overwhelmed as he was and they too became fascinated with the significance of this experience (Hoffman, 1979). Soon after, Hoffman persuaded many other scientists to experiment with and study this drug.<sup>74</sup>

This foundational role of autoexperimentation in the history of psychedelics research is significant for several reasons. First, it was Hoffman’s *personal* not experimental, observational or ‘scientific’ analyses that led him to assert the substances’ significance. He stated in his essay “LSD as spiritual aid” “it was my experiences with LSD that caused me to think about the essence of reality” (Hoffman, 2001) Before this LSD experience, Hoffman grounded all of his laboratory claims through chemical measurements and experiment data. Second, he rightly assumed

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<sup>74</sup> Several of these scientists and other intellectuals of the time document and publish their personal experiences (Alpert et al., 1966; Huxley, 1953; H. Smith, 2000; Wasson, 1957).

that his scientific colleagues would not accept the legitimacy of his personal experience.<sup>75</sup> Such personal experiences were not legitimate evidence in scientific practice.<sup>76</sup> They would have likely assumed he was having some sort of psychotic break and suggest that he go home (where the psychotic belong) until he returned to his scientific rational senses. Third, his personal experiences were so significant that Hoffman was convinced that the only way his colleagues would believe him was if they could personally experience what he had experienced; contrary to standard scientific criteria, he believed that the significance of LSD could only be accessed through personal experience and not through shared observational data and objective measurement. In the end, his assumptions were correct. His colleagues moved from scientific skepticism to awe and enthusiasm, like Hoffman, through their personal experiences.

Repeatedly, scientists who engaged in such autoexperimentation were convinced through their personal experiences that the psychedelic experience gave them unprecedented access to mystical states of consciousness and to ‘spirituality.’ For example Hoffman asserted “It was LSD, the most potent entheogen, that, to use Blake’s famous line, cleansed the doors of my perception and me see everything as it is, infinite” (Hoffman, 2001, 123). Alpert reported “those of us who were involved in

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<sup>75</sup> Indeed, they could scarcely believe his measurements, let alone a seeming mystical conversion experience. Here Hoffman describes being twice asked to verify his report, “The next day I wrote to Professor Stoll the above-mentioned report about my extraordinary experience with LSD-25 and sent a copy to the director of the pharmacological department, Professor Rothlin. As expected, the first reaction was incredulous astonishment. Instantly a telephone call came from the management; Professor Stoll asked: "Are you certain you made no mistake in the weighing? Is the stated dose really correct?" Professor Rothlin also called, asking the same question. I was certain of this point, for I had executed the weighing and dosage with my own hands. Yet their doubts were justified to some extent, for until then no known substance had displayed even the slightest psychic effect in fraction-of-a-milligram doses. An active compound of such potency seemed almost unbelievable” (Hoffman, 1979, Chap 1 online).

<sup>76</sup> This is not to say that autoexperimentation has never played a role in science. However, it has been frequently considered at best ‘off the record’ or worse as ‘foolish’ (Franklin & Sutherland, 1984).

research with mushrooms and LSD in the sixties experienced similar effects through those psychedelics. They opened us up spiritually; they were a sacrament, really. Aldous Huxley said they were ‘a gift of gratuitous grace’ (Dass, 2004, 187). Gordon Wasson, who helped introduce these substances and these spiritualized conceptualizations to western scientists and intellectuals poetically asserted: “It permits you to see, more clearly than our perishing mortal eye can see, vistas beyond the horizons of this life, to travel backward and forward in time, to enter other planes of existence, even (as the Indians say) to know God” (Wasson, 1972a, 197). Even toward the end of his life and after all the controversy, Albert Hoffman still maintained that these substances allowed access to spirituality. At a psychedelics conference organized to commemorate his 100<sup>th</sup> birthday, Hoffman argued:

“At present we’re living in a materialistic age. Many people see the exterior, material part and strive and act in this area. What’s behind it, the spiritual original source, they do not perceive anymore. I see LSD as a catalytic converter: It’s one of the means which directs our attention, our perception to other parts, other contents of our human experience, so that we become aware, again, of the spiritual background”(symposium, , pg. 6).

Through these substances, it was thought; scientists can finally gain access to the realm of the mystics.

While such autoexperimentation was not unheard of at this time, what was somewhat unusual was that many of these scientists who ‘went first’ argued that personal experience with psychedelics and the mystical states they induce was *requisite* to understanding these substances and that no proper science of psychedelics or their mystical states could proceed without such autoexperimentation. As first

wave psychiatrist Humphrey Osmond argued at a meeting of the New York Academy of Sciences in 1957:

“one must undergo the experience himself. Those who have had these experiences know, and those who have not had them cannot know and, what is more, the latter are in no position to offer a useful explanation” (Osmond, 1957, 428).

Thus, autoexperimentation was institutionalized in the first wave as a necessary part of its clinical application. For example, contemporary psychedelic psychiatrist Rick Strassman describes the history of LSD saying “Sandoz [Laboratories] also recommended giving LSD to psychiatric interns to help them establish a sense of empathy for their psychotic patients (Strassman, 2000, 25). Albert Hoffman also commented on this recommendation that psychiatrists take the substance themselves in order to be fully qualified to administer it to their patients. He stated

“In this respect, self-examination by psychiatrists . . . can be most useful. They provide the doctors with direct insight, based on firsthand experience into the strange world of LSD inebriation, and make it possible for them to truly understand these phenomenon in their patients, to interpret them properly and to take full advantage of them” (Hoffman, 1979, 13).

Harvard psychiatrists Timothy Leary and Richard Alpert probably took this argument the furthest when they insisted that it was methodologically necessary and clinically ‘essential’ for scientists to participate with their subjects in psychedelic research.<sup>77</sup> In an article published in the Harvard Crimson during the controversy that ensued around their research Alpert is quoted in an interview on the matter:

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<sup>77</sup> They also increasingly framed the move to discipline them as an issue of “academic freedom, freedom of consciousness and the freedom of the nervous system” (Alpert & Leary, 1962, pg 2 online edition. ) The politicization that was also emerging around what would be called the ‘psychedelic revolution’ was also becoming increasingly intertwined with these sciences. It is beyond the scope of this project to fully investigate the ways in which these sciences became bound up with counter cultures, activism, and explicit politicization in important ways. However, I do envision such an investigation for future projects.

“Defending his research methods, Alpert said it was ‘absolutely essential’ that the experimenter take the drugs with the subject in order to be able to provide proper guidance of the experience” (Russin, 1963, pg 1 online edition). However, this stance on autoexperimentation resulted in Leary and Alpert being fired from Harvard and autoexperimentation became one of the most controversial rather than legitimate aspects of psychedelic research. Given that many psychedelic scientists accepted the notion that personal experience with the drug was essential, even if they did not agree with Leary and Alpert’s excesses, some found this condemnation of autoexperimentation a fundamental problem for any valid scientific analysis of these substances and the spiritual domains to which they gave seemingly consistent access. Gordon Wasson comments on this impasse some time after Leary and Alpert were fired saying:

“These difficulties in communicating have played their role in certain amusing situations. Two psychiatrists who had taken the mushroom and known the experience in its full dimensions have been criticized in professional circles as being no longer ‘objective’. Thus it comes about that we are all divided into two classes: those who have taken the mushroom and are disqualified by subjective experience, and those who have not taken the mushroom and are disqualified by total ignorance of the subject” (Wasson, 1972a, 190-191).

Timothy Leary and Richard Alpert conducted a variety of experiments that included autoexperimentation. As previously stated, they insisted that the scientists as well as the subjects take psychedelics for both methodological and clinical reasons. As their research progressed, their own psychedelic experiences also began to challenge their own scientific worldviews. Alpert reports “The most powerful things that had ever happened to me were happening to me through our Saturday night sessions with psychedelics, and somehow that was more real to me than what I was

teaching on Monday, Wednesday, and Friday” (Dass, 2004, 8) As psychedelic researchers Grinspoon and Bakalar report in their psychedelic history, “the clinical detachment and scientific objectivity conventionally recommended for evaluating drugs seemed to Leary and Alpert to be worse than beside the point, in fact actively pernicious, in interpreting the psychedelic experience, and such methods were soon abandoned” (Grinspoon & Bakalar, 1979, 65). Hoffman captures the more negative tone that many other researchers had about the Harvard research: “Shortly thereafter, Leary and Alpert were discharged from the teaching staff of Harvard University because the investigations, at first conducted in an academic milieu, had lost their scientific character. The experiments had turned into LSD parties” (Hoffman, 1979, 14).

These unorthodox methods, combined with their publicizing of their activities as well as their confrontational defiance became increasingly controversial at Harvard.<sup>78</sup> Given the concerns, Harvard established a ‘watchdog committee’ to investigate their work. Alpert stated,

“They arranged a public meeting to put down our work. The thrust of the meeting was that we were not being ‘scientific’ - mainly they said, because we were ingesting the chemicals ourselves, and how could you be a ‘scientist’ when you were changing your perceptual viewpoint in the midst of your observations?” (Dass, 2004, 7).

Alpert and Leary defended their methodologies and refused to change their stance on autoexperimentation and taking psychedelics with their subjects. Alpert and Leary decried that psychology had “had embraced physics as its model for the study of the

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<sup>78</sup> Grinspoon and Bakalar report that the chairman of the Harvard Social Relations Department “said they were impulsive, insensitive, and afflicted by a bland sense of superiority and a holy man syndrome” (Grinspoon & Bakalar, 1979, 66).

human mind, and so it rejected anything that could not be seen from the outside. Our interests in presenting things that were happening inside of us as the data in our experiments flew in the face of that behaviorist theory ” (Dass, 2004, 7). Alpert reported that “At the meeting, Timothy took the stand and said, ‘You’re wrong- I am a scientist. You people just don’t understand what real science is.’ He argued that they were persecuting scientific inquiry because of their own preconception” (Dass, 2004, 7). Such arguments for autoexperimentation did not win out and they were fired over these breeches of scientific methodology.

These confrontations over scientific methodology took place during the post World War II period with its emphasis on quantification and the growing ascendance of the biological sciences and when the scientific methods were increasingly invested in objectivity and in materialist paradigms (Porter, 2005; Weisz, 2005). Such objectivity requires detached and objective observations as a basic tenet of scientific methodology. These observations require ‘neutrality’ on the part of the scientist and that the phenomenon in question must be accessible to other similarly neutral observers and ideally be measureable such that it can be reliably quantified (Porter, 2005; Weisz, 2005). Autoexperimentation violated multiple dimensions of these requirements. First, by self-administering these substances, autoexperimenting scientists by definition lose their roles as objective and detached observers. Alpert asserted that this was in part why he chose give up being a ‘scientist’. He reported, “I consider myself data, really. I consider myself a subject in the world of Western science because my own consciousness is the stuff and I can only be studied within



the subject-object world of the experimenter by someone independent of me, since it's happening to me" (Dass, 1974, 50).

Second, because they take these substances in order to access mystical experiences, the 'object' of study is also by definition an illegitimate object of study. These states of consciousness which are the object of study cannot be observed by any but the inebriated scientist in question thus violating the scientific requirement for shared observation of mutually verifiable and measurable phenomenon. These states of consciousness could not be studied through detached shared observation but rather each scientist had to have the experience individually and thus every new autoexperiment rather than being a successful replication was rather another failure in shared and objective measurement. Alpert found this invalidation of subjective experiences to be a fundamental limitation to scientific assumptions. He critiqued scientific psychiatry because "we ruled out the possibility that a person could be the observer of his own behavior, without having the subjective fallacy as the experimenter. There are ways of training yourself to do this, once you stop being afraid to do it, and it is a body of knowledge that becomes available that way. It doesn't meet the criterion of being public data, but it still fulfills certain criteria and as such is a body of knowledge not formally within the scientific system (Dass, 1974, 51).

Finally, when these scientists took these substances and then concluded that they were given access to mystical states of consciousness and spirituality, the materialist underpinnings of the scientific enterprise were also violated. Rather than arguing that all could be reduced to observable material phenomenon or quantifiable

biological processes, these experiences seemed to them to validate the notion of a more 'transcendent' reality. For example, Leary and Alpert conceptualized psychedelics as spiritual potentiators granting access to spiritual and mystical experience (Alpert et al., 1966; Leary et al., 1964). They asserted that that "modern psychedelic chemicals provide a key to this forgotten realm of awareness" (Leary et al., 1964, 30-31).<sup>79</sup> For many this created a crisis whereby the scientific assumptions of materialism and objectivity and the concomitant assumptions that the rational mind can come to valid conclusions about that materialist reality were challenged so thoroughly that they were difficult to assimilate into their scientific training. Alpert concluded that these scientific paradigms were too restrictive and he decided to leave his scientific practice for a spiritual one. He stated, "There are parts of this where the model of being an experimenter stands in your way. There is no doubt about that. It corrupts it. You have to give up being the experimenter to have the experience of the transcendence" (Dass, 1974, 51). Alpert concluded that the full apprehension of the spiritual dimensions of psychedelics required giving up being the 'experimenter'.

In some regards his conclusion was an accurate prediction in that while research on spirituality and psychedelics continues today, one important difference in contemporary psychedelics research is the near total absence of autoexperimentation. The move toward quantification and the ascendance of experimental and human

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<sup>79</sup> In one of their most famous publications, *The Psychedelic Experience: A Manual Based on the Tibetan book of the Dead* they argued that this ancient mystical text best described and explained what they were discovering through their psychedelic experimentation. They wrote this book as a manual to be used to 'program' psychedelic sessions in order to maximize their mystical and spiritual significance. However, in doing so it is noteworthy that they wrote this manual not to refute science with the Tibetan Book of the Dead nor to refute the Tibetan Book of the Dead with science but rather to bring science and mysticism together; they framed their scientific commentary on The Tibetan Book of the Dead as a manual to provide scientific procedures for Tibetan mystical experiences via psychedelics (Leary et al., 1964).

subjects research as dominant models for scientific practice only continued to accelerate in the post World War II period (Marks, 1997; Porter, 2005) This made autoexperimentation more stigmatizing and illegitimate. Further, once these substances were criminalized in 1966, researchers faced consequences above and beyond scientific stigmatism- they risked actual criminal prosecution. This combination of scientific standards and legal prohibition combined to largely end any public discussion of autoexperimentation in the contemporary psychedelic sciences.

Despite the official absence of autoexperimentation in the contemporary scientific literature, Langlitz (2007) points out that many contemporary scientists are still primarily motivated by their own personal experiences with these substances. In the 1960s research this autoexperimentation was incorporated into the scientific discussions; even if it was decried, it was still there (see also Doyle, 2002). However, due to fears of scientific denunciation not to mention possible criminal prosecution, contemporary scientists cannot bring this into their scientific research. Some of them continue to discuss the importance of their own personal transformative experiences but only when they are out of uniform.<sup>80</sup> These pursuits are scrupulously kept outside the academy safely in the demarcated realm of the ‘private’, the ‘subjective’ and the ‘personal’. For example, contemporary psychedelics psychiatrist Charles Grob

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<sup>80</sup> As one example of the out of uniform phenomenon, many of the discussions of personal experience with psychedelics are reserved for publications for public audiences where as no mention is made in peer reviewed scientific journals. Additionally, in my experience there is some degree of signaling both in person and in writing that one has the proper psychedelic credentials. While these credentials are not always explicitly discussed, I would argue that they are still important for gaining credibility in psychedelic communities. Finally, I have also been struck by the number of people at festivals, raves and new age gatherings who have both PhD’s and an interest in psychedelics. These alterative spaces have long served as a place where academics can immerse themselves in the fullest aspects of their psychedelic interests free of the disciplinary constraints of the scientific or intellectual world. (For examples of such spaces see: [www.burningman.com](http://www.burningman.com); [www.realitysandwhich.com](http://www.realitysandwhich.com); <http://www.rosencomet.com/index.html>)

indicated in his recent anthology “Hallucinogens: A reader” that he asked prominent scientists to submit descriptions of their personal experiences with psychedelics.

While many agreed:

“virtually all came with the stipulation that we publish the accounts under a pseudonym. As the goal of such a project was for respected members of our society to speak openly about these valuable experiences, it would have run counter to the purpose of the book to conceal the identities of the contributors” (C. S. Grob, 2002, 13)

In the end, this tactic of investigating psychedelics as a way for scientists to access spirituality did not challenge dominant scientific practice. Rather the dominant institutions of science were largely successful in eliminating this practice or at least so stigmatizing it to drive it underground and out of site. All the traditional tools of erasure were brought to bear on these practices including outright firing, criminalization, cessation of distribution of materials, denouncements by professional organizations and stigmatization and marginalization of researchers or advocates of such practices (Furst, 1976; C. S. Grob, 1998; Lee & Shlain, 1985).

This contemporary erasure of autoexperimentation only further reifies the demarcation historically dividing science from any other knowledge deemed below these scientific standards of objectivity. In this regard, this tactic for legitimizing psychedelic sciences of spirituality was not successful in legitimizing a way for scientists to study spirituality through psychedelics. This tactic failed as a legitimizing tactic in part because these practices and the spiritual conclusions these scientists came to were too far outside the assumptions, methods and ontologies of normal science. As a result, other tactics were required were more amenable to the scientific standards by which their legitimacy would be measured.

## **B. Measure spirituality: Operationalizing through experimental mysticism**

As a second tactic, psychedelics researchers framed their research as allowing the *measurement* and operationalization of mystical experiences. While these researchers still characterized psychedelics as a way of accessing spirituality, they asserted that to do so scientifically these substances and their mystical states must be studied in *subjects* and not in *scientists*, lest objectivity be lost. They argued that, using appropriate research subjects, what was once fleeting and ephemeral could now be induced, controlled and replicated on demand in a laboratory and that this allowed the mystical experience to be studied and measured using scientific methodologies more reliably than ever before. As the first wave psychiatrist Walter Pahnke asserted:

“Psilocybin (and LSD and mescaline by analogy) are important tools for the study of the mystical states of consciousness. Experiences previously possible for only a small minority of people, and difficult to study because of their unpredictability and rarity, are now reproducible under suitable conditions. The mystical experience has been called by many names suggestive of areas that are paranormal and not usually considered easily available for investigation (e.g. an experience of transcendence, ecstasy, conversion, or cosmic consciousness): but this realm of human experience should not be rejected as outside the realm of serious scientific study” (Pahnke, 1966a, 7).<sup>81</sup>

This research tactic emerged in the context of the growing quantification of all the disciplines connected to the medical sciences (Porter, 2005; Weisz, 2005). Such quantification became especially pronounced in the post World War II period when

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<sup>81</sup> Pahnke was himself part of Harvard’s Divinity School. He earned an MD from Harvard Medical School, a BD (now MDiv) from Harvard Divinity School, a PhD from Harvard Graduate School of Arts and Sciences, and a Harvard psychiatric residency (erowid, , accessed 12-30-08). He embodies the intersections of science, psychedelics and spirituality and his work at these intersections has remained influential in contemporary psychedelic sciences. I will discuss his research in more detail below.

government funding of scientific research rapidly expanded. This expansion was accompanied by a growing emphasis on the combination of laboratory and human subjects experimentation as the proper bases for scientific and medical claims making (Marks, 1997; Porter, 2005; Timmermans & Berg, 2003). By attempting to measure the spiritual experience in the body and its quantifiable biological processes, preferably those connected to neurology, the psychedelic sciences sought to be indistinguishable from the rest of the emerging research on psychoactive drugs both in the laboratory and increasingly in human subjects.

Rather than arguing that psychedelics gave the scientist personal access to mystical or spiritual experience, a claim that violated dominant standards of scientific objectivity, researchers argued that psychedelics allowed them to reliably induce and study the mystical or spiritual experience in research subjects.<sup>82</sup> In this these scientific and increasingly biomedical paradigms, it was assumed that if the mystical state could be found, it must show itself in measurable psychological and physiological processes.<sup>83</sup> As Walter Pahnke articulated, “these phenomena are now sufficiently reproducible to allow mysticism to be studied scientifically under laboratory conditions . . . persons can now be studied extensively before and after the

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<sup>82</sup> In the first wave these strategies often overlapped. In the Leary/Alpert investigations for example, the experiments involved giving both the research subjects and the investigators psychedelics. One of Leary’s graduate students, Walter Pahnke who conducted the famous “Good Friday Experiment” to be discussed below, disagreed with Leary’s insistence that the experimenters take psychedelics along with the research subjects. In his design, the experimenters leading the group received psychedelics but Pahnke refused to take any until after the 6 month follow up data had been collected (Doblin, 1991).

<sup>83</sup> The first wave was dominated by psychology and its psychological scales, which attempt to operationalize the internal state reported by research subjects (Grof, 1975a; Osmond, 1955, 1957; Pahnke, 1966a, 1966b, 1967; Weil, 1963). By contrast, the second wave is dominated by neuropsychology, psychiatry and psychopharmacology where there is an emphasis on physiological processes, brain chemistry and technologically sophisticated measurements of bodily processes (Callaway, Airaksinen, McKenna, Brito, & Grob, 1994; Callaway et al., 1999; Strassman, 1992; Strassman et al., 1996; Strassman, Qualls, & Uhlenhuth, 1994; Strassman, Qualls, Uhlenhuth et al., 1994; Torres et al., 1992).

experience of mystical consciousness in controlled settings” (Pahnke, 1966b, 14).<sup>84</sup> Contemporary neuroscientist Roland Griffiths stated: “The ability to prospectively occasion mystical experiences should permit rigorous scientific investigations about their causes and consequences, providing insights into underlying pharmacological and brain mechanisms, nonmedical use and abuse of psilocybin and similar compounds, as well as the short term and persisting effects of such experiences” (Griffiths, Richards, McCann, & Jesse, 2006, 15). In this regard, psychedelics allowed for what Pahnke called an “experimental mysticism”, a scientific method for measuring the ephemeral and transcendental mystical experience, an attempt to quantify the quintessentially unquantifiable (Pahnke, 1967).

Walter Pahnke’s ‘Good Friday Experiment’, as it is commonly known, or the ‘Marsh Chapel Experiment’ remains one of the most influential psychedelic investigations of spirituality.<sup>85</sup> Pahnke conducted this experiment in 1962 as a thesis under the supervision of Leary and Alpert as part of the larger Harvard Psilocybin Project.<sup>86</sup> Using a double blind placebo design, Pahnke administered psilocybin mushrooms to seminary students during a church service on Good Friday. (Pahnke,

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<sup>84</sup> Pahnke grounded his work in the psychology of religion and he discusses the long standing arguments regarding the relationships between mysticism and religion. While mysticism and spirituality are synonymous, I feel that Pahnke’s use of mysticism and my contemporary use of spirituality overlap sufficiently that I will include his discussion in as part of my own.

<sup>85</sup> This experiment is both widely known in psychedelics communities and remains widely cited amongst psychedelics scientists. Rick Doblin asserts “The original Good Friday experiment is one of the preeminent psychedelic experiments in the scientific literature” (Doblin, 1991, 23).

<sup>86</sup> The psychedelic experiments at Harvard University were some of the most significant (not to mention controversial) of early psychedelics research in the US. The Harvard psilocybin project involved several investigations of the effects of psychedelics on human subjects. One of the most famous was the Concord Prison Experiment where they investigated whether psychedelics could reduce recidivism. The other famous study is the Marsh Chapel Experiment conducted in conjunction with the Harvard Divinity School (Grinspoon & Bakalar, 1979).

1966a, 1966b).<sup>87</sup> In the interest of developing a serious scientific study of spirituality, he designed his study to assess the mystical potential of psychedelics and to develop scientific analyses of these experimentally induced mystical experiences. He developed a psychological scale to operationalize the mystical experience and to determine if the subject had had a mystical experience and if so, to measure the completeness of the mystical experience. In the development of his scale, he asserted “scientific evidence indicates that these universal characteristics derived from spontaneous mystical experiences also precisely describe experimental psychedelic ones” (Pahnke, 1967, 3).<sup>88</sup> Therefore he developed his scale based on “a historical survey of the literature of spontaneous mysticism including the commentaries of scholars such as William James (1929) and W.T. Stace (1960)” (Pahnke, 1966b, 2). His scale operationalized the mystical experience into nine domains and then quantified each of these domains in order to determine the degree of ‘completeness’ of a subject’s reported psychedelic mystical experience. As Pahnke described, his questionnaire was “based on the nine characteristics of spontaneous mystical experiences outlined above. . . varying degrees of completeness are possible but to be counted as a mystical experience it was decided that both the total score and the score in each separate category must be at least 60% to 70%” (Pahnke, 1967, 4).<sup>89</sup> He thus attempted to both establish the degree of connection between psychedelic experience

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<sup>87</sup> The subjects were in a separate hall from the rest of the church service. They could hear the service over loud speakers. The subjects were not sitting amongst the rest of the congregation during their psychedelic experiences.

<sup>88</sup> Discussing his reliance on the work of the philosopher W.T. Stace, Pahnke asserted “His [Stace] conclusion- that in the mystical experience there are certain fundamental characteristics that are universal and not restricted to any particular religion or culture. . . was taken as a presupposition” (Pahnke, 1966a, 2).

<sup>89</sup> Those characteristics were as follows: unity; objectivity and reality; transcendence of space and time; sense of sacredness; deeply felt positive mood; paradoxicality; alleged ineffability; transiency; positive changes in attitude and/or behavior. (Pahnke, 1966b)



and ‘real’ mystical experience and to verify the ‘realness’ of the mystical experience itself now that he could induce such usually fleeting experiences through the administration of psychedelic substances. His interest was as much in verifying the mystical connection to psychedelics as it was in gaining scientific purchase on the usually ephemeral and fleeting mystical experience (Pahnke, 1966a).

In a contemporary revisiting of Pahnke’s concerns, a recent study by Roland Griffiths at Johns Hopkins University re-examined whether psychedelic mushrooms can occasion mystical experiences (Griffiths et al., 2006).<sup>90</sup> Pahnke’s study was based on the premise that religiously inclined individuals were more likely to have mystical experiences given their predisposition to religious experience (Pahnke, 1966b). Hence for his study he used seminary students and the experiment was conducted in a church (Pahnke, 1966a).<sup>91</sup> Similarly, Griffiths’ subjects were “adults who reported regular attendance in spiritual or religious activities” (Griffiths et al., 2006, 1).<sup>92</sup> In this study, Griffiths administered psilocybin to research subjects in a laboratory setting taking multiple psychological, physiological and behavioral measures. This included the administration of “two questionnaires assessing mystical experience” (Griffiths et al., 2006, 4). First, they used the *States of Consciousness Questionnaire* which was largely based on Pahnke-Richards Mystical Experience Questionnaire designed by Pahnke in the original Good Friday Experiment (Griffiths

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<sup>90</sup> See also (Doblin, 1991)

<sup>91</sup> Pahnke stated, “The experimental design presupposed that in order for experiences most likely to be mystical, the atmosphere should be broadly comparable to that achieved by tribes who use natural psychedelic substances in their religious ceremonies, and that particular content and procedure of the ceremony had to be applicable (e.g. familiar and meaningful) to the participants” (Pahnke, 1966b, 13).

<sup>92</sup> However, the Griffiths study was conducted in a laboratory rather than a church and, given the previously discussed controversies over autoexperimentation the experimenter’s assistants were not given psilocybin in the Griffiths study. Griffiths reports “drug sessions were conducted in an aesthetic living-room-like environment designed specifically for the study” (Griffiths et al., 2006, 3)

et al., 2006). Second, they used the Mysticism Scale which they assert “has been extensively studied, demonstrates cross-cultural generalizability, and is well regarded in the field of the psychology of religion (Hood et al, 2001; Spikka et al. 2005) but has not been previously used to assess changes after a drug experience” (Griffiths et al., 2006, 5). Based on the administration of these scales Griffiths concluded that “when administered under supportive conditions, psilocybin occasioned experiences similar to spontaneously occurring mystical experiences” (Griffiths et al., 2006, 1).<sup>93</sup>

In this regard his study represents a successful replication of Pahnke’s experiment and another scientific validation of the psychedelically induced mystical experience.<sup>94</sup> And like the Good Friday Experiment, the Griffiths study was as much about method as about mysticism. Even more so than Pahnke’s, Griffiths’ contemporary work is aligned with the concurrent emphasis on quantification, objectivity and human subjects research for scientific and medical claims making. If Pahnke argued that psychedelics allowed for an ‘experimental mysticism’ the Griffiths work extends this project by emphasizing ‘state of the art’ scientific methodology. Griffiths asserts that “the present represents an important extension of the Pahnke study using better blinding and comparison control procedures,

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<sup>93</sup> What is not captured in this somewhat understated summary is the significance and intensity of these experiences for many subjects. Griffiths reports “It is remarkable that 67% of the volunteers rated the experience with psilocybin to be either the single most meaningful experience in his or her life or among the top 5 most meaningful experiences of his or her life. In written comments, the volunteers judged the meaningfulness of the experience to be similar, for example, to the birth of a first child or death of a parent. Thirty-three percent of the volunteers rated the psilocybin experience as being the single most spiritually significant experience of his or her life, with an additional 38% rating it to be among the top five most spiritually significant experiences” (10).

<sup>94</sup>This is of course in line with Pahnke’s stated advocacy of a psychedelically facilitated ‘experimental mysticism’. He stated, “The work described above was a first step in the measurement of these variables but more research is needed. The results should be proved to be reproducible by the same and by different experimenters under similar conditions. Such work could lead to a better understanding of mysticism from physiological, biochemical, psychological and therapeutic perspectives” (Pahnke, 1966b, 8).

assessment of effects in individual participants unconfounded by group interactions, empirically validated measures of mystical experience. . . and assessment of effects by community observers” (Griffiths et al., 2006, 14). Griffiths’ work both reflects and extends this early impetus to study psychedelics as tools which allow the ever more methodical measurement of mysticism.

As evidenced by the continuing investigations of ‘experimental mysticism’, this tactic was more successful in legitimizing the science of spirituality through psychedelics than the tactic of autoexperimentation. While this tactic succeeds in legitimizing the study of spirituality it does so at a cost. Whereas the tactic of *access* challenged the very foundational assumptions of the scientific worldview, in this tactic, the most incommensurable aspects of spiritual knowledges are assimilated such that they no longer seem incommensurable. Spirituality and mystical experiences are legitimized only in so far as they are able to be assimilated into the dominant scientific worldview without challenging dominant assumptions, methods and ontologies. In this tactic this assimilation is accomplished in several ways. For one, the spiritual experience is translated into materialist metaphysics and reduced to biological processes such that all troublesome ontologies associated with divinity, mystical metaphysics or transcendental knowing are bypassed.<sup>95</sup> Where the tactic of *access* through autoexperimentation caused metaphysical doubts, this tactic confirms the scientific a priori assumption that even the most intense experiences of divinity are reducible to biological or biochemical causation. Rather than granting the legitimacy of spiritual worldviews that challenge materialist ontologies these studies

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<sup>95</sup> For example, Pahnke asserted “The ontological status of such descriptions may, of course, be debated. Our concern here is simply to present examples of the psychological phenomenon being reported” (Pahnke, 1966b, 2).

further reinforce scientific authority by opening spirituality to scientific operationalization.

Second, by producing the spiritual experiences in research subjects, the sanctity of science's subject/object dualism remains in so far as spiritual experiences are measured in research subjects. According to the methodologies and assumptions of these increasingly biomedical sciences, scientists act as reliable observers who rely on data and measurement to come to objective conclusions about external phenomenon (Porter, 2005; Weisz, 2005).<sup>96</sup> In the tactic of *access* where the scientists become the subjects, this observer role and its associated objectivity is lost. In this tactic of *measurement*, the scientists keep their place as the objective observer and spirituality, rather than trouble this role, takes up its traditional location with all other subjective phenomenon—in the subject. Whatever the subject experiences, no matter how seemingly extraordinary, can easily be explained, measured and analyzed by the apparatus of science without ever running the risk of violating the integrity of the apparatus itself. Rather, the reach of the apparatus is merely extended, ontologies and epistemologies intact, into newly accessed realms allowing previously unquantifiable realms to be opened to increasing assimilation into the archives of scientific explanation.<sup>97</sup>

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<sup>96</sup> While science is not as simple as textbook descriptions of an uncomplicated scientific method, generally speaking, scientific worldviews embrace at least some aspects of the principle of objectivity. This implies that human subjects can know an external reality and through sensory observation can accurately access that external reality. There are debates about how external is the world, how reliable is the sense data and how to best to draw conclusions based on that sense data, but the basic tenet of a knowable external reality accessible to observing human minds remains present in either case.

<sup>97</sup>In her critique scientific research in indigenous contexts, Tuhiwai Smith examines the metaphor of the 'archive' as a central tool of scientific colonialism (L. T. Smith, 1999).

### C. Explain Spirituality: Indians believe, scientists explain

A third tactic for legitimizing the study of psychedelics and spirituality was the move to find scientific *explanations* for the peculiar properties of these vision-inducing substances as well the spiritual belief systems that have historically surrounded their consumption. Whereas the previous two tactics have primarily involved laboratory studies, this tactic has been dominated by field studies.<sup>98</sup> Like the previous tactics, this explanatory tactic also emerged in the context of pharmacology and psychopharmacology. As the post World War II pharmacological sciences (and industries) grew there was increasing demand to for new plants by western researchers and especially the research laboratories of the pharmacology industries seeking the development of marketable drugs (Marks, 1997; Martin, 2007). This resulted in considerable scientific interest in the plants and indigenous medicines of the ‘developing’ world, research that has been called bioprospecting (Hayden, 2003; Shiva, 1997). Emerging in this context of the search for new knowledge and medicines useful to pharmacology, these explanatory psychedelics sciences sought to identify and then scientifically explain (often relying on an increasingly biological

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<sup>98</sup> This field research emerged in the 1930’s largely in ethnobotany and anthropologists. These field studies are primarily studies of indigenous communities and their traditional uses of these substances. This is an effective tactic in part because it is nearly always acceptable to do field studies of indigenous peoples. In fact anthropology takes the study of ‘primitive’ societies as foundational to its discipline. This is especially important for spirituality. Spirituality and religion are historically demarcated as the apotheosis of science because they are uncivilized, backward and ‘primitive’ (L. T. Smith, 1999; Swazo, 2005). What better place to study the primitive than with the ‘primitives’ themselves? While it may not work for scientists themselves to have spiritual or mystical experiences, as discussed with the first tactic, studying spiritual experiences of people who have been defined through colonial narratives as inherently spiritual makes their work largely indistinguishable from the rest of anthropology. I will discuss psychedelic research on spirituality in indigenous communities in a subsequent chapter of this dissertation.

and neurological paradigms) both these substances and the spiritual beliefs associated with their use.

Following this bioprospecting paradigm, these explanatory psychedelic sciences have typically involved two interrelated dimensions. One is the move to develop a full scientific taxonomy of psychedelic plants including a scientific renaming based on their botanical characteristics and identification of their chemical makeup.<sup>99</sup> In this regard they claimed they were just a botanical branch of the bioprospecting endeavor. Additionally, because these psychedelic plants were so often found in indigenous communities where they were primarily used in a ritual manner associated with spiritual belief systems, there was a related move to scientifically study and explain these omnipresent associated belief systems.<sup>100</sup>

One of the earliest exemplars of explanatory investigations of psychedelic spirituality can be seen in the work of Lewis Lewin, a German toxicologist, considered the ‘father’ of modern psychopharmacology for his botanical research in the late nineteenth and early twentieth century. In 1931 Lewin (1931, 163) published *Phantastica: Narcotic and Stimulating Drugs* in which he created one of the first scientific taxonomies of what would now be called psychoactive drugs, including the

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<sup>99</sup> These explanatory sciences overlapped with laboratory studies in that the botanists and mycologists who hunted for new psychedelic substances began by giving it a proper scientific name and then promptly sent the specimens to laboratories to have their ‘active’ ingredients identified, isolated and hopefully synthesized (Schultes & Hoffman, 1973; Wasson, 1957).

<sup>100</sup> Much like ‘hispanic’ or ‘third world,’ the term ‘indigenous’ is problematic in that it collectivizes many distinct populations with vastly different experiences of colonialism. It creates a blanket term for such unrelated peoples that defines them strictly through their relationship to colonialism and thus privileges colonial history and imposes a colonial narrative. It erases the linguistic, cultural, geographic, political, cultural and national diversities that must of course be present in the vast number of peoples and cultures to which this term is applied. I choose this term in part due to lack of better alternatives and in part because it has been utilized by indigenous activists and communities as a term that “internationalizes the struggles of some of the world’s colonized peoples” and which is used for political solidarity and resistance (L. T. Smith, 1999, 7). I will return to these politics in a subsequent chapter of this dissertation.

category for psychedelics referenced in the title.<sup>101</sup> Lewin's field research investigated both chemical properties of plants and their traditional uses in indigenous communities and in so doing he sought scientific *explanations* for both the chemical effects of the plants and the spiritual uses and beliefs surrounding them, what he described as "the impression of supernatural intervention" (Lewin, 1931, 100).

In the 1880's Lewin conducted research on the psychedelic substance mescaline, the chemical derived from the peyote cactus. He conducted his research with the Huichol people who had traditionally used the peyote cactus, which they called 'the little deer', as a sacrament for religious festivals and baptisms supervised by spiritual leaders (Lewin, 1931). In describing Huichol's use, Lewin stated: "The Indians of old time venerated this plant as a god and looked on it as the vegetable incarnation of divinity"(Lewin, 1931, 98). He offered an explanation for why these psychedelic experiences lead the "Indian" to believe in god and the divine origin of the plant:

"Torn for some hours from his world of primitive perceptions, from his life filled only with the satisfaction of purely material wants and necessities, such an Indian feels himself transported to a world of completely new sensations. He hears, sees, and feels things, which, agreeable as they are, must of necessity astonish him because they do not in the least correspond with his ordinary existence and their strangeness must create the impression of supernatural intervention" (Lewin, 1931, 100).

