From Interiority to Inner Territory

Tibetan Buddhism, Neuroscience, and the Politics of Representation

BY

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THESIS

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SUMMARY

Scholars have noted the many ways in which colonial encounters have framed the contemporary portrayal of Buddhism as a “science,” as opposed to being merely a “religion.” Today, this representation of “Buddhism as Science” is most at work in the Western neuroscience of meditation and the introduction of science education into the curriculum of Tibetan Buddhist monasteries in Exile. This dissertation explores the Buddhism and Science dialogues through fieldwork conducted in Tibetan cultural, governmental, and educational institutions in India and meditation research facilities in the U.S. I focus on the situated negotiations of representations of Buddhism as a science as they play themselves out in neuroscience labs and among Tibetans in exile. I will discuss how global networks of neuroimaging research have helped shape and commodify the cultural identities of Tibetan Buddhists and how Tibetan Buddhists themselves have leveraged certain of those representations to yield a materially adventitious, though culturally risky (given the mandate of Tibetan institutions in exile to preserve traditional Tibetan culture), set of circumstances.
I. INTRODUCTION

A. Project Overview

This thesis presents the findings and conclusions of my multi-site ethnographic dissertation project examining the complex histories, institutions, and contemporary encounters in what is often referred to as the Buddhism and Science Dialogues. Today, even as neuroscience researchers focus on the study of meditation draw heavily from the Tibetan Buddhist tradition, Tibetan Buddhist monasteries have been opened to allow the inclusion of science instruction within a traditional monastic setting. In this dissertation, I address the following research issues: 1) what tensions have emerged from the introduction of a science curriculum into Tibetan monasteries? 2) What has been the impact such efforts on traditional practices, routines, and rituals of monastic life and laboratory practice? 3) How are Western neuroscientific researchers and Tibetan Buddhists framing “Buddhism” and “meditation” in ways that make such research plausible and possible? And 4) In what ways have the historical, colonial contexts of the West’s encounter with Buddhism enabled Buddhists and Scientists to present Tibetan Buddhism as a psychological science as opposed to a religion? Accordingly, this thesis is focused on the dynamics of interpretation and interaction between the historical, global, and local frameworks of the neuroscience and Tibetan communities.

Below, I will provide an overview of the entire project. Next, I will outline the first of the theoretical domains which bookend the ethnographic material; namely, the question of representation. The notion of representation functions as a useful conceptual frame through which to engage the various contexts presented in this research. This is because the science which is taught to Tibetan monastics (particularly, psychology and neuroscience) is rooted in
representations which have their history in colonial contexts. In order to participate in science instruction, Tibetan monastics must internalize certain representations about themselves and their practices. I will conclude with a brief précis of the subsequent chapters. Broadly, this work examines how global networks of neuroimaging research have helped shape and commodify the cultural identities of Tibetan Buddhists and how Tibetan Buddhists themselves have leveraged certain of those representations to yield a materially adventitious, though culturally risky (given the mandate of Tibetan institutions to preserve traditional Tibetan culture), set of circumstances.

**B. Background**

I conducted the field work for this project in multiple geographic and institutional settings. In 2011, I made my first trip to Dharamsala, India and had the opportunity to teach and work alongside amchi (Tibetan physicians) at Men-Tsee-Khang, the Tibetan Medical and Astrological Institute. A few days into my fieldwork, I had a rather unfortunate fall down some stairs in the midst of a monsoon rain resulting in several cracked several ribs on my right side. However, this did give me occasion to visit Delek Hospital, the Western biomedical facility, located only a few hundred meters from Men-Tsee-Khang. There, I began to ask questions about how the two medical systems, and science generally, interacted and were perceived within a refugee community charged with the preservation of traditional Tibetan culture. After a few days’ rest, I began my daily ascent from my room at the Library of Tibetan Works and Archives up the steep mountainside to McLeod Ganj. There, I interviewed monastics at the Institute for Buddhist Dialects and Namgyal, Monastery both located near the Dalai Lama’s residence.

In 2013, I was able to begin assembling ethnographic material for the comparative dimension of my project by attending the University of Pennsylvania’s Neuroscience Bootcamp and the
Mind and Life Summer Research Institute (MLSRI) in Garrison, New York. At the MLSRI, I met Dr. Richard Davidson, a neuroscientist who has been a pioneer in the world of meditation research. The MLSRI is designed in such a way as to foster collaboration between established and novice researchers. In one of the breakout sessions, Dr. Davidson spoke of efforts in his Lab to incorporate contemplatives (i.e., meditation practitioners and scholars of meditative practices and experiences), not simply as subjects, but as research partners. He spoke of extending that inclusivity to other disciplines as well. I suggested that having an anthropologist in the Lab, especially if the intent was to one day include Tibetan monastics, may prove an integral component in this venture’s success. Sure, he said, but you’d have to get your own funding.

In 2014, I succeeded in doing just that. On a Varela Award from the Mind and Life Institute, I was welcomed as an Honorary Fellow of the Lab for the Fall semester of 2015. I continued to visit and be involved with the Lab through Spring 2016. Prior to my arrival, I had spent another summer conducting field research in Dharamsala. During my 2015 trip, I worked closely with the Science Translation team at the Library of Tibetan Works and Archives and observed science classes as monks were being taught the concepts and vocabulary of neuroscience, biology, physics, cosmology, genetics, and ecology in English and newly coined Tibetan words. I observed that while these courses provide monks the opportunity to become literate in science, monks do not yet have the opportunity to do science. In this dissertation I contend that it is only once monks become familiar with the Western science practice of constructing facts about the world that they will be able to participate critically in the Buddhism and Science Dialogues.
C. Chapter Overview

In chapter two, *Buddha was a Scientist*, I provide a brief historical overview of Buddhism’s engagement with science and (in the case of Tibetan Buddhism) neuroscientific research. Building on the discussion of representation which follows, I also give particular attention to the colonial practices and discourses out of which the technologies of representation that are most salient to this research arose. I focus on three interrelated representations which are often deployed in the “Buddhism and Science” dialogues: Buddhism as a pan-Asian religion, the Buddha as a scientist, and Tibetan Buddhism itself as “mind science.”

In chapter three, *Camera Obscura*, I give particular attention to the ways in which technologically mediated images support representations used in administrative systems. I examine contemporary discussions about the utility of fMRI images in contemporary research and the ways in which this discourse overlaps with colonial rhetoric employed by the British in their use of photographic images to shape and study the “races” of India. I compare this to China’s contemporary use of fMRI to study cultural differences between Tibetans and the Han. I also explore how anthropology in China is part of an explicit program of modernization, a project whose rhetoric is remarkably similar to that found today in neo-liberal projects of self-fashioning. To aid in my analysis of these several practices of “othering,” I build on Spivak’s (1988) notion of *strategic essentialism* and Abu-Lughod’s (1991) *reverse Orientalism*. Both of these notions are important as they help us theorize about the ways in which Tibetans involved in the science dialogues have been able to use Western colonial era representations to interact agentically within existing power differentials.

In chapter four, *Tibetan Monasticism and Modernization: Pre-1959*, I provide an account of the arrival and development of Buddhism in Tibet, the development and political significance of
the separate sects, and the rise of Gelug monasticism. The Gelug sect became the political and scholarly face of Tibetan Buddhism centuries before China’s initial invasion in 1951 and today figures prominently in the Buddhism and science Dialogues. I give particular attention to the role of the monastery in Tibetan society. I also consider the monastic structures, disciplinary practices, and educational guidelines which continue to shape the incorporation of science into the monastic curriculum. I also consider the “patron/priest” relationship which had structured Tibet’s dealings with surrounding states for centuries and argue that this relationship similarly structures its dealings with the West in the Buddhism and science Dialogues. The chapter concludes with a detailed examination of the 13th Dalai Lama’s attempts to modernize Tibetan monasteries; attempts which were often violently opposed by the monastic leadership. I suggest that the 13th Dalai Lama’s struggle to usher Tibet into the modern world paved the way for key reforms which the 14th Dalai Lama has been able to enact in exile. Of note, these reforms include the introduction of science education in the monasteries.

In chapter five, *Science for Monks*, I present an historical overview of the development of the dialogue between Tibetan Buddhists and Western Scientists. Having historically and theoretically framed the Buddhism and science Dialogues in the previous chapters. I provide in this chapter a sketch of the contemporary partners and stakeholders in the “Science for Monks” program and an ethnographic account of how these interests and histories are mobilized among those in the Tibetan exile community in Dharamsala. I describe the day to day work of translation, curriculum design, event scheduling, and performances of identity. I also present interviews with physicians and students at Men-Tsee-Khang, translators and instructors at the Library of Tibetan Works and Archives (where the science curriculum is designed), and monastics who were in attendance for courses in scientific literacy.
In chapter six, *A Rigorous Good*, I present my ethnographic account of the Center for Healthy Minds (CHM) at UW-Madison. Scientists here have been key figures and researchers in the “Buddhism and Science” dialogue. I will also discuss the history of “mindfulness” and “meditation” as research constructs and objects, statistical and analytical issues within neuroscience research, and the contextual significance of “neuroanthropology” as an interdisciplinary proposal.

In chapter seven, *Minding Mindfulness*, I contextualize the preceding ethnographic chapters within the broader theoretical frame of representation. I explore the ways in which such representations are strategically deployed by both Tibetan Buddhists and Western scientists in transnational networks of neuroscience research. I examine the implications of extracting Tibetan Buddhist constructs of “mind” out of their historically and ecologically nuanced domains and reshaping them for neuroscientific research. Through a consideration of cultural and technological developments at work from the Victorian period on, I return to the question of why Tibetan Buddhism is today dominant in meditation research.

In chapter eight, *Neuro: self-colonization*, I provide an extended critique of the larger field of neuroscience which frames that aspect of the Buddhism and Science dialogues being considered in this dissertation. While chapter seven examines representations of Buddhism and meditation as they are configured in Western science, chapter eight takes up the question of the representation of the brain and the self within neuroscience. In this way, I examine the ideological presuppositions at work within the disciplinary frame of neuroscience. In particular, I examine the neo-liberal strategies of self-fashioning which frame discussions about the utility and importance of such research. I seek to show that theorists, such as Nikolas Rose, who see in the new brain sciences a valorization of the subject and a re-engagement of autonomy, are able to
maintain such a position owing to a highly selective reading of the methods for doing such
science. Such a critique is important given that many of the psychological models and social
agendas which have shaped empirical psychology and neuroscience have begun to find new life
in meditation research

The concluding ninth chapter serves as a reflexive summary in which I examine what is
imagined in and what is hoped for by the participants in the Buddhism and science dialogues.