He then offered a several page first person report from an "unprejudiced" doctor. The doctor began by describing his feeling as follows: "I was on a solitary island floating

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<sup>101</sup> German scientist Kurt Beringer (1927) is generally referenced as the 'first' western scientist to identify and study psychedelic drugs and is most remembered for his text *Der Meskalin-Rausch* (Mescaline Intoxication). One researcher examining the role of psychoactives in the work of Walter Benjamin states "Kurt Beringer's amazing monograph on mescaline, *Der Meskalin-Rausch* was also published in 1927, and remains the greatest work ever written on the subject. Beringer's book contains over 200 pages of protocols from 60 experiments in Heidelberg among doctors, medical students, natural scientists, and philosophers" (S. J. Thompson, 2008, accessed 9-29-09)

in the ether. No part of my body was subject to the laws of gravitation” (Lewin, 1931, 104). He then goes on to describe an intense feeling that he was about to discover the “the solution to the mystery” of the universe and that soon “everything would become visible to my eyes. I would experience everything, understand all, no limits would behind my perception” (Lewin, 1931, 106). He then cries out in frustration and exhaustion as he realized “I was not to penetrate the mystery. . . the impossibility of understanding the end, this refusal of knowledge was exasperating” (Lewin, 1931, 106).<sup>102</sup>

Both men’s reactions seem equally informed by their social milieu and preexisting belief systems. One man expected and found god; the other man expected and found a distillation of the scientific will to knowledge.<sup>103</sup> However, Lewin compares these two experiences and contexts and emphasizes the importance of the doctor’s attempts to analyze his experience, that is his approaching his experiences as an experiment rather than giving over to a vision thought to be induced by a higher power. He says of them:

“It will easily be understood that, as I have already stated, it [peyote] will evoke in the brain of an Indian the idea that it is a personification of God. The phenomena to which it gives rise bring the Indian out of his apathy and unconsciously lead him to superior spheres of perception, and he is subjected proportionately to the same impressions as the cultivated European who is

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<sup>102</sup> Feminist theorist Caroline Merchant’s asserts that the origins of modern science were deeply shaped by the modernization of western patriarchy (Merchant, 1980). Beginning with work of Francis Bacon’s writings she argues that modern science is constituted as a project of masculine domination which can be seen in how science is conceptualized using metaphors of sexual violence and conquest nature as sexualized and feminine. (e.g. penetrating nature for her dark secrets). The description offered by this unnamed doctor seems to me a psychic embodiment of this science-as-sexual-conquest discourse.

<sup>103</sup> The will to knowledge is a concept Foucault used in the title of Volume 1 of his History of Sexuality. He states “a will to knowledge emerged which . . . sketched out a schema of possible, observable, measurable and classifiable objects; a will to knowledge which imposed upon the knowing subject-in some ways taking precedence over all experience-a certain position, a certain viewpoint, and a certain function . . . . ” (Foucault, 1978, 218).



even capable of undertaking an examination of his concomitant state.”  
(Lewin, 1931, 106).

The ethnocentrism of Lewin’s paradigm is both obvious and objectionable to most contemporary multicultural sensibilities. However, there is more going on in this framing than the obvious ethnocentrism that assumes the ‘cultivated European’ as the pinnacle of culture and knowledge.

The power relations undergirding this more obvious ethnocentrism are equally present in this reification of the rational observing mind over and above any other way of knowing this experience in these scientific interpretations of the psychedelic experience. Herein lays the legitimizing power of these scientific attempts at explanation. Lewin argued the importance of his book was that it provided scientific explanations of the spiritual beliefs long associated with psychedelic plants believing that this work legitimized the psychedelic spiritual experience by “giving it an explanation without which it would be void, an explanation which accounts for the various effects by the chemical action of chemical substances produced in the organism itself” (Lewin, 1931, 93).<sup>104</sup>

Another important figure in explanatory psychedelic research on spirituality is Richard Evans Schultz, a ‘father’ of ethnobotany. As an ethnobotanist, Schultz attempted to provide comprehensive taxonomy for psychedelic plants, the tribes that used them and the rituals and spiritual belief systems associated with their use. In

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<sup>104</sup> Beyond just the explanatory tactic, this move to obtain the plant from indigenous people, imbibe the substance in an autoexperiment, document one’s experience, attempt to isolate and then synthesize the ‘active’ chemical agents within it and then study it for possible pharmacological value seen even in this 19<sup>th</sup> century research by Lewin seems in large measure to characterize the arc of these sciences in general. See the subsequent chapter on psychedelic bioprospecting for further analysis of such research.

1979, along with two others, he published *The Plants of the Gods*, an encyclopedia of psychedelic plants and their indigenous uses (Schultes, Hoffman, & Ratsch, 1979).

Similar to Lewin, Schultz was interested in both the chemical properties of these visionary substances and the spiritual beliefs which surrounded their use. He and his co-authors argued that ethnobotany:

“must establish the identity of the plants that in the past were used as sacred drugs or which are still employed for that purpose today. The next step to be explored by scientists is: What constituents-which of the substances in those plants-actually produce the effects that have led to their use in religious rites and magic? What the chemist is looking for is the active principle, the quintessence [of these plant drugs]” (Schultes et al., 1979, 20).

Both Lewin and Schultes sought biological explanations for spiritual ‘beliefs and psychedelic spiritual experiences. As Lewin argued, “In other words: have visions and hallucinations a material cause? Yes, in my opinion. The nature of the cause need not always be the same, but it is always an excitation localized in the interior of the body” (Lewin, 1931, 90). Such biological and material explanations of spirituality and spiritual experience remain dominant in the psychedelic sciences to this day.

Efforts to provide scientific explanations of the effects of these plants and the spiritual belief systems which surround them has be continued to inform this contemporary investigations of psychedelic substances. One of the most significant of such investigations was the Hoasca Project which studied the use of the psychedelic plant ayahuasca<sup>105</sup> (or Hoasca) by the Uniao Do Vegetal (UDV).<sup>106</sup> The

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<sup>105</sup> Ayahuasca is a psychedelic vine from South America. It is commonly combined with other medicinal plants and made into potent psychedelic drinks. It is still currently used in South America for psychedelic spiritual healing (Dobkin de Rios, 1984; Schultes et al., 1979).

UDV is a syncretic church originating in Brazil which was granted the legal right for ritual use of the psychedelic tea ayahuasca in December of 2006 (Labate et al., 2008).<sup>107</sup> The Hoasca project was an international and interdisciplinary multi-study scientific project which examined the pathophysiology, safety and efficacy of the UDV's spiritual uses of ayahuasca (Callaway et al., 1994; Callaway et al., 1999; C. Grob et al., 1996; D. McKenna, Callaway, & Grob, 1998).<sup>108</sup> The project also provides a different context for scientific and religious collaboration as the church is seeking out the scientist rather than vice versa.<sup>109</sup> And in further contrast, both the church and the scientists find their respective claims legitimized by a scientific explanation of psychedelic spirituality. Dennis McKenna, one of the ethnopharmacologists on this project articulated this goal of advancing scientific explanations of these 'magico-religious' practices:

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<sup>106</sup> The UDV is one of several organized ayahuasca religions in South American that has risen in popularity particularly since the late 1990's (Labate, Santana de Rose, & Guimaraes dos Santos, 2008). The other primary church is Santo Daime which has been characterized as catering more to the drug tourism of the west (Dobkin de Rios, 1994, 2006; Dobkin de Rios, Grob, & Baker, 2002). The UDV is a syncretic church founded in northern Brazil in 1961 which now has satellite churches in both North and South America. The UDV draws on a variety of spiritual traditions and is not strictly connected to the indigenous people's traditions for the use of ayahuasca. The church combines Christian, African, indigenous and mestizo urban traditions into its syncretic religious practices and cosmologies (Dobkin de Rios et al., 2002; Labate et al., 2008).

<sup>107</sup> The rights of these groups to use psychedelics are bound up in the larger racial politics which surround the law and indigenous subjects. One psychedelic scientist commented on this racialized difference in legal access to these sacraments "For the moment we have made the curious and peculiarly self-disparaging decision that no one should be allowed to do what a Plains Indian road man or a Mazatec curandera does" (Grinspoon & Bakalar, 1979, 237). This racialization is but one example of the racialized context in which these psychedelic sciences of spirituality emerge. I examine this in greater detail in a subsequent chapter of this dissertation.

<sup>108</sup> The Hoasca Project reveals the interdisciplinary nature of these sciences. While I discuss the field work and investigation of belief systems of the Hoasca project here, this project also included investigations of health and safety concerns as well as investigations of the theorized neurochemical mechanisms of action. The movement from laboratory to field and back again across the purposes of measurement, explanation and application is common in these interconnected sciences.

<sup>109</sup> As Charles Grob, one of the principle investigators stated of this project: "Bridging the gulf between the worlds of modern medical psychiatry and prehistoric plant shamanism has been the hoasca project, a series of pilot research investigations exploring the physiological, central nervous system and psychological effects of the prototype tropical rain forest hallucinogen concoction, ayahuasca (C. Grob et al., 1998, 315).

“With its complex botanical, chemical, and pharmacological characteristics, and its position of prime importance in the ethnomedical and magico-religious practices of indigenous Amazonian peoples, the investigation of ayahuasca in its many aspects has been an impetus to the furtherance of our scientific understanding of the brain/mind interface, and of the role that psychoactive plant alkaloids have played, and continue to play, in the quest of the human spirit to discover and to understand its own transcendent nature” (D. McKenna et al., 1998, 73).

It becomes clear that one of the goals of the psychedelic sciences continues to be the identification of the plants and the belief systems associated with their use and the development of chemical explanations for both the psychedelic effects and the associated belief systems.

As a final example, John Halpern, a contemporary psychedelic psychiatrist and substance abuse treatment researcher, studied the Native American Church’s use of peyote.<sup>110</sup> The Native American ritual use of peyote to address alcoholism was noted early in these sciences and held out as a justification for future research (Bergman, 1971; Bernard & Anderson, 1974; Roy, 1973). Today, peyote is still used by the Native American Church in part as a treatment for alcoholism. The Native American Church is a syncretic, inter-tribal church which uses peyote as a spiritual sacrament which they believe also helps alleviate alcoholism (Grinspoon & Bakalar, 1979). In this tradition the goal is not limited to treatment of an isolated addiction but a more holistic spiritual transformation connected to a larger decolonization and political movement (Calabrese, 2007). In contrast, Halpern’s studies were attempting to determine pharmacological not spiritual mechanisms of action. He argued, “Of course these reported benefits might be primarily attributable to participation in the

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<sup>110</sup> The Native American Church’s right to the ritual use of peyote was granted in the American Indian Religious Freedom Act of 1994, Section 2: Traditional Indian Religious Use of the peyote sacrament (Dobkin de Rios et al., 2002; Labate et al., 2008).

NAC religion, rather than to peyote itself”. But he goes on to say there is evidence that peyote can be beneficial when not used in a religious capacity, “thus, it seems possible that peyote and other hallucinogens might have specific pharmacological properties of potential value” (J. Halpern, Sherwood, Hudson, Yurgelun-Todd, & Pope HG, 2005, 625).<sup>111</sup>

As can be seen by the ongoing contemporary research on psychedelic spirituality in indigenous communities, this tactic has succeeded in carving out space for psychedelic scientists to study spirituality. However, this intersection of the psychotherapeutics of science and the spirituality of sacramental psychedelics produced an impasse of incommensurable knowledge systems. In order to solve the problem of incommensurability, scientists have studied these indigenous plants in order to assimilate indigenous perspectives into the scientific paradigm through studies that seek to ‘explain’ what Indians ‘believe’. Throughout this literature, the phrase ‘Indians believe’ is used repeatedly and is almost always followed by a scientific ‘explanation’ for that belief (Dobkin de Rios, 1973; Furst, 1972; J. H. Halpern, Sherwood, Passie, Blackwell, & Ruttenger, 2005; Harner, 1973; Wasson, 1974). Indigenous actors will describe that these substances are sacred and that it is their connection with spirits, ancestors or divinity which heals the person who imbibes them (See for example, Dobkin de Rios, 1992; Dobkin de Rios, 2005; Estrada, 1981). This is their explanation. However, this explanation falls too far outside of scientific paradigms emphasizing the material and the biological. Thus they

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<sup>111</sup>The NAC asserts that peyote is a sacrament and divine intervention. Halpern however seeks to identify a more pharmacological explanation. Winkelman describes the even earlier work by Aberle (Aberle, 1966) on the NAC and Aberle theorized that the effectiveness of the peyote was either due to the communal organization of the church or the “social psychological effects of NAC participation” ((Winkelman, 2007a)

attempt to explain what is ‘really’ going on in order to translate such primitive and mythological misunderstandings into scientific truth. However, as contemporary philosopher Norman Swazo articulates, “rejecting indigenous science or relegating knowledge claims to the realm of the mythological is all too likely an act of polemics” (Swazo, 2005, 580).

Although this tactic of scientific explanation succeeded in carving out space for these sciences, there were also costs associated with these efforts. This psychedelic explanatory imperative is troublesome in that it goes beyond merely recording these indigenous spiritual practices and psychedelic rituals but rather uses such appropriations to reify the authority of scientific knowledges over indigenous knowledges. Indeed, many of these scientists explicitly discussed this dilemma of the problem of assimilation of these explanatory incommensurabilities surrounding these spiritual substances. For example, Schultes asserted that:

“We now know that the divinity residing in these special plants is chemical in nature, but the ethnobotanist investigating the use of narcotics in primitive cultures must never lose sight of the natives interpretation of his ‘magical’ or ‘sacred’ plants. To ignore or deprecate his views may doom the most meticulously planned scientific inquiry to failure” (Schultes et al., 1979, 5).

Here he acknowledges the importance of divinity and the importance of ‘not losing sight of the native’s interpretation’, however his main concern is a methodological concern for meticulous documentation and talkative informants rather than a questioning of the subjugation of indigenous knowledges. As another example, first wave anthropologist La Barre also warns ‘but we should not foist our pharmacodynamic category of secular medicine upon the American aborigines’ (La Barre, 1972, 275). However, as Wasson himself acknowledges, this is very much

what has happened. Acknowledging the loss, he asserts: “What today is resolved into a mere drug, a tryptamine, or lysergic-acid derivative, was for them a prodigious miracle, inspiring them to poetry and philosophy and religion” (Wasson, 1972a, 200). However, in these explanatory and bioprospecting psychedelic sciences, a ‘mere drug’ is what is required.

#### **D. Apply Spirituality: psychopharmacology of existential medicine**

In the fourth tactic for legitimizing psychedelic sciences of spirituality, the substances and the spiritual experiences they induce are framed as having potential therapeutic *applications* and they are studied for their pharmacological and/or psychotherapeutic potential.<sup>112</sup> This tactic has been dominant in psychedelics research nearly from the beginning—as indeed the first synthetic psychedelic (LSD) was born through drug development research in a pharmacology laboratory (Hoffman, 1979). First wave therapeutic psychedelic research occurred against the backdrop of the post World War II emphasis on human subjects research as well as the growing importance of pharmacology to psychology and psychiatry (Martin, 2007; Weisz, 2005). Contemporary therapeutic psychedelic research occurred in the context of the emerging ascendance of clinical pharmacology. In clinical

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<sup>112</sup> After all, if these substances are scheduled because they do not have medicinal value, and you can demonstrate medicinal value then you have legitimated the work. Psychoactive substances are regulated in the United States in a system of schedules. These schedules were established with the 2001 Controlled Substances Act. There are five schedules with Schedule I the most rigorously controlled and Schedule V the least controlled. All psychedelic substances including LSD, MDMA, Marijuana, DMT, Peyote, Psilocybin, and Mescaline are classified as schedule I drugs. Schedule I drugs are defined in the following manner: The drug or other substance has a high potential for abuse; the drug or other substance has no currently accepted medical use in treatment in the United States; there is a lack of accepted safety for use of the drug or other substance under medical supervision. Schedule I drugs may not be prescribed. The US Controlled Substances Act may be accessed online at [http://uscode.house.gov/title\\_21.htm](http://uscode.house.gov/title_21.htm)

pharmacology there is an implosion of the therapeutic and the scientific, of the laboratory and the clinical, making it in many ways the ideal-type of a medical science or a scientific medicine (Marks, 1997; Reidenberg, 1999; Timmermans & Berg, 2003). In clinical pharmacology, laboratory studies are carried out to identify the mechanisms of action<sup>113</sup> of the drugs and clinical trials are conducted in order to determine the safety<sup>114</sup> and/or efficacy of the drugs and their dose-specific effects (Marks, 1997; Timmermans & Berg, 2003; Weisz, 2005). For example, Charles

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<sup>113</sup> The medical science model involves determining the “mechanism of action” and pathophysiology of the substances, a schema that has been especially salient to contemporary psychedelics research. (Glick & Maisonneuve, 1998; C. S. Grob, 1996; C. S. Grob, Poland, Chang, & Ernst, 1996; Strassman, 1996; Strassman et al., 1996; Strassman, Qualls, & Uhlenhuth, 1994; Strassman, Qualls, Uhlenhuth et al., 1994). Most of this research theorizes the mechanism of action in psychedelics as related to the manipulation of neurochemistry, especially serotonin (Callaway et al., 1994; Mash, Staley, Baumann, Rothman, & Hearn, 1995; Strassman, 1992; Winkelman, 2007b). Indeed, this research has played an important role in the development of the neurochemical models of the brain which are definitional to all neurological disciplines today. Grob asserts that “Once the cutting edge of brain/mind research, the laboratory study of hallucinogens during the 1950’s and 1960’s had made strong contributions to the foundation for much of what become modern neurotransmitter theory” (C. Grob et al., 1998, 315)

<sup>114</sup> As in all scientific medical research, establishing the safety of the drug in question is an important first step. Such investigations have been particularly important for psychedelics research given their controversial status and history (Bergman, 1971; J. H. Halpern et al., 2005; Mash et al., 2000). This emphasis on safety has defined clinical and pharmacological research for some time. This emphasis is often said to originate in the thalidomide crisis of the early 1960’s (Marks, 1997; Porter, 2005). However, this issue has been particularly relevant to the psychedelic sciences given both their potency and their controversial cultural and political history. A recent newsletter of the Multidisciplinary Association for Psychedelic Studies (MAPS) commented on this issue as it pertains to what many argue is an unfair and unwarranted additional scrutiny applied to psychedelics research: “This week, military.com, an online news media outlet wrote an enthusiastic article about our MDMA-assisted psychotherapy for the treatment of posttraumatic stress disorder research. Military.com has ten million members who potentially have read the article! On February 11, the editorial board at New Scientist posed a mental exercise to their readers: Which is safer to give to a perfect stranger, MDMA or Peanuts? “You should give them ecstasy, of course. A much larger percentage of people suffer a fatal acute reaction to peanuts than to MDMA.” The editorialist went onto call for “a rational debate about the true damage caused by illegal drugs—which pales into insignificance compared with the havoc wreaked by legal drugs such as alcohol and tobacco. Until then, we have no chance of developing a rational drug policy.” (MAPS, , March 2009 newsletter, accessed online 4-13-09)



Grob, the contemporary psychedelic psychiatrist who conducted the first clinical trial with terminally ill patients in the second wave, argued: “Given that this is the first study using a hallucinogen as treatment for this patient population in more than thirty years, it was considered prudent to include a double-blind, placebo controlled research design. Although investigators from the 1960’s had not found the need for placebo controls, adhering to contemporary methodological standards at this point in time is necessary to pass scientific scrutiny” (C. S. Grob, 2007a, 209). In the psychedelic sciences, in so far as spirituality seems associated with the therapeutic potentials of these substances it too is brought into the laboratory and the clinical trial in order to determine its pathophysiology and dose-specific efficacy. In so doing, these psychedelic scientists attempt to camouflage themselves inside this wide world of therapeutic scientific medicine.

The scientific study of psychedelics emerged across two primary therapeutic research domains. One entrée was through the field studies of indigenous psychedelic plants such as those conducted and then popularized by Schultes and Wasson (Schultes et al., 1979; Wasson, 1957, 1968). Schultes asserted that such substances offered a new psychopharmacological applications of “narcotic consciousness” transformation (Schultes, 1982, 206). The other was through the discovery of LSD by the Swiss chemist Albert Hoffman at Sandoz Laboratories (Hoffman, 1979). In both cases, this research emphasized the possible therapeutic possibilities of these new substances, for Shultz through the pursuit of indigenous ‘narcotics’ and for Hoffman, through his research at a pharmacology laboratory (Schultes, 1982, 206). As Hoffman stated, “I was aware that LSD, a new active

compound with such properties, would have to be of use in pharmacology, in neurology, and especially in psychiatry” (Hoffman, 1979, 14) While neither Schultes nor Hoffman entered their studies with an interest in spirituality, both emphasized the therapeutic applications of these substances in their early investigations.<sup>115</sup>

Intrigued by their unusual properties and convinced of their therapeutic potential, they distributed these substances throughout their scientific networks. Hoffman, as a chemist in a pharmacology laboratory, was particularly well positioned to distribute his new chemical for further scientific and therapeutic investigation. As Hoffman reported, “The nature of LSD’s activity could lead to numerous possibilities of medicinal-psychiatric uses . . . Sandoz therefore made the new active substance available to research institutes and physicians as an experimental drug, giving it the trade name Delysid” (Hoffman, 1979, 9). Sandoz laboratories “decided to make LSD available free of charge to qualified experimental and clinical investigators all over the world” (Hoffman, 1979, 6). According to Sessa (2005), by 1965 over 2000 papers had been published and that was just on the use of psychedelics as a possible psychotherapeutic drug.

Much of this research did not emphasize a connection to spirituality and some actively sought to distance themselves from spiritual or mystical connections.<sup>116</sup> As

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<sup>115</sup> Hoffman states that he realized the pharmacological potential before the spiritual potential. He stated: “But at that time I had no inkling that the new substance would also come to be used beyond medical science. . . I failed, moreover, to recognize the meaningful connection between LSD inebriation and spontaneous visionary experiences until much later, after further experiments, which were carried out with far lower doses and under different conditions” (Hoffman, 1979, 14).

<sup>116</sup> In regard to these clinically oriented studies that seek therapeutic applications for psychedelics, three primary areas of clinical investigation have characterized this research. First, psychedelics have been connected to mental illness and theorized as possible psychotherapeutic or psychopharmacological interventions (Grinspoon & Bakalar, 1986; Grof, 1975a; D. McKenna, 1996; Osmond, 1955, 1957; Passie, 2007). Psychotherapeutic applications were especially prominent in the first wave and psychopharmacological applications are especially prominent in contemporary research.

first wave psychedelic psychiatrist Walter Pahnke articulated, “the possible therapeutic potential of experiences of mystical consciousness has been somewhat embarrassing to those therapists who pride themselves on scientific objectivity and lack of religious involvement” (Pahnke, 1966b, 12). However, for those researchers who were interested in the spiritual aspects of psychedelics, connecting to this psychotherapeutic framework was still useful. Rather than arguing that psychedelics are therapeutic *as opposed to* spiritual, as some did, these scientists argued the opposite; the spiritual *is* therapeutic. As contemporary psychedelic psychiatrist Rick Strassman asserted, “Some therapists believed that transformative, mystical, or spiritual experience was responsible for many of these ‘miraculous’ responses to psychedelic psychotherapy” (Strassman, 2000, 25). In the first wave, the psychiatrist Humphrey Osmond was one of the more vocal and influential figures who advocated spirituality as central to the therapeutic value of psychedelics. He took issue with what he considered a problematically reductionist and narrow approach to psychedelics by the psychiatric community.<sup>117</sup> In his 1957 address to the National Academy of Sciences he argued:

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This has included research on schizophrenia (Osmond, 1955), obsessive compulsive disorder (Moreno & Delgado, 2007), cluster headaches (Sewell & Halpern, 2007), depression (Montagne, 2007) and PTSD (Mithoefer, 2007). Second, psychedelic substances have been pursued as possible treatments for substance abuse since the beginning of this research (Alper & Lotsof, 2007; J. H. Halpern, 1996; Mabit, 2007; Yensen & Dryer, 2007). Studies of alcoholism have been particularly salient (Albaugh & Anderson, 1974; J. Halpern et al., 2005; John H. Halpern, 2007; Roy, 1973; Yensen & Dryer, 2007). Finally, these substances have been investigated as a possible new and important tool for alleviating the anxiety experienced by terminally ill patients (C. S. Grob, 2007b). In each of these primary applications of psychedelic medicine, researchers have included spirituality as part of their research investigations to varying degrees. In the interest of time and space I will attend only to those projects that are particularly relevant to a scientific theorization of spirituality. For an excellent medical anthropological discussion of non-spiritual neurological research on psychedelics see (Langlitz, 2007).<sup>117</sup> Humphrey Osmond coined the term ‘psychedelic’ in conjunction with his research with schizophrenic patients (Osmond, 1957). ‘Psychedelic’ means ‘mind manifesting’ and Osmond preferred it to the alternate more medicalized term ‘hallucinogen,’ because he did not like to reduce these substances to insanity and psychosis. The term ‘hallucinogen’ denotes that these substances

“Our interest, so far, has been psychiatric and pathological, with only a hint that any other viewpoint is possible, yet our predecessors were interested in these things from quite different points of view. In the perspective of history, our psychiatric and pathological bias is the unusual one. By means of a variety of techniques, from dervish dancing to prayerful contemplation, from solitary confinement in darkness to sniffing the carbonated air at the Delphic oracle, from chewing peyote to prolonged starvation, men have pursued, down the centuries, certain experiences that they considered valuable above all others. (Osmond, 1957, 427)

Arguing against prevailing psychiatric conceptualizations, Osmond argued that psychedelics did more than mimic psychosis. He argued that they could catalyze enriching and life changing visions and were thus useful above and beyond the pursuit of treatments for pathologies (C. S. Grob, 1998; Osmond, 1957). He advocated psychedelic treatment that emphasized these visionary aspects of these substances.

From this perspective, the ability of psychedelics to facilitate states of consciousness which seem to resemble religious conversion offer unparalleled psychotherapeutic potential (Osmond, 1957; Passie, 2007). Subsequent to Osmond, psychedelics psychotherapy research blossomed whereby these psychiatrists and psychologist sought to study and apply the therapeutic possibilities of psychedelic spirituality.<sup>118</sup> As the contemporary psychedelic psychotherapist Sean House articulates of this psychotherapeutic perspective, “When used within a

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induce ‘hallucinations’. The term is associated with psychomimetic model whereby these substances were thought to induce a temporary state of psychosis. I will address this terminology in more detail in a subsequent chapter of this dissertation

<sup>118</sup> The two primary traditions that developed were psycholytic psychedelic psychotherapy and psychedelic psychotherapy. Psycholytic therapy emerged primarily in Europe and uses psychedelics to gain better access to psychodynamic material and to enhance the processes of psychotherapy. Psychedelic therapy emerged primarily in the United States and it emphasizes the spiritual dimensions of psychedelics and attempts to induce them in the safety of the psychotherapeutic setting. For a discussion of these traditions see (Grinspoon & Bakalar, 1979; Grof, 1980) I will discuss these traditions in more detail in a subsequent chapter of this dissertation.

psychospiritual framework, psychedelics opens up realms of experience that can profoundly influence one's sense of self and worldview in ways that match or exceed the best that traditional psychotherapy has to offer" (House, 2007, 189). Whereas the first wave application research emphasized the psychotherapeutic potentials, the second wave turned to the pharmacological and the neurological paradigms to investigate the therapeutic potentials of psychedelic spirituality. For example, psychedelic anthropologist Winkelman argued that "The effects of psychedelics on neurotransmission are responsible for the principal aspects of the associated physical, emotional, cognitive, and sacred experiences and their therapeutic applications" (Winkelman, 2007b, 8).

In the contemporary moment, these substances are still theorized as spiritual but the spiritual becomes a neurological epiphenomenon of not so much sacred but therapeutic significance. This can be seen in the contemporary moment in the work of psychiatrist Charles Grob. Grob conducted clinical trials with psilocybin mushrooms as a possible treatment for end-stage cancer anxiety (C. S. Grob, 2007b).<sup>119</sup> In these trials Grob administered psilocybin mushrooms in a randomized controlled clinical trial to thoroughly screened terminally ill cancer patients. He drew on similar first wave studies to develop his hypotheses and protocols and concluded, along with his predecessors that:

"Psilocybin administered under optimal conditions may reliably induce legitimate mystical experience in normal volunteers, strengthening the case for the judicious use of hallucinogens with patients in profound

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<sup>119</sup> Grob's study of terminally ill cancer patients continues. Information is available at [www.canceranxiestudy.org](http://www.canceranxiestudy.org). Roland Griffiths, from the Department of Neuroscience at Johns Hopkins University School of Medicine, has just initiated a clinical trial with psilocybin as a treatment for anxiety with cancer patients. (Protocol: NA\_00001390). Information is listed on [www.clinicaltrials.gov](http://www.clinicaltrials.gov)

psychospiritual crisis. Indeed such treatment may be considered as *existential medicine* designed to directly intervene and ameliorate the emotional and spiritual suffering of dying patients” (C. S. Grob, 2007b, 213, emphasis in original).<sup>120</sup>

He felt that his research was further evidence that hallucinogens represented a possible “effective intervention for ‘psychospiritual’ crises” (C. S. Grob, 2007b, 214).

He argued that psychedelics are an effective pharmacological treatment option and that ‘further research that will demonstrate the utility of this field of hallucinogenic medicine’ (C. S. Grob, 2007b, 214)

The therapeutic application tactic has been the most successful tactic of legitimation and it now dominates contemporary research. Nearly all contemporary research is framed around the therapeutic or ‘medicinal’ potentials of psychedelic.<sup>121</sup> This makes sense given the expanding interest in evidence based medicine, the unprecedented market dominance of pharmacology research and its associated research industries including funding of academic research and the ever expanding physical and mental health problems in the US (Roberts, 2007). Even in regard to spirituality, given the growing interest in alternative medicine, psychedelics researchers capitalize on this interest to justify both their psychedelics research as well as their research on spirituality (Roberts, 2007). However, this tactical camouflage comes with its own costs and much is lost in translation.

Psychedelic scientists argue that their research on spirituality is justified by the long history of the use of psychedelics where spiritual beliefs and practices have

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<sup>120</sup> See the following first wave studies as examples: (Grob, Richards, & Kurland, 1973; Pahnke, 1969)

<sup>121</sup> As another example of this trend, both the Multidisciplinary Association for Psychedelic Studies (MAPS) and the Heffter Institute, the only significant organizations funding and lobbying on behalf of psychedelic research, both assert medical and therapeutic use of these substances as their primary legitimizing rationales (Heffter, ; MAPS).

traditionally been so interwoven with their therapeutic use that there has been with little differentiation between notions of spirituality and healing (Furst, 1972; C. S. Grob, 1998; Schultes et al., 1979). As Schultz et al state “Indigenous cultures usually have no concept of physically or organically induced sickness or death: both result from interference from the spiritual world . . . they assume far more exalted roles than do the medicine or palliatives with direct physical actions on the body” (Schultes et al., 1979, 14) However, this rationale is usually taken a step further and the argument is made (or implied) that the scientific study of these substances will go further than this historical usage, given the superiority of the scientific method. Winkelman makes this assertions about the anthology *Psychedelic Medicine*, “As the authors in the present volumes show, these uses are dramatically *expanded* as their medical potentials are discovered in the context of the diseases and illness of the modern world” (Winkelman, 2007b, 3, emphasis added). Through the scientific scrutiny and development of psychedelics, scientists seek to expand and enhance the spiritual practices associated with them, allowing their therapeutic potentials to be more fully realized.<sup>122</sup>

The scientists seek to enhance the therapeutic potential of these substances through scientific study by following the typical routes for scientific medical development. For one, scientific studies attempt to explain the ‘real’ causal relationships through determination of both the “mechanism of action” (in the

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<sup>122</sup> After all, this is the rationale for doing science generally speaking. The purpose of applying the scientific method to any object of study is to bring that object into scientific understanding and to ‘develop’ that object into its fullest applied technological capabilities. In this regard, the psychedelic sciences are, well, sciences. And as Swazo, drawing on Foucault asserts, “among the presuppositions, all too often ignored precisely because it is tacit, is a determinate ‘aspiration to power that is inherent in the claim to being a science’ (Foucault, 2003, 10)” (Swazo, 2005, 570).

substance) and the pathophysiology of the treatment (in the subject). Additionally, once the mechanism of action and the pathophysiology are determined, scientific studies, especially clinical trials, seek to determine the safety, efficacy and dose-response parameters of the substances in order to allow them to be used more efficaciously than ever before. It could be said that they are seeking the mechanism of action and the pathophysiology of spirituality itself. As psychedelics scholar Winkelman states,

In essence, the cross-cultural patterns of the use of psychedelics indicate that they are functionally related to the origins of religion, consciousness and perhaps ultimately modern human consciousness. Why should these plants have such central roles in human consciousness and culture? The answer lies in their neurological effects that produce an integration of various psychophysiological processes, a biologically driven psychointegration (4)

These scientists attempted to assimilate the spiritual world view into the scientific and thereby they hoped not only to operationalize the spiritual dimensions for additional therapeutic effect but also to explain the spiritual dimensions as fully as the pharmacological.<sup>123</sup> This means, however, that while the psychedelic sciences interrogate and attempt to integrate spirituality to an unprecedented degree, they do so in such a way that spirituality must be assimilated into a priori scientific assumptions rather than allowing such worldviews to challenge the foundational assumptions of science in any way. In this research where the interest in spirituality is driven by a pursuit of therapeutic applications, the result is in an interesting translation whereby spirituality becomes synonymous with therapy. Spiritual experiences are still investigated in an attempt to render them recognizable to the scientific lens but in the

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<sup>123</sup> Here is an example of the interconnection between these tactics. The attempt to *explain* these substances is often driven by the pursuit of therapeutic application; the attempts to apply these substances originate in efforts to *explain* them.



“decade of the brain”, the spiritual becomes molecular (Langlitz, 2007).<sup>124</sup> I will pay particular attention to these epistemological translations and ontological demotions in these therapeutic sciences in the following chapter.

### III. Conclusion

In conclusion, psychedelic scientists studying spirituality relied on four primary tactics of legitimation in order to legitimize their scientific studies of psychedelic spirituality: (1) *accessing* spirituality through auto-experimentation, (2) *measuring* mystical experiences in research subjects, (3) *explaining* the effects of psychedelic substances and associated belief systems using scientific methods, and (4) *applying* the substances to the domain of psycho-pharmacological therapy. These tactics have been variously successful and indeed have resulted in a renaissance of psychedelics research including access to FDA approval, NIMH and NIH clinical trials, increased funding and residence at prestigious universities. However, by having to tow the line in ways that even first wave scientists did not have to, there has been ever more pressure to translate the power and potential of psychedelics into the accepted assumptions of the biological and neurological sciences. Many of the first wave scientists (and some second wave scientists as well) found that their initial interest in psychedelics was due to their paradoxical properties, the way they induced mystical experiences that seemed inherently to violate biological and materialist cosmologies, and they sought to understand and expand the scientific apparatus of understanding through the ways that these substances challenged scientific

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<sup>124</sup> I take this phrase from the title of Nicolas Langlitz’s dissertation on the neurosciences of psychedelics: “*Neuropsychedelia: The revival of hallucinogen research since the Decade of the Brain*”

knowledge. After the firings, the criminalization and the stigmatization, it would seem that the initial impulse to understand has been replaced by the imperative to predict and to control.<sup>125</sup> Rather than allowing these paradoxical substances to challenge scientific paradigms, these tactics assimilate the very challenges that were initially so seductive. While there is widespread acknowledgement that these substances and the experiences they induce emerge from a long history of spiritual and mystical beliefs and practices, in the “decade of the brain” these become little more than biologically determined neurological epiphenomena. This begs the question of exactly what is being legitimized with these tactics. I address this question in more detail in the following chapters.

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<sup>125</sup> Feminist epistemology as one disciplinary branch of feminist science studies has long engaged in a critique of the problematic epistemological underpinnings of the scientific paradigm. One dimension of this criticism has been to highlight the androcentric and imperial orientations implicitly informing the scientific goals of prediction, control and truth. For more on these critiques see (Code, 1991; Haraway, 1989; Harding, 1998; Merchant, 1980)

## **Chapter 3: Neurotheology: Expanding scientific authority over spirituality in the psychedelic sciences**

### **I. Introduction**

In this chapter, I extend my analysis of the ways that spirituality was negotiated in these sciences in the context of the epistemological authority of the dominant scientific and biomedical paradigms identified in the previous chapter. I focus on the western psychotherapeutic and psychopharmacological scientific and medical disciplines, what I refer to here as the western therapeutic disciplines, which have long predominated in these efforts to integrate psychedelic sciences and spirituality. In fact, the first synthetic psychedelic (LSD) was born through drug development research in a pharmacology laboratory and the earliest studies investigated possible psychotherapeutic protocols for the applications of psychedelically induced spiritual transformation. (Hoffman, 1979; Osmond, 1957).

As the influential first wave psychedelic psychiatrist, Stanislav Grof, asserted:

“Observations of the dramatic and profound effects of minute quantities of LSD on the mental processes of experimental subjects led quite naturally to the conclusion that it might be fruitful to explore the *therapeutic* potential of this unusual compound” (Grof, 1980, 22).

In what I refer to as the therapeutic psychedelic sciences, psychedelic substances and the spiritual experiences they were believed to induce were framed as having potential *therapeutic applications* and as such have long been studied for their pharmacological and/or psychotherapeutic potential. In the history of this therapeutic approach to the psychedelic sciences, there have been various efforts by scientists to more fully integrate historically demarcated spiritual knowledges into their respective models of laboratory research and clinical practice. I analyze the primary epistemological and ontological incommensurabilities that seemed most troubling to these efforts to reconcile these historically demarcated systems through integrating western therapeutic scientific assumptions and practices with spiritual and mystical traditions.