D. The Question of Representation

\[\text{representation is a concept that articulates the historical and fantasy (as}
\text{the scene of desire) in the production of the “political” effects of discourse.}\]

-Bhabha (1991b: 72)

There are several threads that unite these chapters. One is the difference between “textual”
and “lived” Buddhism. Disciplinary, scientific, and administrative concerns rely mainly on
textual sources to shape categories and provide justifications for research, measurement, and
intervention. This is often done without recourse to – or in willful disregard of – the traditional
contexts of transmission and the varieties of religious practice which obtain in actual
communities. For example, in order to operationalize certain Tibetan Buddhist meditative
practices, scientists must prioritize the sensory, experiential, and phenomenological descriptions
of traditional practices. Reference to soteriologically inflected causal mechanisms (such as
\text{karmic tendencies}) must be excluded.\footnote{Though there is some indication that they may be subsumed and reinterpreted under cybernetic
models of the person as system (Lutz et al. 2007, Varela et al. 1991) as I consider in chapter
seven.} One way of interrogating such strategies of
operationalization is to examine the West’s epistemological and disciplinary demand for a
“unifying element” by which a phenomena (or set of phenomena) is said to cohere and to be of a whole. As we will see, this is the analytic strategy employed by Daston and Galison (2007) in their analysis of scientific notions of objectivity and by Almond (1988) in his work on the development of “Buddhism” as a Western category.

There is, however, another strategy: we can ask how a reliance on textual sources facilitates practices of domination and acquisition given that both the methods of textual analysis and anthropometric measurement were developed in colonial and post-colonial networks of administration and disciplinarity (the “system of control in the projection of discourse;” Foucault 1972: 224). By controlling text and interpretative strategies, the West is in a position to transform traditional practice into a kind of knowledge which is answerable to standards and expectations potentially inimical to traditional frameworks. In this light, consider, for example, Harvey’s (2001) notion of “accumulation by dispossession.” This term is meant to indicate the ways wealth is continually, structurally “transferred” from those with the least to those with the most. Such “transfers” are often state supported and facilitated. Harvey discusses wealth, but bodies and knowledge and practices can also serve as commodities. For example, alongside systems of credit and debt, the standardization, patenting, and privatizing of indigenous knowledge systems require bureaucratic enforcement and administrative apparatuses of the state (educational institutions, prisons, standardization), and the shaping of narratives about the self. In principle, each participant in the circulation of goods and knowledge has equal access and rights to commodities and rights. In practice, it is rare that the woefully impoverished and generationally oppressed are ever in a position to take advantage of or defend either. This is doubly problematic when we realize that any object (or practice, or term) can become a commodity provided that its valuation supports and intersects with the acquisition of various
forms of capital (Appadurai 1986). This acquisition in turn situates the individual in the range of social values that confer distinction, prestige, discrimination, and participation (Bourdieu 1998).

As the core epistemological concerns of Tibetan Buddhism become increasingly intertwined with systems of transnational research, education, and administration, we should ask whether the Monastic Science Initiative puts Tibetan Buddhism at risk of being yet another example of "accumulation by dispossession." On the basis of such an analysis, one would might expect that tensions will arise as traditional ways of knowing in the monastery are reworked through science education for use in global networks of laboratory research.

To venture a bit further, consider the ghostly parody of the logic of supply and demand where being "endangered"—whether it be a language, an ecosystem, or a culture—confers an aura of value to the objects produced by or associated with what is at risk (Aiyer 2007). As goods or practices (e.g., certain forms of spiritual practice or health regimes) drawn from cultures so represented become circulated, standards are formed to make possible discriminations in value between objects and among consumers. Notions such as "authentic" or "traditional," over time, begin to figure into debates as to whether or not they are applicable to an object or practice for the purpose of ascribing its place in a commodity network. Such ascriptions both generate and are parasitic on particular, and often monolithic, colonial representations of a "culture" or "people." The question of who gets to shape the particulars of resulting representations of identity and belonging is, in fact, central to the post-colonial enterprise (Spivak 2010).

However, such ascriptions also potentially structure a space of opportunity for such groups to create and participate in markets in a way that allows them some control over their labor and means of production. These new opportunities within the community also provide the conditions
in which “traditional” ways of life can be brought into dialogue with “modernity” allowing groups to fashion new identities and possibilities (Liechty 2003). A complex new set of circumstances arises when the markets are made to respond to political and social changes amidst competing claims of “authenticity” within those very groups (Doane 2007, Tsing 2005).

But what exactly is a representation and how is it that certain representations can be employed both as tools of Western disciplinary power (academia, state and medical administration) and – for Western countercultures and non-Western others – as sites of agency? This question, called the “crisis of representation,” marks a shift in anthropology “from attempts at generalizing theories about society to discussion about the problems of interpreting and describing social reality” (Marcus and Fischer 1986: 6). In part, this means interrogating why individuals or groups generalize about cultures and how these generalizations were precipitate into representations. Representations are historically contingent, economically informed, and ideologically purposeful framings of very select features of a given culture. Those who authored such framings claimed for them “objectivity,” an apotropaic against the accusation of subjective influence or biased construction. The methods and media of selection and presentation, such as measurement or photography were taken as having done the work of removing what is accidental, contingent, and biased and of having gotten to the thing in itself. Representations achieve their power by obscuring the historical, economic, and political effects which conditioned the very tools by which they were fashioned.

The implications of this are profoundly important when we consider that representations are mediated by language. Representations are not things in the world and of themselves nor are they reflective of such. Rather they are formed discursively. The shaping of categories, the interpretation of results, and the framing of problematics are all formed within language
regardless of instrumentation used. Thus, representations are “ideological creations” (Medvedev and Bhaktin 1928: 7). And it is in “social intercourse … in which the ideological phenomenon first acquires its specific existence … its semiotic nature” (ibid., 8-9). The semiotic nature of representations means they are primarily linked to the values of the cultural systems through which they were formed, not to the system which they purport to describe:

A sign [or here, a representation] does not exist as a part of a reality – it reflects and refracts another reality… from a special point of view … the domain of ideology coincides with the domain of signs. They equate with one another. Where ever a sign is present, ideology is present, too. (Voloshinov 1930: 10)

This is not to say that such systems are hermetically sealed, or that sub-groups within and without a different culture do not adopt, adapt, and fashion themselves in ways that can at times differ radically from the system in which they arose. Furthermore, representation is necessary to the formation of a self and the other. One aspect of representations which I want to highlight in this dissertation is the degree to which the nature of representation as such is today often obscured behind claims as to the objectivity of a given representation.

It is because representations get their meaning only insofar as they are embedded in a system of other meanings and significance, whose various elements are themselves in varied states of contestation and relations of power, that they are further haunted by a structural instability. And insofar as representations facilitate systems of power through claims of significance and meaning, they fill a role within and beyond the cultures in which they were formed.

[T]he ideological sign is always multi-accentual, and Janus-faced – that is, it can be discursively rearticulated to construct new meanings, connect with different social practices, and position social subjects differently …. Like other symbolic or discursive formations, [ideology] is connective across different positions, between apparently dissimilar, sometimes contradictory, ideas. Its ‘unity’ is always in quotation marks and always complex, a suturing together of
elements … it is always, in that sense, organized around arbitrary and not natural closures. (Stuart Hall, in Bhaba 1991c, 176-177)

This analysis equally applies to representations. The work of naming and of preservation, though itself a working of culture (Obeyeskere 1990), is generative of ramifying differences in response to new contexts that continually problematize representations of “identity” and “authenticity” in those very communities charged with the task of their preservation. In part this is because the representations which are used to mediate notions such as “identity” are bound up with power and control and are themselves inherently ambivalent. Representations mediate both identity and difference; they structure relational spaces of control, rights, and discourse. Their ambivalence structures these relationships of identity. They are doubly precarious because they are fashioned in response to a pressing need felt by parties on both sides of a given encounter to contain and frame otherness as such once and for all (Bhabha 1991b: 73).

Because I will be offering a critique of the ways in which groups and individuals mobilize rhetorical, textual, and visual forms of representation in the Buddhism and Science dialogues, I draw on the work of Western theorists who have shown how representations are structured by a similar failure or lack which marks them as sites of power. Representations are terms, concepts, or images and, as such, they are amalgams of other representations, each encoding values and beliefs about the world. Technologies of representation, in part, achieve their prominence in so far as they are able to represent themselves as being autonomous from (and thus free from the defects of) those histories and power differentials which mar the “objectivity” of other techniques and technologies of representation. For example, the recording of brain activation and electrophysiological data is said to be superior to the psychological self-report measures of the preceding generation of scientists precisely because it claims to remove the observer (i.e., the potentially self-deluding subject) from the analytic frame. Tellingly, such a position is
analogous to the claims made on behalf of photography as a medium superior to prose in providing an objective presentation of things as they are. The claim to such objectivity is driven by a cultural and disciplinary need for an objective basis or certainty to anchor the value systems of a given culture (Douglas 1966: 3); a need exacerbated, in part, by the problematics of representation as such.

According to Tagg, whose particular concern is the role of photography in systems of power, this problematic is exemplified in the ambivalence inherent to representation as such:

... [it is] the problem of representation to infinity that is the problem of representation as such ... there is no final frame of the real made present for us in the photograph. Representation, then, as Derrida would say, “in the abyss of presence,” not an accident of presence, for “the desire of presence is, on the contrary, born from the abyss (the indefinite multiplication) of representation, from the representation of representation, etc.” (Tagg 2009: 170)

Thus representations are not grounded in themselves, but depend on other representations and networks of meaning. Representations are always fashioned out of elements already in circulation; elements which are multiplied, reduplicated, reconfigured, recontextualized, each bearing the trace of the systems of power through which they came to have meaning. I do not here suggest that the “social misuse of representation [is] an essential property of representation itself” (Turner: 1995: 103). Such a position is itself a kind of “fetishism … obscuring or denying the possibility that representations may be made to serve liberating and empowering as well as oppressive and controlling practices” (ibid., 103). Nevertheless, because representations are historically contingent in character, fashioned in particular contexts from within particular

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2 For example, as I discuss in chapter three, the position that “cultural differences” are “in the brain” requires a series of representational steps: that the “brain” is the image we get from fMRI; that the “differences” seen in that image of “cultural” effects are more salient than the cultural practices and systems of meaning which purportedly produced those differences; the view of “culture” as being that which can be reflected in a dominant mode of expression, etc., etc.
perspectives, they are (as is every form of knowledge) structurally incomplete. Something will always be left out; some group omitted, some history obscured.

For example, the Dalai Lama is considered to be the political and spiritual head of the Tibetan people. And while he is quite inclusive of other traditions in the Tibetan community, those other lineages have other views, practices, leaders. Given the political and cultural devastation Tibet has suffered, many of these other lineages have been in support of the Dalai Lama being the “face” of Tibet in Exile. The Dalai Lama is a very important symbol given the present context, but as a representation of what it is to be “Tibetan Buddhist” it leaves much out. But this lack is true of every representation. It is this incompleteness which allows individuals and systems to shape and configure even so co-called “liberating and empowering” representations into mechanism of oppression and vice versa. Thus, representations carry within them the seeds of their own opposition; their ambivalent nature makes them permeable to further contingency and misuse. But it is also a source of its potential power. It may be that this ambivalence and permeability is part of what drives and enables the circulation and repetition of specific representations over time.

One aspect of the critique, then, consists in keeping to the fore that structural ambivalence, of not letting it be sutured over, reified, or authorized by use and habit. In this way, the anxiety provoked by the lack, by the insufficiency, and by the contingency of representations is mitigated to the extent that such incompleteness becomes central in our understanding of representation as such. Critique as praxis, therefore, concerns the discipline of not letting the complex history and multiplicity of contexts which sustain representations be erased or forgotten even as they are employed in contemporary encounters.
There can be no inevitable sliding from semiotic activity to the unproblematic reading of other cultural and discursive systems. There is in such readings a will to power and knowledge that, in failing to specify the limits of their own field of enunciation and effectivity, proceeds to individualize otherness as the discovery of their own assumptions. (Bhabha 1991b: 70)

Thus, if the ambivalent nature of representation as such is not also continually emphasized, the attempt to critically foreground representations carries, in repeating them and employing them in sites of contestation, the risk of inscribing them further in systems of power and subjugation.

In the chapters that follow, I hope to show how historical, religious, political, epistemological, and technological elements have been precipitated into forms of representation and mobilized by certain groups and actors at various points in the development of the Buddhism and Science dialogues. These representations were themselves further shaped by subsequent individuals who deployed them in strategic ways in contexts often radically different from their initial formulation and whose effects help to shape and condition the nature of their continued deployment and the Buddhism and Science dialogue today.

I suggest too that it is through the process of critique which I outlined above that scientists and Tibetan Buddhists in the dialogue will have the best hope of preventing unwanted effects and resonances emanating from their endeavors, while perhaps ensuring that those who can benefit will do so (namely, that suffering that may be eased, the attention brought to disenfranchised groups within the Tibetan community, etc.). Individuals and communities which are party to the dialogues can potentially use the ambivalence inherent in representation to their advantage; to alternately challenge and accede to certain aspects or registers of a given representation in order to rework the relations of power which structure it. Commenting on such renegotiation, Bhabha observes that
…. there is an agency that seeks revision and reinscription: the attempt to negotiate the third locus, the intersubjective real. The repetition of the iterative, the activity of the time-lag [between question and response] is not so much arbitrary as interruptive, a closure that is not conclusion but a liminal interrogation outside the [representation proffered] … through this time-lag – the temporal break in representation – emerges the process of agency both as a historical development and as the narrative agency of historical discourse. (Bhabha 1991c: 191)

This occurs through the renewed

…. seizure of the sign … there is… a contestation of the given symbols of authority that shift the terrains of antagonism … the social ordering of symbols have been displaced in a supplementary movement that exceeds those terms. This is the historical movement of hybridity as camouflage, as a contesting, antagonistic agency functioning in the time lag of sign/symbol, which is a space in-between the rules of engagement. (Bhabha 1991c:193)

Such seizures of representation and reinscriptions of agency, however, require that disadvantaged individuals and groups have access to the technologies and rhetorics which were formerly the sole province of colonial and dominant groups. For example, once those groups which had formerly been the object of the Western colonial scientific and administrative gaze come themselves to have use of those very technologies and systems, they may then turn that gaze back on to the West and the processes whereby it constructs representations.³ For example, indigenous groups are often portrayed in the West as “ecological,” and in touch with nature (Doane 2007). Such groups have been able to use that representation for purposes of marketing regional products and to critique and resist the appropriation of land and resources by companies and governments. If the West insists on seeing indigenous groups as ecological, then those

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groups should be the dominant voice, they argue, in discussions about what to do with the land
and resources, citing the West’s professed egalitarianism. Here the West is confronted with a
vision of itself being objectified via the same technologies and representations by which it
objectified others. At the same time, and in this process, these groups reconfigure their own
representations and those which had been imposed; they find new spaces to both contest and
affirm through a command and exploration of the technologies by which those representations
were fashioned:

…. as groups that had been the objects of Western media representations took
control of these media to represent themselves⁴, they shifted the subjective
angle of Western representation, and their consciousness of the nature and goals
of representation as practiced by themselves … [a shift which] applies as much
to a material shift in the nature of the object as in the conceptual position or
ideological perspective of the subject. Not only do groups who begin to
objectify their own identities through media such as video thereby transform
their identities in essential ways, but even more importantly, they shift the focus
of attention from what it is they represent…to the process of producing the
representation.

….the praxis of creating culture [mediates] in a double sense: connecting the
present reality of the group to its own past and future, and articulating its
external relationship to the dominant national or world (i.e., Western) culture
and society in which it is embedded. (Turner 1995: 104-105)

I suggest that the Tibetan monastic community, in participating in the science dialogues and
in opening the monasteries to instruction in science and technology, is at risk of reinscribing
certain registers of representations imposed upon it by the West. The West, in turn, is
reinscribing and renegotiating its relation to its own self-representation via Science. In this
dissertation I attend to the mutual process of this unfolding reinscription. It is a process in which
the West seeks a form of re-enchantment (Weber 1994) and, through science, an objective yet
ethically grounded mode of being in the world. And Tibetan Buddhists are concerned to bring
attention to and to preserve Tibetan culture, to spread Buddhism, and to modernize the exile

⁴ And, I would argue, not only media, but technologies and disciplinary rhetoric.
community in a way which allows it to preserve its traditional forms and values in the face of Chinese efforts to eradicate it. To do this, Tibetan Buddhism has had to shape itself to what is meant by “Buddhism” in the West.

However, I also contend that one of the limits of the current Science for Monks program is that, though it provides scientific literacy, there is very little actual scientific practice engaged in by the monks. The methods and the day to day practice and negotiations of doing science are not yet part of the monk’s training. I contend that until the actual doing of science is part of their training, the monks have literacy, but no parity in the dialogue. They are literate in a certain representation of science. And, if that is the case, what then does “dialogue” mean in such a context? Through historical analysis and ethnographic material, I show that while there are many practical explanations for why monks are not yet doing science (e.g., cost of equipment, funding, visa issues). I suspect that there might also be a resistance to the idea of the “monastic scientist” insofar as it goes against the grain of a certain class of representations about “authenticity,” “indigeneity,” and as we will see, “Tibetan Buddhism” itself. These representations, as I will show, have been kept in play for complex reasons by both Western and Tibetan participants in the dialogue.

To do this, I trace in the chapters which follow, the historical, political, theoretical, and economic threads which inform, shape, and sustain the representations which mediate the Buddhism and Science dialogue. And as the West works to alternately contend with and reify the images it has constructed of Buddhism, Tibetans involved in the Dialogues have themselves reworked those representations in ways which both play into and reconfigure colonial imaginaries (e.g., reconfiguring monastic education to allow for science instruction). In this respect, the “scientific” character of Buddhism marks the place where the West has been seduced
by its own desire for a ground of objectivity located outside the limits of representation as such.
In the same way, Tibetans have used and are using the ambivalence which structures the West’s representations of Buddhism to constitute an “agency … through the strategic use of historical contingency” (Bhabha 1991c: 191). For example, meditation as it is framed in the West is not something which is practiced by the majority of Tibetan monks, much less lay Tibetan Buddhists. However, meditation is the practice which structures or anchors nearly all of the dialogues which occur between Tibetan Buddhists and Western Scientists. Thus, the West frames the dialogue while Tibetan Buddhists use Western representations to secure other types of support (education, cultural, financial). The representations at play in the Buddhism and Science Dialogue mark it as a site of shared (though not equal) subjectification and self-fashioning, given that “the relations of knowledge and power … are always a strategic response to an urgent need at a given historical moment” (Bhabha 1991b: 73).

In what follows, it may be instructive if we conceive of Buddhism (as it has been fashioned in the present encounter as I am framing it) as a strategic formation. Buddhism is one specific kind of formation which has been a pivotal a foil in the history of the West’s ongoing attempt to represent to itself the power for representing which is called Science. In attempting to address Victorian-era concerns that science and technology were sacrificing what was spiritual and sacred in man in the name of progress, “Buddhism” was enlisted and fashioned into a system which was held to have both anticipated the findings of science and presented an ethical way of living with that knowledge; it bore the promise of re-enchantment. Furthermore, it did so without an appeal to a creator god or a soul, and so satisfied the reductive, materialist position which dominated the science of the time. The mass of gods, demons, hells, etc. that actually comprised the collected living faiths known as Buddhism, were explained away as corruptions and
accretions, or they were psychologized. Gods, demons, and hells were moved from the realm of myth and belief and taken for allegorical presentations of the workings of the mind. Put somewhat differently: one means whereby Western science has been able to ground itself as a system of objective representation is through the reification of such a contingent imaginary of Buddhism.