In my analysis of the therapeutic psychedelic science I relied on scientific publications, academic books, books targeting a public audience and secondary scientific and cultural histories from the 1930's until the present. I focused on key figures whose research shaped the dominant narratives and scientific discourses of these therapeutic sciences. The disciplines that pervade this literature are psychiatry, psychology, and psychopharmacology. In the contemporary period, subfields of the neurosciences such as neuropsychiatry and neurochemistry are playing increasingly prevalent role in the production of scientific knowledge on therapeutic applications of psychedelics.<sup>126</sup>

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<sup>126</sup> See Appendix B: Data sources for a listing of documents I analyzed in this study organized by chapter.

## **II. Psychospiritual: The psychological disciplining of spirituality**

### **A. History of psychology of religion**

The psychedelic sciences are not unique in their attempts to frame the religious or the spiritual through the lens of the psychological and especially the psychodynamic.<sup>127</sup> While there have been other psychologists who have also attempted to connect the psychological and the religious, Carl Jung is the psychologist who is most associated with attempts to integrate the psychological with the religious.<sup>128</sup> Jung, a contemporary of Freud, attempted to connect the psychodynamic notion of the unconscious mind to religion. In his book “*Psychology and Religion*” he offered scientific “facts which bear out the existence of an authentic

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<sup>127</sup>While religion and spirituality are not synonymous, there is sufficient overlap in their intellectual histories and epistemological conundrums that in this chapter I situate my more specific conversation about spirituality and mysticism in the context of this broader conversation surrounding philosophy, psychology and religion. For a more contextualized discussion of the relationship between spirituality and religion and substances in the west see (Fuller, 2000)

<sup>128</sup>Western psychology has also been involved in religious matters in the context of the emergence of the Buddhist traditions that have taken root in the west. Japanese and Tibetan Buddhism also flourished during the same time that psychedelics were being discovered in the US (Suzuki, 1964; Trungpa, 1973). As these Buddhisms have been taken up in the west, there has been considerable debate as to whether Buddhism should be taken up by Westerners as a psychology or as a religion (Watts, 1975). Some westerners have taken it up as a psychology or have at least attempted to blend psychology and Buddhist practice, usually in a non-theistic manner (Magid, 2002; Watts, 1975). Others have argued that Buddhism is a religion and that western attempts to equate it to psychology are emblematic of the west’s entrenched secularism and tendency toward scientific reductionism (Uchiyama, 1993). They argue that it is the belief in a higher power, even if non-deist, above and beyond the individual which is of particular importance in these spiritual or religious traditions. Psychological Buddhism interprets these traditions as solely about mental or psychic processes of consciousness, conceived of as an emergent property of the ‘mind’ or in contemporary terms, the ‘brain’. Thus in psychology an external reference outside the individual is not required and a belief in a higher power is not necessary, moves which allow for an easier assimilation of Buddhist traditions into secular and scientific paradigms.

religious function of the unconscious mind” (Jung, 1938, 3).<sup>129</sup> He advocated granting greater significance to religious experience in psychological theorizing and practice. However, while Jung emphasized the importance of the religious, he also advocated scientific empiricism and a phenomenological standpoint. He stated “I restrict myself to the observation of phenomena and I refrain from any application of metaphysical or philosophical considerations” (Jung, 1938, 3).

These ‘metaphysical or philosophical considerations’ create longstanding tensions across the varied engagements of western psychology and religion. Like Jung, one option is to prioritize the scientific paradigm and construct a scientific psychology of religious experience where the experience is theorized as an interesting, possibly transformative, possibly pathological human belief or state of consciousness but psychologically understandable in any case. For example, Freud argued that it was a human fantasy and infantile regression that should be overcome (Freud, 1927). In contrast, American psychologist and philosopher of religion William James felt that mystical experiences could be personally transformative (James, 1902). Contemporary psychological research on religion, framed largely in terms of biomedical and neurological paradigms, theorizes it as a culturally malleable experience that emerges from the biological brain.<sup>130</sup>

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<sup>129</sup> He gave the lectures which were recorded in this book as an inviter speaker for the Dwight D. Terry Lectureship at Yale University. The purpose of these lectures is the humanitarian examination of the “eternal problem of religion” (Jung, 1938, 1)

<sup>130</sup> For example, NPR recently published a series of articles on science and spirituality by Barbara Bradley-Hagerty based on her book *Fingerprints of God: The Search for the Science of Spirituality* (Bradley Hagerty, 2009d). These articles and her book examine the growing number of neurologists and neurochemists whose research focuses on spirituality and mysticism seeking the “God Spot” or the “God chemical” in the brain.<sup>130</sup> In this regard these psychedelic investigations are part of an emerging broader scientific interest in the neurology of spirituality, which some have called ‘neurotheology’ (Bradley Hagerty, 2009a, 2009b, 2009c, 2009e, 2009f).

There are important epistemological and ontological incommensurabilities that cut across these attempts to integrate religious or spiritual matters into western therapeutic disciplines. For one, there is the ontological question surrounding metaphysical notions of god and divinity. In so far as psychologists have embraced scientific paradigms of empiricism and realist materialism, metaphysical deities and supernatural realities are by definition unintelligible. For another, the epistemological problems of ‘knowing’ religious or spiritual experiences, metaphysical questions aside, presents further difficulties of incommensurability. The religious or mystical experience is the quintessentially ‘unknowable’ experience, what the influential philosopher of religion Otto called ‘numinous.’<sup>131</sup> These impasses surrounding epistemologies of mystical consciousness and the spiritual ontologies are similarly negotiated in the psychedelic scientific attempts to know the quintessentially ‘unknowable’ through these psychedelic substances.

## **B. Psychotherapeutic psychedelic spirituality**

In the therapeutic psychedelic sciences similar ontological impasses over divinity and epistemological impasses of quintessentially unknowable experiences were also negotiated. The first wave of psychedelic studies began in the 1930’s and 1940’s and rapidly expanded during the post-World War II period. These early studies involved both psychotherapeutic and psychiatric disciplines. However, in the post-World War II period, pharmacology and psychopharmacology came increasingly

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<sup>131</sup> Otto’s influential term refers to the experience of divinity or the presence of the holy (Otto, 1923). He theorized this experience as inarticulable, as “wholly Other . . . unlike anything that we have encountered or ever will encounter, it arouses in us a mental state of stupor, a “blank wonder, an astonishment that strikes us dumb, amazement absolute” (Melani, 2009).

to dominate both psychology and psychiatry (Marks, 1997). Psychedelic psychiatrist Rick Strassman (2000) who conducted the first approved clinical trials for psychedelics in the second wave described the historical interconnection between the birth of psychedelics substances, particularly LSD and what he called ‘biological psychiatry’. He argued that psychedelics played an important role in the emergence of biological psychiatry with its emphasis on neurochemistry and especially the importance of neurotransmitters such as serotonin. He stated:

“The years after World War II were exciting ones for psychiatry. In addition to LSD, scientists also discovered the “antipsychotic” properties of Chlorpromazine, or Thorazine. Thorazine made it possible for severely mentally ill patients to improve enough that they could leave the asylums in unprecedented numbers. This and other antipsychotic medications finally allowed doctors to make progress in treating some of most disabling illnesses. The contemporary field of ‘biological psychiatry’ was born in those years. This discipline which studies the relationship between the human mind and its brain chemistry, was the child of these two strange bedfellows: LSD and Thorazine.” (Strassman, 2000, 23-24).<sup>132</sup>

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<sup>132</sup> Not all psychologists or psychiatrists are comfortable with this narrative of chemical liberation and scientific ‘progress’. The narrative can also be framed differently. Some refer to Thorazine as a chemical straight jacket which serves the purpose of a ‘be still, be quiet, be docile’ doctrine in the tradition of ‘One flew over the cuckoo’s nest’. Its use has become increasingly coercive in both hospitals and prisons where involuntary sedation is now routine practice. Further, while escaping the asylum arguably had its benefits, this story fails to ask what happened to these chemically managed former-inmates once they had their bags packed for them and the doors shut as they were told to leave. In theory, the closing of the hospitals marked the birth of ‘community mental health’ with its philosophy of inclusion where the mentally ill and those who treat them are both embedded in the community. The realities, however, were an underfunded and understaffed public infrastructure that could not accommodate the large numbers and high needs of this newly released population. This resulted in a further expansion of chemical intervention into the lives and bodies of these individuals as drugs and 15 minute appointments with prescribing psychiatrists were cheaper and more efficient than more the thorough and engaged practices of psychologists, occupational therapists and social workers. Additionally, large numbers of these former inmates found themselves homeless and living on the streets. Accessing social services often led them back into contact with the overextended public mental health services and another round of medication might ensue sometimes resulting in alternating periods of homelessness and medication. Thus, when Strassman announces his excitement about this moment and proudly connects LSD to Thorazine, I am made more not less skeptical about the history of these sciences. After all, LSD also has a sordid history of coercive uses by both the military and the CIA. As Foucault has so clearly articulated, the birth of the clinic is the beginning of power, not the end.



In his book “*Spirit Molecule: A doctor’s revolutionary research into the biology of near-death and mystical experience*”, Strassman (2000) described the trajectory of his landmark psychedelic research and his uphill and strategic battle to obtain permission to conduct a study on DMT.<sup>133</sup> He described strategizing with other colleagues about how best to follow the dominant scientific models of biological psychiatry and clinical pharmacology in order to maximize their chances at obtaining the approval that would initiate the first approved study of the second wave.<sup>134</sup> He described the standard research steps for clinical pharmacology, the disciplinary home he was attempting to claim for his DMT research. First find out what the drug does. Next find out how it works by determining the mechanism of action and pathophysiology first in animal research and subsequently in gold-standard clinical trials.<sup>135</sup> The quest for dose response effects is typically part of this research to identify pathophysiology and mechanism of action. Finally, ideally, conduct efficacy studies to validate its treatment effectiveness and thus possible marketability (Strassman, 2000).

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<sup>133</sup> DMT’s formal scientific name is N,N-dimethyltryptamine. It is a short acting but intense psychedelic substance. It can be synthesized and also occurs naturally in plant psychoactive such as ayahuasca, its most famous plant source. It is famous for inducing experiences of contact with nonmaterial beings (Schultes et al., 1979; Strassman, 2000).

<sup>134</sup> As discussed in chapter 2, Strassman describes “Sitting up in the loft of his northern California home in August 1988, we spent a day sorting through a wide range of approaches with which to frame a human psychedelics research project. By sunset, we arrived at two relatively simple but solid conclusions.” (Strassman, 2000, 91)(91). One was to study DMT using the biomedical model. He also described how they discussed using the drug war research craze to justify their own investigations. The decided “any psychedelic research project must not conflict with, and in fact must be consistent with, the current concerns about drug abuse. The U.S. government was spending billions of dollars contending with the problems associated with out-of-control substance use. Surely some of that money could fund a human DMT study. Rather than fighting against the government by trying to remove legal restrictions, it made more sense to appeal directly to the scientific thinking that ultimately drives research” (Strassman, 2000, 92). This is another tactical consideration that has informed this research since these substances were scheduled in 1970 and to an even greater degree with the escalation of the drug war rhetoric of the 1990’s.

<sup>135</sup> He stated “After demonstrating what DMT did, the biomedical model requires determining how those effects occur. These are mechanism of action studies” (Strassman, 2000, 139).

This paradigm that Strassman describes has been central to the history of the psychedelic sciences. The scientific assumptions and practices of biological psychiatry produce particular difficulties for incorporating spiritual knowledges because they are frequently incommensurable with those self same scientific tenets.

As Strassman stated:

“We may quibble about what is biological, psychological or spiritual. . . however, we are pressed far beyond our comfort zone as clinician-researchers when dealing with psychedelic subjects who return telling tales of contact and interactions with seemingly autonomous nonmaterial entities” (341).

Thus, epistemological and ontological impasses occur as these methods are brought to bear on these psychedelic spiritualities. As such, there are difficulties in theorizing the spiritual as a ‘psychological’ or ‘neurological’. In so far as psychologists embrace scientific truth criteria where knowledge is based in shared observation of phenomenon, the internal and inarticulable realms of religion and spirituality are incapable of registering on the epistemological radar of empiricist science. In order to integrate religious and spiritual matters into western psychological knowledge and practice, these incommensurabilities had to be negotiated.

In the sections that follow I trace these attempts at integrating the spiritual and the psychological and the difficulties involved in bridging such metaphysical divides. I trace these impasses across the model of clinical pharmacology suggested by Strassman. I begin with scientific taxonomic efforts to name these substances and in so doing determine ‘what’ they do. Next I address scientific efforts to determine how they work by determining mechanisms of action and scientific causality. Finally I examine the pursuit of therapeutic applications whereby they sought to develop

clinical applications either pharmacologically or psychotherapeutically. I conclude by discussing the emergence of a would-be clerical authority in the western therapeutic disciplines.

## **II. (What does it do) Scientific taxonomies: Psychedelic sciences, hallucinogenic disorders and entheogenic religions**

Drawing on this model of clinical pharmacology, one of the first epistemological and ontological tensions can be seen in the history of the attempts to categorize this peculiar ‘class’ of substances. These substances have had multiple names over the course of these sciences and these tensions can be seen in the histories and implications of these names. The predominance of the western therapeutic disciplines can also be seen in the history of these names and taxonomies. The psychological and the psychopharmacological etiology of these taxonomic debates are pervasive and also illustrative of these epistemological and ontological impasses.

One of the first names for this grouping of plants was the German Toxicologist Louis Lewin’s term ‘phantastica’ (Lewin, 1931, 163).<sup>136</sup> In 1931 Lewin (1931) published “*Phantastica: Narcotic and Stimulating Drugs*” based on his wide-ranging ethnobotanical survey of these substances. In this survey, he created one of the first scientific taxonomies of what would now be called psychoactive drugs including the category for psychedelics referenced in the title.<sup>137</sup> His classification

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<sup>136</sup> As discussed in chapter 2, Lewin was German toxicologist who is widely considered the ‘father’ of modern psychopharmacology.

<sup>137</sup> German scientist Kurt Beringer (1927) is generally referenced as the ‘first’ western scientist to identify and study psychedelic drugs and is most remembered for his text *Der Meskalin-Rausch (Mescaline Intoxication)*. This book is one of the first to document attempts to therapeutically apply a psychedelic substance, in this case mescaline.

‘Phantastica’ referred to a class of substances capable of evoking transient states of hallucination and visions such as those reported by mystics in mentally normal persons.<sup>138</sup> In the chapter dedicated to these substances, he also referenced the experiences of famous mystics and mystical passages from the bible and asked: “In other words: have visions and hallucinations a material cause?” (Lewin, 1931, 90). In these newly discovered substances, he sought then the cause of mystical ecstasies via the explanatory materialisms of the new science of psychopharmacology.

Despite this early research, scientific and medical engagement of psychedelics did not proliferate until the 1950’s concurrent with the expansion of pharmacology and psychopharmacology. As this therapeutic research spread, more scientists struggled to properly name these peculiar but potent substances. In 1952, the British psychiatrist Humphrey Osmond began studying psychedelics while looking for treatments for schizophrenia (Osmond, 1952). His research attracted the attention of Aldus Huxley who volunteered to be a subject. Aldus Huxley was a well-regarded science fiction writer and counter cultural intellectual associated with the emerging interest in eastern mysticism at the time. Huxley became the first US person to ingest the drug outside of medicinal applications (symposium, , pg. 3). In his famous 1953 essay about his experience “*Doors of Perception*”, Huxley coined the term ‘hallucinogen’ (Huxley, 1953). The term ‘hallucinogen’ roughly means that it generates delusions, false notions and sensory distortion (Grinspoon & Bakalar,

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<sup>138</sup> He states: “I mean the action of chemical substances capable of evoking such transitory states without any physical inconvenience for a certain time in persons of perfectly normal mentality who are partly or fully conscious of the action of the drug. Substances of this nature I call phantastica” (Lewin, 1931, 92). The mental states he refers to are “visions and hallucinations” (Lewin, 1931, 90).

1979). Strassman points out that “Hallucinogens is the most common medical term for psychedelic drugs, and it emphasizes the perceptual, mostly visual effects of these drugs” (Strassman, 2000, 31). Like ‘phantastica’ it draws on a psychological framework through which it connects mystical and spiritual experiences to the western notion of the psychological and more specifically to psychopathology.

However, Humphrey Osmond was interested in how LSD might be used to understand and hopefully treat psychiatric mental illnesses such as schizophrenia. He coined the term ‘psychedelic’ as a preferred alternative to Huxley’s hallucinogen, which he argued was not an ideal term for these substances because of its association with insanity. In contrast with the pathologizing term ‘hallucinogen’, psychedelic is generally translated as ‘mind manifesting’ (Grinspoon & Bakalar, 1979; Strassman, 2000). The term ‘psychedelic’ was further popularized by Timothy Leary as he helped introduce the expansion of psychedelics into the 1960’s counter cultures where the term psychedelic was the primary word for these substances in those communities (Grinspoon & Bakalar, 1979). In fact, this word came to describe all things counter cultural associated with LSD such as psychedelic art, psychedelic music and psychedelic colors.<sup>139</sup> However, even though these cultural frameworks are most strongly associated with the term, it has its origins in psychiatry whereby it is still associated with psychological processes and mental disorders (Grinspoon & Bakalar, 1979). In contrast to “hallucinogens” the emphasis is on the treatment rather than the disease. Indeed Osmond asserted that it was the ability of these substances to

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<sup>139</sup> I use the term ‘psychedelic’ for several reasons. For one, it is the term that I am most familiar with given my own participation in counter cultures. For another, I would argue that it has become the most widely used term across the scientific and counter cultural communities generally speaking. The term ‘hallucinogen’ is still primarily used in the medical literature, a literature and paradigm that is outside of what I would claim as my cultural or intellectual community of practice.

induce seemingly mystical states of consciousness that made it a potential palliative against psychological disorders (Osmond, 1957).

In contrast to these two primary terms for this class of substances, the more specific term 'entheogen' has emerged as the preferred terminology for those who use such substances for spiritual or mystical consciousness transformation (Forte, 1997; Roberts, 2001). Those who use this term argue that the medicalized term 'hallucinogen' and the hedonistic term 'psychedelic' both denigrate their self-identified spiritual engagement with substances they view as sacred. This term is meant to contrast their spiritual engagement with either the secular 'study' of these experiences or with their casual and recreational use (Forte, 1997; Roberts, 2001). While the term entheogen is largely associated with spiritual uses, even this most spiritualized of the terms for these substances still emerges out of the western psychotherapeutic sciences. Even though it is associated with spiritual psychedelic communities, the term itself was coined by psychedelic scientists. This term was coined in a journal article titled "*Entheogen*" by a group of psychedelic researchers. They stated:

"We, therefore, propose a new term that would be appropriate for describing the states of shamanic and ecstatic possession induced by the ingestion of mind-altering drugs. In the Greek the word entheos means literally 'god (theos) within', and was used to describe the condition that follows when one is inspired and possessed by the god that has entered one's body. . . In combination with the Greek root gen-, which denotes the action of 'becoming', this word results in the term we are proposing: entheogen" (Ruck, Bigwood, Staples, Ott, & Wasson, 1979, 1-2)

Entheogen is generally translated as 'becoming divine within' or 'that which causes God to be within a person' (Grinspoon & Bakalar, 1979). However, while

these psychedelic researchers advocated this term, its use remains segregated in these literatures. Entheogen is more often used by scientists in anthologies meant for public rather than strictly scientific consumption and in conjunction with communities who emphasize this dimension of psychedelic potentiality. For example, there have been two prominent second wave anthologies on the spiritual significance of entheogens and their authorship overlaps with these scientific communities (Forte, 1997; Roberts, 2001). Both of these books were funded by the Council of Spiritual Practices, an organization whose goal is “collaboration among spiritual guides, experts in the behavioral and biomedical sciences, and scholars of religion, dedicated to making direct experience of the sacred more available to more people”.<sup>140</sup> The editor of the anthology “*Psychoactive Sacramentals: Essays on Entheogens and Religion*” Robert Forte asserted that “these writings aim to direct attention to the distinctly sacred nature of these substances with the hope that *religious minded investigators*, policy architects, and the concerned public will take note” (Forte, 1997, 4- emphasis added). However, again, it is primarily in these specialized and public oriented documents that entheogen is invoked. Otherwise the term of preference primarily follows the lineage of the psychiatrist Humphrey Osmond and the connotation of the ‘mind manifesting’ psychedelic (Walsh & Grob, 2005).

However, these psychological associations have also shifted over time to reflect the dominant scientific paradigms associated with these western therapeutic disciplines as well as the shifting political climate in which they are embedded. For example, one can see both the increasing importance of psychopharmacology as well

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<sup>140</sup> Taken from their website: <http://csp.org/about.html> , accessed 12-13-09

as politics in the name change for one of the central journals for psychedelics research. This journal was published as the “*Journal for Psychedelic Drugs*” beginning in 1971 in order to “to compile and disseminate objective information relative to the various types of drugs used in the Haight-Ashbury subculture”.<sup>141</sup> In 1981 the name was changed to the “*Journal of Psychoactive Drugs*” in order to “better reflect the broad scope of its contents”.<sup>142</sup> In keeping with the times, the journal rejected the more vilifying ‘psychedelic’ in favor of the more mainstream ‘psychoactive’. I argue that this reflects not only an attempt to bolster the legitimacy of these controversial sciences but also the shifting model of understanding in these sciences as they changed in concert with the dominant scientific paradigms of their disciplines at large. As such this name change reflected the increasing dominance of psychopharmacological and biomedical model in psychology, what Strassman called biological psychiatry (Strassman, 2000).

Strassman also pointed out that the problems about what to call these substances extend not only to their specific names but also to what is even implied by the word ‘substance’. He stated: “First, what do we call it? Even among researchers there is little agreement over this crucial point. Some don’t even use the word *drug*, preferring instead *molecule*, *compound*, *agent*, *substance*, *medicine*, or *sacrament*” (Strassman, 2000, 30). And he goes on to say of this lack of agreement:

“This focus on names is not trivial. If everyone agreed about what a psychedelic is or what it does, there certainly would not be so many words for the same drug. The multitude of labels reflects the deep-seated and ongoing debate about psychedelic drugs and their effects” (Strassman, 2000, 30).

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<sup>141</sup> As stated on their website: <http://www.journalofpsychoactivedrugs.com/briefhistory.html>. Accessed: 12-13-09

<sup>142</sup> As stated on their website: <http://www.journalofpsychoactivedrugs.com/briefhistory.html>. Accessed: 12-13-09



Indeed, these debates over name are multiply significant. First they represent differing epistemological and ontological commitments regarding the effects of these unusual substances. More specifically, they represent one of the arguments that has been part and parcel of this research since it's beginning. As Strassman argued:

“Another problem was that psychedelics were becoming an embarrassing source of contention even within psychiatry itself. Biology-based psychiatrists had little patience with colleagues who ‘found religion’ and touted the spiritual effects of these drugs. These latter researchers viewed their brain-only associates as narrow-minded and repressed. Psychiatry has never been especially comfortable with spiritual issues.” (Strassman, 2000, 29).

This taxonomic Babel raises another important issue—the productive power of naming not only in the discursive but in the experiential and/or subjective sense (Weeks, 1998). As Strassman argues “Thus, what we call a drug can take, or give, influences our expectations of what that drug will do. It also modifies the effects themselves, and how we interpret and deal with them” (Strassman, 2000, 30). He argued that the names and understandings surrounding these substances help to determine many dimensions of the psychedelic experience. It also reflects and influences scientific understandings and clinical practices. He asks, “As one who takes the drug, are we research *subjects* or *volunteers*? *Clients* or *celebrants*? As the one giving them, are we *guides*, *sitters*, or *research investigators*? *Shamans* or *scientists*?” (Strassman, 2000, 30). In this history these substances are studied as drugs and applied as psychotherapeutics. Despite this psychological and biomedical disciplining, however, there are still attempts to integrate spiritual and mystical

dimensions into these otherwise more mundane worlds of the laboratory and clinical setting such that the lines between shamans and scientists does become more blurred.

### **III. (How does it work) From magic to molecules: Scientific causality and sacred substances**

These epistemological and ontological incommensurabilities surrounding divinity and mystical experience and the attempts to extend scientific authority over these usually demarcated phenomenon were also apparent in the scientific attempts to determine the ‘mechanisms of action’ of these unusual psychotherapeutic drugs and the psychotherapeutic spiritual experiences they induce. Drawing on this model of clinical pharmacology, these scientists theorized the pathophysiology and attempted to determine the mechanisms of action of these psychedelic substances and in so doing to determine them for the spiritual experience itself. As Strassman argued explicitly, “One of my deepest motivations behind the DMT research was the search for a biological basis of spiritual experience” (Strassman, 2000, 56). In one case it was thought to be psychological and in the other neurological, however both represent efforts to scientifically conceptualize spirituality vis-à-vis the respective western therapeutic disciplines. In this section I describe both efforts to grapple with the spiritual psychedelic experience.

#### **A. Psycho-spiritual: Divinity as psychology**

One strategy for resolving such impasses is the attempt to theorize the spiritual as the psychological. Contemporary psychologically oriented anthropologist

Winkelman articulates this position saying, “the traditional shamanic practices for utilizing these [psychedelic] substances in diagnosis and healing derive from a kind of ‘natural psychology’ of these substances, their inherent psychophysiological dynamics” (Winkelman, 2007a, 144). Similarly, the first wave anthropologist Peter Furst, drawing on the work of psychedelic psychiatrist Stanislav Grof argues that “The ‘otherworld’ from which you seek illumination is, after all, only your own psyche. . . hallucinogens such as LSD function as ‘very powerful unspecified amplifiers(s) of mental processes” (Furst, 1972, xiv). Psychedelic psychiatrist Metzner and former member of the Harvard projects described this longstanding connection between psychedelics and psychology as follows: “The other analogy is the microscope metaphor. It has been repeatedly said that psychedelics could play the same role in psychology as the microscope does in biology: opening up realms and processes in the human mind to direct, repeatable, verifiable observation that have hitherto been largely hidden or inaccessible” (Metzner, 2004, 28). Here again divinity is reduced to the psychological and specifically to the psychodynamic and its emphasis on pathology and inner conflict.

There is a long history of research in these psychedelic sciences theorizing these substances as connected to psychological disorders and consequently as aids to the psychotherapeutic process. As the influential psychedelic psychiatrist Stanislav Grof reported:

“Yet it is possible with a degree of over-simplification, to distinguish certain basic ways of using LSD in psychotherapy. These modalities fall into two major categories, which differ in the degree of significance attributed to the role of the drug. The first category involves approaches in which the emphasis is on systematic psychotherapeutic work; LSD is used to enhance the therapeutic process or to overcome resistances, blocks and periods of

stagnation. The approaches in the second category are characterized by a much greater emphasis on the specific aspects of the drug experience and the psychotherapy is used to prepare the subjects for the drug sessions, give them support during the experiences, and to help them integrate the material” (Grof, 1980, 29).

The ‘specific aspect of the drug experience’ which is emphasized in this category was commonly its theorized ability to induce spiritual or mystical experiences (Hoffman, 2001; Pahnke, 1967). They theorized that there must be a connection between the psychological process and the spiritual experience.

Initially, in the first wave these substances were considered “psychomimetic” in that they were thought to induce a state of pseudo-psychosis whereby they could be used to study and perhaps treat non-psychedelic induced, that is ‘real’ psychosis (Grof, 1980).<sup>143</sup> However, other psychologists took issue with this narrow focus on pathology especially in the light of the extraordinary experiences produced by these chemicals which they argued resembled spiritual experiences described by a number of mystics from William Blake to the Rig Vedas to the ‘shaman’s of ancient times (Grof, 1980; Passie, 2007; Walsh & Grob, 2007). There is an emerging psychological paradigm called ‘transpersonal psychology’ which emphasizes the notion of the transpersonal and which relies as much on yoga and meditation as on traditional psychotherapy. It focuses on what Grof calls ‘spiritual emergencies’ (Grof, 1980). It is not limited to psychedelic therapies but often includes an emphasis on altered states of consciousness induced through breathwork. For a discussion of Transpersonal therapy see (Walsh & Vaughan, 1993).

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<sup>143</sup> While this model has fallen out of favor in regard to the specifics of psychosis, the connection to psychological disorders and consequent interest in psychotherapeutic modeling continues. For an detailed analysis of this framework see (Langlitz, 2006).

From this perspective psychedelics are theorized as inducing ‘altered states of consciousness’ on par with mystical experiences which are transformative on both the personal and ‘transpersonal’ level (Grof, 1980; Strassman, 2000; Walsh & Grob, 2007).<sup>144</sup> This they argue pushes the boundaries of the western notion of the psychological and its perhaps overly limited focus on ‘waking’ consciousness of daily life as well as an overemphasis on pathology at the expense of ecstasy (Walsh & Grob, 2007) For example, Walsh and Grob argue that

“Psychedelic researchers, and subsequently a growing number of researchers in other areas, therefore argued that we may need ‘state-specific scientists’, ‘yogi-scientists’, or ‘meditative philosophers’, who are experts in multiple states and conventional Western disciplines” (Walsh & Grob, 2007, 222).

Therefore while psychedelic spirituality is accounted for via psychological modeling doing so continues to pose challenges for the ordinary tools of psychological psychology.

In *Spirit Molecule*, Strassman (2000) also discussed the difficulties he faced in his work specifically in regard to the psychedelic experience and its seeming ability to induce such spiritually oriented ‘altered states of consciousness’. In his DMT experiments, he coded and then categorized his subjects’ experiences.<sup>145</sup> Three of these seven categories were explicitly spiritual: “Contact Through the Veil: 1 & 2 and “Mystical States”. He reported that the experiences he found the most difficult to work with given his scientific world views were the Contact Through the Veil

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<sup>144</sup> Transpersonal theory is not limited to psychedelic therapies but often includes an emphasis on altered states of consciousness induced through breathwork. For a discussion of Transpersonal therapy see (Walsh & Vaughan, 1993).

<sup>145</sup> He stated: “during each DMT session, I took detailed notes of every aspect of that day’s events. . .After I got back to my office, I dictated these notes and my secretary transcribed the dictation into a word-processor file. When printed, these records occupy more than one thousand pages of single-spaced text” (Strassman, 2000, 153) .

experiences where many of his subjects reported contact with other beings.<sup>146</sup> His subjects reported that they had met these other beings and they rejected any attempt to interpret their experiences in psychological terms such as dreams, projections or hallucinations.<sup>147</sup> They insisted that these non-material beings and alternate universes they visited were Real.

Strassman identified this as an impasse in his research with which he struggled both personally and methodologically. He reported that when he responded to his subjects relying on psychological or biological frameworks, they resisted and shut down. To address this he stated “as a thought experiment, I decided to act as if the worlds that the volunteers visited and the inhabitants with whom they interacted were real, as real as Room 531” (Strassman, 2000, 201). He found that using this approach allowed his subjects to be more open to him about their experiences. Of course this heuristic strategy produced its own troublesome cognitive dissonance for Strassman. He reported, “nevertheless, there was a nagging discomfort in taking this approach in responding to reports of contact. I began wondering if I were starting a descent into some sort of communal psychosis” (Strassman, 2000, 201).<sup>148</sup>

This discomfort was due in large part to his training in clinical pharmacology and psychoanalytic psychotherapy and the limitations he was finding in these conceptual tools of his trade. He found Freud overly psychological and his subjects

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<sup>146</sup> He reports, “It may be that I have such a hard time with these stories because they challenge the prevailing world view, and my own. Our modern approach to reality relies upon waking consciousness, and its extensions of tools and instruments, as the only ways of knowing. If we can’t see, hear, smell, taste or touch things in our everyday state of mind, or using our technology-amplified sense, it’s not real. Thus, these are ‘nonmaterial’ beings” (Strassman, 2000, 186).

<sup>147</sup> He reports, “even more impressive was the apprehension of human and ‘alien’ figures that seemed to be aware of and interacting with the volunteers. Non-human entities might be recognizable: ‘spiders’, ‘mantises’, ‘reptiles,’ and ‘something like a saguaro cactus’ (Strassman, 2000, 147).

<sup>148</sup> This seems to me an ironic play on psychedelics as psychotomimetic. They make scientists lose touch with materialism.

rejected any Freudian implication of unresolved infantile sexual crises.<sup>149</sup> He looked to Jungian psychology which he argued included “a broader perspective on the language of the unconscious . . . nevertheless, it is a psychological model, not a physical or biological one” that his biological psychiatry model required (Strassman, 2000, 314). Further, he stated, “responding to beings as mental constructs or projections, no matter how large the scale, continues to convert the experience into ‘something else’. It does not address the overwhelming and convincing sense of certainty felt by the person having the experience” (Strassman, 2000, 314). Strassman’s psychedelic spirit molecule, DMT, evoked experiences of contact with other beings that did not lend themselves to his explanatory psychological (or biological) paradigm. Despite the clinical utility of his ‘thought experiment’ of granting these experiences truth and reality, he could not find a satisfactory explanation while still maintaining a commitment to scientific materialism. In the end he began to worry,

“The overarching concern I have about the use of psychedelic drugs has to do with applying them in the service of being helpful, rather than in being smart . . . That is, the biomedical model, ‘taking it apart and seeing how it works’, may be antithetical to the most fruitful applications of psychedelic drugs” (Strassman, 2000, 332).

Still, antithetical as it might be, he remained insistent on finding a scientific framework to accommodate these spirit molecules. As has happened so often in the

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<sup>149</sup> He reports, “Even more prone to cause a volunteer to dismiss my interpretations as inaccurate or inappropriate was any attempt to use psychological explanatory models. . . . There were certainly times when I used this approach in reacting to a particular dreamlike sessions. However, I could not in good conscience suggest that any repressed unconscious infantile drives were behind the experimental manipulations by, or communications with, these beings” (Strassman, 2000, 314).

past, the soft science of psychology looked to the prototypical hard sciences whenever there is a crisis of scientific legitimacy. Strassman found comfort in theoretical physics and argued that perhaps assuming the reality of other beings and alternative universes, while seemingly radical, can still fall within scientific paradigms.<sup>150</sup> He stated:

“In making this suggestion, I’m not discarding the brain-chemistry and psychological models. Rather, I wish to add to the options we entertain in attempting to develop explanations that are helpful to volunteers, intellectually satisfying to researchers, and perhaps even testable using methods not yet invented but theoretically possible” (Strassman, 2000, 315).

If there are other worlds then it is a comfort to any scientist to know they will follow the same laws and require only a methodological expansion in the otherwise intact scientific project. Thus the psychopharmacological induction of these psychospiritual experiences becomes a question of method more so than divinity and future research calls for development of appropriate protocols for their psychotherapeutic application.

## **B. Spirit Molecules: Divinity as neurology**

Another strategy for integrating these spiritual experiences emerges from neurology and pharmacology. Rather than theorizing spirituality as a psychological aspect of the ‘mind’ it is conceptualized as a neurochemical aspect of the biological brain. While it was the psychotherapeutic possibilities that initiated these therapeutic

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<sup>150</sup> Psychedelic psychiatrist Stanislav Grof also looked to theoretical physics for possible explanations for the incommensurable experiences he has grappled with in the course of administering psychedelics (Grof, 1980). He states “In this matter, psychology and psychotherapy can learn an important lesson from modern physics” and he makes reference to ‘theoretical physicist’ Geoffrey Chew and his theories about the universe. (Grof, 1980, 294).



psychedelic sciences, the biological interpretations allowed such interest in spirituality to flourish in the contemporary worlds of biological psychiatry. As Grof suggested even in the first wave, “Various suggestions concerning the therapeutic use of LSD were based on the specific aspects of its action . . . Some gave ‘exclusive emphasis on LSD as a chemotherapeutic agent that has certain beneficial effects just by virtue of its pharmacological action’” (Grof, 1980, 23-24). Strassman points to a current example, “Researchers now plan to give psilocybin in an attempt to treat patients with OCD, using serotonin-receptor physiology as their underlying model. No recourse to psychological processes really is necessary, although it may prove crucial to a fuller understanding of its beneficial effects” (Strassman, 2000, 339). It is this pharmacological action which is emphasized in the contemporary context of biological psychiatry.

In biological psychiatry and in the contemporary psychedelic sciences more generally, the dominant interpretation of the mechanism of action of these substances is that they operate via serotonin. Strassman recounts the historical connection between psychedelics and the emergence of neurochemistry as a discipline:

“The presence and function of serotonin in the brain and in animal behavior clinched its role as the first known neurotransmitter. At the same time, scientists showed that LSD and serotonin molecules looked very much like each other. They then demonstrated that LSD and serotonin competed for many of the same brain sites . . . These findings established LSD as the most powerful tool available for learning about brain-mind relationships” (24).

Working within the same serotonin model, psychedelic anthropologist Winkelman posed an additional term to add to the growing list of taxonomic candidates. He has deemed these substances as ‘psychointegrators’. He stated:

“An interdisciplinary synthesis, provides the rationale for the term: ‘psychointegrator’ to refer to the central effects of these substances, explaining their cross-cultural social and therapeutic uses in terms of effects on the serotonergic neurotransmitter systems . . . Psychointegration produces spiritual and transcendent experiences by enhancing the operations of basic structures and functions of consciousness . . . these neurological foundations help explain the widespread common patterns of these plant substances in religious and therapeutic practices” (Winkelman, 2007b, 5).

Winkelman concludes that as psychointegrators psychedelics “provide a neurological basis for the role of chemical agents as sources of spiritual experience” (Winkelman, 2007b, 6).