Here, it is important to point out the implications of this strategy of justification for the claim to objectivity made on behalf of the scientific image, the models and forms of presentation which scientists employ. Though such models have validity within a certain system or praxis, they share the fate of all representations and are permeable to a host of political, social, and historical effects as they are employed and transposed to other domains. For example (as I discuss in more detail in chapter three), Chinese scientists are able to claim to have uncovered a statistically significant variation in activation or morphology in a particular brain region among a subset of the population. Yet the social, political, and historical significance of that (purported) variation is shaped by a host of discourses which precede the study and which seek their justification in its findings. A claim to objectivity is thus revealed to always already have been embedded in an attempt to give material proof for a contingent, cultural ordering and valuation (Douglass 1966: 2). And even when scientific studies note the inadequacy of their findings (e.g., the limits of the study, number of participants, etc.) this does little to counter the attendant repressive and controlling effects. For, in the act of asserting itself and its flaws (the ritual acknowledgements of the limits of any given study) it does so within the framework of science and so does little to weaken the power of representations so framed.
Representations are most effectively deployed when groups or individuals succeed in erasing the traces of the contingent process of a representation’s construction (the interests and power that framed it) giving it thereby the appearance of “truth.” For Tagg

... the bad faith of Representation is tendentious, motivated, trompe l’oeil. Reality, outside all interest, present to itself, is given, unmediated, without representation, to the unfooled eye. We see the truth now. The careful rhetorical construction of the image has brought us to this point ... the image makes a play with representation only to release itself from representation’s limits, placing itself outside citation on a ground beyond dispute. (Tagg 2009: 113-114)

This play of the image, of representation, of the culturally contested and negotiated boundary of the scientific image and the rhetorical representations considered above has been cogently framed by Daston and Galison as the problem of “objectivity.” In what follows, I will consider their analysis of the notion of “objectivity” in order to illustrate the relevance of the general problem of representation to the problem of representation in science in particular.

E. **Representing Objectivity**

In their book *Objectivity* (2007), Lorraine Daston and Peter Galison trace the history of “objectivity” as it developed into an “epistemic virtue” in the practice of science and the functioning of disciplinary regimes. Daston and Galison (2007: 20-21) frame three historically sequential and dialectical moments associated with their understanding of this development: truth-to-nature, mechanical objectivity, trained judgment. Truth-to-nature is the idea that an imaged is true to the essential nature or ideal type of an object. Mechanical objectivity is to represent the object “as it is,” free from any trace of the means of its production. Trained judgment is the “smoothing” of data to remove “instrumental artifacts,” effects in the image or model produced by the working of the recording device. In large measure, this development
(Kuhn 1996) was conditioned by the invention of various technological forms—photography, histology, spectrometry—which, in the mechanical reproducibility of their effects, were taken to present objects free of the bias of the knower and immune from the material traces of the attempt to know (Frank 1988). By the late 19th century, to be a scientist meant to work to present the object of scientific research not as an approximation to some Goethean Urpflanze, archetype, or Platonic Ideal, but as it “really is” in all the “imperfections” of its actuality. The presentation of such “raw data” was fundamentally linked to the imaging technologies mentioned above and to yet nascent statistical and clinical trial practices. Results were codified in atlases and monographs and circulated among learned societies, administrative officials, and a growing consumer public avid for such displays and accounts (Daston and Galison 2007).

But in the presentation of this endless variety of “things as they are,” scientists and the public were confronted with the need to order this multiplicity. In the attempt to find the principle whereby such variety and variance could be ordered, concerns about judgment and the role and place of subjectivity became increasingly paramount. At the end of the production of supposedly raw data, the disciplines found themselves once again thrown back upon interpretative strategies in order to make the growing mass of data intelligible. Further, as goods and objects made their way from colonial domains into Europe, the question of their categorization, and even anomalousness, became a source of pride, wonder, and anxiety about the epistemic completeness of Western science (Breckenridge 1988). Exhibitions, such as the Crystal Palace and World Fairs, came into being at about this time in order to engage the public in the spectacle of the object. This object, though it may defy immediate scientific taxonomization, was nonetheless secured as an object within trans-global transactional systems shaped by industry of the “scientific and entrepreneurial” European (Barringer 1998).
It is in this context that scientists began to search for discursive ways of framing their growing recognition that judgment and intuitive process must play a part in the work of scientific discovery and the presentation of data. Daston and Galison suggest that this shift occurred at the end of the 1800s. This shift should be understood in relation to the fact that much of the statistical, anthropometric, carceral, and ethnographic materials which were being drawn on in Europe were shaped though colonial administrators and thus served as testaments to the power of their administrative and practical science. Ultimately, such a mass of “raw” data witnessed against itself, generating a mass of objects whose variety required judgement to classify, and so introduced the anxiety of subjective influence again (Metcalf 1997, Pinney 1997). While I explore these developments and their effects more fully in chapter three, it is important to note that, as we saw with representations above, scientists still appeal to method and the objectivity of their instrumentation to cover over the historical and cultural dimensions of the ways in which they frame and interpret their objects.

In trying to understand this complex engagement and how it relates to the problems of representation at work in the Buddhism and Science dialogue, I recall Weber’s (1977) discussion of the question of the possibility of objectivity and what the term actually means for science. Weber directs science to attend to its own activity and limitations. He remarks that scientists try to pull out from the myriad and multitudinous forms and processes of the relentlessly unfolding universe those features upon which they seek to anchor notions of causality, value, and formation. In their success, scientists forget that they alone, responsive to a whole host of concerns which have little to do with notions of “objectivity,” have set the conditions and set the thresholds for what is salient.
F. *Lost Horizon*

It has become almost obligatory: no introduction to a reading of the West’s troubled fascination with Tibet can be considered complete without some mention of James Hilton’s 1933 novel. *Lost Horizon* employs a ramified conceit to tell its story: an unnamed neurologist reads the tale of a man he once knew. This man – Hugh “Glory” Conway – had, in the intervening years, been overcome by “battle fatigue” (akin to what today would be called Post Traumatic Stress Disorder). Conway delivered his story piecemeal during a journey with a novelist friend named Rutherford, who took notes and subsequently wove these episodes into a narrative.

Previous commentators on the novel have focused on the cultural impact the novel has had: bequeathing Shangri-La to the popular imagination and the lore of Tibet; inspiring more than a few explorers to attempt to find the Valley of the Blue Moon over which the Monastery Shangri-La was said to have perched. In particular, Donald Lopez, Jr’s 1998 *Prisoners of Shangri-La* placed significance on the manner in which certain “facts” about Tibet including art, literature, religion, and politics get reworked in the West in some rather predictable ways. Lopez explores how certain cultural projections seem to resurface generation after generation among radically different scholars and contexts.

However, it is rarely observed that the “lamasery” Shangri-La itself had been abandoned by Tibetans long before the events of the story unfold. At the time of the novel’s story, the lamasery is run as a kind of retreat for the lumpen clerisy (Coleridge 1830) and is headed by a Catholic priest from Luxembourg. This ancient Capuchin priest, now the High Lama, stumbled into the valley of the Blue Moon and found an ancient lamasery existing then on this same mountain shelf, but it was in a state of decay both physical and spiritual … and conceived the idea of setting upon the same magnificent site a Christian monastery … [out of] pride in his
own Faith [he decided] that if Gautama could inspire men to build a temple on the ledge of Shangri-La, Rome was capable of no less. (Hilton 1933: 142)

In this monastery individuals are preserved (in body and mind) through a mix of herbs and breathing exercises. We are told that only rarely are Tibetans admitted; the European races seem to thrive best in the environment the priest has created in this enclave of nowhere (Hilton 1933: 157). From his hidden domain in the East, the abbot predicts Americans, exemplified by a specimen case found in a member of Conway's company – the boorish businessman Barnard – will do even better. The aged European “High Lama” asks “Glory” Conway – the battle weary traveler brought there by a fantastic series of events – to take his place.

Thus, the novel presents us with a story of a remote place wherein lies a structure, founded by Tibetans but redeemed by the West for the purpose of redeeming the West.

I also find uncanny, given where we are in history and how the Tibetan Buddhism and Science dialogue has actually developed, the device through which the story is told: we, the readers, are reading over the shoulder, as it were, of a neurologist who is receiving a bed side report from a novelist about a man frayed by ravages of trench warfare. Throughout, we are complicit (reading with the neurologist), we are credulous (because of Conway’s suffering and sacrifice), and we are skeptical (insofar as it is a novelist who served as amanuensis of the subject). It reads like a detective story or case report; we look for clues to its falsity, holes in the reasoning, inconsistencies and improbabilities. We find that – having once granted the improbability of the encounter – the story draws us in.

But consider too Hilton’s (oddly prescient, given that it was psychologists were then at the fore of the “psychologization” of Buddhism) device of the neurologist. For, in the decades which were to unfold after the publication of the novel, scientists, psychologists, and especially
neuroscientists were to become central in sustaining and rearticulating the image of Tibet and Tibetans to the West under consideration here. Having shaped a representation of Tibetan Buddhism as a psychological science and not primarily as a religion, it became possible for neuroscientists to continue earlier colonial era representations of “Buddhism as a science” to help underwrite Western social and clinical interventions. However, such a representation also opened a space for Tibetans Buddhists to bring attention to their culture and to adapt it in a way where what is “traditional” is brought into dialogue with modernity, as opposed to being simply swept away. The implications of this – for both Tibetan Buddhism and Western science – will be considered in this dissertation.

These logics and images I aim to interrogate in the pages which follow, aware of the reader who will one day read over this reader’s shoulder and of the recursively unfolding encounter between Tibetan Buddhism and Science.
II. BUDDHA WAS A SCIENTIST

A. Orientalism and the trope of the “scientific”

Scholars have noted the many ways in which certain historical encounters have given rise to contexts which helped frame the contemporary portrayal of Buddhism as “scientific,” as opposed to being merely a “religion.” Donald Lopez and others have worked to draw attention to the whole complex of representations of Buddhism in the West – the “Scientific Buddha” (Lopez 2012) among them – examining how they were fashioned in the context of larger cultural discourses and imaginaries (Anand 2008, Bishop 1989, Huber 1997, Klieger 1997, McMahan 2015). In my research – particularly through the two ethnographic studies which comprise the central chapters of this dissertation – I want to focus on the situated negotiations of such representations as they play themselves out in labs and monasteries. I will also explore the messiness and the excess which these general representations have in relation to other domains and activities, as well as in the ones they are supposedly governing.

Lopez’ 1998 book The Prisoners of Shangri-la did much to bring to critical consciousness the seemingly contradictory views which had structured the West’s fascination with Tibet and within which the Buddhism as science is embedded. Lopez describes how Tibet has been portrayed alternately as pure and polluted. On the one hand, it was a backward and repressive feudal kingdom ruled by authoritarian metempsychotics. On the other, it was the peaceful roof of the world where the innermost secrets of the human mind had been laid bare and operative by noble nomads. Lopez disentangles the complicated histories which sustained each of these representations of Tibet. To be sure others had – and since have – pointed to the persistence and power of these conflicting images and the way they circulate in popular and academic culture (Schell 2000). But what makes Lopez’s book so important for what I am to
consider here is his contention that such images are sustained by a perceived lack or deficit on our own part (Lopez 1994: 39).