Strassman also posits a molecular explanation of psychedelic spiritual experiences. He argues that DMT is a ‘spirit molecule’ which he defines as follows:

“A spirit molecule needs to elicit, with reasonable reliability, certain psychological states we consider ‘spiritual’. These are feelings of extraordinary joy, timelessness, and a certainty that what we are experiencing is ‘more real than real’. Such a substance may lead us to an acceptance of the coexistence of opposites, such as life and death, good and evil; a knowledge that consciousness continues after death; a deep understanding of the basic unity of all phenomena; and a sense of wisdom or love pervading all existence . . . A spirit molecule also leads us to spiritual realms. These worlds are usually invisible to us and to our instruments and are not accessible using our normal states of consciousness. However, just as likely as the theory that these worlds exist ‘only in our minds’ is that they are, in reality, ‘outside’ of us and free standing. If we simply change our brain’s receiving abilities, we can apprehend and interact with them (Strassman, 2000, 54).

In this line spirituality is connected to psychedelics and psychedelics are connected to neurochemistry; therefore spirituality is connected to neurochemistry.

Strassman’s (2000) interest lies not only in identifying that DMT is a spirit molecule but following the paradigm of clinical pharmacology also seeks to discover how it works, the pathophysiology of the spiritual experience. He argues that DMT is an endogenous chemical in the body produced by the pineal gland, what he refers to

as the ‘spirit gland’.<sup>151</sup> He argues that DMT induces spiritual or mystical experiences by artificially raising the levels of DMT in the body. He argues that such experiences are kindred to near death experiences that he believes are caused by a naturally occurring spike in DMT produced by the pineal gland. Further, he argues that the pineal gland maps onto the crown chakra<sup>152</sup> in Tantic yoga and thus provides a biological seat for the spiritual experience. In this regard he proposes a modern day inversion of Descartes’ notion of the pineal gland as the “seat of the soul”.<sup>153</sup> Where Descartes bowed to the theology of the church to maintain a soul; contemporary neuroscientists bow to the cosmologies of science to maintain the body.

Because they are scientists and attempting to assimilate their psychedelics research around spirituality into these dominant scientific paradigms many, like Strassman, are acutely aware of the dilemmas this poses. The solution for now is a resort to the causal models of the psychological and the neurological. However, neither of these retreats to ontological safety of either the psychological or the neurological resolves these epistemological and ontological impasses. Rather, such measures merely kick the epistemological can up the road and as such obscure more

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<sup>151</sup> Strassman discusses the history of this research on DMT. In 1965 German scientists isolated DMT in human blood. In 1972 it was discovered in human brain tissue. Additional research found it in urine, cerebrospinal fluid. “It was not long before scientists discovered the pathways, similar to those in lower animals, by which the human body made DMT. DMT thus became the first *endogenous* human psychedelic” (Strassman, 2000, 48).

<sup>152</sup> Strassman states, “In the Eastern Ayurvedic tradition, these centers are called chakras, and particular experiences likewise accompany the movement of energy through them. The highest chakra is also called the Crown, or the Thousand Petaled Lotus. In both traditions, the location of this Crown sefira or chakra is in the center and top of the skull, anatomically corresponding to the human pineal gland” (Strassman, 2000, 59).

<sup>153</sup> Indeed Strassman engages Descartes’ work directly. He discusses Descartes in his chapter on the pineal gland. He states, “Descartes thus proposed that the pineal gland somehow was the ‘seat of the soul’, the intermediary between the spiritual and the physical. The body and the spirit met there, each affecting the other, and the repercussions extended in both directions. How close to the truth was Descartes? What do we know about the biology of the pineal gland? Can we relate this biology to the nature of the spirit?” (Strassman, 2000, 60).

than they reveal. The psychological (and especially Freudian conceptions of the psychological) becomes a black box where spirituality can reside but any metaphysical or ontological difficulties are neutralized by its opaqueness.<sup>154</sup>

Alternately, conceptualizing psychedelics neurologically either as biological triggers for mystical union or as release valves for the unconscious mind only further exacerbates these impasses as strictly empirical causal mechanisms for such subjective concerns, as ‘mind’ or ‘spirit’ remain elusive. Strassman himself is aware of this issue and he stated:

“However, while it may be possible to relate specific changes in brain physiology to certain subjective effects, we are far from knowing how one translates into the other. This, of course, is the holy grail of clinical neuroscience, but it may be an unattainable goal, similar to finding the center of an onion; we can pull back deeper and deeper layers, but the center eludes us” (Strassman, 2000, 333).

In the case of the psychological, while denying the divine they worship at the idol of the ephemeral Freudian mind. Or, in ironic contrast, in the neurological traditions, they now use PET scans to try to find both the mind and the spirit in the energetic auras of the biomechanical brain. In both cases divinity is still subsumed into the

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<sup>154</sup> I am drawing on two meanings of this term. In science studies, Latour defines black boxes occur “When many elements are made to act as one” such that “no matter how many pieces that are in it and no matter how complex . . . system” it is viewed as one more simple object, process or concept (Latour, 1987, 131). In behaviorism, the psychological tradition stemming from B.F. Skinner, the ‘mind’ is considered a black box in that only inputs and outputs are considered and all causal mechanisms remain obscured in the empirically inaccessible non-spatiotemporal regions of the ‘mind’ or the ‘brain’ (Skinner, 1987). Behaviorism as a tradition is based in both pragmatism and rigorous empiricism and as such are skeptical of the cognitive traditions which they see as pseudo-scientific pursuits of minds which are little more scientific than souls or humors (Skinner, 1974). They are also skeptical of the neurosciences which they worry are merely more technologically sophisticated pursuits of equally non-spatiotemporal causal mechanisms for behavior where the empirical causal link will remain by definition elusive (Skinner, 1987). My own previous training is in radical behaviorism and I while I do not currently work in that field I would argue that their discussions of philosophy of science and empiricism are elegant and subtle. I say this because the field has been largely caricatured as simplistic, mechanistic and myopic.

larger discipline of the psychological where mystical experience is not evident of a higher power but only further evidence of the chemical complexity of the biological.

#### **IV. (How do we apply it) Magical psychotherapy: psychological protocols for applying psychopharmacological spirituality**

In clinical pharmacology, clinical trials are conducted in the service of the development of clinical applications. Following this model, psychedelic researchers sought to study these substances for possible psychopharmacological development.

As Strassman argued,

“I hoped that after establishing safe use of psychedelics under medical supervision more therapeutic studies would begin with my colleagues’ assistance. It would be a smooth transition for our dose-response and tolerance work to psychedelic therapy projects. Topping off this ambitious clinical research framework was the development of new psychedelic drugs with unique properties. With the full range of clinical facilities available, it would be easy to assess the effects of new medications in normal volunteers and in specific patient populations” (282)

As his comment illustrates, the would-be therapeutic application is determined in large measure by these conceptualizations of substance action, in one case, psychotherapeutic and in the other case psychopharmacological. In so far as psychedelic substances were thought to induce therapeutic spiritual experiences through some psychological transformation or through a biological mechanism such as serotonin or DMT then those substances represent unparalleled psychotherapeutic and psychopharmacological potentials. In this section I analyze these efforts to therapeutically apply the psychedelic spiritual experience both psychotherapeutically

and psychopharmacologically and I examine the epistemological and ontological impasses which result.

**A. Applied mysticism: Psychedelic and psycholytic psychotherapeutic traditions**

In so far as these substances are conceptualized in reference to the psychological, then the therapeutic application is sought in psychotherapy. Historically, there have been two primary paradigms for theorizing and applying the psychotherapeutic value of psychedelic spiritual experiences, psycholytic and psychedelic psychotherapies (Grinspoon & Bakalar, 1979; Grof, 1980).<sup>155</sup> Both of these traditions were attempts to develop psychotherapeutic protocols for the therapeutic application of psychedelics and the experiences they induce. However, one of the primary differences between these traditions is their conceptualization of role of spirituality in that process. As Psychedelic historians Grinspoon and Bakalar describe, “Two polar forms or ideal types of LSD therapy emerged; one emphasized the mystical or conversion experience and its aftereffects, and the other concentrated on exploring the labyrinth of the unconscious in the manner of psychoanalysis” (Grinspoon & Bakalar, 1979, 194). Both are attempts to apply psychedelics psychotherapeutically wherein spirituality is assimilated into psychotherapeutic paradigms to differing degrees.

Psycholytic therapy emerged in the course of research in Switzerland in the 1940's subsequent to Hoffman's discovery of LSD (Chandler & Hartman, 1960; C. S.

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<sup>155</sup> This is not to say these have been the only models but that these have been the most prominent. In this history I analyze the dominant narratives which have framed this research. For a fuller review of past paradigms see (Grof, 1980).

Grof, 1998). The term ‘psycholytic’ was coined in 1960 at the “*First European Symposium on Psychotherapy under LSD-25*” by psychedelic therapist Ronald Sandison (Passie, 1997).<sup>156</sup> Psycholytic means ‘soul dissolving’ or ‘soul loosening’ (Passie, 1997). However, despite this etymological connection to the soul, psycholytic therapy is centered in psychoanalysis more so than in mysticism or spirituality. In psycholytic therapy psychedelics are thought to dissolve psychic barriers allowing fuller access to the subconscious mind and are thus used as an aid to enhance the psychodynamic therapeutic process. It is thought that the use of LSD facilitates and enhances the psychotherapeutic process whereby it can be completed more quickly, more effectively or with a greater range of disorders (Grof, 1980). The protocols for psycholytic therapy call for light doses of psychedelics over a long period where they are used in the context of otherwise traditional psychoanalytic therapy sessions.<sup>157</sup>

The light dose is meant to lower psychic defense mechanisms but without so overwhelming the client that it interferes with the didactic therapy interactions or the verbal processing of internal states. This requires “as many as a hundred drug sessions over a period of two or more years” (Grinspoon & Bakalar, 1979, 195). During these sessions, “all the phenomenon that occur in LSD sessions or in connection with LSD therapy are interpreted using the basic principles and techniques of psychodynamic psychotherapy” (Grof, 1980, 31)

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<sup>156</sup> Psycholytic therapy emerged in Europe and has largely been practiced there. There are contemporary practitioners still today in Switzerland even if sometimes they operate ‘underground’ (C. S. Grof, 1998). In contrast, psychedelic psychotherapy emerged in Canada and the United States and has largely only been practiced there never spreading in popularity to European psychotherapy communities (Grof, 1980).

<sup>157</sup> Grinspoon and Bakalar report the typical dose at “not more than 150 micrograms” (194). Grof reports “the dosage range from 75 to 300 micrograms” (31). Dosage is important in psychedelics and especially with LSD where the dosages are so miniscule and yet the difference in effects are so profound. The experiential difference between a light dose and a high dose cannot be underemphasized.

Thus any spiritual experiences are interpreted through the psychodynamic and largely Freudian traditions.<sup>158</sup> As such, psycholytic psychotherapy has historically been infused with Freud's suspicion of spiritual or mystical experiences. Pioneering psychedelic psychiatrist Stanislav Grof saw this as a limitation of the psycholytic tradition. He stated:

“The toll that psycholytic therapy has had to pay for its theoretical rooting in Freudian psychoanalysis has been confusion and conflict about the spiritual and mystical dimensions of LSD therapy. Those psycholytic therapists who firmly adhered to the Freudian conceptual framework tended to discourage their patients from entering into the realms of transcendental experiences, either by interpreting them as an escape from relevant psychodynamic material or by referring to them as schizophrenic” (Grof, 32).

In this tradition, spirituality was fully subsumed into the psychological and indeed even unto the pathological.

In psychedelic therapy, in contrast, the ability of psychedelics to induce mystical and religious conversion experiences was regarded as the mechanism of their psychotherapeutic action. As Grof asserted, “This therapeutic approach differs from the preceding one in many important aspects. It was developed on the basis of dramatic clinical improvements and profound personality changes observed in LSD subjects whose sessions has a very definite religious or mystical emphasis” (Grof, 1980, 32). It was thought that by skillfully facilitating mystical and religious psychedelic experiences that these experiences could be therapeutically transformative. In this tradition, the psychotherapeutic process is largely the backdrop and context for the more central therapeutic agent: psychedelic spiritual experiences. In this regard spirituality plays a more direct role in psychedelic therapy than in psycholytic traditions.

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<sup>158</sup> For a discussion of other psychological traditions in psychedelic psychotherapy see (House, 2007).



Psychedelic psychotherapy emerged from Humphrey Osmond's treatment work with alcoholics in Canada in the 1950's where he discovered that the LSD induced religious experiences were sometimes transformative of the often intractable problem of alcoholism. Based on these observations, clinicians developed psychedelic therapy protocols which sought to create optimal conditions and increase the probability of inducing these psychedelic spiritual experiences (Grof, 1980). In contrast to the low dose psycholytic process, psychedelic therapy protocols call for high doses over shorter and more intense periods of time as it was found that such experiences are more typical on high doses of psychedelics. Grof explained:

“The dosages used in this approach are very high, ranging from 300 to 1500 micrograms of LSD. In contrast to the use of serial LSD sessions in the psycholytic treatment, psychedelic therapy typically involves only one high-dose session or, at the most, two or three. The procedure has been aptly referred to as a ‘single over-whelming dose’ (Grof, 1980, 36).<sup>159</sup>

The more formal psychotherapeutic process is in large measure focused on processing and integrating this psychedelically induced mystical experience in order to maximize its psychotherapeutic impact (House, 2007). In this regard, psychedelic psychiatrist Charles Grob argues that “By blurring the boundaries between religion and science, between sickness and health, and between healer and sufferer, the psychedelic model entered the realm of *applied mysticism*” (C. S. Grob, 1998, 13). I discuss this unusual emergence of a would be scientific mysticism in more detail below as I argue it represents an important expansion of scientific authority over realms previously outside of its secular reach.

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<sup>159</sup> Again, doses are very significant for psychedelics. In this tradition, the doses are increased even up to very high doses. Grof described one patient who was not responding to lower doses being given 38 sessions of 1500 micrograms injected intramuscularly (Grof, 1975b). For anyone who has ever taken psychedelics, this dosage is inconceivable. ‘Overwhelming’ indeed.

## **B. Magical psychotherapy: Psychopharmacological shamanisms**

In contrast to these early more strictly psychotherapeutic models which predominated in the first wave, contemporary sciences emphasize psychopharmacological approaches to the therapeutic application of these substances. Psychopharmacology is “a term which quite literally means how drugs effect the psyche” (Diamond, 2000). It is the study of the effects of drugs on the brain and associated states of mind or mood. This can be seen in the name change previously mentioned from the Journal of Psychedelic drugs to the Journal of Psychoactive drugs; these are drugs that are active on the psyche. In the contemporary moment biomedical models and especially cognitive neurosciences have come increasingly dominant both psychiatry and psychology (Marks, 1997). This has also resulted in a blurring of pharmacology and psychotherapy. These sciences reflect this blurring in that contemporary psychotherapeutic approaches work in concert with neurological models. Strassman reports the importance of psychological protocols for pharmacological studies. Grof (1980) argues that the pharmacological studies were a dead end and that the benefits could only be found through the process of psychotherapy. The contemporary neurochemist Deborah Mash likewise asserts the importance of psychotherapy for pharmacology:

“As with most pharmacological agents, it is important for ibogaine pharmacotherapy to be integrated with psychotherapy. This suggestion for drug development of ibogaine as a pharmacotherapy for substance abuse is consistent with the current advances in substance abuse treatment strategies, which indicate that outcomes can be enhanced and extended by combining the most effective forms of psychotherapy and pharmacotherapy” (Mash et al., 1998, 275)

In the contemporary moment the lines between these models are increasingly blurred.

For example, Deborah Mash is a contemporary neurochemist who studies the psychedelic plant ibogaine as a possible treatment for substance abuse (Mash et al., 1998; Mash et al., 2001).<sup>160</sup> Mash's initial human safety study of ibogaine was only the second psychedelic investigation to receive permission from the FDA for trials in the second wave. She and her team published their efforts toward the "development of ibogaine as a pharmacotherapy for drug dependence" (Mash et al., 1998). In a public discussion of her work, Mash theorizes that it is ibogaine's spiritual capacities that determine its psychopharmacological efficacy. She states,

"Spirituality is how we perceive it. It's the serotonin, the serotonergic link, or peptide probably coming from the pineal gland and we're just beginning to understand it. I'm certain that when one goes into a very deep meditative and mystical states that there's a neurobiological correlation to that" (Diamond, 2000, 375).

As can be seen in her explanatory interpretation, spirituality is neurobiological and thus its application is largely, although not exclusively, pharmacological.

The contemporary anthropologist Michael Winkelman also theorizes a psychopharmacological understanding of the spiritual ritual use of these substances. He states: "Shamanism developed a 'natural psychology' approach to managing psychedelics based on their adaption in enhancing the integrative processes of the brain" (Winkelman, 2007a, 144)<sup>161</sup> He goes on to say, "Noted effects of these

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<sup>160</sup> Substance abuse treatment has been a primary site of therapeutic investigation from the beginning of psychedelics research. Bill Wilson, the founder of AA, argues that it was his LSD treatment received through Humphrey Osmond that cured his alcoholism and inspired him to start AA (Yensen & Dryer, 2007). There has been considerable research on psychedelics as possible treatments for substance abuse (Alper & Lotsof, 2007; J. H. Halpern, 1996; Mabit, 2007; Yensen & Dryer, 2007).

<sup>161</sup> The term 'shamanism' is now ubiquitous in psychedelics communities, new age communities as well as anthropology, holistic medicine, and pharmaceutical research on indigenous medicine (For psychedelics examples see: Dobkin de Rios, 1992; Harner, 1973, 1980; Pinchbeck, 2002). However, this term itself is a colonial construction. This term is native to Siberia and no other indigenous

substances reported in traditions around the world and their similarity to shamanic practices reveal natural indigenous ‘neuropsychology’ engaged by these psychedelic medicines” (Winkelman, 2007a, 145). Winkelman conceptualizes this natural psychology as psychopharmacological effects on the brain by the psychedelic chemicals combined with the “psychological focus of shamanic ritual” facilitate enhanced access to the unconscious mind (Winkelman, 2007a, 145). The healing occurs not through divine beings but through psychopharmacology and psychodynamic resolution of the unconscious.

Anthropologist Marlene Dobkin de Rios has been one of the most prolific of the scientists studying the ritual use of the psychedelic vine ayahuasca in South America.<sup>162</sup> She has conducted several investigations of the use of psychedelics for spiritual healing purposes in indigenous and mestizo communities where she analyzed how ‘culture’ and spiritual ‘belief’s’ influence the content of the psychedelic experiences and their therapeutic processes and outcomes (Dobkin de Rios, 1984, 1992; Dobkin de Rios & Grob, 2005). In one of her earliest studies, she examined the role of cultural ‘belief systems’ for therapeutic outcomes of ayahuasca healings in the an urban slum Peru (Dobkin de Rios, 1973). She concluded that these spiritual beliefs matter for the therapeutic effectiveness of the ayahuasca healing ritual which she termed ‘magical psychotherapy’ (Dobkin de Rios, 1973, 81). She concluded that

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communities call their spiritual leads ‘shamans’. Much like the term ‘Hispanic’, the term ‘shamanism’ emerged in the social sciences as a universal category for a multitude of spiritual traditions that they argue have essential similarities. For a comprehensive history of this term see (Jones, 2006) For a critique of the practices of so-called shamanism by whites see the following: (Hobson, 1978; Noel, 1999; Rose, 1994; Wallis, 2003) I will return to this topic in greater detail in a subsequent chapter of this dissertation.

<sup>162</sup> She has written extensively about the cultural aspects of ayahuasca as a spiritual healing practice in both past and present indigenous contexts (Dobkin de Rios, 1973, 1976, 1984, 1990, 1992; Dobkin de Rios et al., 2002).

in many ways this ‘magical psychotherapy’ was comparable to western psychotherapy (Dobkin de Rios, 1973). She stated, “drug-healing in the Peruvian Amazon in many ways represents a very old and time-honored tradition of dealing with psychological problems that predates Freudian analysis by many centuries” (Dobkin de Rios, 1973, 76).

However, the healers and shamans that Dobkin de Rios and Winkelman studied for these psychological protocols and neurological models did not frame their work as ‘psychological’ nor did they conceptualize their healing as an intervention into psychodynamic or even psychological processes, in the Western sense. Dobkin de Rios herself acknowledged this in the same article: “Ayahuasca is not used to gain verbal insight or to work through psychodynamic materials in order to effect long-range cures. Rather the drug is used to identify the causes of magical illnesses” (Dobkin de Rios, 1973, 80). Winkelman also addressed this dilemma between indigenous spiritual explanations and his own more neurological hypotheses. He acknowledged that it was commonly asserted by multiple indigenous communities that these substances were “spiritual sacraments” both in the sense that the plant itself was sacred but also in the sense that these sacramental substances facilitated contact with “sacred realms” and “Transcendental Others” who were ultimately the agents of healing and transformation (Winkelman, 2007b). Winkelman asserted that in the “premodern world” psychedelics were thought to facilitate “direct contact with a spiritual source of power” (Winkelman, 2007b, 4). As Winkelman acknowledges, such a “spiritual basis that may alienate a more scientific approach to the study of these substances” (Winkelman, 2007b, 7) Given these constraints, while Winkelman

acknowledges the spiritual role of these substances, it is the psychopharmacological role more so than the spiritual or the magical which is predominant in his own work (and the field writ large).

## **V. Neurotheology: The emergence of psychiatric clerical authority**

These substances and the spiritual experiences they induce are thought to have important psychotherapeutic potential if they can be harnessed and developed. There are efforts to develop psychotherapeutic protocols for the application of these substances and the altered states of consciousness they induce. The impasse of divinity, however, once again troubles these efforts. If it is the spiritual experience which is transformative, then such matters would traditionally be the purview of spiritual, mystic or religious leaders. Indeed there is a rich history of spiritual disciplines seeking to effect positive transformation and healing in the lives of devotees. However, by attempting to harness and apply the spiritual psychedelic experience and theorizing it as part of the psychotherapeutic process, scientists take up a sort of clerical authority. Not only do they extend their authority into this newly accessed realm by naming and explaining vis-à-vis scientific assumptions and practices but here they begin to take on an authoritative role typically the domain of spiritual and religious leaders as can be seen with Mash's proposal for an emerging 'neuroshamanism' or Grob's mention of what he sees as an emerging 'applied mysticism'. The term that perhaps best captures this emerging authority is neurotheology.<sup>163</sup> Winkelman attempts to connect contemporary biomedical

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<sup>163</sup> Winkelman's work is in dialogue with other scientific investigations of shamanism which attempt to theorize its 'neuropsychology' (Bednarik, Lewis-Williams, & Dowson, 1990; Krippner,

discourse to what he defines as ‘shamanic’ traditions and he frames this connection as ‘neurotheology’ where he argues: “The universal features of shamanism found in foraging societies pointed to their biological bases . . . these biological bases for ritual healing provide a natural theology or ‘neurotheology’, a biological structuring of spiritual beliefs and practices that underlie the universality of shamanic activities” (Winkelman, 2007a, 144).<sup>164</sup> In this regard, the spiritual healing powers formally the domain of the shamans and their spirits is transferred to the domains of the doctors and their neurochemicals.

Indeed, some psychologists explicitly envision a scientific ecclesiastical authority accomplished via an emergent spiritual leadership by psychiatric/psychological disciplines through psychedelic research. Psychologists have advocated just such a clerical role for psychotherapy and its psychologists. As Bakalar and Grinspoon describe:

“Most of these methods are employed in both psychiatry and religion; they remind us that the word ‘cure’ means both treatment of disease and the care of souls, and that all psychotherapy relying on insight some ways resembles conversion. Jung compared psychoanalysis to an initiation rite, and Theodore Roszak now predicts: “We may expect to see the psychotherapy of the coming generation take on more and more the role, if not the actual style, of the old mystery cults to which troubled souls turned not for adjustment or gratification but for spiritual renewal” (Roszak 1977|1975, p. 208) With the aid of more ancient traditions, psychotherapy becomes a Way and its exploration of the self a spiritual journey”. (Grinspoon & Bakalar, 1979, 236)

First wave Psychiatrists Timothy Leary, Ralph Metzger and Richard Alpert also argue for this clerical role in an even more exaggerated way. They published a

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2002a, 2002b). Barbara Bradley Haggerty’s recent book examines the growing group of neuroscientists who study spirituality which has been called ‘neurotheology’ (Bradley Haggerty, 2009d)  
<sup>164</sup> For a more detailed discussion of Winkelman’s use of this term see: (Winkelman, 2002, 2004, 2007a).

book titled “*The Psychedelic Experience: A manual based on the Tibetan Book of the Dead*” based in part on their research at Harvard University where they gave psychedelics to colleagues, graduate students and undergraduate research subjects (Leary et al., 1964). They attempted to connect their psychiatric research with the ancient Tibetan mystical teachings on death and dying. They wrote their book as a ‘manual’ whereby scientists could take on a new important role as spiritual guides adding their scientific and psychological expertise and psychedelic spiritual facilitation to enhance these ancient mystical knowledges. Leary et al asserted: “The role of the psychedelic guide is perhaps the most exciting and inspiring role in society. He is literally a liberator, one who provides illumination, one who frees men from their life-long internal bondage . . . Awe and gratitude, rather than pride, are the rewards of this new profession (Leary et al., 1964, 110).

Strassman, while more cautious and circumspect than the brash and often bombastic Leary crowd, also describes a future for psychedelic sciences of psychedelics that appear to merge the scientific and the clerical and to add a more clerical-dimension to scientific authority. He described a self-identified ‘idealistic future’ for psychedelics research based on his experience with his own research program that initiated the second wave of psychedelics research. He described his center as a place of serene natural and architectural beauty where “research scientists and staff would possess psychotherapeutic, psychedelic, and spiritual training and would work under medical direction” (Strassman, 2000, 336). He argued that any clinician-researchers at this ideal site would also have ‘religious sensibilities’



developed through formal religious training as well as first hand psychedelic experiences. He explains the latter saying,

“traditional psychiatric medical training ought not to be only the preliminary requirement for being able to administer psychedelic drugs to another human being. One of the most important additional qualifications should be having taken psychedelics oneself” (Strassman, 2000, 337).

They would be both initiates and initiators in this would-be scientific ashram of psychedelic spirituality.

Nevertheless, while spirituality is incorporated into this science-ashram to an unprecedented degree, scientific authority is yet upheld. For one, Strassman argues that while there are a variety of methods and purposes for taking psychedelics such as with friends, with a religious teacher/community or in a communal setting and “there is nothing wrong with any of these models, but it’s important not to confuse or interchange them with the research format. Research may one day lead to therapeutic uses” (Strassman, 2000, 331)(331) His assumption of scientific authority as the ‘best way’ is a priori and unquestioned. Further his scientific ashram would be ‘under medical direction’(Strassman, 2000, 336). He argues explicitly for establishing medicine as the primary authority over spiritual matters stating:

“Medical doctors’ training and experience provide them with unique abilities to appreciate, understand, and respond to the whole human organism’s reaction to medication. Therefore, the law places the privilege and responsibility of using drugs in the hands of physicians. Within the field of medicine, psychiatrists receive the most exhaustive training in dealing with human behavior and its relationship to the physical body” (337)

In Strassman’s model medical authority is extended into realms formerly the province of spiritual leaders and teachers and in so doing extends ‘medical direction’ to include

clerical authority. As he states, “ironically, we may have to rely more upon science, especially the freewheeling fields of cosmology and theoretical physics, than on our own more conservative religious traditions for satisfactory models of explanations of these ‘spirit-world’ experiences” (Strassman, 2000, 186-187).

Now, this is not to say that he argues that such scientific ashrams should replace churches or that scientist become the new priests and pastors of day to day religious life. It does to some degree, however, bring spiritual matters under the province of scientists. On the one hand the scientist is expected to receive training from a spiritual leader and in this regard the scientist is not the expert but rather the student, or even the disciple if you will. Once the scientific ashram is established, however, this same spiritual teaching makes the scientist resident expert in spiritual matters. When combined with scientific authority and academic credentials, this makes a potent combination. However, given their historically demarcative relationship, this mixing of scientific and spiritual matters is not without its problems on both sides of the proverbial aisle. As Grinspoon and Bakalar discuss:

“The mixture of mystical and transcendental claims with therapeutic ones is another aspect of psychedelic drug therapy that troubles a society of irreligious or tepidly religious individualists. The pronouncements of drug enthusiasts are sometimes too much like religious testimonials to please either psychiatrists or priests and ministers” (Grinspoon & Bakalar, 1979, 235).

These epistemological and ontological tensions and their implicitly hierarchical relationships are all evoked in these psychedelic psychotherapeutic sciences such that both parties are uneasy over their respective domains of authority.

Strassman also discusses how this issue of scientific authority over spiritual matters became such a contentious issue that it contributed to his decision to

terminate his psychedelic research projects. In his book chapter titled '*Stepping on Holy Toes*' Strassman described how he had been involved in a Zen monastic community long before he began his psychedelic research. He relied on the expertise of monks in this community to aid him in his interpretations of his psychedelic research. However, as his research progressed the ecclesiastical authority of the monastic community became uncomfortable with his research on seemingly mystical states of consciousness and eventually chastised him for his project and demanded that he cease and desist. They sent him two letters. One letter stated: "The idea of administering psychedelics to the terminally ill is to me appallingly dangerous. It comes about as close to 'playing God' as anything I've ever seen in the mental health professions. . . An attempt to induce enlightenment experiences by chemical means can never, will never succeed" (Strassman, 2000, 304) The other letter stated:

"That DMT might elicit enlightenment experiences is delusional and contrary to the teachings of the Buddha. . . hallucinogens disorder and confuse the mind, impede religious training, and can be a cause of rebirth into realms of confusion and suffering. . . This is the teaching and viewpoint of myself, [the abbot], [the order], and the whole of Buddhism. We urge you to cease all experiments" (Strassman, 2000)(305).

This religious organization made it clear that they felt that this scientists was overstepping the bounds of his authority and encroaching on territory they considered their own. Strassman was aware of these boundaries and was attempting to negotiate them both politically and personally. When this came to a head institutionally he concluded

"there generally is little support for the incorporation of spirituality, with its nonmaterial and therefore non-measurable factors, into clinical research's fold. We will see in this chapter that neither is organized religion, no matter

how mystically inclined, open-minded and secure enough to seriously consider the spiritual potential of clinical research with psychedelics” (294).

And due to such impasses of spirituality through the doorway of psychedelics, Strassman packed his bags and ended his own research. After all, these are not philosophical disagreements but consequential confrontations over who has the power to name the world and decide the ontological fate of its ghosts and gods, whether the ancestral gods of Zen or the psychological ghosts in the biological machine.

## **VI. Conclusion:**

In conclusion, while spirituality was able to enter the laboratory through the doorway of psychedelics, this doorway did not prevent an assimilationist demotion of divinity. The spiritual experience is to varying degrees translated into materialist metaphysics and reduced to biological processes such that all troublesome ontologies associated with divinity, mystical metaphysics or transcendental knowing were bypassed. And this represents one of the primary limitations of these moves to establish scientific and medical authority over spiritual and mystical domains. In order to do so spirituality must be assimilated into materialist and biological assumptions whereby divinity must be reducible to the psychological or neurological. The authority of sciences is thus extended to this newly accessed realm where they claim the liturgical roles and ecclesiastical authority typically wielded by spiritual or religious leaders to the degree where they seek to determine the very *mysticality* of the mystical experience.

There are many troublesome hierarchical dimensions to this usurpation of the spiritual into the psychological and the molecular. Because these are scientific efforts to assimilate spirituality into science, science retains its position as a dominant knowledge and spirituality and its associated epistemological and ontological incommensurabilities are (re)subjugated vis-à-vis that hierarchical relationship. Now this is not to say that these scientists are engaging in a simplistic or unaware reductionism. Indeed, these impasses are acknowledged and worried over frequently in these sciences. Given their role as scientists, however, a certain faithfulness to scientific cosmology is required wherein the theological becomes neurological. For example ethnobotanist Richard Evans Schultz whose fieldwork provided the plants materials for the emerging psychopharmacological laboratories also struggled with the incommensurabilities of the scientific world of botany and chemistry and the indigenous belief systems which characterized these plants as sacred and the experiences as mystical. He argued that:

“One might think that with the isolation, structural analysis, and synthesis of psilocybin and psilocine, the mushrooms of Mexico had lost their magic. Substances that because of their effects on the mind had led Inidan’s to believe for thousands of years that a god dwelt in those mushrooms can now be synthetically produced in the chemist’s retort. It should be remembered, however, that scientific investigation has merely shown that the magical properties of mushrooms are the properties of two crystalline compounds. Their effect on the human mind is just as inexplicable, as just as magical, as that of the mushrooms themselves. This also holds true for the isolated and purified active principles of other plants of the gods” (Schultes et al., 1979, 23).

However, it is obvious that that despite these acknowledgements of these impasses and the stated intents to avoid a reductionist demotion of divinity, a scientific causal model has already crystallized which gives primacy to

neurochemistry and biological or molecular frameworks. For the culture of scientists, faith in the molecular remains unshaken. What was once a mystery which Hoffman and Wasson marveled at as keys to a heretofore mysterious realm are now already refigured as yet another confirmation of biological complexity which requires no reference whatever to such mysterious (and politically precarious) notions of divinity. Langlitz states “Scientists can no longer see them as ‘magic’ drugs but rather as 5-HT<sub>2A</sub> receptor-specific molecules that affect membrane potentials, neuronal firing frequencies, and neurotransmitter releases in particular areas of the brain” (Langlitz, 2007, 193). In the contemporary world of clinical pharmacology and psychopharmacology, it is at the end of the day a drug, one with unusual properties, but a drug nonetheless. It is drugs and not sacraments, after all, which earn FDA approval and can be legitimately examined via clinical trials, as Strassman discussed in his description of his 2 year ordeal to obtain such approval (Strassman, 2000).

Strassman’s research has illuminated the core epistemological and ontological impasses seemingly inherent in psychedelic sciences of spirituality particularly the problem of divinity or existence of other non-material beings and the difficulty in capturing intense subjective experiences that are often interpreted by the person having them as spiritual or mystical. Non-material beings and unspeakable altered states of consciousness and would-be divine revelations do not lend themselves to the models of biological psychiatry. This is where Strassman’s work illuminates the boundaries of scientific and spiritual knowledges. While I appreciate Strassman’s, and others to be sure, sincere and subtle wrestling with these impasses, I am left unsatisfied with their resort to theoretical physics. I remain unconvinced that the

magic is not lost from the molecular or that a psychoactive is as sacred as a sacrament. It is still a quest after all to find a science of spirituality whereby the dominant criteria of science continue as arbiters of truth and reality. Given the definition of subjugated knowledges as those which are deemed inconceivable by dominant knowledge standards, it is in the very inconceivability of spirituality seems to me to be potent (Foucault, 1977b). What would it mean to assume that alternative beings exist, that alternative realities exist, that scientific assumptions and practices are more limited in scope than they are often assumed to be? I do not have any answers about the reality of such beings. However the tensions inside the question can produce cracks in the foundations of scientific truth, subjugated interstices that seem fruitful for imagining outside of their a priori visions of the admissible and the conceivable.

In this regard, these sciences represent a unique opportunity to intervene in the historically hierarchical demarcative relationships between science and spirituality. After all, for all the problems, these therapeutic psychedelic scientists engaged the historically subjugated and demarcated worlds of spirituality to an unprecedented degree in the secular and modernist scientific history of the west. These efforts could be enhanced by greater understanding of and engagement with issues around race, class, gender, sexuality and nation. This is especially apparent extensive research that occurred in indigenous communities regarding their sacred plants and spiritual beliefs. It is to these politics that I turn in the following chapter.

## **Chapter 4: Neuroshamanism: The psychedelic sciences and the bioprospecting of spirituality**

### **I. Introduction**

While I attend to various aspects of power relations across these chapters, here I address the politics of location more explicitly in these sciences. In this chapter I analyze the psychedelic sciences of spirituality that flowed out from the ‘discovery’ of psychedelic substances which occurred in the context of bioprospecting research in indigenous communities.<sup>165</sup> As a bioprospecting endeavor, the goal of this research was to identify, explain and subsequently develop psychedelic plants and the spiritual knowledges associated with their use into marketable medicines and psychotherapeutic protocols. Given the spiritual belief systems that surrounded their use and the ability of these substances to induce intensely altered states of consciousness, these scientists grappled with epistemological and ontological problems that arose across each of these biomedical bioprospecting steps. I analyze these epistemological and ontological impasses and the attendant political dilemmas across these bioprospecting attempts to scientifically assay the plants from the gods in the pursuit of therapeutic spirituality. I conclude by arguing that while these sciences

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<sup>165</sup> Bioprospecting describes the increasingly profitable scientific and pharmacological drug development collaborations that emerged out of the post World War II expansion in funding for scientific, technological and medical developments and the associated growth in the pharmaceutical industry. As the pharmacology industries expanded, they collaborated with the field scientists of ethnobotany and anthropology who conducted research on indigenous uses of plants and indigenous medicinal knowledge in order to obtain additional plant materials to develop into pharmaceutical drugs.



represent a moment where scientists engage with spiritual knowledges from historically marginalized communities to an unprecedented degree that unfortunately the politics of location and historically hierarchical relationships constitutive of bioprospecting are variously reinforced despite the ‘good intentions’ of these psychedelic scientists.