Lopez maintains that it is the Tibetans who are the prisoners given that they must delicately tread this balance between being perceived as Enlightened and/or polluted. But it seems that Lopez’s notion of “imprisonment” itself is built on a perception of the Tibetan as having little or no say or agency in constructing the image. In some ways, his analysis re-inscribes the top-down, West-to-East rhetoric and fantasies of domination, blinding us to the ways in which such representations were co-constructed, albeit within existing power differentials, in ways that often exceed their target and generate undesired effects. While Prost (2006) and others have shown that such tensions as Lopez cites do exist, such a situation is not unique to Tibet’s case and is shared by other groups struggling with modernization (Doane 2007). For example, being “rich” and a refugee troubles community expectations and the fantasies which underwrite the ethics of international and economic support.

What does seem significant in the case of Tibet is that, under the leadership of the Dalai Lama and his involvement with Western scientists, an enormous number of people and dollars have been mobilized in relation to the cause of Tibet. Tibetans participate and actively work to nuance the set of representations in circulation. Of course it could also be argued that it is the Tibetan people who are the prisoners of this limited set of representations; imprisoned not only by the West but by the Tibetan religious and governmental elite themselves. Are the elite are the

5 It would seem, too, that Tibet’s policies played into the image of Tibet as a region both primitive and profound through the restriction of movement across its borders, lack of standing army, its sizable monastic population, and the “priest/patron” relationship Tibet secured and maintained since 1276 (primarily with Mongolia serving as protectorate; Kvaerne 1984: 261-262). These material conditions were framed by the West in accord with a strategy of representation that sought to keep secluded Tibet as a place holder for an “otherness” against which the West defined itself.
only ones who stand to benefit from such representations, pursing their own goals through the propagation of the image of Tibet as exclusively Buddhist? Some may argue that only a small contingent of Tibetans benefit from representing Tibet as being dominated by one lineage. Indeed, there are many differences, tensions, and histories within both lineage and region of what is broadly known as Tibetan Buddhism. At times, these differences are obscured by such a limited (and, Lopez argues, historically recurrent) set of representations. As we will see, these differences and tensions are hard to contain even in exile, where refugee status and the exigencies of exile would seem to speak to the need for a unified front. However, the logic of cultural preservation which underwrites the unified presentation of Tibet as Buddhist generates a tension. For, to claim such a unified front is necessarily exclude differences others within the community deem salient. We would expect in such instances a resistance to attempts which would obscure the differences within Tibetan Buddhism itself and threaten the loss of those differences which are Tibetan but not Buddhist; a resistance which may be conceived in relation to the threat of such an imprisonment through representations of “authenticity” as Lopez contends.

However, we will also have occasion to track other representations of Tibet and Tibetan Buddhism. In one instance, Tibetans are perceived to manifest a peaceful and psychologically advanced culture which is being overrun by the murderous and mechanistic Chinese government. In another instance, Tibetans are guardians of ecological insight and as bearers of a technology permitting analysis and control of the mind. It is this last representation which I will most concern myself with in what follows.
B. Tibetan Buddhism and Science

When the Dalai Lama first visited the U.S. in 1979, he gave Harvard University researchers permission to study the effects of meditation on the brains of Tibetan monks (Harrington 2008). In the decades since, research into the physiological effects of meditation has been steadily on the rise (see Fig. 1). Today, researchers seek an understanding of the relation between practice as techniques of focused attention and “plasticity,” an index of the brain’s susceptibility to short- and long-term structural and functional changes induced by those practices (Davidson et al. 2003, Davidson and McEwen 2012, Lutz et al. 2007, Wallace 1999, Xiong and Doraiswamy 2009).

![Number of publications](image)

**Fig. 1** Results reflect the number of clinical research articles as of April 15, 2016. Figure obtained using the search term “meditation” in the Web of Science database. This graph was produced only 3½ months into 2016 and the number of publications already exceeds what was done in 2006.

But there is a history behind this recent encounter. Anne Harrington (2008: 232) contends that this most recent wave of research in brain science was from its beginnings deeply intertwined with political and ideological concerns. In Europe and America, early technological
investigation of the brain was buoyed by countercultural interest in the quantifiable effects of psychotropics, neurolinguistic programming, yoga, and meditation. Concomitant developments in computerized imaging and scanning were beginning to make it possible to register the activity of the brain without having to open the skull. Early research efforts examined the relationship between brain function, mood, and stress. However, in the absence of theoretical models which could capture the attention of funding institutions, it was difficult to get the support necessary for researchers to begin generating results robust enough to make compelling and convincing claims.

This situation began to change in late 1979 with the Dalai Lama’s aforementioned first visit to the United States. Previously, Western academic’s views of Tibetan culture reflected a deeply critical view of Tibetan Buddhist religion and even an ambivalence concerning whether it should even be identified as Buddhism (Almond 1988, Kaschewsky 2001). Nevertheless, Tibet did occupy a unique place in the cultural imaginary of the West (Anand 2008, Bishop 1989, Schell 2000), a fact given a particular valence as the Dalai Lama sought international attention to the ongoing struggle in Tibet (Goldstein 1997: 83). Political unrest in Tibet, the new diplomatic and trade relations between China and the U.S., and the historical vagaries and controversies surrounding the nation-status of Tibet itself all served to strengthen Tibet’s hold on the cultural imaginary. However, the U.S. refused to grant the Dalai Lama a state visa which would have required it to diplomatically recognize Tibet as its own sovereign power. Instead, the US granted the Dalai Lama permission to visit as a religious figure (Harrington 2008: 231).

During his tour, the Dalai Lama took the opportunity to visit several universities where research into the neurophysiology of meditation was already underway. The impetus behind this first phase of meditation research had been spurred on by the efforts of the Transcendental Meditation (TM) movement. TM, a system of mediation loosely derived from Hindu practices
and which fueled much of the counter-cultural interest in meditation, was beginning to encounter cultural resistance in the West. This reassertion of dominant cultural forces and values occurred in large part due to the excesses associated with the American encounter with guru devotion and fantastical claims of unusual powers developed in the course of meditative practice (Urban 2000). Though Herbert Benson had made scientific studies which substantiated some of the claims that meditation reduces stress and promotes relaxation (Benson et al. 1982), association with TM was becoming professionally risky. With the arrival of the Dalai Lama and Tibetan Buddhism, researchers were able to avail themselves of a meditative tradition that had public support, captured the imagination, and made explicit physiological claims about which it was open to having tested.

But what did Tibetan Buddhists stand to gain from such an association? The Dalai Lama recognized that scientific research on the benefits of Tibetan Buddhist meditative practices presented itself as a non-political way to discuss why Tibetan culture and Tibetan Buddhism would be worth preserving. In the Dalai Lama’s view, “Buddhism is more than a religion. It is a science of the mind.”6 Within Tibetan Buddhism, there was ample textual material which provided an account of phenomenological, physiological, and behavioral outcomes said to co-occur with having gained skill in meditation. It is this feature which made it possible that Tibetan Buddhism should appear to be operationalizable in the laboratory. Furthermore, turning their attention to Tibetan Buddhism helped scientists distance themselves from earlier studies of TM and its claims of extraordinary feats and powers.

Subsequently, Tibetan Buddhism was also identified as having an emphasis on practices that were said to increase one’s ability to behave with compassion, both on and off the

meditation cushion. In a world still moving uneasily beneath the shadow of the Cold War and unwilling to let go its hope for peace and a resolution of world conflict, Tibetan Buddhism spoke to prevailing anxieties in a way in which Zen, Theravadan (Vipassana), or Hindu traditions already circulating in the West did not. Today the belief that Tibetan Buddhism uniquely emphasizes compassion and that it is eminently operationalizable and practicable underwrites much of the rationale behind the ongoing research engagement at Davidson’s Lab and other institutions.

Arguing that the scientific study of the mind could be furthered by the models embedded in Tibet’s meditative traditions also went some way to providing an answer to the Dalai Lama’s question of how to modernize Tibetan generally and monastic education specifically. Today, the Dalai Lama’s efforts have given rise to both the Mind and Life Institute and the Emory-Tibet Partnership, both dedicated to neuroscientific research in dialogue with Tibetan Buddhist meditative practice (Ram 2007, Samphel 2011). Further, the Dalai Lama responded to the prevailing concern of both scientists and lay alike to emphasize practices drawn from a range of Tibetan lineages which emphasized the link between meditation and the development of compassion. Not only did this harmonize with his position of non-hatred and non-violence with respect to the Chinese, it also led a generation of researchers to investigate the neurological underpinnings of the relation between social and affective capacities (Davidson and Harrington 2002, Ricard and Thuan 2001, Varela et al. 1991, Wallace 2003).

Following his visit to the labs at Harvard, scientists requested that the Dalai Lama give his permission to researchers to approach monks in retreat in order to study the effects on brain physiology of long term meditative practice (Harrington 2008, Bstan-’dzin-rgya-mtsho et al. 2006). Despite his lifelong interest in Western science and technology, the Dalai Lama was
initially quite reluctant to grant this permission. Monks in retreat are engaged in a soteriologically driven disciplinary practice upon which hinges the question of their Enlightenment and the release of themselves and others from the bondage of an illusory existence full of suffering. Disturbing them for purposes which were alien, if not antithetical, to their committed way seemed both frivolous and dangerous. Further, as the spiritual head of Tibetan Buddhism, the Dalai Lama felt that it would put the monks in an awkward position to ask this of them. Monks might feel compelled to participate and this in turn may have adverse effects on their meditative endeavors. However, upon further consideration of the dire situation in Tibet and recognizing that research in meditation and neuroscience was the least political way to bring attention to the violence within Tibet and the plight of the Tibetan people in exile, the Dalai Lama eventually approved the effort. However, he left it to individual monks to decide for themselves whether or not to participate in the research (Davidson and Harrington 2002, Bstan-‘dzin-rgya-mtsho et al. 2008).

This was an important and politically astute decision. The U.S. was in a precarious position with respect to China and the opening of trade barriers and cultural exchange. Despite extending quiet sympathies, the government could do little to help Tibet, especially after the failure of the CIA sponsored resistance in Tibet. However, the populace could offer their attention, their money, their critique, and support. By linking the cause of Tibet to the Western fantasy of a rapprochement between science and spirituality, the Dalai Lama could generate support without violating his promise to operate in the U.S. as a religious and not a political figure. It is also important to note that the Dalai Lama’s granting permission to scientists did not give scientists carte blanch to do what they wanted nor did it override the imperatives and concerns of the monks the scientists were to approach. The Dalai Lama is not a “Pope.” Other
than voicing a wish and perhaps generating a desire to please, it remained in the monks’ purview as to whether or not to participate. Sanctioning by the Dalai Lama may also have given participating monks a further venue for gaining spiritual merit.