## **II. Familiar Ground: the political contours of bioprospecting for spirituality**

In this chapter I analyze scientific research on psychedelics and the spiritual beliefs associated with their use in indigenous communities.<sup>166</sup> In order to understand the psychedelic sciences in their historical and scientific context, it is important to note that the psychedelic sciences emerged in and through the increasingly profitable scientific and pharmacological drug development collaborations which have been termed ‘bioprospecting’ (Hayden, 2003, 11; Shiva, 1997). Bioprospecting emerged out of the post World War II expansion in funding for scientific, technological and medical developments and the associated growth in the pharmaceutical industry (Hayden, 2003). As the pharmacology industries expanded, they required additional plant materials to develop into pharmaceutical drugs.<sup>167</sup> In order to find this

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<sup>166</sup> Much like ‘hispanic’ or ‘third world,’ the term ‘indigenous’ is problematic in that it collectivizes many distinct populations with vastly different experiences of colonialism. It creates a blanket term for such unrelated peoples that defines them strictly through their relationship to colonialism and thus privileges colonial history and imposes a colonial narrative. It erases the linguistic, cultural, geographic, political, cultural and national diversities that must of course be present in such a vast number of peoples and cultures to which this term is applied. I choose this term in part due to lack of better alternatives and in part because it has been utilized by indigenous activists and communities as a term that “internationalizes the struggles of some of the world’s colonized peoples” and which is used for political solidarity and resistance (L. T. Smith, 1999, 7).

<sup>167</sup> Pharmaceuticals were originally based on the manipulation of plant chemistry. However Hayden (2003) points out that pharmaceuticals research is increasingly focused on synthetic chemicals as well as microbes. Hayden argues that that political problems associated with bioprospecting research in indigenous communities have in part contributed to this emergent emphasis on synthetic and ‘culture-free’ chemicals. She states, “the recourse to microbes remains shorthand for ‘culture-free’ - there are,

additional ‘raw’ material, these industries collaborated with the field scientists of ethnobotany and anthropology who conducted research on indigenous uses of plants and indigenous medicinal knowledge in the “‘biodiversity rich’ regions of the globe” or the “so-called developing nations” (Hayden, 2003).<sup>168</sup> The hope of such collaborations was that this *ethnobotanical* information might lead them to medically active plants for development of pharmaceutical drugs or other marketable products such as alternative medicine or cosmetics (Hayden, 2003; Shiva, 1997).<sup>169</sup>

Historically, prospecting is associated with the hunt for gold and oil, however these (bio)prospectors were panning for biologically active and pharmacologically marketable plant ‘resources’. As STS scholar Hayden states, bioprospecting has “arisen alongside, and indeed as part of, a growing trend in which traditional knowledge, like biodiversity, has been given a great deal of institutional life as both an identifiable, codifiable thing, and as a resource, in all senses” (Hayden, 2003, 36). In these sciences then knowledge itself becomes a new ‘resource’ bound up in the politics of extraction.<sup>170</sup> As post-colonial scholar Tuhiwai Smith observes about the broader colonial history of science:

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in the prospecting imagination, resources that will entail much less political negotiation than their floral counterparts” (Hayden, 2003, 235). However in the beginning these sciences relied more heavily on ethnobotanical knowledges as leads for medicinally active plants.

<sup>168</sup> STS scholar Cori Hayden states, “bioprospecting is the new name for an old practice; it refers to corporate drug development based on medicinal plants, traditional knowledges, and microbes culled from the ‘biodiversity rich’ regions of the globe- most of which reside in the so-called developing nations” (Hayden, 2003, 1)

<sup>169</sup> STS scholar Cori Hayden states, “ethnobotanically guided searches for leads to drugs . . . have been endeavors based on a certain kind of ‘translation’; turning plants and often, though not always, knowledges about their uses into industrially useful, biologically active chemical compounds” (Hayden, 2003, 31) .

<sup>170</sup> As science and technologies critic Cori Hayden articulates, “As we know from the intertwined histories of colonialism, natural history, and botany, the study of plants and knowledge about their use has a long and complicated legacy in which resource extraction has unquestionably played a prominent role” (Hayden, 2003, 30).

“knowledge and culture were as much part of imperialism as raw materials and military strength. Knowledge was also there to be discovered, extracted, appropriated and distributed . . . The production of knowledge, new knowledge and transformed ‘old’ knowledge, ideas about the nature of knowledge and the validity of specific forms of knowledge, became as much commodities of colonial exploitation as other natural resources”(L. T. Smith, 1999, 59).

In this regard, bioprospecting has had a controversial history and has been sharply criticized by indigenous communities and post-colonial critics (Hayden, 2003; Shiva, 1997; Swazo, 2005). Post colonial scholar Vandana Shiva (1997) referred to these practices as ‘biopiracy’ decrying them as the further plundering of the “nature and knowledge” of the developing world by developed nations and multinational corporations and as such only the most current iteration of imperialism and colonialism. She states, “ When indigenous communities are asked to sell their knowledge to corporations, they are being asked to sell their birthright to continue to practice their traditions in the future” (Shiva, 1997, 74). As such, bioprospecting represents an important site for political struggles over knowledge.

Therefore, situating the psychedelic sciences of spirituality in the context of bioprospecting implies not only a particular set of scientific practices and paradigms but a history of politics and struggle. As STS anthropologist Cori Hayden argued regarding non-psychedelic bioprospecting in Mexico: “We will find ourselves not in uncharted territory but traveling well-worn routes, as these researchers retrace both their own steps and those of the collectors, miners, and colonial explorers whose pathways” proceeded them (Hayden, 2003, 6). Similarly, these psychedelic sciences also trace similar steps and demonstrate similar political contours. However, because these psychedelic sciences prospect for that which is literally sacred to these

indigenous communities- their sacred plants and spiritual rituals- additional political complexities are involved.

In fact, it could be argued that this entrée of science into indigenous spirituality represents an intensification of colonial bioprospecting relationships. As post-colonial scholar Tuhiwai Smith argues:

“The values, attitudes, concepts and language embedded in beliefs about spirituality represent, in many cases, the clearest contrast and mark of difference between indigenous peoples and the West. It is one of the few parts of ourselves which the West cannot decipher, cannot understand and cannot control. . . yet” (L. T. Smith, 1999, 74).

In this regard, Tuhiwai Smith argues that “the global hunt for new knowledges, new materials, new cures . . . brings new threats to indigenous communities” (L. T. Smith, 1999, 25). And these new threats emerge from through this application of the scientific gaze, not despite it. She asserts, “Those observers of indigenous peoples whose interest was of a more ‘scientific’ nature could be regarded as being far more dangerous in that they had theories to prove, evidence and data to gather and specific languages by which they could classify and describe the indigenous world” (L. T. Smith, 1999, 83) Thus, the psychedelic sciences of indigenous spirituality in some ways represent a colonial bioprospecting incursion into indigenous communities with the explicit intention of finding this final cipher, a venture which seeks to finally bring the gaze of science to bear on the sacraments and plant allies which have been so precious to indigenous communities for the long history of scientific ‘civilization’.

In this chapter I analyze the political contours of the bioprospecting of spirituality in these psychedelics sciences. I trace the primary scientific attempts to assimilate this newly ‘discovered’ spirituality given that these spiritual assertions

were incommensurable with the scientific and often biomedical research paradigms in which these scientists operated. In this analysis I examine the psychedelics research which occurred in indigenous communities or that substantively engaged indigenous people's spiritual beliefs and practices. The research I examined was predominated by the field sciences of ethnobotany and anthropology. I analyzed these field sciences from both the first and the second wave in order to attend to how these sciences have shifted over time and in relationship to the shifting scientific and disciplinary paradigms in which they were embedded. As with the previous chapter, I focus on the dominant narratives and important figures of these scientific fields in order to bring dominant knowledges into greater relief.<sup>171</sup>

### **III. History of psychedelic bioprospecting and the 'discovery' of spirituality**

I analyzed the psychedelic research conducted on psychedelics and the spiritual beliefs surrounding their use in indigenous communities for the ways that the incommensurabilities posed by these spiritual assertions were negotiated and resolved. I found that these efforts varied across discipline and shifted in relationship to the particular dominant scientific and medical paradigms in which they were embedded. In my analysis I found that the dilemmas posed by these scientific investigations of spirituality were exacerbated by being grounded in the largely biomedicalized bioprospecting disciplines. After all, the study of every aspect of indigenous life including the use of intoxicating substances and spiritual rituals was virtually definitional to the discipline of anthropology from its inception (Deloria,

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<sup>171</sup> See Appendix B: Data sources for a listing of documents I analyzed in this study organized by chapter.

1969a; L. T. Smith, 1999).<sup>172</sup> Following these disciplinary traditions, one prominent claim which has largely been associated with anthropologists is that these substances unlock the mystery of the evolution of human consciousness and represent the key to the development of religiosity; In contrast, in the increasingly biomedicalized contemporary sciences these substances and the beliefs and rituals associated with their use are valued for their untapped pharmacological possibilities. In both cases spirituality is assimilated into prevailing scientific explanatory frameworks as I will discuss below.

**A. Where God is: discovering psychedelic spirituality**

These psychedelic sciences emerged in the 1950's after several prominent American and European scientists 'discovered' psychedelic mushrooms being used by indigenous communities in Mexico and South America. These 'discoveries' were in many ways routine plant identifications in this larger taxonomic pharmaceutical project. However, the peculiar properties of these plants and the spiritual context of their use distinguished them from other more traditional entries in the emerging scientific pharmacopeia. These early scientists found repeatedly that the indigenous peoples from whom they obtained these substances argued that these substances operated via divine actors, spiritual processes and magical effects. For example, first wave psychedelic ethnobotanist Schultes asserted: "The effects of many hallucinogens are so extraordinary that most of these plants early acquired an exalted

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<sup>172</sup> This has also meant that the contested power laden relationships between Western science and indigenous subjects have been associated with anthropology from its inception as well. As Tuhiwai Smith Tuhiwai Smith asserts, "anthropologists are often the academics popularly perceived by the indigenous world as the epitome of all that is bad with academics" (L. T. Smith, 1999, 67).

place in primitive society, often becoming sacred and the objects of direct worship” (Schultes, 1972, 5). Speaking specifically of the mushroom conceptualizations in Mexico, first wave psychedelic anthropologist Peter Furst stated:

“Matlatzinca mushroom taxonomy, which places edible mushrooms in one category and the hallucinogenic kind into a wholly different metaphysical one, alongside deities and spirits, . . . To most of us, all mushrooms, sacred or culinary, may look more or less alike, but to the Indians they are wholly different experiential phenomenon” (Furst, 1976, 107).

As a further example, first wave psychedelic explorer Gordon Wasson commented on the seeming ubiquitousness of the sacred associations surrounding these substances. He argued that the most common answer he received from indigenous peoples about psychedelic mushrooms was, “they carry you where God is” (Wasson, 1957, 10). He commented that this was “the answer that we have received on several occasions, from Indians in different cultural areas, almost as though it were in a sort of catechism” (Wasson, 1957, 10). However, the dilemma posed by this spiritual catechism is perhaps best captured in the oft repeated story here told by first wave psychedelic anthropologist Peter Furst: “A newspaper reporter who made the mistake of calling peyote a ‘drug’ while interviewing a Huichol shaman in my presences was indignantly told, ‘Aspirin is a drug, peyote is sacred’, and warned not to confuse such important matters” (Furst, 1976, 112).<sup>173</sup>

The context of biomedical bioprospecting research, however, makes this warning difficult for these scientists to heed. After all, these bioprospecting scientists are seeking drugs not supernatural power or sacramental substances. Such causal ascriptions are incommensurable with these biomedical sciences which require more

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<sup>173</sup> This story is repeated in at least two other sources: (Forte, 1997, 1; Grinspoon & Bakalar, 1979, 235)

scientific causal mechanisms and objective explanations. As first wave psychedelic psychiatrist Ralph Metzner asserted: “In the modern Western worldview dominated by materialistic mechanistic science, such recognition of ‘spirits’ in nature, or spirits of dead ancestors, is considered quite beyond the pale of reason or proof” (Metzner, 2004, 6). Thus one of the central dilemmas of these psychedelic bioprospecting endeavors was what to do with spirituality vis-à-vis the scientific and medical paradigms guiding this otherwise straightforward bioprospecting research.

## **B. Evolutionary psychedelic origins of religion**

After all, in the context of the anthropology of indigenous peoples, the discovery of the use of intoxicating psychedelic substances and associated spiritual ‘beliefs’ need not cause any particular scientific difficulty. If anything, such practices would fall in line with lingering primitivist constructions of both past and present indigenous communities (L. T. Smith, 1999; Swazo, 2005).<sup>174</sup> In such constructions, indigenous peoples are essentialized as “the authentic, essentialist, deeply ‘spiritual’ other” and the embodiment of the romanticized pre-modern past (L. T. Smith, 1999, 70).<sup>175</sup> Not surprisingly then, first wave psychedelic bioprospecting sciences frequently drew on primitivist anthropological interpretations in their scientific investigations of this newly discovered psychedelic spirituality. There was a pervasive emphasis on connecting these psychedelic practices to ‘prehistory’ and in establishing their use to be as ancient as possible (Furst, 1976; Harner, 1973; Wasson,

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<sup>174</sup> As Tuhiwai Smith asserts, “Of all the disciplines, anthropology is the one most closely associated with the study of the Other and with the defining of ‘primitivism’” (L. T. Smith, 1999, 66).

<sup>175</sup> For a further discussion of such constructions of indigenous peoples see (Huhndorf 2001).



1963, 1968).<sup>176</sup> It was also common to theorize psychedelics as granting access to a primitive trace unpolluted by rational and secular modernism.<sup>177</sup> This romanticizing of the ‘primitive’ past can be seen in the influential work of contemporary ethnopharmacologist Dennis McKenna when he asserted: “Our interest then centered upon primitive societies where a connection with the timeless world of the unconscious is maintained” (D. McKenna & McKenna, 1975, 4) In a similar vein, psychedelic explorer Gordon Wasson stated: “We learned that in Siberia there are six primitive peoples- so primitive that anthropologists regard them as precious museum pieces for cultural study” (Wasson, 1957, 9).<sup>178</sup>

Following this primitivist logic, if ‘primitive societies’ embody the teleological baseline of human evolution then it follows that these ‘ancient’ psychedelic practices represent a possible key to the development of human consciousness itself. As philosopher Norman Swazo argues: “Genetics and

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<sup>176</sup> Post-colonial indigenous scholar Tuhiwai Smith articulates a critique of this concept more generally saying, “What has come to count as history in contemporary society is a contentious issue for many indigenous communities because it is not only the story of domination; it is also a story which assumes that there was a ‘point in time’ which was ‘prehistoric’. The point at which society moves from prehistoric to historic is also the point at which traditions breaks with modernism. Traditional indigenous knowledge ceased, in this view, when it came into contact with ‘modern’ societies, that is the West. What occurred at this point of culture contact was the beginning of the end for ‘primitive’ societies. (L. T. Smith, 1999, 55).

<sup>177</sup> Post-colonial scholar Tuhiwai Smith problematizes this particular primitivist logic arguing, “What counts as ‘authentic’ is used by the West as one of the criteria to determine who really is indigenous, who is worth saving, who is still innocent and free from Western contamination . . . At the heart of such a view of authenticity is a belief that indigenous cultures cannot change, cannot recreate themselves and still claim to be indigenous” (L. T. Smith, 1999, 74).

<sup>178</sup> This also raises another issue which has also been a political problems for indigenous communities. The scientific practice of collecting indigenous cultures, bodies or in the current moment DNA into scientific ‘archives’ or museums has long been problematized by indigenous communities. Cori Hayden discuss this issue as it emerges around current biomedical scientific research attempt to collect indigenous DNA. She states that such projects “mobilized a powerful response by North American Indian Organizations against what they label as ‘the vampire project’ (Harry 2000; Reardon 2001). Refusing to be ‘museumified’ in the HGDP’s modernist discourse of nostalgia and loss, indigenous activists have argued that money should be spent not on preserving indigenous peoples in genetic databases, but rather on channeling funds to help those communities participate in the world in ways that they themselves might choose (Spiwak, 1993)” (Hayden, 2003-35).

anthropology . . . combine in their common interest of understanding humanity's 'evolutionary past'" and view "indigenous peoples in particular as having 'the information needed to reconstruct our evolutionary history'" (Swazo, 2005, 572). For example, first wave psychedelic anthropologist Peter Furst articulates this connection saying, "it is probably not too much to say that mysticism, or religion, has always been a fundamental aspect of the human condition with its beginnings going back perhaps to the primitive origins of self-consciousness" (Furst, 1976, 4). It is further argued that this evolution in human consciousness was facilitated by these psychedelic substances. For example, psychedelic anthropologist Marlene Dobkin de Rios speculates,

"Plant hallucinogens may have played an important role in the evolution of Homo Sapiens as a species. . . . some of the psychotropic plants that were experimented with from early times might have stimulated language and communication about the unusual perceptions of reality that followed their ingestion" (Dobkin de Rios, 1990, 6).

This is further exemplified by first wave psychiatrist Ralph Metzner's conceptualization: "I suggested that if we assume that evolutionary processes are accompanied by a greater range of consciousness, perhaps consciousness-expanding substances play a role as a kind of evolutionary instrument or Gnostic catalyst" (Metzner, 2004, 10). Thus these 'prehistoric' psychedelic rituals were framed as keys to understanding both human evolution (a continuum on which the indigenous person always represents Before) and the ancient mystery of human spirituality (which indigenous people embody).

In this regard psychedelics were widely framed as the material stimulus leading to the evolutionary development of human religiosity (La Barre, 1972).

Wasson made this argument most poetically in his paper “The Hallucinogenic Fungi of Mexico: An Inquiry into the Origins of Religious Idea Among Primitive Peoples”, when he wrote:

“As man emerged from this brutish past, thousands of years ago, there was a stage in the evolution of his awareness when the discovery of the mushroom (or was it a higher plant?) with miraculous properties was a revelation to him, a veritable detonator to his soul, arousing in him sentiments of awe and reverence, and gentleness and love, to the highest pitch of which mankind is capable. . . It made him see what this mortal eye cannot see (Wasson, 1963)”. - (Quoted in Metzner, 2004, 17).

First wave psychedelics ethnobotanists Richard Evans Schultes also takes up this idea and argues “Their use goes back so far into prehistory that it has been postulated that perhaps the whole idea of a deity could have arisen as a result of the otherworldly effects of these agents” (Schultes et al., 1979, 14).

### **C. Narcotic consciousness and pharmacological spirituality**

In contrast, the contemporary bioprospecting sciences are more connected to a biomedical model and drug development and there is thus consequently less interest in explaining primitive belief systems or speculating about the origin of religion. Rather, the interest is in the development of therapeutic applications and pharmaceutical drugs. This is exemplified in a statement by psychedelics ethnobotanist Richard Evans Schultz about his own psychedelic bioprospecting research, “The Shamanism of this valley may well represent the most highly evolved narcotic consciousness on earth” (Schultes, 1982, 206).<sup>179</sup> In this regard the

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<sup>179</sup> The term ‘shamanism’ is now ubiquitous in psychedelics communities, new age communities as well as anthropology, holistic medicine, and pharmaceutical research on indigenous medicine (For psychedelics examples see: Dobkin de Rios, 1992; Harner, 1973, 1980; Pinchbeck, 2002). However,

contemporary sciences of psychedelic spirituality have largely followed the ethnobotanical model articulated by Richard Evans Schultz. Schultz is considered one of the founding fathers of ethnobotany and he is perhaps most famous for his extensive work with psychedelic plants (Hayden, 2003).<sup>180</sup> While ethnobotany is of course not limited to psychedelic plants, it has played a foundational role in these psychedelic sciences of spirituality.<sup>181</sup>

Schultz's early extensive field research in the Amazon during the late 1930s and early 1940s through Harvard University foreshadowed two prominent orientations in these bioprospecting psychedelic sciences. First, his work exemplified the early move to create a scientific taxonomy of all psychedelic

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this term itself is a colonial construction. This term is native to Siberia and no other indigenous communities call their spiritual leads 'shamans'. Much like the term 'Hispanic', the term 'shamanism' emerged in the social sciences as a universal category for a multitude of spiritual traditions that they argue have essential similarities. For a comprehensive history of this term see (Jones, 2006) For a critique of the practices of so-called shamanism by whites see the following: (Hobson, 1978; Noel, 1999; Rose, 1994; Wallis, 2003) I will return to this topic in greater detail in a subsequent section of this chapter.

<sup>180</sup> According to Hayden, Shultz was "an iconic figure in North America ethnobotany, a 1960's counter culture icon, and former mentor to many prominent ethnobotanists . . . several of whom are now active champions of the use of ethnobotany in the drug discovery process" (Hayden, 2003, 32) Wade Davis, one of his students and famous bioprospector in his own right, argued that Schultz "had spent thirteen years in the Amazon because he believed that the Indian knowledge of medicinal plants could offer vital new drugs for the entire world" (Davis, 1985, 11). Wade Davis's first popular book, *The Serpent and the Rainbow*, was a scientific investigation of Voodoo in New Orleans, an interest he developed in large part out of his psychedelic experiences (Davis, 1985). His second book, *One River*, documents his and Schultz's explorations of the Amazon in the 1970's. I would argue that his books personify the scientist-explorer colonial archetype (Davis, 1997). For a future project, I would like to analyze the presence of this colonial imaginary of discovery and the romanticized explorer in psychedelic scientific history. However, it is beyond the scope of the present project.

<sup>181</sup> Another significant inter-disciplinary discipline in these explanatory psychedelic sciences is the less well known ethnomycology. This term was coined by R. Gordon Wasson and his wife, Valentina Pavlovna Guercken (Wasson & Vavlovna, 1957). Ethnomycology combines mycology—studies of mushrooms—with ethnology and anthropology—the studies of human cultures. Ethnomycology is the study of the cultural usages and implications of psychedelic mushrooms. In ethnomycology, the mushroom is theorized as simultaneously cultural and biological and the uses of these substances are treated as both cultural and chemical. Like Schultz, Wasson's work emphasized creating a complete scientific taxonomy of psychedelic plants (especially mushrooms) as well as providing scientific explanations for their peculiar properties and the spiritual belief systems that surround their use (Wasson, 1968, 1980).

plants.<sup>182</sup> This taxonomic project involved finding, identifying and scientifically naming as many plants as possible, finding, identifying and naming all the indigenous peoples who used such plants, and sending those plants to laboratories to have their ‘active’ ingredients isolated, chemically extracted and hopefully synthesized (Akers, 2007; Schultes & Hoffman, 1973; Torres et al., 1992). Second, his research emphasized studying not only the plants themselves but also the spirituality associated with them to explain both for the purposes of drug development. As he articulated in his influential encyclopedia of psychedelics which he wrote in the context of his own ethnobotanical research:

“The botanist must establish the identity of the plants that in the past were used as sacred drugs or which are still employed for that purpose today. The next step to be explored by scientists is: What constituents-which of the substances in those plants-actually produce the effects that have led to their use in religious rites and magic? What the chemist is looking for is the active principle, the quintessence or quinta essential, as Paracelsus called the active compounds in plant drugs” (Schultes et al., 1979, 20).

Following Schultz, psychedelics scientists increasingly saw in these psychedelic spiritual rituals new potentially untapped pharmaceutical possibility. As contemporary psychedelic anthropologist Michael Winkelman argued, “These traditions provide clinical knowledge regarding a range of strategies and ‘best uses’ approaches regarding the application of psychedelic medicine” (Winkelman, 2007a, 144). In order to develop these ‘best uses’ these ‘traditions’ must first be discovered,

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<sup>182</sup> The earliest scientist typically mentioned in this literature is Lous Lewin, widely considered the father of modern pharmacology (Furst, 1976; C. S. Grob, 1998; T. McKenna, 1992). As a toxicologist with Parke-Davis Lewin obtained peyote collected from the Sonoran Indians in Brazil and through chemical extraction and autoexperimentation he began classifying drugs and plants in accordance to their psychological effects. The classifications were, Inebriantia (Inebriants), Exitantia (Stimulants), Euphorica (Euphorants), Hypnotica (Tranquilizers), and Phantastica (Hallucinogens) (Lewin, 1931).

identified and explained so that their medicinal properties can be understood and then their applications and uses articulated.

Given the spiritual belief systems that surrounded their use and the ability of these substances to induce intensely altered states of consciousness, these scientists grappled with epistemological and ontological problems in each of these biomedical bioprospecting steps. In the following sections of this chapter I trace the politics of bioprospecting for spirituality in these psychedelic sciences across these psychedelic bioprospecting steps. I analyze this history for the particular epistemological and ontological dilemmas posed by spirituality as an object of study and how these incommensurable knowledges were often assimilated into scientific knowledge and appropriated in the context of bioprospecting research and drug development in ways that reinforced the historically hierarchical relationships.

### **III. Prospecting Spirituality: The ‘discovery’ of psychedelic plants**

Bioprospecting by definition begins with ‘discovery’. This is the ‘prospecting’ dimension of the term. In bioprospecting, researchers search the lands and knowledges of indigenous peoples hoping to ‘discover’ new plants and knowledges useful for pharmaceutical development (Hayden, 2003, 61).<sup>183</sup> However, as STS scholar Cori Hayden acknowledges “We might note that while the trope of discovery has a potent and bloody history in the annals of conquest and colonialism”

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<sup>183</sup> Indigenous communities are not the only locations for such bioprospecting. Hayden points out that urban markets in developing countries are also important locations for bioprospecting. As Hayden articulates “Markets are appealing sites of study for . . . in part because of their status as a filter for sorting out dubious ethno-folk knowledge from that with a likely claim on baseline biomedical truths. For having been used and even selected/improved by ‘generations of Mexicans’, market plants are likely to show therapeutic activity across and into new contexts, most notably the pharmacology laboratories that serve as the primary destination for their current collections” (Hayden, 2003, 221).

(Hayden, 2003, 24). While ‘discovery’ is in part a routine methodology of bioprospecting, the implications of this discovery are wider than simply the botanical or pharmacological potential that so interests those doing the discovering, especially with such secret and sacred matters. Post-colonial scholar Tuhiwai Smith offers a post-colonial reframing of this scientific narrative of ‘discovery’: “Imperialism in this sense could be tied to a chronology of events related to ‘discovery’, conquest, exploitation, distribution and appropriation” (L. T. Smith, 1999, 21) In this case of psychedelics bioprospecting, the scientific ‘discovery’ of psychedelic spirituality has had a similar legacy which opens spirituality to this troubling imperial chronology. In this section I trace the discovery narrative in these bioprospecting sciences as these early researchers prospected for psychedelic plants and spiritual knowledges. In tracing this discovery narrative I analyze how these colonial politics of discovery are variously evident across these bioprospecting origin stories.

#### **A. First contact: The psychedelic explorer and the origin story of psychedelic discovery**

One of the best examples of scientific ‘discovery’ in these sciences can be seen in the work of R. Gordon Wasson. While Shulz and others cataloged these substances, R. Gordon Wasson is widely memorialized as being the first white man to ‘discover’ psychedelic mushrooms and for ‘distributing’, to use Tuhiwai Smith’s language, them to the western scientific and intellectual world (T. J. Riedlinger, 1997).<sup>184</sup> There are innumerable books that pay tribute to Gordon Wasson and his

‘discovery’ and he seems to serve as a sort of pioneer hero figure in psychedelic communities.

Gordon Wasson was an amateur botanist and mycologist with interests in anthropology.<sup>185</sup> During his honeymoon in 1927, Wasson’s wife, Valentina Pavlovna Guercken, found some edible wild mushrooms. Pavlovna, who grew up eating such mushrooms in Russia, introduced her husband to these edible fungi he initially found repulsive. Interested in both the botany of mushrooms and in their very different cultural relationships to them, the couple began to research mushrooms and eventually published a book together which explored cross-cultural differences in relationships to mushrooms (Wasson & Vavlovna, 1957).<sup>186</sup> In the course of this research, the Wassons’ interests took them on an expedition to Mexico where they sought evidence of hallucinogenic mushrooms and their use by indigenous peoples. In 1955, Wasson arrived in Oaxaca, Mexico where he began to search for hallucinogenic mushrooms and knowledge about their use. Because of her reputation as one skilled with the use of hallucinogenic mushrooms, Wasson was eventually taken to Mazatec *curandera*<sup>187</sup> Maria Sabina (Wasson, 1957).

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<sup>185</sup> He was also vice president of the prestigious banking firm J.P. Morgan at this time (Lee & Shlain, 1985).

<sup>186</sup> It is interesting to me that he and his wife undertook this research together and that she was the one who facilitated his interest in mushrooms. Beyond a mention of her role in introducing Wasson to his life’s work, however, she is seldom mentioned. While I would argue that this is yet another example of the politics of expertise in this literature, it is beyond the scope of this project to pursue this analysis in more detail. However, I intend to explore how wives and other women are variously included and excluded in scientific and counter-cultural psychedelic history for a future project.

<sup>187</sup> “The shaman who conducts [the mushroom ceremony] holds the title *curandera* if a woman, *curandero* if a man; both worlds mean ‘healer’ (T. Riedlinger, 2004, 82).



Maria Sabina claimed that the local *síndico*<sup>188</sup> came to her house and told her about “the foreigners” and that he had promised to bring them to her house so that she could give them the sacred mushrooms (Estrada, 1981). As psychedelic psychologist and Wasson historian Thomas Riedlinger stated “Believing that she had no choice because Wasson had been authorized, apparently, by Cayetano, an official of the village, she agreed to conduct a *valeda* that evening with her daughter” (T. Riedlinger, 2004, 83). According to her own interview-autobiography compiled by Mazatec writer Alvaro Estrada, she replied, “If you want to, I can’t say no. You are an official and we are friends” (Estrada, 1981, 71). Thus Sabina assented to this request and allowed Wasson to participate in the soon to be world famous mushroom *velada*, or sacred ceremony, and to become the first ‘white man’ to imbibe the mushrooms himself. As Wasson himself reported, “So far as we know, we were the first outsiders to eat the mushrooms, the first to be invited to partake in the agapé of the sacred mushroom” (Estrada, 1981, 190). However, I would argue that his use of ‘invited’ here is a misnomer considering the circumstances leading to his participation in this ritual. Wasson had used all his considerable resources and scoured the world hunting these mushrooms down. Then, prompted by his request, the local authority came to Sabina, as both a friend and authority figure, and told her that he had made promises to wealthy white foreigners that he would bring them to her house and that he had assured them of her cooperation. She agreed, as she says,

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<sup>188</sup> In Mexican town government, the *síndico* is the representative of the District Attorney (*Ministerio Público*) wherever, as in Huautla, there is no District Attorney’s Office. Whereas the municipal president is the administrative representative of the town, the *síndico* is the social representative. In Huautla he takes care of the public thoroughfares and the graveyards. He handles infractions of the law and also intervenes in property disputes. In the absence of the president he takes his place” (Estrada, 1981, 202).

out of obedience to this official and trust in her friend. The next day, this official took these men to her house and she said complied with their request to participate in a ceremony and to personally consume the mushrooms out of duty and obedience. I cannot see ‘invitation’ as an accurate assessment of this situation.

By participating in this ritual, Wasson took on the mantle of the first ‘white man’ to experience these indigenous sacraments. For Maria Sabina and for the Mazatec tribe, these mushrooms were part of a spiritual tradition in which the mushrooms, which they called by the Aztec name *teonanacatl*, meaning ‘*the little saints*’ or ‘*the little children*’ and they were honored as a sacrament. As Sabina explained, “The mushrooms have power because they are the flesh of God” (Estrada, 1981, 55) They were to be taken in the context of traditional sacred rituals and under the guidance of a “Wise One”, a traditional mushroom healer or other spiritual leader (Estrada, 1981). Indeed, this is why Wasson was taken to Sabina when he inquired about the *teonanacatl*. The individuals he asked about the mushrooms spoke of them as both sacred and potentially dangerous (Wasson, 1957).<sup>189</sup> In this community, Sabina was considered an expert in such matters and was therefore the best person to consult regarding their proper spiritual use.<sup>190</sup>

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<sup>189</sup> Wasson reports, “Throughout my sojourn in Mexico I was constantly being warned that the divine mushrooms were *muy delicados*, ‘very dangerous’, and their consumption is hedged about with many taboos” (Wasson, 1972a, 196).

<sup>190</sup> The framing of the Sabina-Wasson story also speaks to politics of scientific ‘experts’. In her own community she was considered an expert and consulted as an authority. However, in these sciences while her knowledge is acknowledged it is framed more as data to be archived than as consulting another ‘expert’ on par with consulting another scientist. This follows a colonial legacy of science which reifies scientific authority as feminist philosopher of science Sandra Harding argues in her book on post-colonial science studies: “Western science has usually restricted this principal, however, in two ways that we can now see have had discriminatory effects. It is only the observations of “informed” or “well-trained” observers that count. Thus, it is only the members of the scientific community, that can count” (Harding, 2006, 31).

At the same time, by assenting to this request, Sabina becomes the one who gave the mushrooms to these white men who were searching for these secret mushrooms and the secret Mazatec traditional knowledges about them. For Sabina, she was sharing in good faith a sacred and powerful spiritual ritual that her tribe had honored for centuries. And yet once she shared this ritual, what Wasson did with this sacrament was outside of her control.

For Wasson, these ‘divine mushrooms of immortality’, as he called them, were an important ‘discovery’ in that they allowed science to solve yet another age-old human mystery.<sup>191</sup> He asserted that he felt obligated to publish and ‘distribute’ such an important discovery to a wide audience (Wasson, 1972a). Therefore, in 1957, after his initial experience with Maria Sabina, he published what became a famous (in psychedelic circles anyway) article in *Life* magazine about his experience with these psychedelic mushrooms. The article “Seeking the Magic Mushroom” was published as part of *Life* magazine’s “Great Adventures Series” (Wasson, 1957).<sup>192</sup>

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<sup>191</sup> During this ceremony Wasson consumed several psychedelic mushrooms. He reported being deeply moved by this experience such that he called them ‘the divine mushrooms of immortality’ (Wasson, 1968). After this experience, psychedelic mushrooms (and to some degree other hallucinogenic plants) became a primary focus of Wasson’s amateur research after this experience. Wasson dedicated the rest of his intellectual work to finding, documenting and explaining the uses of psychedelic mushrooms in ancient cultures including continued investigations in Mexico and eventually expanding to include the mystical traditions of India (Wasson, 1968, 1974, 1980; Wasson, Ruck, & Hoffman, 1978). He was convinced that he had scientifically discovered the puzzle of ‘soma’, the mysterious intoxicant referred to in the ancient Indian mystical texts the *Rig Vedas*. (Wasson, 1968; Wasson et al., 1978). Wasson’s work has been deeply influential to this field and this characteristic investigation of indigenous communities through studying their psychedelic plant rituals and attempting to scientifically explain their belief systems, cosmologies or religious histories continues to define research to this day

<sup>192</sup> This title and Wasson’s report are in line with post-colonial criticisms of the links between colonialism, ‘exploration’, travel and science. As Tuhiwai-Smith argues, “One particular genre of travelers’ tales relates to the ‘adventures’ experienced in the new world, in Indian country, or Maoriland, or some other similarly named territory. These adventures were recounted with some relish; they told stories of survival under adversity and recorded eye witness accounts of fabulous, horrible, secret, never-seen-before-by-a-European ceremonies, rituals, or events’ (L. T. Smith, 1999, 78).

He framed the importance of his discovery in terms of initiating further scientific bioprospecting of this new spiritual ‘frontier’. He stated,

“the greatness of a discovery is in the further discoveries that it may render possible. To my mind the identification of the Soma with a hallucinogenic mushroom is more than the solution of an ancient puzzle. I can imagine numerous roads of inquiry on which, with this new knowledge in hand, one may set out” (Wasson, 1972b, 210).

In this respect, his assessment of his own legacy was accurate. This discovery did contribute significantly to the emergence of the first wave of psychedelic sciences and is considered by many the instrument that ushered in the ‘psychedelic revolution’ of the 1960’s (Metzner, 2004).

In this regard, this story of Wasson and Sabina forms part of the ‘canon’ of the western psychedelic history, especially in those circles that emphasize the spiritual and/or mind-expanding implications of psychedelics.<sup>193</sup> Tuhiwai Smith argues, “In the imperial literature these are the ‘heroes’, the discoverers and adventurers, the ‘father’s of colonialism. In the indigenous literature these figures are not so admired; their deeds are definitely not the deeds of wonderful discoverers and conquering heroes” (L. T. Smith, 1999, 20). Following this sentiment and speaking about these far reaching implications of Wasson’s ‘discovery’ Sabina says:

“The day that I did a vigil for the first time in front of foreigners, I didn’t think anything bad would happen, since the order to give a vigil for the blond ones came directly from the municipal authorities at the recommendation of the *síndico*, my friend Cayetano García. But what was the result? Well, that many people have come in search of God, people of all colors and all ages. The young people are the ones who have been the most disrespectful. They take the *children* at any time and in any place. They don’t do it during the night or under the direction of the Wise Ones, and they don’t use them to cure

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<sup>193</sup> This discovery narrative is told repeatedly in psychedelic histories. See for example: (Akers, 2007; Allen, 1999; Furst, 1972; T. McKenna, 1992; Metzner, 2004; T. Riedlinger, 1996; T. J. Riedlinger, 1997; Wilson, 1999)

any sickness either. But from the moment the foreigners arrived to search for God, the *saint children* lost their purity. They lost their force; the foreigners spoiled them. From now on they won't be any good. There's no remedy for it." (Estrada, 1981, 91)

For all the romanticizing of the newly discovered western frontier it remains problematically connected to a long history of western scientific appropriation and exploitation of indigenous resources for their own epistemological and material gain. As Shiva argued, 'discovery' as a "metaphor suggests that prior to prospecting, the resource lies buried, unknown, unused, and without value. Unlike gold or oil deposits, the uses and value of biodiversity are known by the communities from where the knowledge is taken through bioprospecting" (Shiva, 1997, 73).<sup>194</sup> In this case they were known, considered sacred and protected for centuries. In this regard 'discovery' is considered a euphemism for imperialism that obfuscates what should more accurately be described as theft<sup>195</sup>. Not only does this glorify the role of the colonizer responsible for the 'discovery' it also erases the subjectivity and sovereignty of indigenous peoples, places and knowledges.<sup>196</sup> In the first waves of European colonialism this logic was used to justify taking indigenous lands, deemed

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<sup>194</sup> This discovery is often framed as Shiva suggests. Take for example this summary offered by psychedelic historians Grinspoon and Bakalar: "Believed until recently to be extinct, the old magical and healing practices continued almost surreptitiously in remote rural areas, where the drug plants have been rediscovered and identified in the last forty years by a series of scholars among whom the names of Richard E. Schultes, Roger Heim, R. Gordon Wasson and Albert Hoffman are prominent" (Grinspoon & Bakalar, 1979, 48).