Initial attempts to go into the foot-hills above Dharamsala to conduct research were less than successful. When a team of scientists undertook the study of long-term Tibetan monastic meditators in the early 1990s, the equipment was far too bulky and the data obtainable was not fine grained enough. Further, the monks who were approached at first replied in a very self-effacing way: *What do I know? I am but a novice, perhaps elsewhere there is someone worthy.* The scientists persisted, and the monks responded that if they wanted to study compassion and meditation, the scientists should join them in meditation for a few years (Davidson 2015 personal communication; see also Houshmand et al. 2002).

One of the scientists in that initial party – Richard Davidson – today heads the Center for Healthy Minds in at UW-Madison (formerly, Center for the Investigation of Healthy Minds). A pioneer in the neuroimaging studies of meditation, Davidson was later able to study Tibetan monastics in the lab, running them through a battery of fMRI and behavioral tasks. Davidson remains a key figure in the shaping of not only the West’s perception of meditative practice but of Tibetan Buddhism as a distinctive science of the mind. Because of the distinct neural signatures of advanced practitioners who focus on meditative practices which are designed to promote compassion and selflessness (Lutz et al. 2004), Tibetan Buddhist meditative practice is seen as compatible with rigorous research. In addition, secular dissemination of and training in compassion and selflessness is seen as being ideally suited to our global predicament. This discursive framing or “representation” of Tibetan Buddhism as being wholly amenable to science
and as fundamentally ethical and rational beyond all other religions, structures much of the dialogue between Buddhism and Science.

Many scholars have pointed out the historical encounters which have given rise to and sustained representations of Buddhism as “scientific” and it is my goal to bring an anthropological perspective to this debate and to trace how the these representations are deployed in specific encounters and contexts. I will show how these targeted deployments have radically unintended consequences in contexts (such as neuroimaging research in China) which do not share the same histories or politics, though they participate in the same globalized information and research exchange networks. I also consider the risks involved in efforts to valorize representations of “Buddhism as science” which do not simultaneously consider the counter-representations which sustained their historical origin. This last analysis will be conducted in the vien of Spivak’s (1988) *strategic essentialism* and Abu-Lughod’s (1991) *reverse Orientalism*.

C. *From the colonial to the global*

The carceral, economic, and administrative practices of colonial and neoliberal projects shadow heavily the question of representation as it has been posed in anthropology. It is this “shadowing,” which I want to explore below and in the following chapter. I want to examine the ways in which the very notion of representation is itself haunted by a logic of the double-bind. Crafting, deploying, and maintaining representations of shared histories and identities are necessary as individuals and groups seek to mobilize support networks and to leverage rights discourse. But these same representations can be used against said groups in different contexts. They can be linked to different histories differentially across race, class, and gender and are
themselves often rooted in violent and repressive encounters which were, and continue to be, constitutive of multiple representations. Furthermore, representations cannot be changed or deployed without in some way changing or threatening the other’s representation of themselves.

Scholarly, medical, and administrative practices often work to guard against such slippage and contestation by appealing to textual findings and crafting discipline-specific strategies and instrumentation. Through an analysis of the translation of texts and the deployment of instrumentation we can read the trace of agendas crafted to frame and tame the encounter with an other (the encounter with the limits of self-representation perhaps). Such agendas underwrite the disciplinary efforts whereby groups are subsequently framed within an homogenized otherness. In such instances, textual and technologically mediated representations become ways of subsuming variance and ambiguity, of administratively fashioning a population, and providing political rationale for policy and intervention.

Thus, arguing for historically grounded or homogenized groups on either side of the encounter is always a claim in support of some political imaginary (Anderson 2004, Sugirtharajah 2003). Such agendas betray themselves in the logics governing the selection among the variety of factors and forces available. Factors which intersect in ways that could be characterized as ramifying or reformist, complicit or resistant depending on the contexts of power framing particular acts and policies. Thus, choices at one point influence the set of possible representations and fields of deployment in another.

Such textual mechanisms and political appeals have also underwritten missionary and colonial administrative encounters with Buddhism. The Oxford English Dictionary puts the first occurrence of Buddhism (or Buddhisme) in Volney’s 1800 Lectures on History.7 “Lamaism” had

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been reserved for the particularly Tibetan inflection of what was becoming known as Buddhist practice makes its first appearance in England in 1751. By 1816, its followers were characterized by the Foreign Bible Society as “gentle, but deluded.” By 1822, the physician John M. Good characterized their places of worship sites of “cruel and senseless penances and punishments” (as quoted in the OED). 8

And yet, the European encounter with Tibetan Buddhism preceded these scholarly formulations by over a century. In 1624, the Portuguese Jesuit Antonio de Andrade traveled to Tibet and reported in detailed travelogues on the piety and religious customs of the Tibetans wherein he recognized many similarities with his own Catholicism (Kaschewsky 2001: 5). Considered with wonder in their time, a little over one hundred years later, his accounts were decried as “lies and fantastic inventions” (Kaschewsky 2001: 5). This proximity of Tibetan forms of Buddhist monasticism to Catholic monasticism were initially hailed as cause for brotherhood and recognition of a common source but were later seen by Protestant Victorian commentators as something to be maligned. Acknowledging the similarities, some saw them as the work of Satan, that “…the author of evil had induced these pagans to imitate the manners of holy mother church, in order to expose her ceremonies to shame” (Medhurst 1838; quoted in Almond 1988: 124). Still others divined the work of a tellingly modern incarnation of the Evil One, declaring that “Romanism is Buddhism prepared for a foreign market – Buddhism adapted to a western civilization” (Dubose 1886; quoted in Almond 1988: 124).

These critiques were part of a larger Protestant Victorian era critique of all forms of monasticism (East and West) as being populated by individuals described as dull and degenerate: 

As Almond notes in the The British Discovery of Buddhism:

The image of morally bankrupt Buddhist societies was further reinforced, in Victorian eyes, by the presence in Buddhism of the monastic ideal. In part, we may put this down to an anti-Catholic bias in Victorian society. But in particular, it has its roots in the Victorian gospel of work. Buddhist monasticism was seen as pre-eminently selfish and anti-social. (Almond 1988: 119)

The monastic elements of exclusion, poverty, and meditation – were seen, in the words of one commentator, not to develop the mind but served to “contract it almost to idiocy.” Almond suggests that “The use of words like ‘indolence’ and ‘idiocy’ signals the failure of the Victorian writer to come to terms with a passive element in religion that contrasted so much with their more active, ‘muscular’ vision of the Christian life” (Almond 1988: 122).

So how did Buddhism come to be the redemptive framework needed by the West? Almond posits that “during the Victorian period, there developed the assumption that human nature is essentially secular, and therefore, that religions…are essentially opposing addenda, the value and truth of each of which merit analysis and argument” (Almond 1988: 139). Alongside this positioning, Almond argues that there was also a disciplinary shift in framing Buddhism as “an object which was instanced and manifested ‘out there’ in the Orient, in a spatial location geographically, culturally, and therefore imaginatively other” (Almond 1988: 12). Buddhism became

an object the primary location of which was the West, through the progressive collection, translation, and publication of its textual past. It had become a textual object, defined, classified, and interpreted through its own textuality. …the essence of Buddhism came to be seen as expressed not ‘out there’ in the Orient, but in the west through the West’s control of Buddhism’s own textual past. (Almond 1988: 13)

Victorian scholars noted that such a move – locating the “truth” of Buddhism in the texts which they possessed rather than the living traditions – was valid in as much as Buddhists themselves
seemed to be unable to give an account of their variety serviceable for knowledge production. However, to effect this unity of “Buddhisms” they encountered, scholars posed an essence, an Ur-form, a core which waited like a seed for ripening through centuries and varieties to be recognized by the West. For example, Edward Upham in his 1829 *The History and Doctrine of Buddhism (sic)* maintained that

> without assuming any pretention to an intimate or thorough knowledge of Budhism … the complex and even chaotic elements of that system, the conviction has powerfully struck my mind, and become an essential point to state, that in Budhism there is mixed up a germ of intellectual motion, ‘a seed not swallowed up and lost in the wide womb of uncreated night’, which speaks of moral responsibility, and responds to the realities of eternity… (Upham, quoted in Almond 1988: 14)

Thus, the first text in English to reference Buddhism in its title bases its authority on a “conviction” projected onto a representation of Buddhism – a projection which prides itself on having separated the wheat of truth from the chaff of practice. Of special note is that this “seed” is defined as a unique and foundational “moral responsibility” around which Buddhism is said to cohere (a notion that reappears, I argue, in the contemporary idea of “basic goodness” discussed in chapter six below). Upham articulates many of the themes which we will encounter throughout this exploration: *Buddhism* as a system which is more significant as a conceptual framework rather than a set of practices rooted in a community; the moral foundation or “secular ethics” around which *Buddhism* is said to cohere; and the need and ability of Western forms of knowledge – including philology, psychology, neuroscience – to parse and reveal the “truth” of Buddhism from the distortions of culture for the good of the West (or the world as envisioned by the West).

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9 And it is here, in defining itself as a Science and less a Religion that Tibetan Buddhism has been able to enter into the production of knowledge.
Tibet, too, occasionally figures in these early characterizations of Buddhism: “the religion of Thibet, from whence-ever it sprung, is pure and simple in its source, conveying very exalted notions of the Deity, with no contemptible system of morality; but in its progress it has been greatly altered and corrupted by the inventions of worldly men…” (Pringle 1777, quoted in Almond 1988: 13). Here, as with Upham’s Buddhism, the religion of Tibet is both “pure and simple in its source” and “greatly altered and corrupted.” This mystery religion “from whence-ever it sprung” is taken to have its chief expression in its “notions of Deity” (a claim that has not been a significant part of the subsequent discourse about the “suitability” of Buddhism for a scientific and secular modernity) and in an admirable moral system. Present here again are two key tropes which animate contemporary discussions about the compatibility between Buddhism and science: the religion of Tibet presents a foundational system of morality, and men have tried to obscure this truth beneath a mass of superstition or speculation and which it is the researcher’s duty to sweep away.

In this way, it is the West which “developed the discourse within which Buddhism was circumscribed…and determined the framework in which Buddhism was imaginatively constructed, not only for themselves, but also in the final analysis for the East itself” (Almond 1988: 140). Thus, in constructing the opposition of the Eastern versus the Western mind, the Victorians constructed Buddhism, a disciplinary object whose interpretation became a method by which the West would try to work out its own concerns about itself (cf. Almond 1988: 141).

So how is it that Buddhism and Tibetan Buddhism in particular came to be framed as consonant with an empirical science of the mind?

The representations “Buddhism as a science” or, alternatively, “Buddha was a scientist,” have been linked to the effort of Sri Lankan Theravadan communities to distance themselves
from other regional religious groups. In this they also sought to establish national identity, and
parity with Christians and Humanists in colonial contexts (Droit 2003, Lopez 2008, McMahan
2015). Significantly, as early as the 1830s, Europeans had begun to make claims that Buddhism
was compatible with science. They observed that some Buddhist notions, like the minuteness of
the particles of matter and the causal effects of material processes, anticipated the findings of
modern science and provided way of thinking through the implication of then recent discoveries
(Lopez 2008: x). Sri Lankan (and later Japanese) representatives eagerly entered into debates
with missionaries as early as the 1870s. These representatives did so in order to signal to the
West that, in adopting science or presenting Buddhism as “science” Asia was not in need of the
kinds of colonial intervention which sought to civilize or modernize the region.

Additionally, representatives from both Buddhism and the West debated amongst
themselves and with each other whether to even define Buddhism as a religion. It was thus
posited that it be considered a philosophy of life, a claim which gained further momentum at the
1893 Parliament of World Religions held in Chicago. Buddhist representatives claimed that,
unlike Christianity, Buddhism was compatible with modern science. These representatives
argued that Buddhism had insight into Darwinian natural selection, albeit indirectly through the
law of karma and dependent origination. Because grounded in a “scientific worldview,”
Buddhism could never be guilty of the kinds of opposition witnessed in Christianity’s reaction to
Galileo, Gordano Bruno, or – much later – John Scopes. Such arguments made Buddhism
palatable to progressive Western audiences. 10

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10 For Lopez (2008: 146): “An attraction for Buddhism to European intellectuals during the
Victorian period was that it presented an ethical system that did not require God, yet somehow
seemed consistent with Darwinism…Karma took the place of divine reward and retribution, and
in the discourse of Buddhism and Science, Karma would be described as ‘natural law’.” Even
today, David Barash can write (in a summary of his book Buddhist Biology penned for
One key speaker at the Parliament, Dharmapala, talked of Buddhism as a tradition rooted in a deep and basic insight of humanity. Dharmapala clothed the Buddha in the garments of the progressive elites of the time who had begun to trouble the logic of Empire and the restrictions against universal suffrage. He envisioned a more equitable distribution of resources and opportunity (McMahan 2015). Dharmapala himself stressed an onward and upward progressive message: even as life moved from simple to complex, so the universe, through the cause and effect which governs the heart and spirit, moves upward to moral perfection. It is not difficult to see the appeal of such a message. It is a message that repeats itself even today in the idea that technology and the flow of information are harbingers of equality, that the tearing up of old ways gives birth to the new.

It is important to note that Dharmapala was of a wealthy Sri Lankan family, fluent in English and British educated. Obeyesekere (Gombrich and Obeyesekere 1988) has labeled his approach that of “Protestant Buddhism.” Others see him as a prime example of what is now being called “Buddhist modernism” (McMahan 2015). This means that on one level, the representations of Buddhism as rational, scientific, and textually grounded were mobilized in global contexts as part of an effort to secure a legitimate and independent Buddhist states. On another level, “Protestant Buddhism” articulated ideals such as the freedom of conscience and the importance of interior experience in contradistinction to the centrality of authority and

*Psychology Today*: “Buddhists talk about “mind-streams” coursing through innumerable generations; evolutionary scientists talk about genes doing the same thing. … Evolution – the fundamental biological process that generates and is defined by physical continuity over time – is thus nothing but a highly specified process of transmitting a kind of gene-based karma.” https://www.psychologytoday.com/blog/pura-vida/201312/karma-is-natural-natural-selection. However, the Dalai Lama has cautioned that “From the Buddhist perspective, the idea of these mutations being random events is deeply unsatisfying for a theory that purports to explain the origin of life” (Bstan-‘dzin-rgya-mtsho 2005: 112).
tradition. Such a representation of Buddhism was deployed as a way of garnering broad appeal in the West through a focus on compassion and social engagement and individual freedom.

The Japanese case for the importance of Buddhism on the global scene was nuanced a bit differently, as McMahan points out in *The Making of Buddhist Modernism* (2015). McMahan quotes the Japanese Buddhist philosopher Inoue Enryo:

> [E]veryone knows that we must look to the west to supply models not only for all kinds of commodities and utensils, but also for models of government, law, the military system, education, the physical sciences and technology. However, there is one thing Japan can transmit to foreign countries and win fame: that thing is Buddhism. (McMahan 2015: 121)

Arguably, such a representation parallels and supports the “Buddhism as science” representation. Here, Buddhism is the antidote to imperialism and to the West’s secular angst born of Weberian disenchantment (see also, McMahan 2015). Buddhism is thus presented as the West’s ethical and rational compliment.

Thus, for scholars like McMahan and Lopez, *Buddhist modernism* (the larger frame in which they see the “Buddhism as science” discourse unfolding) *articulated itself as an answer to those points of anxiety, unease, disbelief and disenchantment by which the West itself was troubled*. What I wish to underscore is that Tibetan Buddhism – which draws on these earlier representations – was quite different in many important ways from the religion of those who made the preceding claims. Theravadan and Japanese Buddhism made the rather misleading claim that they were free of the hells and earthly hierarchies which made so many other religions a bane to human existence. And while it is an open question as to the degree to which any set of lay believers were versed in these levels and their nuanced rules and representations, it is manifestly the case that such things are quite prominent in Tibetan Buddhism. Additionally, there is a whole metaphysics of incarnations and empowerments which should trouble
materialists and progressives alike. And yet, Tibetan Buddhism has been able to successfully mobilize the “Buddhism as science” representation within the historical tension of its own specific colonial encounter. This representation is sustained and reinforced by the fact that advanced neuroscience and medical laboratories have increasingly drawn on its “traditional” practices to shape research agendas (Davidson and Lutz 2007, Janes 2002, Pordie 2008). Consequently, the effort to frame Tibetan Buddhism in particular as a science of the mind is, in many ways, a unique development within this encounter between Buddhism and the West. How Tibetan Buddhism went from being imagined as the least rational form of Buddhism to the one most compatible with modern science is one of the central themes of this dissertation.

But what exactly was the Orientalist framing of Tibetan Buddhism against which this science discourse developed and how did Tibetan Buddhism come to dominate the recent “Buddhism as science” discourse? This deserves our attention when we consider that Tibetan Buddhism is in some respects so unlike other forms of Buddhism that early scholars had identified it as Lamaism: a mix of indigenous shamanic practices with a Buddhist overlay. However, it is also the case that in Tibet texts once thought lost to the ravages of time and pillage were preserved in original and translation. A panoply of gods and daemons and a multitude of heavens and hells coexisted alongside a subtle and sophisticated philosophical discourse through which it was possible to amend and reconstruct the numerous South Asian texts on which they were based. Both elements have served to shape the often contradictory representations of Tibetan Buddhism we have considered.

In the late 1800s, as a pan-Buddhist discourse was emerging, Tibet had not yet fully become an object of the Western historical and disciplinary consciousness. Lopez (1994) articulates the logic and history of this emergence by building on Said’s (1978) Orientalist thesis
that the West’s textual and technological efforts to demarcate the East from the West are reflective of the West’s own agendas. As we have seen, Tibet had been framed as the most polluted and the most spiritual. It was the land where the pure, pristine and untouched recesses of the human spirit were perfected and preserved, and it was the land of unmitigated abuse and domination, a whole population kept in serfdom by superstitious demagoguery. How, Lopez asks, can we make sense of this? And where does this historical situation leave the Tibetans themselves in trying to carve out a position in the modern world, when their attempts to modernize are considered signs of corruption and inauthenticity and their efforts to hold onto traditional culture are considered “backward” but somehow appropriate (and, in some sectors, necessary; Prost 2006)? As for the first question, Lopez suggests that there is something of a blind spot in in the West’s own self-conception which the West is trying to protectively overcome in its relation to Tibet (Lopez 1994: 43). I enter into this question more fully in the concluding chapter.

As for the second question: while Tibet was never colonized by the West, Tibet did step into an imaginative space that was dominated by Western academic discourse, popular writing, and the West’s colonial encounters with other Buddhisms. Furthermore (as I will show in later chapters), the writings of the Theosophists had attempted to situate Tibet and Tibetans in this space long before any Tibetan teacher had ventured West. Thus, when Tibet entered into sustained contact with the West, their continued existence in exile was in part conditioned by the degree to which they managed and negotiated the imaginaries which had already been projected onto them. The West itself came face to face with living “representatives” of Tibet, through which the West had sustained a hope of reenchantment and recovery. In this encounter, the Tibetans were in need of ethical and political and financial support, challenging the West to
confront its representation of Tibetans through dealing with actual Tibetans. The Tibetans also
confronted the Western imaginary and worked to shape themselves to it under the exigencies of
exile. It is this dynamic which must be considered in relation the most recent inflection the
Buddhism and science dialogue, as I propose to do in what follows.

D. Orientalisms, Buddhisms, and Science: the modern scene

Given the political events which have unfolded since China’s 1951 occupation and
subsequent annexation of Tibet, it is curious how the tropes, figures, and representations which
formed the West’s image of Tibet have followed it into exile and how the Central Tibetan
Administration, the Western scientists, and China have used such figures to radically different
ends and consequences. One way to understand this is to consider that one of the main
responsibilities of the Dalai Lama and the Tibetan government-in-exile is to ensure the
preservation of Tibetan culture. In Dharmsala, home of the exile government (Gangchen
Kyishong or “Gangkyi”), institutions for the preservation of dance, language, religion, medicine,
and astrology figure prominently. In such proximity to the Dalai Lama, claims to authenticity
seem both supportable and necessary. But Tibetan Buddhism – as a religion, philosophy, and
medicine – have now spread globally, and the claims for and of “indigenous” or authentic
Tibetan practice become complicated as individuals and communities deal with local
expectations, projections, and personal exigencies (Kloos 2010).