<sup>195</sup> Tuhiwai-Smith articulates this position saying, "The eighteenth and nineteenth century also constituted an era of highly competitive 'collecting'. Many indigenous peoples might call this 'stealing' rather than 'collecting'. This included the collecting of territories, of new species of flora and fauna, of mineral resources and of cultures" (L. T. Smith, 1999, 61).

<sup>196</sup> Tuhiwai Smith addresses this concern stating, "When discussing the scientific foundations of Western research, the indigenous contribution to these foundations is rarely mentioned. To have acknowledged their contribution would, in terms of the rules of research practice, be as legitimate as acknowledging the contribution of a variety of plant, a shard of pottery or a 'preserved head of a native' to research" g56(L. T. Smith, 1999, 61)(61)

to be waste lands or terra nullius.<sup>197</sup> It appears that in the contemporary moment this logic is used to justify the taking of indigenous knowledges, and in this case of psychedelics, spiritual knowledges and sacred plants, with similar resorts to sanitized notions of scientific progress and development so central to all bioprospecting projects.

### **B. Breaking into the secret circle: scientific informants and secret psychedelic knowledge**

Bioprospecting by definition requires such ‘discovery’ as is seen in the scientist-explorer roles of Schultes and Wasson. Further, prospecting and discovery imply finding something that is hidden or lost. This scientific ‘discovery’ of psychedelic spiritual rituals was exactly that, a discovery of something that had been deliberately hidden. After all, these psychedelic rituals had, due to a long bitter history of religious and then scientific colonialism, gone underground, hidden as an act of resistance and preservation. As Estrada, the Mazatec writer who wrote and published Maria Sabina’s interview-autobiography stated, “centuries of condemnations from the pulpit forced native doctors to shift the rites and worship of the magical plants onto a private, even secret, plane” (Estrada, 1981, 23). Wasson too commented on “the difficulty that I had to overcome more than twenty years ago when I, a blond foreigner, a stranger had to break into that secret circle” (Estrada, 1981, 19).<sup>198</sup>

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<sup>197</sup> As Shiva stated, “Their lands could be usurped as terra nullius—lands empty of people, vacant, wasted, and unused” (Shiva, 1997, 46).

<sup>198</sup> Reidlinger reports that “Wasson noted at the time that the mushrooms are treated with reverence by the Indians, so he always made it a point to do likewise. ‘After all’, he wrote, ‘it was a bold thing we

In the broader history of non-psychedelic bioprospecting, the primary method for ‘discovering’ this ethnobotanical such information, sacred or otherwise, has been to rely on the knowledges of the peoples historically using those plants largely through anthropological methods of becoming ‘friends’ of the natives.<sup>199</sup> (Shiva, 1997). This psychedelic bioprospecting research typically relied on, as they are usually called by anthropologists among others, ‘informants’.<sup>200</sup> For example, Wasson reports:

“Wherever we travelled we tried to enter into contact with untutored peasants and arrive at their knowledge of their fungi- the kinds of mushrooms they distinguished, the names of the mushrooms, the uses to which they were put, and the peasants’ emotional attitude toward them. “ (Wasson, 1972a, 187).

However, the fact that these researchers sought deeply revered and protected secrets made such informants and such knowledges more difficult and more politically complex to obtain. Many of these psychedelics researchers reported particular difficulty finding willing informants because of the previously discussed secrecy and taboos surrounding this subject as well as to ongoing political needs to protect these knowledges and practices. The ceremonies such as Wasson sought out "were always held at night behind closed doors in private homes" (T. Riedlinger,

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were doing, strangers probing the innermost secrets of this remote people. How would a Christian priest receive a pagan’s request for samples of the Host?" (Wasson and Wasson 1957) (T. Riedlinger, 2004, 82).

<sup>199</sup> Tuhiwai Smith comments on the complexities of this relationship between the person seeking knowledge and the people being asked to provide it: “The role in this process of well-intentioned officials, missionaries, traders, and travelers, who became familiar with indigenous customs, languages and made important friends, is a complex one. They were often identified as ‘friends’ of the natives to be used, reviled, sometimes honored in their own societies and by their indigenous host society”(L. T. Smith, 1999, 79).

<sup>200</sup> While I realize that this term is meant as a neutral term by anthropologists and its use is widespread, I cannot help but read counter cultural meanings into this term where it is associated with pejoratively with ‘snitching’. I believe that such connotations are not in fact unrelated to the complex relationship between anthropologists and those they study.

2004, 77) Sabina also emphasizes that ‘Before Wasson’ there were traditional taboos about revealing this knowledge. She stated:

“Before Wasson nobody spoke so open about the *children*. No Mazatec revealed what he knew about this matter . . . When we Mazatecs speak of the vigils we do it in a low voice, and in order not to pronounce the name that they have in Mazatec (/nti<sup>1</sup>tjo<sup>3</sup>) [sic] we call them *little things* or *little saints*. That is what our ancestors called them (Estrada, 1981, 19).

In similar vein, contemporary psychedelic anthropologist Dobkin de Rios discussed this issue in her work with mestizo ayahuasca healers in the slums of Peru: “Although drug use (with the exception of Cannabis) is not illegal in Peru, practicing medicine without a license is. Thus, initial contact with healers and attempts to gain their confidence often entailed not being terribly inquisitive nor asking too many questions” (Dobkin de Rios, 1973, 73).<sup>201</sup>

Wasson acknowledged the complexity of the ‘informant’ role Maria Sabina played in his own psychedelic exploration. He stated, “She is probably not unique except that she, alone among the shamans of first rank in Mexico, has allowed herself to become known beyond the confines of her personal following in the Mazatec land” (Estrada, 1981, 15). Sabina stated in her interview-autobiography that she only provided the mushrooms because the local *sindico* told her to do so (Estrada, 1981). While Wasson does publicly worry about the repercussions of his ‘discovery’, he remained unconvinced that that she really meant what she said. In the preface to the autobiographical interview published by Estrada he stated, “Though she says that she

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<sup>201</sup> Dobkin de Rios conducted her first ethnography of ayahuasca in the slums of Peru in the 1960’s. After experiencing considerable difficulty in obtaining any information on these rituals she describes how she posed as a fortune teller in order to gain the trust of community members and open the conversation toward the realm of spiritual rituals hopeful that they would lead to tales of ayahuasca. In this configuration there is a psychologist impersonating a fortune teller to gain access to a practicing mystical healer in order to use her scientific powers to dub him a proxy-psychologist. I find this layering of discourse are both troubling and entertaining.



obeys the Church and obeys the municipal authorities, and though she says that when she responded favorably to my request that she was simply complying with the request of the *sindico municipal*, Cayetano Garcia, I remain in doubt” (Estrada, 1981, 19).<sup>202</sup>

This refusal to acknowledge the implications rather than the intentions of these scientific extractions exemplifies a colonial narration of bioprospecting identified by the philosopher Norman Swazo in his article where he discussed the ethics of bioprospecting and argued for “the right of indigenous culture seeking to safeguard local ways of knowing and doing” (Swazo, 2005, 571)(571). He insisted that ethics dictate that indigenous concerns must be addressed even to the point of ceasing and desisting the proposed research project. “Proposals for participatory collaboration that are advanced without entertaining among the options the real possibility of abandoning the research project on the basis of indigenous ethics simply presume to privilege the legitimacy of the research whatever the indigenous people asserts about its own ends” (Swazo, 2005, 582). This issue of ethics is particularly important regarding indigenous knowledges and even more so with such sacred knowledges because, unlike artifacts in museums, there is no recourse as they cannot be given back.<sup>203</sup> In this psychedelic history, Sabina herself confirmed the manner in which the psychedelic bioprospecting ‘discovery’ began by Wasson represented a

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<sup>202</sup> The parallels to the rape discourse of ‘she said no but she really didn’t mean it’ are striking and troubling to me.

<sup>203</sup> There have been ongoing demands by indigenous communities that the ‘artifacts’ which were taken from them be returned. As Tuiwai-Smith argues, “This side of the research encounter, with the inducements that sometimes went with the exchange of ‘artifacts’, has left a long-lasting resentment among indigenous peoples, who are now attempting to have items and the remains of ancestors returned to their own people” (L. T. Smith, 1999, 83)(83)

fundamental and not always welcome exposure of someone else's closely guarded secrets.

“Before Wasson, I felt that *the saint children* elevated me. I don't feel like that anymore. The force has diminished. If Cayetano hadn't brought the foreigners . . . the *saint children* would have kept their power” (Estrada, 1981, 91).

“Before Wasson”, she said again, emphasizing the seriousness of what happened in his wake. In line with this problematic history of bioprospecting to which Swazo's demands for consent refer; Wasson emphasizes his intentions over her objections.

In this regard her story provides further illustration of the nature of indigenous objections to bioprospecting and the political difficulties of this bioprospecting for Indigenous 'secrets' given the longstanding backdrop of colonialism. After Wasson published his Life magazine article, Sabina and her small village were inundated with westerners seeking her magic and her mushrooms (Estrada, 1981; Rothenberg, 2003). Neither Sabina nor her village appreciated these intrusions. In the end, Sabina's house was burnt down which she speculates was an indictment of what many Mazatecs saw as her betrayal of Mazatec magic to the white man. She stated:

“And even though I'm the 'clean woman,' the 'principal clown woman,' evil has been done to me. Once they burned my house of seven arm-lengths. It was built of wood with a thatched roof of dried sugarcane leaves. I don't know the reason why they did it. Some people thought it was because I had revealed the ancestral secret of our native medicine to foreigners. It's true that before Wasson nobody spoke so openly about the children. No Mazatec revealed what he knew about this matter. I only obeyed the *síndico*” (Estrada, 1981, 79).

She did eventually regain her status in her own community. She also became internationally famous and has been extensively photographed, recorded and

published.<sup>204</sup> Her role as an ‘informant’ to these western scientific ventures created a complex positioning whereby she was both romanticized and vilified for her role in the ‘discovery’ of these potent secrets.<sup>205</sup> However, this romanticizing of ‘discovery’ and the valorization of the discoverers has been criticized by post-colonial and indigenous scholars as a problematic western cultural imagery which sanitizes imperialism and obfuscates the inherently extractive and appropriated dynamics of ‘discovery’ that which others already possess (Shiva, 1997; L. T. Smith, 1999).

Indeed, Gordon Wasson, the man who has been credited with the mushrooms and the ushering in of the psychedelic revolution later in his life worried about his own culpability in the destructive impact of his well-intentioned psychedelic ‘discovery’. He stated:

“Not once does Maria Sabina reproach me for having made known to the world both the mushrooms and her gift as their ministrant. But not without anguish do I read her words: ‘Before Wasson, I felt that the saint children elevated me. I don’t feel that anymore. The force has diminished. If Cayetano hadn’t brought the foreigners . . . the saint children would have kept their power . . . From the moment the foreigners arrived, the saint children lost their purity. They lost their force; the foreigners spoiled them. From now on they won’t be any good. There’s no remedy for it’. These words make me wince: I Gordon Wasson, am held responsible for the end of a religious practice in Mesoamerica that goes back far, for a millennia. I fear she spoke the truth, exemplifying her wisdom. A practice carried on in secret for centuries has now been aerated and aeration spells the end” (Estrada, 1981, 20).

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<sup>204</sup> She states, “The foreigners take photographs of me wherever I happen to be. They take photographs of me going along the path with my load of corn on my back or resting on a rock in the marketplace. I’ve become accustomed to all that. That reminds me that somewhere in Oaxaca City, there’s an enormous photograph of me working the earth with a hoe. The people who took that picture of me bought my hoe and took it with them. I like people to give me photographs of myself” (Estrada, 1981, 82).

<sup>205</sup> Ralph Metzner was one of the psychiatrists with the controversial Harvard projects responsible for the widespread publication of these newly revealed secrets and he too discusses complicated role of being responsible for the widespread dissemination of these ‘secrets’: “Gerald Heard, the distinguished English philosopher, friend of Aldous Huxley, and author of many books on the history of religion and mythology advised us not to publicized our findings, to stay underground, following the example of historical esoteric groups and secret societies. Needless to say, his advice was ignored; nothing could have been further from Tim Leary’s whole nature” (Metzner, 2004, 32).

In the preface of the same book, psychedelic mushroom scholar Rothenberg also adds to this sentiment of Wasson's saying: "And, still more strikingly, the worlds of another shaman count the losses for Estrada: 'What is terrible, listen, is that the divine mushrooms no longer belong to us. Its sacred language has been profaned. The language has been spoiled and it is indecipherable for us'" (Estrada, 1981, 10).

While the psychedelic literature has not completely ignored the negative impact on Sabina, her village and psychedelic plants generally but those regrets are nearly subsumed in a redemptive narrative of the greater good or for the sake of 'mankind'.<sup>206</sup> For example, in a tribute article to Wasson, psychedelic historian Riedlinger draws on a similar justification grounded in western salvation:

"In Huautla de Jimenez, a village in south central America, a middle-aged white man from New York City found himself taking possession of an ancient mystical secret that a tribe of local Indians, the Mazatecs, had guarded for thousands of years. Though some would later say he stole this secret, others believed that he acted as an agent or courier charged with transmitting a gift from the Indian Culture to ours; a gift of sacred medicine for Western seekers" (76).

Contemporary psychedelic scholar Richard Doyle (2008) in a recent article was discussing Sabina's assertions that "foreigners" had ruined the little children and Wasson's concern that he had ruined a sacred and ancient tradition and his remorse for his part in creating these problems. Wasson was especially concerned that his actions might lead to the eventual extinction of psychedelic mushrooms. However, Doyle comes to a more positive conclusion saying, "Yet, happily, Wasson was wrong

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<sup>206</sup> The broader project of bioprospecting has been frequently relied on similar humanitarian justification. Hayden remarks that the ethnoscientists have argued that their work serves as form of 'epistemological advocacy' saving these knowledges from extinction (Hayden, 2003). Shiva also comments on such justifications and argue that they serve to "to mask the injustice and immorality of bioprospecting" (Shiva, 1997, 75). I will return to this issue in the conclusion of this chapter.

about this extinction. Years later, the noösphere brought Maria Sabina’s little children to the labs of John Hopkins University” (Doyle, 2008, 18).

While Doyle is correct that the mushrooms themselves were not made extinct, his observation still does not give sufficient weight to Sabina’s lament. While the mushrooms themselves are not extinct, Sabina argued that their sacramental qualities were destroyed both for her and for her tribe. This is not a ‘happy’ conclusion and the fact that they remain in Johns Hopkins laboratory invokes yet another troublesome aspect of the relationship between science and indigenous peoples. There are any number of indigenous languages, crafts, sacred objects and ritual being ‘maintained’ in archives and museums (L. T. Smith, 1999).<sup>207</sup> But to the indigenous peoples for whom these ‘artifacts’ were once living and sacramental aspects of their lives and cultures, this is no comfort in this scientific safe-keeping; indeed such scientific mausoleums are part and parcel of the problem. Yet from the perspectives of these scientists, this ‘archive’ is an invaluable testament to scientific progress.<sup>208</sup>

#### **IV. What’s in a name?: Scientific taxonomies of the sacred**

In bioprospecting, once the plants are ‘discovered’, then they must be properly identified and given a scientific name/classification. Yet it is not as if these plants did not have existing names. As psychedelic psychopharmacologist Metzner describes:

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<sup>207</sup> As Tuhiwai Smith states, “Indigenous property is still said to be housed in ‘collections’, which in turn are housed either in museums or private galleries, and art and artifacts are often grouped and classified in the name of their ‘collector.’ . . . These collections have become the focus of indigenous peoples’ attempts to reclaim ancestral remains and other cultural items (known in the West as ‘artifacts’) belonging to their people” (L. T. Smith, 1999, 61).

<sup>208</sup> As Hayden argues about bioprospecting more generally, “A significant part of this effort has been spent compiling indigenous knowledge into a material and discursive entity, which is not often and easily referred to as a national patrimony” (Hayden, 2003, 43).

“The names given to the mushrooms by some of the Mexican Indian tribes- Mazatec, Mixtec, Zapotec, and others- confirm the reverence and affection the mushrooms inspire: ‘holy lords’, little saints’, ‘children (*los niños*), ‘dear little ones that spring forth’ (*nti-xi-tho*, Mazatec), ‘little princes.’ The Aztecs call them ‘little flowers’, although fungi do not bloom” (1-2)

However, in the course of these taxonomic sciences it was common to frame these original names as ‘folk’ or as a ‘colloquialism’ For example, as one contemporary mycologist asserted, “this mixture of species was referred to in Spanish as *angelitos*, a specific native Mexican *colloquialism* for *psilocybe mexicana*” (*Akers, 2007, 14, emphasis added*) The scientific name of course implies an improvement over this ‘colloquialism’; it is more ‘true’ than the nonspecific and non-expert native ‘name’. This frames their original names as local vernacular lacking both specificity and truth-value. As STS scholars Watson-Verran & Turnbull point out in reference to western philosophy of science, “Karl Popper, for example, claims that all science is cosmology and Gerald Holton sees physics as a quest for the ‘Holy Grail’, which is no less than the ‘mastery of the whole world of experience, by subsuming it under one unified theoretical structure” (Watson-Verran & Turnbull, 1995, 127). This renaming thus reifies the scientific meanings inherent to those categories over and above the indigenous classifications.

Discussing similar practices around colonization of indigenous peoples by European settlers, Tuhiwai Smith (1999) also addressed the problematic colonial move of renaming indigenous land and places. She described this element of colonialism succinctly stating, “They came, they saw, they named, they claimed” (L. T. Smith, 1999, 80). She argued that this renaming forced native peoples to abandon their own names that are intimately tied to their own stories, mythologies, traditions

and histories and instead to use the ‘official’ names and to concede to the power relations they imply.<sup>209</sup> Tuhiwai Smith asserts “Naming the world has been likened by Paulo Freire to claiming the world and claiming those ways of viewing that count as legitimate”(L. T. Smith, 1999, 81). Similarly, these taxonomic psychedelic bioprospecting sciences are also, as Popper acknowledged, ‘cosmology’ and just as in the colonial renaming of indigenous land and places the politics of such (re) naming go beyond etymology In this section I discuss these politics as they are enacted in these taxonomic psychedelic projects.

**A. Assaying the little children: taxonomies of subjectivity**

The previously discussed sacred ontologies frequently associated with these substances pose an additional problem for scientific classification. Not only are these substances frequently considered sacred but they are also frequently conceptualized as active subjects in their own right. Wasson discusses this issue in his own research on indigenous uses of mushrooms that not only were the mushrooms often considered sacred but also that “the mushrooms are visualized as little beings, male or female or both” (Estrada, 1981, 18). Furst similarly asserts that “in the preindustrial or tribal worlds, psychotropic plants are sacred and magical; they are perceived as living beings with supernatural attributes” (Furst, 1976, 15). Winkelman also emphasizes this issue of subjectivity in the many indigenous ontologies associated with these

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<sup>209</sup> Tuhiwai Smith articulates this connection between taxonomy and power stating, “Ideas about these things help determine what counts as real. Systems of classification and representation enable different traditions or fragments of traditions to be retrieved and reformulated in different contexts as discourses, and then to be played out in systems of power and domination, with real material consequences for colonized people” (L. T. Smith, 1999, 44).

substances. He states “Shamanic practices are predicated on fundamental animistic reality, a world pervaded by a multiplicity of unseen but sensed spirit entities that are causal agents underlying the variety of phenomenon” (Winkelman, 2007a, 148). This can also be seen in the more contemporary research as well. In an examination of the traditions of the Native American Church’s sacramental use of peyote, Psychedelic anthropologist Dobkin de Rios provides another example of attributions of divine agency saying, “The local healers explain that psychoactive plants are not only a mixture of chemical substances but are living entities with a spirit that can cure if respected or kill if abused” (Dobkin de Rios et al., 2002, 244).

As more specific examples, the Mazatec peoples living in Mexico refer to these mushrooms as the *little children* or the *little saints* (Estrada, 1981). For example, Maria Sabina describes her own process of realizing the divine subjectivity of the *little children*, “I knew that they weren’t of flesh and bone. I knew that they weren’t beings of water or tortilla. I know that it was a revelation that the saint children were giving me . . . and its because the mushrooms are saints . . . they give wisdom” (Estrada, 1981, 47). For the Huichol people, their traditional understandings refers to the peyote cactus as ‘*the little deer*’ (Furst, 1972).

Anthropologist Peter Furst studied a traditional Huichol peyote pilgrimage or ‘hunt’ in 1968 in Mexico and he reported, “to the Huichol, peyote and deer are synonymous. The first of the sacred plants to be seen by the leader of the [peyote] hunting party contains the essence of Elder Brother Wawatsdri, ‘master’ of the deer species” (Furst, 1972, 141). The Huichol take these pilgrimages to find the little deer to seek their guidance, as Furst describes, “One goes to attain visions of great beauty, to hear the



voices of the spirits, the divine ancestors, and to receive their guidance” (Furst, 1972, 151).

In both understandings, the *little children* or the *little deer* are granted subjectivity. The saints and the deer are like people, having agency, capable of speech and communication and even having a ‘soul’ in that they are a connection with the divine or with the spirit world. In many traditions this sacred subjectivity is emphasized over and above the agency of the human agent working with the sacrament. Wasson acknowledged this distinction that he argued characterized most indigenous conceptualizations of psychedelic spiritual rituals. He asserted, based on his investigations of several indigenous traditions surrounding psychedelic mushrooms, that they all shared the assumption that “the mushroom ‘speaks’ through the mouth of the Sabio [‘Wise One’], he [sic] only serving as the vehicle for the mushroom’s voice” (Estrada, 1981, 18). Similarly, when Wasson spoke with Maria Sabina about such matters she insisted that she was as servant of the mushroom and that the mushroom was the agent who spoke through her. Sabina stated,

“The *little things* are the ones who speak. If I say: ‘I am a woman who fell out by herself, I am a woman who was born alone’, the *saint children* are the ones who speak. And they say that because they spring up by themselves. Nobody plants them. They spring up because God wants them to” (66)

By contrast, in the western scientific tradition the ‘little children’ are assayed in the laboratory, stripped of their ancestral name and cosmological divinity, and renamed after the scientific father who first manages to cast his taxonomic claim. Where Sabina insisted that she was the servant of the mushroom, in the western scientific tradition the mushroom takes the name of its proverbial scientific

husband/father and like a wife becomes one with her husband to be known only by his name and in service of his legacy. In these scientific names both this agency and this divinity are lost. Instead, there are battles between prominent mycologists to find, classify and then name all the hallucinogenic mushrooms, sometimes after themselves or each other. As Metzner reports:

“Wasson brought back specimens of the mushrooms that Maria Sabina and other healers used and worked with the great French mycologist Roger Heim to identify them, name them, and publish the results of their findings in the mycology literature. Wasson also contacted Albert Hoffman, who identified the psychoactive principles in the visionary Mexican mushrooms as *psilocin* and *psilocybin*” (Metzner, 2004, 22).

As contemporary mycologist Akers documents, the famous early mycologist Roger Heim to whom Metzner refers was trying to name one mushroom after famous explorer Gordon Wasson but another mycologist beat him to the finish line by almost a month. He did not, however, meet all the criterion of the ‘international’ scientific community for designating a new species (Akers, 2007). In these taxonomic competitions these sciences again follow the contours of bioprospecting and their colonial imperative for ‘discovery’ and taxonomic flag-planting which is at the heart of indigenous criticisms of these sciences.

As Tuhiwai Smith argues, “The arguments of different indigenous peoples based on spiritual relationships to the universe, to the landscape and to stones, rocks, insects and other things, seen and unseen, have been difficult for Western systems of knowledge to deal with or accept” (L. T. Smith, 1999, 74). Such animistic conceptualizations have been particularly incommensurable with western sciences and their historical grounding in the “mechanistic philosophies” of western sciences

(Shiva, 1997). These animistic sacred conceptualizations have ontological implications that are lost in the translation to the materialism of a ‘mechanism of action’. Shiva discusses these implications in regard to the broader bioprospecting sciences of which these psychedelic projects are but one part: “The removal of animistic, organic assumptions about the cosmos constituted the death of nature- the most far-reaching effect of the scientific revolution” (Shiva, 1997, 47). I would argue that in this psychedelic scientific removal of the animistic assumptions of these spiritual subjectivities represents yet a further extension of this imperative. Where Merchant documented the scientific death of nature, perhaps these sciences extend this imperative toward the death of the spirit through the assaying of *the little children* (Merchant, 1980).

**B. Extrapharmacological variables: spirituality as culture**

This taxonomic (re)identification facilitates the next step in bioprospecting drug development of isolating the ‘active’ ingredient of these plants, the ‘mechanism of action,’ and its attendant pathophysiology. Hayden describes this process in her own work on bioprospecting, “ethnobotanically guided searches for leads to drugs . . . have been endeavors based on a certain kind of ‘translation’; turning plants and often, though not always, knowledges about their uses into industrially useful, biologically active chemical compounds” (Hayden, 2003, 31). However, the indigenous communities that used these plants insisted that they were spiritual interventions and not simply ‘medicines’. Schultes articulated this spiritual emphasis in the following observation,

“It’s medicinal powers were so great—and its psychoactive effects of course, are to Indian’s the epitome of ‘medicinal power’—that it was considered a vegetal incarnation of a deity. The legends of its effectiveness as a supernatural medicine have kept peyote from being used hedonistically as a narcotic and have helped to maintain its exalted role as a near deity- a place it holds to this day, even among highly acculturated Indian groups in the US(Schultes, 1982, 14).

This sentiment is echoed by psychedelic historians Grinspoon and Bakalar who argued that ‘shamans’ “used psychedelic plants not as a cure but as a means to pass messages to and from the spirit world where illness is produced” (Grinspoon & Bakalar, 1979, 235) However, in these biomedical bioprospecting sciences, these spiritual explanations offered by the indigenous practitioners simply do not carry the same causal weight as pharmacological mechanisms of action. Thus these scientific efforts required a ‘translation’ as Hayden says, of these scientifically insufficient spiritual conceptualization offered by the indigenous communities into scientific ‘mechanisms’ which explain the effects of these substances and the spiritual rituals surrounding their use.<sup>210</sup>

One strategy that I found in these sciences for addressing this impasses was the move to demarcate the primary chemical mechanism of action, in Halpern’s phrase the “specific pharmacological properties of potential value” (J. Halpern et al., 2005, 625) from the ‘extrapharmacological variables’ of spirituality often relegated to the murky realm of ‘culture’. It was frequently emphasized how the psychedelic experience is highly subjective and context dependent and in large measure culturally

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<sup>210</sup> This is of course one of the central impasses between scientific and spiritual worldviews, the ontology of the divine and the epistemology of the mystical. As Swazo discusses with such translations across these worldviews: “Already there is here a problem identified by Paul Feyerabend in his *Against Method*, insofar as there is a pre-analytic presumption of ontological equivalence that allows for translation of meaningful empirical content and explanatory success; yet it is precisely this ontological question that must be engaged preliminary to any evaluation of indigenous science” (Swazo, 2005, 581).

determined (see especially Dobkin de Rios, 1990).<sup>211</sup> Thus these sciences have paid considerable attention to what it is about indigenous ‘cultures’ that leads them to their consistent experiences with divinity and reaffirmations of their sacred cosmologies. Several have argued that indigenous ‘cultures’ act to program the malleable pharmacologically induced psychedelic experience. For example, Dobkin de Rios argued that indigenous peoples often experience culturally-expected spiritual visions due to this influence of cultural beliefs because “belief systems, values, and expectations do program the individuals subjective experience” (Dobkin de Rios, 1990, 9). Putting it more directly, anthropologist Peter Furst asserted that “The ecstatic trance of a Huichol who feels himself to be in touch with the supernatural, then, would be a particular culturally conditioned interpretation of a pharmacological stimulus” (Furst, 1972, xv). Of course this is in direct contradiction to the Huichol ‘shamans’ themselves. As Furst reports in this same article, “‘Eat peyote’ the officiating shaman urges his companions, ‘so that you will learn what it is to be Huichol’”(Furst, 1972, xiv). Thus, while this cultural argument solves the scientific dilemma of divinity, it explicitly denies the experiences and explanations of the indigenous peoples and communities themselves in a most overt way.

The role of ‘culture’ as causal for these spiritual psychedelic beliefs is also theorized in the other direction; Psychedelic experiences program the culture. Some researchers have theorized that psychedelic substances and the spiritual beliefs surrounding their use are tools of socialization creating a self perpetuating cycle of

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<sup>211</sup> For example, Dobkin de Rios takes this as the central goal of her many studies: “The so-called psychedelic drug experience is a complex one in which such interaction brings forth one of the most subjective experiences available to psychological, sociological or anthropological inquiry” (Dobkin de Rios, 1990, 8).

cultural expectations creating spiritual experiences which in turn reaffirm the cultural expectations. As Dobkin de Rios stated: “We can argue that cultural identity is learned and reaffirmed by psychic productions under drug experiences in many traditional societies of the world” (Dobkin de Rios, 1984; 1992, 198; Dobkin de Rios & Grob, 2005). Similarly, Furst asserted:

“indeed we can go so far as to say that the psychotropic plants have helped determine the history of the culture, inasmuch as it is typically in the ecstatic initiatory trance experience that the individual confirms for himself the validity of tribal traditions he has heard his elders recite from earliest childhood” (Furst, 1976, 16).

Furst goes on to assert, “a basic function of the psychedelic experience in non-western cultures [is] to facilitate the integration of the individual into the total society and the values by which it lives” (Furst, 1972, xiii).

Dobkin de Rios and Grob argued that this occurs in large part due to the pharmacological properties of these substances which they theorize induce a state of ‘hypersuggestibility. They argued that these substances sensitize the individual to suggestibility such that persons in that vulnerable state can be inculcated via the suggestions of the elders and community with certain ‘values’ including spiritual beliefs and the deification of these substances, They assert:

“that psychedelics plants create “altered states of consciousness in which factors of suggestibility either explicitly or implicitly provoke cultural dramas for many tribal societies to help them socialize and orient their youth. The use of hypersuggestibility as a cultural technique to normalize and enculturate youth in certain tribal societies is important to understanding what the authors have called ‘managed altered states of consciousness’. Elders explicitly inculcate values and norms in adolescents by managing the plants drug-inducing properties. In doing so, they provide the youth with a fast-paced educational experience which serves to teach values, beliefs and religious tenets, as well as reinforced cultural identity” (Dobkin de Rios & Grob, 1994;

C. S. Grob & Dobkin de Rios, 1992) Quoted from (Dobkin de Rios et al., 2002, 241)

In this way, the importance of rituals and beliefs are acknowledged yet at the same time they are ontologically demoted. Nevertheless, this demotion serves the added benefit to bioprospecting endeavors in that if the extra pharmacological variables augment the pharmacological or psychological agent then they too can be harnessed and developed into psychedelic medicine.

Thus, driven by this interest in scientific development, these bioprospecting psychedelic studies of indigenous spirituality perpetually refer to the ‘cultures’, ‘rituals’, and ‘beliefs’ and thus continue to sidestep the cosmological impasse between the indigenous ‘beliefs’ and these quests for scientifically more manageable ‘mechanisms’. The implications of this scientific reframing also serve to construct these notions of ‘culture’ in a political vacuum which takes too little account of both these cultural and cosmological impositions and the relations of power and structural inequality which indigenous peoples movements themselves tend to emphasize when they discuss their own ‘cultures’(Deloria, 1969b; L. T. Smith, 1999). For example, John Halpern, a contemporary psychedelic psychiatrist and substance abuse treatment researcher, studied the Native American Church’s use of peyote.<sup>212</sup> The Native American Church is a syncretic, inter-tribal church that uses peyote as a spiritual sacrament which they believe also helps alleviate alcoholism (Grinspoon & Bakalar, 1979). In this tradition the goal is not limited to treatment of an isolated addiction but

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<sup>212</sup> The Native American ritual use of peyote to address alcoholism was noted early in these sciences and held out as a justification for future research (Bergman, 1971; Bernard & Anderson, 1974; Roy, 1973).

a more holistic spiritual transformation connected to a larger decolonization and political movement (Calabrese, 2007). However, Halpern's own studies emphasized safety and efficacy measures and were attempting to determine pharmacological not spiritual mechanisms of action. He argued, "Of course these reported benefits might be primarily attributable to participation in the NAC religion, rather than to peyote itself" But he goes on to say there is evidence that peyote can be beneficial when not used in a religious capacity, "thus, it seems possible that peyote and other hallucinogens might have specific pharmacological properties of potential value" (J. Halpern et al., 2005, 625).<sup>213</sup>

Again however, as a church and a religion, the NAC utilizes peyote as a sacrament and attribute its ability to heal to this divinity. As Dobkin de Rios articulated, "Native Americans believe that their medicine will allow them to see the truth about their lives, and the peyote spirit will give them guidance and direction" (Dobkin de Rios et al., 2002, 242). In contrast to this divine causality, Winkelman asserted "In communal ritual, [peyote] is consumed by adult group members in psycho- and socio-therapeutic treatments to deal with the problems of acculturation and to mediate between cultural worlds in creating a syntheses to manage culture change through symbolic confrontation" (Winkelman, 2007a). Spiritual guidance in the face of ongoing colonization and a tool of acculturation are hardly synonymous and the latter reflects a problematic erasure of politically situated cultures, meanings and worldviews.

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<sup>213</sup> Winkelman described even earlier scientific studies of the NAC by Aberle (Aberle, 1966). Aberle theorized that the effectiveness of the peyote was either due to the communal organization of the church or the "social psychological effects of NAC participation" (Winkelman, 2007a, 151)



In contrast to a politically situated conceptualization, indigenous ‘culture’ was framed as a valuable but threatened resource similar to plant life and concerns with biodiversity (Hayden, 2003).<sup>214</sup> However, Tuhiwai Smith takes issue with this historical scientific “obsess[ion] with describing various modes of cultural decay” (L. T. Smith, 1999, 87). This obsession with cultural decay stimulates not political intervention but record keeping and archiving, as seen in these psychedelic sciences.<sup>215</sup> For example, Wasson articulated after his trip in 1953, “For more than four centuries the Indians have kept the divine mushrooms close to their hearts, sheltered from desecration by white men, a precious secret. . . With the passing years they will die off, and, as the country opens up, the cult is destined to disappear” (Wasson, 1972a, 192). Despite the acknowledgement of these threats, the goal is not to assist these indigenous peoples in maintaining their own history and traditions, resisting cultural appropriation or biological or political extermination-after all they are ‘destined to disappear’. Rather it is to record these practices for the benefit and use of the western scientists themselves. Estrada states this quite explicitly saying: “In our day, these ‘demoniacal’ practices of the Indians have been disappearing with the advance of Western culture in Mexico . . . Yet in Huautla. . . investigators have found a *mine* for the study of this type of native practice” (Estrada, 1981, 23) Schultes makes a similar argument:

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<sup>214</sup> For a more extended discussion of the rhetoric of protecting ‘diversity’ in bioprospecting sciences see (Hayden, 2003).

<sup>215</sup> As she goes on to argue, “While Western theories and academics were describing, defining and explaining cultural demise, however, indigenous peoples were having their lands and resources systematically stripped by the state; were becoming ever more marginalized; and were subjected to layers of colonialism imposed through economic and social policies. This failure of research, and of the academic community, to address real social issues . . . result[ed] in much more active resistance by communities to the presence and activities of researchers” (L. T. Smith, 1999, 88).

“Only a fraction of what is common knowledge about these plants among the medicine men of aboriginal tribes is actually known to modern science. It behooves modern investigators to tap this valuable and ready source of information before the culture that gave it birth disappears through acculturation or extinction” (Schultes, 1982, 206)

In this framing, the indigenous people’s are ‘tapped’ or ‘mined’ like a natural resource and they are a ‘ready source of information’ for the purpose of the scientific record.<sup>216</sup> However, the extinction seems to be an epistemological rather than a political or humanitarian crisis. Worse yet, as has been demonstrated, these scientists often seem to be part of the cultural appropriation that threatens these communities in the first place. As yet another example of this sentiment, Winkelman asserts that what he calls ‘shamanic healing traditions around the world “are *repositories* of millennia of clinical experience and knowledge regarding the best applications of these substances” (Winkelman, 2007a, 143). Thus indigenous ‘cultures’ ultimately become another *repository* for the bioprospecting of spiritual clinical applications.

## **V. Developing existential medicine: psychedelic sciences of shamanism**

The primary goal of these bioprospecting endeavors is the eventual therapeutic application development of drugs and protocols for their delivery. These scientists have argued that these substances have traditionally been used for healing in indigenous communities even if they did not conceptualize ‘healing’ in the same physiological ways as western medicine. Therefore, these indigenous spiritual uses of psychedelics have still been viewed as an important source of knowledge for

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<sup>216</sup> As another example, in her discussion of her fieldwork in Peru, anthropologist Marlene Dobkin de Rios relied on a similar framing. She also made the connection to bioprospecting quite explicit. She stated, “Various psychiatrists, psychologists, social workers, and now myself, an anthropologist, were all interested in the rich natural laboratory that Peru represented” (Dobkin de Rios, 1984, 8).

western medicine. Contemporary psychedelic anthropologist Michael Winkelman's best describes this positioning when he argues:

“These traditions provide clinical knowledge regarding a range of strategies and ‘best uses’ approaches regarding the application of psychedelic medicine. This knowledge includes ritual structure in preparation for this use, guiding their application and producing optimal effects; conceptual frameworks for understanding and managing the manifestations of the spirit world that are central to these ‘entheogens’ . . . and consequently their potential application for a range of specific conditions” (144)

Thus he advocates the study and further scientific development of these ‘best uses’ of psychedelic spirituality. The spiritual and ritual application of these substances to which Winkelman turns as a model for the development of best practices for the clinical application of psychedelic medicine are largely identified by these scientists as part of ‘shamanism’. In this regard, they focus on those shamanisms that utilize psychedelic substances as one of the means of achieving spiritually induced processes of healing.

“Shamanism” was a term originally coined by anthropologists which was meant to define a type of religiosity displayed by a variety of hunter-gatherer tribes (Eliade, 1951; Jones, 2006).<sup>217</sup> Psychedelic psychiatrist Metzner defined shamanism as follows: “Although ‘shamanism’ is a term derived from the Siberian Yakut culture, it has come to refer to any of a group of practices that involve going into an altered state of consciousness for the purpose of healing or divination” (Metzner, 2004, 11). Psychedelic scientists argue that psychedelics have played an extensive

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<sup>217</sup> The anthropologist most associated with this term is Mircea Eliade (Eliade, 1951). In a historical review of the scientific use of this term, Jones asserted “In 1951 Eliade published the first cross-cultural examination of shamanism, not only basing his study on the comparative method but also ushering in the official study of shamanism as a scientific field within the domain of religious studies” (Jones, 2006, 10). Based on his broad cross-cultural analysis Eliade concluded that shamanism ‘is precisely one of the archaic techniques of ecstasy—at once mysticism, magic, and ‘religion’ in the broadest sense of the term’ (Eliade, 1951, xix).

role in the history of shamanism and many theorize that psychedelic plants provide the key to its emergence in human cultural history.<sup>218</sup> Contemporary anthropologist Michael Winkelman argues for this evolutionary role for psychedelics arguing, “Shamanism and the ritual use of psychedelic plants coevolved deep in prehistory, contributing to selection of the characteristics of the human brain and consciousness, as well as evolved psychologies and therapies”(Winkelman, 2007a, 143).<sup>219</sup> Winkelman goes on to argue that ‘primitive’ ancestors imbibed psychedelic substances in the course of their varied foraged diets and discovered the power of these particular plants (Winkelman, 2004). Through these initially psychedelic-induced altered states of consciousness, so-called ‘shamanism’ evolved and with it a new stage of human evolution was reached.<sup>220</sup>

Thus while this term was derived from one specific indigenous community in Siberia it was theorized as universal. For example first wave anthropologist Peter Furst argued, “The striking similarities between the basic premises and motifs of shamanism the world over suggest great antiquity as well as the universality of the creative unconscious of the human psyche” (Furst, 1972, ix). Contemporary

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<sup>218</sup> Winkelman describes the oft-cited debate about how Eliade, the anthropologist who popularized the universal concept of the shaman, originally denigrated the role of psychedelics within shamanic history and considered them a sort of religious fraud. In contrast, La Barre and other anthropologists argued for the centrality of psychedelics even postulating them as the originary source of shamanism and religiosity. Eliade apparently later recanted and acknowledge the legitimacy of psychedelics in the history of shamanism (Winkelman, 2007a, 149).

<sup>219</sup> In this analysis I emphasize Winkelman’s contemporary perspective because his work takes psychedelics and shamanism as the focus of his work with the goal of connecting both to psychopharmacological models. However, this idea emerged early in first wave anthropology. Anthropologist La Barre’s article published in Peter Furst’s influential anthology is commonly referenced in regard to this idea and he states “With some other anthropologists, I believe that the use of powerful botanical hallucinogens has been a real and important vehicle of shamanistic ecstasy, not only in modern ethnographic times but also in prehistoric antiquity” (La Barre, 1972, 270).

<sup>220</sup> Here is another example of the emphasis on evolution and its attendant primitivist constructions which associated the indigenous with the past subsuming both the past and the indigenous into a nostalgic teleology.

psychedelic anthropologist Michael Winkelman took this further and argued that psychedelics are the key to universal shamanism in that, “the universal features of shamanism found in foraging societies pointed to their biological bases (Winkelman, 2007a, 144). Thus this psychedelic key to the ‘biological bases’ and ‘universal’ aspects of shamanism was valued as allowing the further study, explanation and therapeutic application of these ‘ancient’ healing practices. As Winkelman articulated, he seeks the “integration of shamanic perspectives as guidelines for therapeutic approaches with psychedelics” (Winkelman, 2007a, 144)

In many ways these psychedelic shamanisms represent the goal of these bioprospecting projects whereby the discovery, identification and causal explanations result in either drug or psychotherapeutic protocol development. Depending on how these causal mechanisms were theorized there were efforts that attempted to integrate shamanism into psychotherapeutic protocols and some which took a more pharmacological approach. In both cases the overarching goal of these scientific engagements with psychedelic shamanism was to incorporate these shamanic practices or rituals into western medical and psychological practice.<sup>221</sup> And in both cases these scientific attempts to ‘integrate’ these shamanic practices had to negotiate

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<sup>221</sup> One of the most important figures in psychedelic shamanism is Michael Harner. Harner was an anthropologist in the 1960’s who studied the Jivaro, now the Shuar, peoples of the Peruvian Amazon in 1956/57 and 1960/61. Through these experiences, Harner discovers a newfound interest in shamanism that deepens to the point that he leaves his official role as a scientist and seeks initiation as a ‘shaman’ (Harner, 1980). He now runs an organization called Foundation for Shamanic Studies and teaches shamanic practices to westerners and to indigenous peoples groups where he claims to be reintroducing ‘traditional’ shamanic practices. (see: <http://www.shamanism.org/>) However, because he has chosen to leave the world of psychedelic sciences, I am not including his work in this analysis. I would argue, however, that Harner represents a psychedelic iteration of the ‘going native’ discourse, a discourse which is not uncommon in psychedelic communities. I would like to analyze Harner and others who seem to enact a psychedelic ‘going native’ and pursue a racial analysis of these sciences and counter cultures for a future project.

the incommensurabilities surrounding these altered states of consciousness and spiritual belief systems.

**A. Shamanic paradigm: scientific shamanic psychotherapeutic protocols**

One of the best examples of such an attempt at integration between shamanism and psycho therapeutic protocols can be seen in the work of the aforementioned work of Michael Winkelman, a contemporary psychedelic anthropologist whose work focuses on shamanism. As previously stated, Winkelman advocated the clinical application of psychedelic medicines based on the ‘universal’ tenets of what he calls the ‘shamanic paradigm’. He stated:

“Shamanic guidelines for psychedelic clinical medicine are derived from a ‘shamanic paradigm’, an understanding of the biological basis of these spiritual healing practices as an evolved human psychology. . . a ‘natural psychology’ approach to managing their adaptations in enhancing the integrative processes of the brain” (Winkelman, 2007a, 144).

In his own work he has attempted to theorize the psychopharmacology of these substances and also to develop his ‘shamanic paradigm’ by identifying the ‘universal’ ritual “guidelines for enhancing psychedelic elements in therapy“ (Winkelman, 2007a, 145). He identified ritual percussion, dietary restrictions and sexual abstinence as core ritual guidelines for the therapeutic application of psychedelics (Winkelman, 2007a, 145). He also advocated the more mystical aspects of shamanism as a way to augment the psychological ‘work’ of psychedelic self-analysis. This includes ‘shamanic flight’, otherwise known as an out of body experience, and associated visionary experiences. He argues that psychedelics are therapeutic in part by engaging the shaman’s “imagistic capacity, eliciting

neurologically based representations of the fundamental forces of life and death, self and others, and the dynamics of emotional and social life” (Winkelman, 2007a, 159) He also advocates incorporating animism or a belief in the spirit world which he argues is the basis of shamanism. While he advocates animism as the core of shamanism, in his own applications he translates a belief in spirits into a psychodynamic phenomenology. He asserts “shamanism uses spirit constructs to represent personal, intra-psychic and social dynamics and management of emotions . . . . Spirits represent aspects of the person such as personal and social identity, self, i.d., ego, superego complexes, drives, social motivations, obsessions, and other psychodynamic processes” (Winkelman, 2007a, 158). Thus, even when it is argued that shamanism should guide the medicine in the end the biomedical paradigm defines the terms such that the spirits can be anything it seems except what these indigenous actors say they are—spirits.

Winkelman’s attempts to theorize this universal shamanic paradigm are not unique to psychedelics. As previously stated, there has been a broader scientific interest in indigenous ‘paradigms’ since the inception of anthropology at least (Deloria, 1969a). This means that these psychedelic bioprospecting engagement with shamanism such as Winkelman’s take up the many attendant political problematics associated with this larger history of the sciences of indigenous spiritualities. First, there is the problem of the term itself which is a colonial construction. This term is native to Siberia and no other indigenous communities call their spiritual leads ‘shamans’. Much like the term ‘Hispanic’, the term ‘shamanism’ emerged in the social sciences as a universal category for a multitude of spiritual traditions that they

argue have essential similarities. Indigenous scholars take issue, however, with this colonial construction of universal indignity which has long informed anthropology (Berkhofer, 1979; L. T. Smith, 1999).

Second, these psychedelic sciences continue to reify scientific authority by claiming to ‘explain’ what ‘Indians believe’ and yet in their explanation scientific causality replaces indigenous emphases on divinity. As Swazo argues, “In this sense, members of indigenous peoples lose that ‘spiritual autonomy’ represented in their narratives about their origins, narratives that are all too often irrelevant to the explanatory paradigm of evolutionary science” (Swazo, 2005, 575). However, based on a broader history of scientific cosmological impositions, indigenous groups have come to ‘insist on the validity of their own narratives regardless of the claims of evolutionary sciences” (Swazo, 2005, 573).

The term ‘plastic shamanism’ has emerged in this regard as a pejorative term to describe white appropriations of indigenous spiritual traditions (Hobson, 1978; Noel, 1999; Rose, 1994; Wallis, 2003). Native American anthropologist Wendy Rose argued that such so-called shamanism is another example of white cultural appropriation and seems often to involve the misrepresenting of indigenous teachings by white people who have often only minimal relationships with current indigenous spiritual teachers and seldom any deep political ties to the struggles of indigenous communities (Rose, 1994). This political issue comes up across these sciences as shamanism as I discuss in another example below.



## **B. Neuroshamanism: developing spirit medicine for soul sicknesses**

Another scientific approach to incorporating psychedelic shamanism and western medicine is to emphasize a more strictly pharmaceutical mechanism of action for both the substance and the spiritual experience. In this regard they are applied as spirit molecules or what psychedelic clinical pharmacologist Rick Strassman called ‘existential medicine’ (Strassman, 2000). However, this integration of the existential and the medicinal also has implications for the one giving the medicine as was discussed in the previous chapter. In this regard, when scientists and doctors apply this more strictly biomedical model to the shamanic use of psychedelics substances and attempt to capture this therapeutic process as a drug or medicine, they become a sort of neo-shaman or as neurochemist Deborah Mash asserts, neuroshamans (Diamond, 2000).

Deborah Mash is a neurochemist who studies the psychedelic plant ibogaine. Ibogaine is “used by the Fang peoples of West Africa as part of a syncretic ancestor-worship religion” (Dobkin de Rios et al., 2002) She describes ibogaine as a ‘chemical bar mitzvah’ because her studies show that the ‘tribes’ of West Africa used it for rites of passage into adulthood (Diamond, 2000, 367).<sup>222</sup> Mash has studied their use of these sacraments and seeks to develop them into a possible

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<sup>222</sup> Mash uses the term ‘tribes’ to discuss the use of ibogaine in West Africa. However, this term has been criticized as an example of colonial scientific practice. As sociologist of science Jenny Reardon discusses, “the use of the categories ethnic group and tribe to mark a distinction between the purportedly impure mixed Europeans and the relatively pure non-Europeans . . . derived not from nature, but from the subject-position of the researchers in Europe . . . the view that tribes fell into discrete natural and social units served the interests of European states that needed to impose order to rule their colonial acquisitions. Citing the late Columbia University social anthropologist Morton Fried’s 1975 study, *The Notion of Tribe*, Swedlund argued that tribes are the ‘social constructions of states that were superimposed by colonials upon non-European populations that were organized in all sorts of varying ways’” (Reardon, 2005, 94). For two of the more prominent of such post-colonial critiques of western science and the study of non-Western ‘other’s see (Asad, 1973; Said, 1978). The use of unspecified ‘tribe’ in the psychedelics sciences problematically reinscribes these colonial scientific practices. I attend to these concerns in more detail in subsequent chapters.

pharmacological treatment for substance abuse, particularly heroin addiction (Mash et al., 1998; Mash et al., 2001). However, rather than a strict pharmacological drug she advocates that it be combined with psychotherapy. Further, she also theorizes that it is ibogaine's spiritual capacities which determines its psychopharmacological efficacy. In an interview where she discusses the wider implications of her pharmacological research, she theorizes that "drug addiction is an illness of the spirit, and if you're going to cure it, you have to do so at that level" (Diamond, 2000, 367). She theorizes that ibogaine is one such treatment. She argued that the substance allow the addict to "reprogram" their life and to get rid of the "baggage" that has been contributing to their addiction and other mental or behavioral problems. She sees in ibogaine a way to address the growing problems of "soul sickness" through the spirituality that is connected to ibogaine.

Mash has come to describe her work with ibogaine as 'neuroshamanism' which she describes as "the meeting of modern neuroscience with ancient or traditional mysticism and shamanism" (Diamond, 2000, 376).<sup>223</sup> Neuroshamanism emphasizes the development of a plant into a pharmaceutical in line with the bioprospecting context out of which it emerged. However, it emphasizes the spiritual dimensions of those botanicals. It is not just the botanical that is important, after all most standard pharmaceuticals are derived from plants, but rather it is the conceptualization of the plant as spiritual and the theorization of the mechanism of

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<sup>223</sup> She names this paradigm in this interview and discusses it as if it is term that she uses regularly. However, I could find no mention of this term in her scientific publications based on a search of her research in Pub Med. I have found through this analysis that this seems to be another common tactic for negotiating the stigmatizing dimensions of this research, segregating one's scientific work from one's 'public' discussions. I speculate that these scientists seem to discuss their ideas about spirituality more freely outside of the watchful eye of the scientific community.

action as the induction of spiritual states of consciousness which is the key to neuroshamanism:

“The neuroshaman will take back to the laboratory information from so-called alternative healers to design studies as part of new research programs that will pave the way for a revolutionary change in the way we view ourselves as neurobiological organisms. This approach will foster the emerging sense voiced in recent decades that we need to reconnect with fundamental aspects of spirituality, from physical healing to higher consciousness” (Diamond, 2000, 378-379).

Mash advocates neuroshamanism and it’s blending of science and spirituality and even goes so far as to advocate a ‘revolution’ in the biological sciences:

“The neuroshamans will be the ones who make the leap of faith. They’ll be the ones to say, ‘we don’t have enough empirical knowledge now to be able to really thoroughly describe and understand these other domains of human consciousness and existence, but we’re willing to study them, we’re willing to bring the tools that we have from the laboratory setting to apply them to begin to describe this’. There’s going to be a revolution” (Diamond, 2000, 404).

She does acknowledge the very real difficulties facing such a spiritual scientific revolution.<sup>224</sup> She discusses her frustration with the limitations of what she calls capital “S” science and its resistance to grappling with anything that cannot be measured.<sup>225</sup> She worries that such “scientific hubris” stands in the way of what she

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<sup>224</sup> Interestingly she discusses this revolution in the traditional Kuhnian sense, “There’s going to be a revolution . . . It’s become polarized enough now. It’s Kuhn’s Structure of Scientific Revolutions, like when we went from the particle to the wave, same kind of idea. . . . And we haven’t had one of those in the brain sciences in a long time” (404) In this regard, she theorizes psychedelic as a catalyst for revolution. It is beyond the scope of this project to explore this theorizing of psychedelics as revolutionary (also often discussed as liberatory). However, I would assert that exploring the ways that psychedelics have catalyzed overtly political and often revolutionary discourse in the sciences is as a possible future direction for sociological and feminist work in this area.

<sup>225</sup> She argues that this due to the political economy of contemporary science. She argues that many scientists are afraid of no longer being able to practice science. She also argues that the current funding architecture for the sciences interferes with creativity, ingenuity and the ability of science to pursue novel subjects or paradigms. She criticizes the strict requirements for obtaining grant money, the intense pressure to publish as many articles as possible and the requirements for ‘traditional’ research to which promotions, prestige and continued funding are tied. The difficulty of succeeding in the competitive world of neuroscience is only exacerbated when the object of study is stigmatizing,

sees as a “new scientific movement that will come, that will begin to link the spiritual to the material, to help to guide this synthesis of the biological system with the spiritual forces on the planet” (Diamond, 2000, 384).

In her model, this intersection of “modern neuroscience” with “ancient shamanism” is a “revolutionary” movement for the good of the planet in which the scientific ‘neuroshamans’ will be the guides. While it is acknowledged that indigenous communities have utilized these substances since ages past, it is only when scientists discover, rename, and then ‘guide’ their use do they become ‘revolutionary’ and capable of full planetary revolution. Nonetheless, as Furst and Schultes point out,

“What is new then is not the discovery of substances in nature that act powerfully on the mind and . . . and tactile sensations which the user experiences as supernatural . . . As Schultes says, what is new is only their fascination for Western man” (Furst, 1972, xi).

However, in this bioprospecting conceptualization, something ‘new’ does emerge from this newfound Western fascination with these ancient psychedelic substances.<sup>226</sup>

This conceptualization implicitly contrasts their use by ‘Western man’ as a ‘revolutionary’ improvement over and above the centuries long legacy of their use by indigenous peoples.

This conceptualization exemplifies one of the core tenets of the colonial legacy of bioprospecting research. Shiva argues that one of the colonial legacies of bioprospecting is that it rests on a western ideology of ‘development’ which is used to

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illegal and as in the case of spirituality, widely considered superstitious and inappropriate for the laboratory.

<sup>226</sup> And even this Western fascination with ‘shamanism’ is no longer so new as there has been a broader scientific interest in shamanism nearly since the inception of anthropology at least (Deloria, 1969a).

justify western scientific encroachments into indigenous resources and knowledges (Shiva, 1997).<sup>227</sup> Like the western colonialisms which preceded it, bioprospecting is justified by the idea that such ‘primitive’ peoples do not fully utilize their land or their natural resources and instead allow them to go to waste (Shiva, 1997; L. T. Smith, 1999).<sup>228</sup> Drawing on the cultural powers of ‘civilization’ and in this case the developmental powers of science, these resources are taken from the hands of these indigenous peoples where they have languished for centuries and ‘developed’ by scientists to their fuller, and in this case, revolutionary perspective (Shiva, 1997; L. T. Smith, 1999). However, as Shiva argues, such references to ‘development’ are merely ideological justifications for ongoing appropriation and conquest which is not in the interest of the ‘planet’ as Mash says, but rather in the interests of the colonizer who seeks to claim them (Shiva, 1997).<sup>229</sup>

After all, for all the talk of the ‘planet’, bioprospecting represents a “world wide search currently being undertaken amongst indigenous populations for . . . solutions to Western diseases” (L. T. Smith, 1999, 63). Mash articulates this herself arguing that the pursuit of such indigenous spiritual remedies are important because the ‘soul sicknesses’ of the West “ranging from anti-social behavior to gang mentality, and all the way to serious mental illness” are expanding in Western Society

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<sup>227</sup> She theorizes ‘development’ as another iteration of colonialism. She states, “Globalization has occurred in three waves. . .the first wave was colonization of America, Africa, Asia and Australia by European powers over 1,500 years. The second imposed a Western idea of ‘development’ during the postcolonial era of the past five decades. The third wave of globalization, unleashed approximately 5 years ago, is known as the era of free trade” (Shiva, 1997, 104).

<sup>228</sup> Tuhiwai Smith comments on the botanical ‘collecting’ research and exploration which emerged in the 18<sup>th</sup> and 19<sup>th</sup> centuries. She asserts, “The ideas that collectors were actually rescuing artifacts from decay and destruction, and from indigenous peoples themselves, legitimated practices which also included commercial trade and plan and simple theft” (L. T. Smith, 1999, 61).

<sup>229</sup> She states, “The metaphor of bioprospecting thus hides the prior use, knowledge, and rights associated with biodiversity. Alternative economic systems disappear, and the Western prospector is projected as the only source for medical and agricultural uses of biodiversity” (Shiva, 1997, 73).

at an alarming rate in part because “We’re bankrupt as a community. We’ve lost it” (Diamond, 2000, 383). Thus while bioprospecting has been justified on the grounds of development for all such references obscure the realities of medicines for some.<sup>230</sup> Thus this model of neuroshamanism problematically replicates bioprospecting logics of appropriation whereby western science and industry stake a claim not only over the pharmaceutical but in this case also the spiritual. In this regard, such psychedelics research, whereby the shamanic is taken over by the neurochemists in an emerging neurological theology, participates in a long lineage of spiritual and cultural appropriations “which from indigenous perspectives ‘steals’ knowledge from others and then uses it to benefit the people who ‘stole’ it. Some indigenous and minority group researchers would call this approach simply racist. It is research which is imbued with an ‘attitude’ and a ‘spirit’ which assumes a certain ownership of the entire world” (L. T. Smith, 1999, 56).

## **VI. Conclusion: The politics of the well intended**

Hayden has also discussed how bioprospecting scientists have a history of distinguishing their own efforts from these criticisms of bioprospecting as a continuation of western colonialism. She asserts, “Like many anthropologists Schultes, and his legions of students also figure themselves as advocates- culturally sensitive plant-hunting Davids, taking on the Goliaths of Western ethnocentrism, scientific hubris, modernizing violence, and bureaucratic idiocy” (Hayden, 2003, 32). Following this logic, these scientists not only attempt to distance themselves from the

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<sup>230</sup> As Shiva argues, “In this sense, the ‘global’ does not represent a universal human interest; it represents a particular local and parochial interest and culture that has been globalized through its reach and control, its irresponsibility and lack of reciprocity” (Shiva, 1997, 103).

‘past’ colonial projects but also to distinguish their own projects as progressive and in the best interest in ‘humanity’.<sup>231</sup> She argues that contemporary bioprospecting is often framed as “epistemological advocacy” whereby “ethnobotanists, chemists and pharmacologists have seen the project of ‘translating’ traditional or folk medicine into chemical compounds as a mode of advocacy itself” (Hayden, 2003, 32).

Nevertheless, post-colonial scholar Tuhiwai Smith takes issue with this characterization of such projects as in the interests of indigenous peoples. As

Tuhiwai Smith (1999) argues:

“research within late-modern and late-colonial conditions continues relentlessly and brings with it a new wave of exploration, discovery, exploitation and appropriation. Researchers enter our communities armed with good will in their front pockets and patents in their back pockets. They bring medicine into the villages and extra blood for genetic analysis. No matter how appalling their behaviors, how insensitive and offensive their personal actions may be, their acts and intentions are always justified as being for the ‘good of mankind’”(L. T. Smith, 1999,24).

She argues that despite these justifications, the outcomes of these bioprospecting sciences have largely benefitted the scientists more so than ‘mankind’ in any general sense and the impact on indigenous cultures remains problematic.

Yet this ideology of ‘the good of mankind’ is ubiquitous across this bioprospecting psychedelic literature. For example, psychedelic ethnobotanist

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<sup>231</sup> For example, one of the central articles written as part of the Hoasca project, an influential second wave international and interdisciplinary study of religious ayahuasca use in South American, begins with a discussion of the history of colonialism and the violent repression of indigenous spirituality (C. Grob et al., 1996). The authors reference anthropologist Michael Taussig’s (1986) book “*Shamanism, Colonialism and the Wild Man: A Study in Terror and Healing*” in which Taussig provides a detailed analysis of the material destruction and genocide of indigenous people and also challenges the colonial narratives within western scientific discourses. However, as is the case in this article, this colonialism is almost always discussed in the past tense and in reference to European colonialism and religious repression rather than in reference to ongoing colonial politics.

Schultes provided an early example of the emphasis of psychedelic science for the sake of ‘mankind’:

“It is our belief that scientists- for the sake of humanity itself and its advancement- must make technical knowledge available to those able to take advantage of its presentation. It is in this spirit that we wrote the plants of the gods, hoping that it may, in one way or another, further the practical interests of mankind” (Schultes et al., 1979)

Similarly, first wave psychedelic ethnopharmacologist Dennis McKenna states that the scientifically informed and “widespread use of psychedelic drugs in modern society was somehow rooted to the intuition that exploration and re-assimilation of so-called magical dimensions was the next step in humanity’s collective search for liberation” (D. McKenna & McKenna, 1975, 4).

There are also efforts to distance these sciences from the more problematic aspects of the larger scientific histories of which they are apart. Such efforts have included claims that these psychedelic scientific pursuits are ‘different’ from these other extractive bioprospecting projects.<sup>232</sup> They have argued that this psychedelic research is ‘different’ as a result of the liberatory intentions of the researchers (D. McKenna & McKenna, 1975), its noble pursuit of higher consciousness (Walsh & Grob, 2005) and its centering of indigenous knowledge and practice (Metzner, 2004). For example, Ralph Metzner, a first wave psychedelic psychiatrist from the Harvard projects wrote regarding the scientific ‘discovery’ of psychedelic mushrooms:

“This exchange between the traditional shamaness and the modern chemist constituted a respectful completion of the cycle of discovery and an honoring of the ancestral roots of knowledge. It is in the marked contrast to the usual

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<sup>232</sup> Tuhiwai Smith also comments on this tendency to claim immunity through ‘difference’: “At other levels criticism of individual researchers and their projects is deflected by the argument that those researchers are different in some really significant ‘scientific’ way from others” (L. T. Smith, 1999, 68).



exploitative approach of contemporary pharmaceutical science, which seeks to isolate the chemical principles in traditional plant medicines and then proceeds to market those with no regard to the treasury of wisdom manufactured by traditional shamans and healers” (Metzner, 2004, 23).

The structural colonial relationships that have characterized the relationships between western scientists and industries and the indigenous communities cannot, however, be simply wished away or spiritually transcended.

These attempts to sidestep these historically hierarchical relationships through retreat to humanitarian intentions problematically reduce all discussions of power to the level of individuals (Hayden, 2003).<sup>233</sup> Colonial relations, including knowledge relations, are not reducible to the level of the individual nor are they reducible to the feelings of individual members of dominant groups (usually white, first world and male). In this logic, there is no analytic attention to structures, institutions or ongoing systemic inequality in which these well-intentioned individuals are situated.<sup>234</sup> As feminist philosopher of science Sandra Harding asserts, too much focus on the intentions of individuals

“will have little effect on changing racist social structures and widely shared assumptions unless it is actively put in the service of an antiracist political movement . . . Thus, some of the most powerful recent analyses have sought

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<sup>233</sup> Hayden examines the problematic connection between neoliberalism and bioprospecting including the resort to individualism that interferes with any more structural analyses of power relations. For further discussion see (Hayden, 2003).

<sup>234</sup> “Here is another example from the counter cultures that also illustrates this point: “The therapeutic applications of shamanic principles enhanced by ayahuasca have been manifested in the development of an international tourism, what some (Dobkin de Rios, 1994) have critiqued as ‘drug tourism’. North Americans and Europeans, educated about the potentials of ayahuasca, seek out these sessions in the international marketplace for ayahuasca ceremonies, particularly in South America . . . In a study based on interviews with some of these so-called ‘drug tourists’, Winkelman (2005) discovers people in search of the kinds of powerful personal and spiritual healing that ayahuasca can provoke. Contrary to the search for hedonistic highs implied by the characterization ‘drug tourists’, their principal motivations are characterized by seeking spiritual relations and personal spiritual development” (Winkelman, 2007a, 163)(163). Here again political and critiques of these practices are dismissed by resort to the ‘good intentions’ of the first world actors involved.

to identify racist and ethnocentric assumptions and practices of First World institutions, societies, and civilizations, ones that are to be found beyond or outside the intentions of the individuals” (Harding, 2006, 21).

Despite these good intentions of psychedelics researchers, they too often replicated the colonial history of saving themselves at the cost of indigenous people where all things indigenous become resources which these well intentioned dominant group members can extract and use for their own benefit.

For all that these sciences represent sincere attempts by western science to engage with spiritual knowledges; these historically hierarchical structural relationships continue to trouble these efforts. Thus Swazo’s concern that such efforts are “first and foremost about asserting the right of Western science to insist on pursuing ‘the subject’ of its empirical investigations among indigenous peoples, regardless of the barrier that erupts and asserts itself under the rubric ‘indigeneity’” (Swazo, 2005, 572) are born out in these bioprospecting sciences. This purpose is born out in these science such that both Sabina’s lament and Tuhiwai Smith’s’s critique are also born out in this psychedelic bioprospecting of spirituality whereby the ‘discovery’ of these psychedelic substances “makes our own belief systems available, yet again, for further mining and exploration” (L. T. Smith, 1999, 6). And yet the stories of the psychedelic or neuroshamanic ‘revolution’, both counter cultural and scientific do not sufficiently address these problems of cultural and now spiritual appropriation. They honor Maria Sabina as a noble savage but then do not cede her authority or hear her rebuke. They are too high on their own good intentions. In the next and last chapter of this study I synthesize these politics as I have traced them in this project and then I turn my attention toward the possibilities that I see in the

psychedelic projects historically and in the future should these situated politics of consciousness be rigorously attended to and actively ameliorated.

## **Chapter 5: Conclusion: The politics of knowledge in the psychedelic sciences of spirituality**

### **I. Introduction**

This study examines the politics of knowledge surrounding the negotiations over spirituality in the psychedelic sciences from the 1930s to the present. This study speaks to the ongoing concerns of the sociology of knowledge and feminist epistemology regarding the complex and contradictory relationships between power and knowledge. In this conclusion, I will discuss how my findings illuminate feminist sociological concerns about how relations of power constitute science and vice versa. First, I will analyze how science as a dominant knowledge has continued to exercise power over spiritual knowledges in ways that reinforce and reify historically hierarchical relationships between domination and subjugation. I will then discuss how the epistemologies of mystical consciousness and spiritual ontologies associated with divinity are assimilated into dominant scientific assumptions and practices across these efforts to integrate spirituality into the psychedelic laboratory. Second, to avoid a totalizing overdetermination of domination, I will turn my attention to the emancipatory possibilities inherent to subjugated knowledges. By examining yet undertheorized subjugated spiritual knowledges, this study introduces an important future direction for building solidarity between the broader scholarship of the sociology of knowledge and emancipatory

feminist theoretical projects. As such, I will explore how the interconnected valences of incommensurability and oppositionality yield the greatest emancipatory potentials and represent the hope of this project. Finally, I will discuss possible future directions for research on the peculiar substances that could not be addressed within the constraints of this study.

## **II. Synthesis of findings: mystical epistemologies and divine ontologies**

In this study, I have argued that psychedelic substances serve as a doorway where spirituality and mystical states of consciousness enter the scientific laboratory to an unprecedented degree given their traditionally demarcative relationship. However, the incommensurabilities between spiritual and scientific worldviews result in epistemological and ontological impasses that troubled efforts to develop psychedelic sciences of spirituality. First, mystical states of consciousness have traditionally been defined as experiences beyond words, as ineffable, inarticulable. Mystical traditions have emphasized that such states of consciousness can only be known through firsthand experience and not through words, language or secondhand description. They are the quintessential unquantifiable experience. Second, spirituality traditionally involves some ontological conception of the divine or the sacred that is non-reducible to philosophical realism or materialism. Although the conceptions of divinity vary (for example, from the monotheism of Christianity to the immanent non-deistic conceptions of Zen Buddhism), there is nearly always some notion of a transcendent reality beyond the visible world taken in by the five senses.

By contrast, most scientific traditions involve at least some commitment to objectivity and materialism. Thus, mystical consciousness poses particular problems for scientific methodologies, which require shared and objective observations. The conceptualizations of divine ontologies or divine causalities pose particular problems for scientific paradigms, which are based on materialism and as such require a material causal mechanism. As such, I have found that mystical epistemologies and spiritual ontologies are the primary incommensurabilities that trouble efforts to integrate psychedelic substances and the spiritual experiences they induce into scientific assumptions and practices. As I analyzed the psychedelic sciences of spirituality, I traced how these impasses had been negotiated across several scientific disciplines from the first wave of these sciences between the 1930s and late 1960s to the second wave from in the 1990s to the present.

Chapter two analyzed how spirituality has been brought forward and legitimized through the history of the psychedelic sciences. I argued that after scientists discovered that psychedelics seemed to induce mystical states of consciousness they attempted to apply scientific assumptions and practices to these substances and the spiritual experiences they induced. Given the historically demarcative relationships between science and spirituality, I argued that psychedelic scientists have used a range of *tactics of legitimation* to justify the scientific study of these peculiar spiritual substances. These tactics include (1) *accessing* spirituality through auto-experimentation, (2) *measuring* mystical experiences in research subjects, (3) *explaining* the effects of psychedelic substances and associated belief systems using scientific methods and (4) *applying* the substances to the domain of

psycho-pharmacological therapy. I found that across each of these tactics of legitimation the epistemologies of mystical consciousness and ontologies of divinity associated with psychedelic spirituality were assimilated into dominant scientific practices requiring objective observation and material causal mechanisms. Thus, I argued that although these tactics were necessary to prevent the total elimination of research on spirituality in the psychedelic sciences they also served to reinforce the dominance of scientific knowledge over spiritual knowledges.

Chapter three focused on the western therapeutic disciplines that have predominated throughout the history of the psychedelic sciences of spirituality. I analyzed the efforts to integrate psychedelic substances and the spiritual experiences they induce into western therapeutic assumptions and practices. To resolve these incommensurabilities associated with mystical consciousness and divinity, I found that psychedelic experiences were conceptualized as either psychological or neurological phenomenon stripped of any association with mystical knowledge or divine causality. Thus, I further argued that by conceptualizing these mystical epistemologies and divine ontologies in this way western therapeutic disciplines expanded the reach of their authority into the realms of spirituality. More specifically, I argued that their efforts to scientifically determine the mysticity of mystical experiences and pursuit of scientific liturgical authority over the administration of psychedelic sacraments resulted in the emergence of a would-be psychiatric clerical authority.

Chapter four analyzed the psychedelic sciences of spirituality flowing from the ‘discovery’ of psychedelic substances that occurred in the context of bioprospecting research in indigenous communities. I traced the efforts to integrate and develop indigenous spiritual psychedelic knowledges and practices across each step of the bioprospecting model from plant identification to the determination of mechanisms of action and finally to drug development studies. I found that in each step the impasses around mystical consciousness and divinity can be resolved by assimilating the incommensurabilities of indigenous spiritual knowledges into dominant scientific assumptions and practices. This occurred largely by rejecting indigenous assertions of divine causality and mystical consciousness and instead (re)conceptualizing the psychedelic spiritual experience through psychological, biological and, in particular, neurological causal models. I argued that given the historically hierarchical relationships between western sciences and indigenous communities this reconceptualization reified western scientific authority over indigenous knowledges and practices. This replicated the problematic appropriations and subjugations of indigenous knowledges, resources and communities in ways that followed the familiar colonial contours of the bioprospecting history of which they are a part.

In summary, I have found that across these attempts to integrate spirituality into the laboratory the incommensurabilities associated with mystical epistemologies and spiritual ontologies have been resolved by sacrificing the integrity of spiritual knowledges and reifying scientific assumptions and practices. Although this erasure of mystical consciousness and divinity has varied according to scientific



discipline, scientific paradigm and historical context, I have found some common means for how it occurred. Divine ontologies and mystical epistemologies have been rejected across these disciplines and replaced by causal explanations referencing the psychological, neurological and, to a lesser extent, cultural. Table 5.1 provides a summary of these key problematic assimilations of mystical consciousness and divinity, which I will discuss in more detail below.

[Insert Table. 5.1 Summary of Findings]

First, the mystical experience has been conceptualized as a psychological phenomenon that, although more intense than other states of consciousness, is not fundamentally different. This can be seen by attempts to develop psychological scales to operationalize and measure psychedelically induced mystical states of consciousness and then apply these experiences via the protocols of psychotherapy and models of psychoanalysis. Although these experiences are traditionally thought to be caused by contact with divine beings or sacred and transcendent realities, in these psychological models they are merely psychological phenomena that are more or less desirable or psychologically useful.

Second, the mystical experience has been conceptualized as a neurological phenomenon that, although intense and unusual, is little different from other neurologically induced and thereby natural states of consciousness. This can be seen by attempts to connect these states of consciousness to theories of human cognitive evolution and then measure and operationalize them through the brain epistemologies

of neurological disciplines. Although these experiences are traditionally associated with divine contact, in these models they are merely neurological epiphenomena. They change from being evidence of divinity to testaments to the biological complexity of the neurological brain.

Contemporary medical anthropologist Nicolas Langlitz's (2007) dissertation analyzed this incorporation of the elusive psychedelic experience into the brain epistemologies of modern neuroscience. He argued that neuropsychological studies of psychedelics hypothesize that all states of consciousness are functions of the brain's information processing abilities. Therefore, there should be a neural correlate to all states of consciousness, including altered states (Langlitz, 2007). Thus, in contemporary research these studies of spiritual experiences look for or at least hypothesize biochemicals that produce the spiritual experience. The spiritual experience is acknowledged but the explanation of the experience remains within the scientific paradigms of objectivity and materialism. If there is a gene responsible for aggression or a neurotransmitter that manufactures depression, then it is no stretch to assume a neuromechanism secreting spiritual experiences. In this context, the ghost is a byproduct of the machine.

Finally, the incommensurabilities of mystical consciousness and divinity have been resolved by replacing divine causal understanding with notions of culture and 'belief'. This can be seen in the psychological studies that have attempted to causally connect belief systems and neurological states and the anthropological studies that have attempted to find biological explanations for traditional belief systems. For example, when individuals, especially from non-western cultures, report spiritual

psychedelic experiences, it has been argued repeatedly that the person's cultural beliefs caused the malleable neurologically induced states of consciousness to reinforce these preexisting beliefs. Scientists then apply objective and supposedly culture-free explanatory models to explain what is 'really' going on with these intense and culturally malleable psychedelic experiences. Thus, the spiritual 'belief' is granted no authority over 'reality' in contrast to the causal 'explanations' of science that supposedly transcend such limiting, cultural determination. However, as philosopher of science Larry Laudan (1996) argued:

The value loaded character of the term 'science' (and its cognates) in our culture should make us realize that the labeling of a certain activity as 'scientific' or 'unscientific' has social and political ramifications which go well beyond the taxonomic task of sorting beliefs into two piles. (Laudan, 1996, 345)

Thus, although psychedelic substances have served as a doorway for spirituality to enter the scientific laboratory, they have not prevented the problematic reinscription of historically hierarchical demarcations, which have long characterized the relationships between science and other ways of knowing. In this regard, this study speaks to the long-term concerns in the sociology of knowledge with the 'reality-making' powers of (scientific) knowledge (Berger & Luckman, 1966). Speaking of this concern, feminist sociologist Avery Gordon (1997) argued that scientific knowledge is implicated in the relationships of power in a "profound" way. She stated that:

The more subtle violations are unseen and denied with a sanction only their perverted and inverted returns evidence adequately ... the quiet stranglehold of a full-time alertness to benevolent rule: and the virtually unspeakable loss of control, the abnegation over what is possible. ((Gordon, 1997, 207)

Drawing on Gordon's articulation of the deeper implications of the reality-making power of science, I argue that across these sciences I frequently found a problematic abnegation of mystical and spiritual possibilities.

### **III. Subjugated possibilities: incommensurability and oppositionality**

The point of theorizing domination is not to create another overdetermined binary out of 'domination' and 'subjugation' but rather to examine the complex configurations enacted across shifting contexts and interconnected social locations. Despite finding a relationship between domination and subjugation across these sciences, domination was not the only outcome of these psychedelic scientific engagements with spirituality. Although hierarchical reinscriptions were rife across these sciences, it is not the case that the entire history is reducible to domination and power over. After all, to argue that any intersection between dominant and subjugated knowledges is a collision doomed to co-option and appropriation creates an iron cage of domination that dooms all to an endless cycle of subjugation with no hope for resistance or remediation. Like all totalizations, such a construction is both overdetermined and politically paralyzing.<sup>235</sup> As Foucault (1980) argued, "There is no relationship of power without the means of escape or possible flight. Every power relationship implies at least in potential, a strategy of struggle" (Foucault, 1980a,

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<sup>235</sup> Indeed, even the feminist epistemology scholars who theorize dominant knowledges warn against creating a paralyzing totalization. As Patricia Hill Collins (1998) states in her critique of postmodern decentering, "[They] seem fascinated with the thesis of an all-powerful hegemony that swallows up all resistance except that which manages to survive within local interstices of power" (Collins, 1998, 135). She goes on to ask, "When weapons of resistance are theorized away in this fashion, one might ask, who really benefits?" (Collins, 1998, 136).

225). Thus, although this project has focused on diagnosing the problematic relationship between domination and subjugation I would like to end by exploring the hope of this project.

In this regard, I will attempt to find what feminist scholar Kathy Ferguson (1991) suggested:

A vehicle for enabling political actions that resists the twin dangers of paralysis (nothing can be done because no final truth can be found) and totalization (there is one way to do things, the way reflecting the truth that has been found. (Ferguson, 1991, 338)

My hope in this project was that, given these substances have inspired many scientists and white counter cultures towards spirituality and various activisms, perhaps there were emancipatory potentials in these psychedelic sciences and counter cultures.

Although I did not find the 'revolutionary' politics some practitioners have claimed, there were moments of hope and possibility where science, spirituality and activism intermingled in these psychedelic sciences and communities.

Throughout the history of psychedelic sciences scientists have challenged the sanctity and authority of scientific truth based on the psychedelic spiritual knowledges they were encountering. These scientists began to publically question the 'stranglehold' that science had on truth and advocate a more respectful relationship towards spiritual ways of knowing. First wave psychedelic psychiatrist Ralph Metzner was optimistic about the ability of psychedelics to facilitate a more respectful engagement between science and spirituality. He asserted:

Those seekers who are partaking again of the sacramental plants and mushrooms of earlier times and cultures are rediscovering a sense of sacredness of nature that is not at all incompatible with the curiosity

and respectful knowledge –seeking of a scientific explorer or researcher. (Metzner, 2004, 6)<sup>236</sup>

Despite Metzner's optimism, several spiritual advocates remarked on the personal and professional difficulties taking such a position entailed. For example, Richard Alpert concluded that he could no longer align himself with the scientific project because he felt the scientific authorities were failing to grasp the depth of spiritual possibility:

I was not sure though, that I could make the point about our scientific methodology, so I took a stance very different from Timothy's. I said, "Ladies and gentlemen, you're absolutely right. I am no longer a scientist. I'm turning in my badge. From now on, I should be considered a 'datum.' I'm the data, and you may study me, to see what happened to him who 'did that in the sixties.' You can be the scientists. I give it up. I don't really want to do it anymore." ... Why did I want to give it up? ... I had realized I'd rather cultivate faith than skepticism. (Dass, 2004, 8).

Contemporary psychedelic psychiatrist Rick Strassman also discussed these difficulties at length in his book on his efforts to conduct the first post-criminalization FDA approved trials of a psychedelic substance in the US. He found that psychedelics research brought these impasses into stark relief. He stated:

Many modern-day scientists possess an abiding faith in the spiritual. However, these same scientists are caught in a profound conflict between their personal and professional beliefs ... Lack of open dialogue about these issues makes it much more difficult to even imagine enlarging our view of reality of nonmaterial realms using scientific methods. (Strassman, 2000, 186)

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<sup>236</sup> As discussed in Chapter 1, the language of 'rediscovery' enacts a particular politics between the dominant, who are seeking something they have lost and thereby the need for rediscovery, and the subjugated, who are the caretakers of that which the dominant are seeking to rediscover. I have found this basic relationship born out repeatedly in these sciences.

In these sciences, those who most advocated such spiritual incommensurabilities were the most likely to be disciplined and denounced by what increasingly politicized scientists began to see as ‘establishment academics’.<sup>237</sup> These figures were frequently denounced by psychedelic scientists trying to sustain and/or revive scientific research on psychedelics and who viewed these figures as fringe elements that endangered the legitimacy of their own work and jeopardized the entire psychedelic research enterprise (Grinspoon & Bakalar, 1979; C. S. Grob, 1998).<sup>238</sup> For example, Alpert was aware of the stigma associated with his psychedelic defection from Harvard and commented that when he gave talks to professional organizations in his new role as new age yogi he was framed as “that poor Dr. Alpert that used to be at Harvard and took all those drugs and ... you know ... well, he’s schizophrenic, you know” (Dass, 1974, 49). The scientific pushback and politicization that often seemed to result suggested that it is the most incommensurable dimensions of these subjugated spiritual knowledges that are most closely bound to oppositionality.

The embrace of these spiritual knowledges on their own terms led to a crisis of scientific allegiance as well as an increasingly broad politicization of these scientists and the substances themselves. In this regard, it is important to point out that Timothy Leary and Richard Alpert were denounced not only over issues of scientific methodology but also for their unseemly behavior and outspoken radicalism.<sup>239</sup> Metzner, who was part of the controversial Harvard projects,

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<sup>237</sup> Metzner (2004) asserts, “Furthermore, establishment academics are likely to be unfamiliar with the nature of psychedelic experience” (Metzner, 2004, 41).

<sup>238</sup> For example, Metzner (2004) reports that “some observers have blamed Tim Leary, with his admittedly passionate advocacy of psychedelic drug use, for the clamp down of government authority on scientific research” (Metzner, 2004, 35).

<sup>239</sup> Metzner acknowledged this issue in his own description of the Harvard controversies: “It must also be said that although Leary and Alpert flooded the academic community with research papers,

articulated this self-identified politicized position associated with these psychedelic spiritualities at Harvard:

The Harvard groups' mission, if I may put it that way, was to find a way for the middle-class professional groups, of psychology of medicine, and religious ministry, as well as the artistic subcultures, to accommodate these astounding new substances ... this attempt succeeded, to a point. After a critical mass of thousands of tripping youths and adults was reached, the establishment panicked. There was no way, in my opinion, that they were going to let these kinds of revolutionary activities continue. They *were* revolutionary expansions of consciousness. (Metzner, 2004, 35)

As can be seen in Metzner's articulation of *revolutionary* consciousness, the psychedelic scientific and counter cultural struggles around legitimizing these substances and the spiritual beliefs and practices surrounding them catalyzed varying degrees of political consciousness and engagement in these communities.

This politicization emerged within these sciences in part out of the struggles between spiritual knowledges and scientific investigations, and was most exaggerated in those moments where spirituality was most thoroughly embraced. Thus, it is in such moments of oppositionality towards the scientific regimes of truth and politicized engagements with spirituality that I found moments of hope and fruitful possibilities for political coalitions with feminist emancipatory projects.<sup>240</sup> For example, Ram Dass helped usher politicized psychedelic spiritualities into the white counter cultures of the 1960s and yet he began as a scientist facing the difficult

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memoranda and descriptions, some of the tone of their written and verbal pronouncements had a quality of messianic overenthusiasm that turned a lot of people off" (Metzner, 2004, 33).

<sup>240</sup> This has been especially true in the psychedelic counter cultures with a long connection to social justice movements. Take, for example, the way Metzner (2004) defines the 'psychedelic movement' as a "loose non-organized association of shamanistic consciousness explorers, pagan hippie revelers, techno-freaks and advocates for global cultural evolution, who share a passionate interest in natural and synthetic mind-expanding technologies" (Metzner, 2004, 36). Each of these groups is in turn variously connected with social justice activism such as peace/non-violence movements, women's movements and especially environmentalism (Bey, 1985; Saunders, 1995; Starhawk, 1982).



intersection of science and spirituality and grappling with how to understand that impasse. He sought to take spiritual knowledges seriously and conscientiously avoid simply reinscribing the scientific authority he wielded by virtue of his membership in that epistemological party. Like Ram Dass, I am hopeful that grappling with the intersection of these seemingly incommensurable worldviews can challenge the hegemonic reach of western science and its pervasive power to name the world. In this regard, I would argue that the legacy of Ram Dass and his scientific apostasy and embrace of spiritual service represents the hope of this project.<sup>241</sup>

As previously noted, Ram Dass (2004) turned in his scientific badge because, as he stated: “I had realized I’d rather cultivate faith than skepticism” (Dass, 2004, 8). As his spiritual practice deepened after leaving his scientific work, he discovered the epistemological and ontological incommensurabilities with which he had struggled as a scientist. He stated:

Now, it turns out that what is required to get to the next level of consciousness is to transcend the rational mind. That means to transcend to knower who knows. And that is very frightening thinking when that has been your vehicle for controlling your universe up until that point. (Dass, 1974, 53)

However, he persisted and dedicated himself to this newfound spiritual path. Having found his spiritual path through psychedelics, his guru Neem Karoli Baba argued that both Ram Dass and psychedelics were meant to bring spirituality back to the US. He explained:

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<sup>241</sup> It seems contradictory that my figure of hope in this science studies project should be a scientific apostate. Nevertheless, I find his example instructive. Indeed, this dissertation is in some ways a result of his work. While I was formulating my project, someone left the tape set of his 1974 lectures at Naropa University at my yoga studio in the ‘free’ bin. As I listened to his lecture, I identified with his struggles with his scientific training, his emerging spiritual practices and his commitment to peace movements.

“When I said that God came to the United States in the form of LSD, I was quoting my teacher, with whom I lived for six months ... When I asked him what LSD was he went away and several weeks later he came back and he wrote, and the quote is almost exact, ‘LSD is like a Christ coming to America in the Kali-Yuga. America is a most materialistic country and they wanted their Avatar in the form of a material. The young people wanted their Avatar in the form of a material. And so they got LSD. If they had not tasted of such things, how will they know, how will they know?’ (Dass, 1974, 14).

Following his guru’s instructions, when he returned to the US he became a spiritual avatar in the emerging new age movement where he remains a respected figure to this day.

One aspect of Ram Dass’s teachings, which I argue most resonates with feminist articulations of the emancipatory possibilities of spirituality, is how his translations of spiritual knowledges and practices emphasized the importance of ‘service’ at both the personal and social level.<sup>242</sup> Ram Dass (1971) reports that his guru told him that his mission was to ‘feed people’. (Dass, 1971). Ram DassHe took this teaching seriously and worked for the rest of his ‘career’ towards establishing service organizations and encouraging all who came to see him to enact love and be of service.<sup>243</sup> In this regard, Ram Dass’s teachings are in line with feminist scholarship on ‘spiritual activism’ (Keating, 2005). As Patricia Hill Collins (1990) argued regarding the importance of spirituality and consciousness transformation for black feminist traditions:

The problem of [consciousness] is not simply a problem of thought, but also a problem of practice ... the demand to end a deficient

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<sup>242</sup> Ghandi has immortalized the connection between the Bhagadvaghita and nonviolent peace movements. For a discussion of Ghandi’s philosophy in relationship to the Bhagadvaghita see (Easwaran, 1997).

<sup>243</sup> He has also collaborated with other Buddhist peace activists and written about service work (Dass & Bush, 1992; Dass & Gorman, 1987).

consciousness must also be joined to a demand to eliminate the conditions which caused it. (1990, 28)

Ram Dass founded the non-profit service organization the Seva Foundation, and its mission seems in line with this feminist call for emancipatory spiritual activism. Its mission statement asserts, “We must translate our compassion and concern into useful service”.<sup>244</sup> As such, it is my hope that without throwing out either science or spirituality a politically responsible intermingling might produce the “multi colored rituals” which Gloria Anzaldúa (1987) envisioned to banish “the white sterility they have in their kitchens, bathroom, hospitals, mortuaries and missile bases” (Anzaldúa, 1987, 69) and perhaps, through psychedelics, even in their white-walled scientific laboratories.

#### **IV. Future directions: beyond hegemony, beyond science**

This study opens many possibilities for future work in several directions within this larger world of psychedelic sciences. There are currently very few social scientific projects on these emergent sciences and thereby many possible directions for future research.<sup>245</sup> This study only hints at the sociological and feminist investigations to which these peculiar sciences lend themselves. In this section, I will discuss two directions that have presented themselves during the course of this study.

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<sup>244</sup> Retrieved from <http://www.seva.org>; accessed 2-13-10).

<sup>245</sup> The social scientific analysis that I found on psychedelics were (Doyle, 2002, 2005, 2008; Langlitz, 2006, 2007). There are journalistic accounts and reports by psychedelic scientists themselves but few social scientific or science studies examinations of these particular sciences.

## **A. Beyond hegemony: troubling psychedelic hegemonic histories**

The first direction emerges from the necessary limitations of this project. In this study, I focused on the hegemonic narratives in these sciences and the works of the ‘fathers’ of this field and its frequently retold origin stories for several reasons. First, this project is one of the first sociological analyses of this field and as such one of my goals was to identify the dominant narratives and the ‘center’ of these psychedelic scientific discourses. This is not to say that this dominant narrative should remain the only rendition of this history. However, analyzing the center allows future projects to trouble and expand this initial mapping of the field. Second, one of my theoretical goals was to examine the relationships between dominant and subjugated knowledges and use this particular case study to speak to broader sociological concerns about such relationships. Although this is not a simple dualistic relationship, it would also be wrong to suggest that there is no relationship between domination and subjugation. I intentionally focused on those narratives that seemed most dominant in part to draw attention to the hegemonic discourses at work and in part to bring the tensions between them and subjugated knowledges into greater relief. However, this is not to say that analytic work in this field should end with an analysis of hegemonic discourses.

Indeed, given the multifaceted relationships between dominant and subjugated knowledges, future work should extend this analysis by examining the hegemonic discourses through a more detailed analysis of the fractures in the center. One worthwhile future project would be to change the level of analysis such that the fractures and multiplicities within these hegemonic narratives are highlighted. In

each of the broad categories into which I categorized these disciplines, there was greater complexity than it was possible capture in the context of this project. Any one of these categories is itself worthy of its own more detailed discourse analysis to examine the epistemological and ontological complexities at work.

**B. Beyond science: out of the tower and into the street**

Additionally, in this project I limited my analysis to the psychedelic sciences. However, these sciences are part of a much broader psychedelic community. Indeed, these scientists are often themselves members of multiple communities of practice and these communities are variously interconnected and co-influential. I envision a future project where I examine these connections across and between these scientific communities and psychedelic counter cultures. I am particularly interested in those figures that began their work as scientists and then left to join spiritual or counter cultural communities. These figures bring together scientific training, spiritual interests and political commitments in ways that speak to feminist and sociological concerns about knowledge, power and consciousness.

Another future project would be an analysis of how these psychedelic scientific and counter cultural communities became explicitly politicized through their psychedelic practices. This politicization is most visible in the ongoing legacy of Leary and Ram Dass, as alluded to in this study. For a future study, I am interested in analyzing these scientific and counter cultural communities as politicized social movements with self-identified ‘liberatory’ commitments. For such a project, I would examine how these liberatory commitments connect with and diverge from

other liberatory projects around race, class and gender. Given that these movements often occurred at similar historical moments, this comparison would allow a sociological and feminist investigation of emancipatory social movements and politicized notions of consciousness.

**Table 5.1: Summary of findings**

Chapter 2: Experimental mysticism: Tactics of legitimation in the psychedelic sciences of spirituality	Scientific domain or practice	Scientific conceptions to resolve incommensurability	Assimilation of Mystical consciousness	Assimilation of Divinity
	Access	Allows access to spirituality by chemically inducing mystical experience	Mystical consciousness violates requirements for objective observation of object of study	Divine agency and origination violate required materialist causal models
	Measure	Allows controlled replication and operationalization of mystical experience	Mystical consciousness reconceptualized as quantifiable psychological or neurological phenomenon	Divine agency and origination replaced by neurological or psychological causal mechanisms
	Explain	Allows scientific explanation of spiritual experiences and beliefs	Mystical consciousness reconceptualized as culturally determined subjective interpretation of neurochemically induced state of conscious	Divine agency and origination replaced by combination of chemical causality and cultural determination
	Apply	Allows spirituality to be applied as therapy	Mystical consciousness reconceptualized as therapeutic psychological process	Divine agency and origination replaced by neurological or psychological causal mechanisms

<b>Table 5.1: Summary of findings</b>				
<b>Chapter 3: Neurotheology: Expanding scientific authority over spirituality in the psychedelic sciences</b>	<b>Scientific domain or practice</b>	<b>Scientific conceptions to resolve incommensurability</b>	<b>Assimilation of Mystical Consciousness</b>	<b>Assimilation of Divinity</b>
	What does it do?	Psychedelic Hallucinogen	Mystical consciousness subsumed into psychological models of psyche and mind	Divine agency and origination replaced by psychological or psychopathological causality
	How does it work?	Divinity as psychology	Mystical consciousness subsumed into psychological cosmologies of unconscious mind	Divine agency and origination replaced by psychodynamic causality
		Divinity as neurology	Mystical consciousness reconceptualized as epiphenomenon of biochemical brain	Divine agency and origination replaced by neurochemical causality
	How to apply it?	Psychedelic psychotherapy and psychopharmacology	Emergence of psychiatric ecclesiastical authority through determination of mysticity of mystical experience	Emergence of psychiatric liturgical authority through administration of psychedelic sacrament



**Table 5.1: Summary of findings**

Chapter 4: Neuroshamanism: The psychedelic sciences and the bioprospicing of spirituality	Scientific domain or practice	Scientific conceptions to resolve incommensurability	Assimilation of Mystical Consciousness	Assimilation of Divinity
	Discovery	Narcotic Consciousness	Mystical consciousness reconceptualized as evolutionary neuropsychological stage of development	Divine agency and origination replaced with pharmacological causality
	Identification/ explanation	Extrapharmacological variables	Mystical consciousness reconceptualized as culturally determined subjective interpretation of neurochemically induced state of conscious	Divine agency and origination replaced with combination of chemical causality and cultural determination
	Application	Shamanic paradigm; Neuroshamanism	Mystical consciousness reconceptualized as therapeutic psychological phenomenon	Divine agency and origination replaced with psycho-pharmacological and psychotherapeutic causality

## Appendices

### Appendix A: Tables of codes

<b>Content Coding:</b> <i>I always noted any mention of the following subjects:</i>		<b>Context Coding:</b> <i>I coded my documents according to the following categories in order to situate them into their scientific and historical contexts.</i>		
Spirituality content	Science/knowledge content	Time period	Methodology	Discipline
Spirit Spirituality Sacred Sacrament Magical Ritual Mysticism Mystical consciousness Mystical experience Altered states of consciousness Religion God Divinity	Objectivity Causality Epistemology Ontology Cosmology Metaphysics Science Methodology Rationality Materiality Reality Mechanisms Empirical Explain Cause	First wave <i>(1930-1970)</i> Second wave <i>(1970-present)</i>	Clinical RCT Laboratory Field	Psychology Psychiatry Biomedical psychology Clinical pharmacology Pharmacology Psychotherapy Psychopharmacology Neurochemistry Neuropsychiatry Anthropology Ethnobotany

**Thematic Coding:**

*These codes emerged after more detailed analysis and were applied specifically to documents as I organized themes and documents into cohesive groupings for chapters*

Chapter 2	Chapter 3	Chapter 4
Access Measure Apply Explain Autoexperiment Stigma Messianic Evangelical Legitimacy Incommensurability Advocacy Subject/object Indian's believe Bioprospecting Therapeutic	Psychology and religion Divinity as psychology Psychospiritual Divinity as neurology Psychedelic Psychotherapy Psycholytic Psychotherapy Biological Extrapharmacological Therapeutic Protocol Taxonomy Scale Subjective Expert Authority Clerical	Bioprospecting Race Indigenous Indian Native Colonial Taxonomy Indian's believe Culture Belief Explain Discover Secret Informant Ancient Primitive Prehistory Evolution Origin of religion Universal Subjectivity Shamanism Archive Noble Savage Intentions Good of mankind

## Appendix B: Data Sources

### Chapter 2: Experimental mysticism: Tactics of legitimation in the psychedelic sciences of spirituality

#### Access Documents

##### *First Wave*

Hoffman, A. (1979). *LSD: My problem child*: Vaults of Erowid Online Books.

Leary, T., Metzner, R., & Alpert, R. (1964). *The psychedelic experience: A manual based on the Tibetan Book of the Dead*. New York, NY: Citadel Press.

Dass, R. (1971). *Be Here Now*: . New York, NY: Crown Publishing Group.

Dass, R. (1974). *The only dance there is*. Garden City, NY: Anchor Books.

Dass, R. (2004). *Paths to God: Living the Bhagavad-Gita*. New York, NY: Harmony Press.

Wasson, R. G. (1957, May 13, 1957). Seeking the magic mushroom. *Life*.

##### *Second Wave*

N/A

#### Measure Documents

##### *First Wave*

Pahnke, W. (1966). Drugs and mysticism. *The International Journal of Parapsychology*, VIII(2), 295-313.

Pahnke, W. (1966). Implications of LSD and experimental mysticism. *Journal of Religion and Health*, 5, 175-208.

Pahnke, W. (1967). *LSD and religious experience*. Paper presented at the LSD, Man and Society, Middletown, Connecticut.

##### *Second Wave*

Griffiths, R. R., Richards, W. A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology*, 187(3), 268-283.

de Wit, H. (2006). Towards a science of spiritual experience. *Psychopharmacology*, 187(3), 267.

Doblin, R. (1991). Pahnke's "Good Friday Experiment": A long-term follow-up and methodological critique. *The journal of transdisciplinary psychology*, 23(1).

### **Explain Documents**

#### ***First wave***

Lewin, L. (1931). *Phantastica: Narcotic and stimulating drugs*. New York, NY: E.P. Dutton.

Schultes, R. E. (1976). *Hallucinogenic Plants*. New York, NY: Golden Press.

Schultes, R. E., Hoffman, A., & Ratsch, C. (1979). *Plants of the gods: Their Sacred, Healing and Hallucinogenic Powers*. New York, NY: McGraw Hill.

Wasson, R. G. (1957, May 13, 1957). Seeking the magic mushroom. *Life*.

Wasson, R. G. (1968). *Soma: Divine Mushrooms of Immortality*. New York, NY: Harcourt, Brace and World.

Wasson, R. G. (1974). *Maria Sabina and her Mazatec mushroom velada*. Unknown: Unknown.

Wasson, R. G., Ruck, C. A. P., & Hoffman, A. (1978). *The road to Eleusis*. New York, NY: Harcourt, Brace Jovanovich.

#### ***Second wave***

Callaway, J., Airaksinen, M., McKenna, D., Brito, G., & Grob, C. S. (1994). Platelet serotonin uptake sites increased in drinkers of ayahuasca. *Psychopharmacology*, 116, 385-387.

Callaway, J., McKenna, D., Grob, C. S., Brito, G., Raymon, L., Poland, R., et al. (1999). Pharmacokinetics of Hoasca alkaloids in healthy humans. *Journal of Ethnopharmacology*, 65, 243-256.

Halpern, J., Sherwood, A., Hudson, J., Yurgelun-Todd, D., & Pope HG, J. (2005). Psychological and cognitive effects of long-term peyote use among Native. *Biological Psychiatry*, 58(8), 624-631.

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McKenna, D., Callaway, J., & Grob, C. S. (1998). The scientific investigation of ayahuasca: a review of past and current research. *The Heffter Review of Psychedelic Research*, 1(65-77).

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Winkelman, M. (2004). Shamanism as the original neurotheology. *Zygon*, 39(1), 193-217.

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#### ***First wave***

Grof, S. (1980). *LSD Psychotherapy*. Pomona, CA: Hunter house.

Hoffman, A. (1979). *LSD: My problem child*: Vaults of Erowid Online Books.

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Annals of the New York Academy of Sciences*, 66(3), 418-434.

#### ***Second wave***

Grob, C. S. (1998). Psychiatric research with Hallucinogens: What have we learned? *The Heffter Review of Psychedelic Research*, 1, 8-20.

Grob, C. S. (2007). The use of psilocybin in patients with advanced cancer and existential anxiety. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic medicine: New evidence for hallucinogenic substances as treatments* (Vol. 1, pp. 205-216). Westport, CT: Praeger Perspectives.

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Strassman, R. (2000). *DMT: The Spirit Molecule: A Doctor's Revolutionary Research into the Biology of Near-Death and Mystical Experiences*. New York: Park Street Press.

Winkelman, M. (2007). Therapeutic Bases of psychedelic medicines: Psychointegrative effects. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic Medicine: New evidence for hallucinogenic substances as treatments* (Vol. 1, pp. 1-20). Westport, CT: Praeger Publications.

Winkelman, M., & Roberts, T. B. (Eds.). (2007). *Psychedelic Medicine: New Evidence for Hallucinogenic Substances as Treatments*. Westport, CT: Praeger/Greenwood Publishers.

### **Chapter 3: Neurotheology: Expanding scientific authority over spirituality in the psychedelic sciences**

#### **Psychological Documents**

*\*While I separated the psychological from the neurological/pharmacological models, they are often connected. This is even more the case in the contemporary sciences where the biomedical sciences and especially the neurosciences are now the dominant paradigms in psychology. However, where there is overlap I have chose to categorize particular studies depending on which model was more primary or more emphasized*

#### ***First Wave***

Grof, S. (1980). *LSD Psychotherapy*. Pomoa, CA: Hunter house.

Osmond, H. (1957). A review of the clinical effects of psychotomimetic agents. *Annals of the New York Academy of Sciences*, 66(3), 418-434.

Passie, T. (1997). Hanscarl Leuner: Pioneer of hallucinogen research and psycholytic therapy. *Multidisciplinary Association for Psychedelic Studies (MAPS) Newsletter*, 7(1), 46-49.

#### ***Second Wave***

Dobkin de Rios, M., Grob, C., & Baker, J. (2002). Hallucinogens and redemption. *Journal of Psychoactive Drugs*, 34(3), 239-248.

Grinspoon, L., & Bakalar, J. (1986). Can drugs be used to enhance the psychotherapeutic process? *American Journal of Psychotherapy*, 40, 393-404.

House, S. G. (2007). Common processes in psychedelic-induced psychospiritual change. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic medicine: New evidence for hallucinogenic substances as treatments* (Vol. 2, pp. 169-194). Westport, CT: Praeger Perspectives.

Passie, T. (2007). Contemporary Psychedelic Therapy: An overview. In M. Winkelman & T. B.

Walsh, R. N., & Grob, C. S. (2007). Psychological Health and Growth. In M. Winkelman & T.

B. Roberts (Eds.), *Psychedelic Medicine: New evidence for hallucinogenic substances as treatments* (Vol. 1, pp. 213-225). Westport, CT: Praeger Perspectives.

Yensen, R., & Dryer, D. (2007). Addiction, Despair and the Soul: Successful Psychedelic Psychotherapy: A case study. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic Medicine: New evidence for hallucinogens as treatments* (Vol. 2, pp. 15-28). Westport, CT: Praeger/Greenwood.

### **Neurological/Pharmacological documents**

#### ***First Wave***

*Note: Neurological models were less dominant in the first wave and especially in the psychological disciplines. It was in the related disciplines of ethnobotany and psychopharmacology that the neurological models were emerging most strongly.*

Lewin, L. (1931). *Phantastica: Narcotic and stimulating drugs*. New York, NY: E.P. Dutton.

McKenna, D., & Towers, G. H. N. (1958). On the comparative ethnopharmacology of the Malpighiaceae and Myristicaceae hallucinogens. *Journal of Psychoactive Drugs*, 17, 35-39.

Schultes, R. E., Hoffman, A., & Ratsch, C. (1979). *Plants of the gods: Their Sacred, Healing and Hallucinogenic Powers*. New York, NY: McGraw Hill.

#### ***Second Wave***

Diamond, N. L. (2000). Deborah Mash (interview). In N. L. Diamond (Ed.), *Voices of truth: Conversations with scientists, thinkers and healers* (pp. 365-414). Twin Lakes, WI: Lotus press.

Mash, D. C., Kovera, C. A., Buck, B. E., Norenberg, M. D., Shapshak, P., Hearn, W. I., et al. (1998). Medication development of ibogaine as a pharmacotherapy for drug dependence. *Annals of the New York Academy of Sciences*, 844, 274-292.

Strassman, R. (2000). *DMT: The Spirit Molecule: A Doctor's Revolutionary Research into the Biology of Near-Death and Mystical Experiences*. New York: Park Street Press.



Winkelman, M. (2007). Therapeutic Bases of psychedelic medicines: Psychointegrative effects. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic Medicine: New evidence for hallucinogenic substances as treatments* (Vol. 1, pp. 1-20). West port, CT: Praeger Publications.

#### **Chapter 4: Neuroshamanism: The psychedelic sciences and the bioprospecting of spirituality**

##### **'Discovery' of psychedelics and spirituality**

*Note: research that reports to have 'discovered' psychedelic substances or associated spiritual beliefs occur only in the first wave*

Lewin, L. (1931). *Phantastica: Narcotic and stimulating drugs*. New York, NY: E.P. Dutton.

Schultes, R. E., Hoffman, A., & Ratsch, C. (1979). *Plants of the gods: Their Sacred, Healing and Hallucinogenic Powers*. New York, NY: McGraw Hill.

Wasson, R. G. (1957, May 13, 1957). Seeking the magic mushroom. *Life*.

Wasson, R. G. (1974). *Maria Sabina and her Mazatec mushroom velada*. Unknown: Unknown.

##### **Evolutionary conceptualizations**

*Note: This conceptualization is primarily dominated by anthropology and was also more prevalent in the first wave.*

##### ***First wave***

Furst, P. (1972). *Flesh of the Gods*. New York, NY: Praeger.

Furst, P. (1976). *Hallucinogens and culture*. Novato, CA: Chandler and Sharp Publishers, Inc.

La Barre, W. (1972). Hallucinogens and the origin of religion. In P. Furst (Ed.), *Flesh of the Gods: The ritual use of hallucinogens* (pp. 261-279). New York, NY: Praeger Publications.

Schultes, R. E., Hoffman, A., & Ratsch, C. (1979). *Plants of the gods: Their Sacred, Healing and Hallucinogenic Powers*. New York, NY: McGraw Hill.

##### ***Second Wave***

Doyle, R. (2008). Just say yes to the noösphere!: Psychedelics and the evolution of information technologies. *Multidisciplinary Association for Psychedelic Studies (MAPS) Newsletter*, XVII(1), 14-18.

Metzner, R. (2004). *Sacred mushroom of visions teonanacatl*. Rochester, VT: Park Street Press.

Winkelman, M. (1995). Psychointegrator Plants: Their roles in human culture, consciousness and health. In *Yearbook of Cross-Cultural Medicine and Psychotherapy, 1995: Sacred Plants, Consciousness, and Healing; Cross-Cultural and Interdisciplinary Perspectives*. (pp. 9-53). Berlin: Verlag.

### **Taxonomies/Mechanisms**

*NOTE: Here I include the renaming of these substances in ways that changes the divine subjectivity and causality associated with the substances. I also include efforts to explain the effects as cultural rather than spiritual.*

#### ***First wave***

Furst, P. (1972). *Flesh of the Gods*. New York, NY: Praeger.

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Wasson, R. G. (1957, May 13, 1957). Seeking the magic mushroom. *Life*.

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#### ***Second wave***

Dobkin de Rios, M. (1990). *Hallucinogens: Cross-cultural perspective*. Bridgeport, UK: Prism Press.

Dobkin de Rios, M., & Grob, C. (2005). Ayahuasca use in cross-cultural perspective. *Journal of Psychoactive Drugs*, 37(2), 119-122.

Halpern, J., Sherwood, A., Hudson, J., Yurgelun-Todd, D., & Pope HG, J. (2005). Psychological and cognitive effects of long-term peyote use among Native. *Biological Psychiatry*, 58(8), 624-631.

Halpern, J. H., Sherwood, A. R., Passie, T., Blackwell, K. C., & Ruttenger, A. J. (2005). Evidence of health and safety in American members of a religion who use a hallucinogenic sacrament. *Medical Science Monitor*, 14(8), 15-22.

Metzner, R. (2004). *Sacred mushroom of visions teonanacatl*. Rochester, VT: Park Street Press.

## **Psychedelic shamanisms**

### ***First wave***

Castaneda, C. (1968). *The teachings of Don Juan: A Yaqui way of knowledge*. New York, NY: Washington Square Press.

Dobkin de Rios, M. (1973). Curing with Ayahuasca in an Urban Slum. In M. Harner (Ed.), *Hallucinogens and shamanism* (pp. 67-85). New York: Oxford University Press.

Furst, P. (1976). *Hallucinogens and culture*. Novato, CA: Chandler and Sharp Publishers, Inc.

Harner, M. (1973). *Hallucinogens and Shamanism*. London: Oxford University Press.

Harner, M. (1980). *The Way of the Shaman: A Guide to Power and Healing*. New York, NY: Harper & Row Publishers.

### ***Second Wave***

Diamond, N. L. (2000). Deborah Mash (interview). In N. L. Diamond (Ed.), *Voices of truth: Conversations with scientists, thinkers and healers* (pp. 365-414). Twin Lakes, WI: Lotus press.

Dobkin de Rios, M. (1992). *Amazon Healer: The life and times of an urban shaman*. Bridgport, UK: Prism Press.

McKenna, T. (1992). *The Archaic Revival: Speculations on Psychedelic Mushrooms, the Amazon, Virtual Reality, UFOs, Evolution, Shamanism, the Rebirth of the Goddess, and the End of History*. New York, NY: Harper Collins.

Winkelman, M. (2002). Shamanism as neurotheology and evolutionary psychology. *American Behavioral Scientist*, 45(12), 1873-1885.

Winkelman, M. (2004). Shamanism as the original neurotheology. *Zygon*, 39(1), 193-217.

Winkelman, M. (2007). Shamanic guidelines for psychedelic medicine. In M. Winkelman & T. B. Roberts (Eds.), *Psychedelic medicine: New evidence for*

*hallucinogenic substances as treatments* (Vol. 2, pp. 143-168). Westport, CT: Praeger Perspectives.

## **General Data Sources**

### **Secondary sources:**

*NOTE: Social scientific analyses of psychedelic science/substances, histories of psychedelic sciences written by psychedelic scientists, cultural histories of psychedelic sciences*

Dobkin de Rios, M. (1990). *Hallucinogens: Cross-cultural perspective*. Bridgeport, UK: Prism Press.

Doyle, R. (2002). LSDNA: Rhetoric, consciousness expansion, and the emergence of biotechnology. *Philosophy and rhetoric*, 35(2), 153-174.

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Langlitz, N. (2006). Ceci n'est pas une psychose: Toward a historical epistemology of model psychoses. *Biosocieties*, 1, 159-180.

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McKenna, T. (1992). *Food of the gods: the search for the original tree of knowledge*. New York, NY: Bantam Books.

**Anthologies:**

*NOTE: Non-peer reviewed but written by key scientists targeted toward a public audience. I am also including articles which provide historical overviews of the psychedelic sciences*

Forte, R. (1997). *Entheogens and the Future of Religion (The CSP Entheogen Project Series, Number 2)*. San Francisco, CA: Council on Spiritual Practices.

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Walsh, R. N., & Grob, C. S. (2005). *Higher wisdom : eminent elders explore the continuing impact of psychedelics*. New York: State University of New York Press.

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