But anthropologists have long noted that the work of preservation, though itself a
working of culture (Obeyeskere 1990), is generative of cultural differences in response to new
contexts that continually work and re-work “identity” and “authenticity.” Such re-workings
occur in the very communities charged with the task of their preservation. For example, Prost
(2006) has shown that among Tibetan exiles, as with many refugee communities, there circulates a largely informal economy of sponsorship. In this economy, individual refugees garner the economic support of a Western sponsor for their religious practice, education, health, and/or housing. Such informal exchanges, however, betray a deeper social syntax which hinges on representation.

For example, with respect to monks and nuns, gifts are conducted through the monasteries and the expectations clearly defined. There is a long tradition of Tibetan monasteries receiving such benefits and it is a practice supported and buttressed by certain social and religious expectations (like merit accruing to the donor). Where there is no such long standing support, as in the case of some monasteries recognizing Western children or adults as reincarnated lamas (tulku, Tib. sprul ku), controversy and contention are aroused. There is often the suspicion that such “recognition” is merely an investment or political ploy. Such recognitions challenge conceptions of identity, authenticity, and agency (Zablocki 1990).

The case of lay folk, however, is even more complex. Support for refugees hinges — in the donors’ minds — on certain perceptions of what a refugee “looks like” in terms of prosperity. Ironically, individuals who manage such sponsorship well run the risk of being labeled “rich,” potentially damaging their community’s symbolic and social capital as Tibetan refugees. Consequently, some may elect to trade or give up such economic capital to preserve social and symbolic capital among their fellow refugees.

Thus the question of survival through a particular representation — as a refugee, as an exile — is not to be fully answered by the injunction to preserve one’s culture. This is as true in the case of Tibetans as with others. And yet, it is in the struggle to preserve their culture — maintaining an identity recognizably consonant with the host country’s projected image of the
culture-in-exile — which has enabled Tibetans to garner the goodwill of many and the continued political asylum of India.

To be sure, Tibetan Buddhists increasingly have a voice in the representations which the West attempts to construct, but through the use of a fixed and historically laden set of representations as mobilized in various intuitional frameworks and relief efforts. But what effects are wrought – unintentional or otherwise – on the lives of Tibetans outside those networks? Are there unintended costs to this elision of “Buddhist” with “Tibetan”? In what follows, I provide an example of how the representation of Buddhism as Scientific and Tibetans as essentially Buddhist has converged in a historically ironic and potentially tragic way. Namely, China’s use of such claims to structure fMRI research which underwrites Chinese state curtailments of Tibetan culture.

III. CAMERA OBSCURA:
The anthropometry of the brain

*In the representation of human beings through the apparatus, human self-alienation has found a most productive realization.*

-Benjamin (1935), quoted in Hansen 1987

In the previous chapter, I reviewed the ways in which Western representations of Tibet and of Buddhism generally were fashioned in the context of the structuring of identity and otherness in the West during the colonial era. Specifically, I drew on the work of several scholars to show how such representations have, historically, served a dual function: to claim a relative superiority of the West’s modes of knowing and to define the field in which the other could be encountered.

In order to understand the paths by which these representations work, we have to have a greater sense of the origin of these representations. As I showed in the introduction, representations – both cultural and the “objectively” scientific – serve as nodes in systems of power. Additionally, representations which are made to bear an aura of “objectivity” are, in some sense, “naturalized.” Appearing as something “natural” and not constructed, such representations obscure the contingent, politicized contexts within which representations were fashioned. This can be seen most clearly in the way that scientific representations which made a claim to “objectivity” were bound up with carceral and administrative practices deployed during the British colonial period. As I will argue below, the manner in which neuroimaging is deployed in certain cultural contexts have their precedent in the anthropometric practices which were developed to serve colonial ends. I suggest that contemporary, technologically mediated presentations of cultural difference are no less ambivalent or permeable to power effects than their predecessors.
I argue that Western science’s engagement with Tibetan Buddhism today is permeable to a similar set of power effects mediated by representations of difference as those found in the colonial era. To bring this point into greater relief, I consider nineteenth century British representations of colonial subjects in India. I show how this colonial era strategy of naturalizing difference through increasingly complex technologies and administrative strategies is being employed today in the modern nation-state of China. Though unfolding in a radically different colonial situation (Hostetler 2001), China’s use of Western technology and methods to essentialize and naturalize cultural differences within its population bears a striking similarity to strategies, logics, and rhetorics employed by the British almost a century and a half ago.

One of the cultural groups that state sponsored Chinese researchers have investigated using fMRI are Tibetans. Ironically, the defining cultural practice of Tibetan Buddhists for the Chinese neuroscientist is “meditation.” As we will see below, China considers meditation and Buddhism problematic for the state for reasons very similar to those which the West identifies as being salubrious: Tibetan Buddhism provides a technique which produces lasting changes in the brain and whereby one comes to internalize and live with less “attachment” to one’s self. Both China and the West have scientific projects motivated by the same representation of Tibetan Buddhism (e.g., Buddhists do not believe in a “self,” meditation is Buddhism’s most defining practice). However, this representation (encouraged, in part, by those Tibetan Buddhists who participate in the Buddhism and Science dialogues) mediates widely different political and policy actions. Fostered in response to a Western fantasy about Buddhism, the emphasis on “meditation” as the defining practice of Tibetan Buddhism has been taken up in a radically different way by Chinese researchers, making an ostensibly benign and politically neutral practice a key cultural difference justifying state intervention.
A. The British Case

One of the ways in which nineteenth century British functionaries sought to lay administrative hold on the peoples of India was by ordering, for ideological purposes, the range of differences they encountered among groups. In this context, they developed techniques of recording, such as photography, and anthropometric measurement for administrative purposes. Administrators and functionaries measured physical traits which were taken to be characteristic, as defined by prevailing sociological theories, of the separate “races.” In a further attempt to naturalize these differences, administrators claimed that such traits were reflective of differences considered salient by the people of India themselves. These traits were often articulated with the help of Brahmin “informants,” who themselves had much to gain in cooperating with the British (Metcalf 1997: 113). For example, measures of osteometric features (such as nasal or cephalic indices) would be paired with visual assessments, such as skin tone and follicle distribution. These physical features were then correlated with regional costume and geography. The resulting set of features were then set in kind of continuum by which to rank and order developmental and cultural difference in India (Anderson 2004: 16).

Colonial administrators provided such data within an ideologically constructed and self-validating interpretive context. This was facilitated by newly implemented census procedures demanded information about caste, itself a category shaped by the colonial encounter (Dirks 2001). However, census data was often filled in by informants or regional administrators and thus bore little resemblance to the occupational and social networks that varied greatly across India.

11 Reliance on Brahman informants not only strengthened the British view of the caste system in India, but gave a textual basis and justification for the strategies of governance and control insofar as the Brahmans stressed their caste distinctions were fundamental to the Indian situation.
India. To try to record that variation as it actually existed would have proven, selective as it was, the impossibility of a pan-Indian classificatory scheme (Mandelbaum 1968: 40). Thus, the administrative apparatus worked to reify already existing representations of Indian otherness in ways that helped to justify both disciplinary and colonial projects.

Other early collection efforts included amassing data and specimens of clothing, folklore, tools, and ritual implements (Anderson 2004, Cohn 1968, Crooke 1973, Risely 1915/1969). Such information was later collated and used to construct tables that permitted administrative mapping and categorization. These technologies of representation helped generate tables that would then form a basis for policy insofar as certain features were ostensibly correlated with certain “peoples” who were taken to have specific temperaments and capacities suitable for regional production and warranting of more or less control. Thus, these administratively fashioned and ideologically fraught representations of various peoples formed the matrix within which legal, pedagogical, medical, and social institutions were structured. As these systems functioned well enough to generate the data required for policy decisions, the failure of individuals to sufficiently adapt to or work within those groups was not perceived as an inherent flaw or failure of the system which constructed the representation, but of the individual or group in question.

It is important here to provide some historical context so that we may understand the significance of this period for a distinctive mobilization of the notion of caste within the British colonial and administrative imaginary. This mobilization of the notion of caste was further driven by the Sepoy Mutiny of 1857. Early historical and Orientalist approaches to the notion of caste conceived of it as a social formation unique to India. Rooted in distinctive religious doctrine and practice, the varna system was taken to be the one perdurable feature of Indian civilization which bore it as an identifiable entity throughout the long course of its tumultuous
history. The presumed constancy of caste was even understood to have made India immune to history as such (Dumont 1970, Mandelbaum 1970). However, there was remarkably little agreement about the nature, working, emphasis, or function of this defining feature of Hindu society (Dirks 2001). Prior to 1857, caste was framed as the social infrastructure on which European notions of property and law could be propped; the sole institution that saved India from the “barbarism” held to be the condition of the rest of South Asia. After 1857, caste was perceived as that practice which held India in the stagnant thrall of a mendacious religious elite; the mechanism of superstition which interfered with India’s reception of its true Aryan legacy of progress and civilization which Britain took such pains to present to it. Thus caste, as a marker of an essential difference, was far from being locatable independent of the relations of power and historical exigencies of the British-India encounter. After 1857, caste went from being framed primarily in terms cultural to racial. Initially, caste was seen as the flower of an Aryan culture which had been abused by the harsh winds of Mughal rule, lacking now only the patient hand of the (British) gardener to bring India through its present difficulty into the full bloom of high civilization. Later, caste was framed as an essential difference, a racial characteristic that was insurmountable, evidence of a gulf never to be bridged between the ruler and the ruled (Dirks 2001, Metcalf 1997).

To explain the violent inversion of the order of things which was the Mutiny of 1857, the British speculated that the Sepoy’s were reacting to the fact that cow and pig fat had been used to grease munitions cartridges; problematic because in order to properly utilize them, the munitions cartridges had to be torn open with the teeth while handling the rifle. The religious dietary prohibitions of the Sepoy populations made this already difficult maneuver impossible (Embree 1963, Metcalf 1997). Thus, the Sepoy mutiny was in fact a protest against colonial disregard of
local practices and beliefs. Additionally, there had been unrest in the population prior to the events of 1857. An aggressive policy of annexation, combined with exacting economic policies, had already begun to give the diverse religious, ethnic, and social groups in India cause to feel united in their resentment against the British (Dirks 2001, Embree 1963). These unnamed tensions erupted on May 10, when a regiment killed British officers and then marched on and took Delhi. Cities were lost and recaptured. By July 1858, the British had reestablished control.

However, the uprising prompted the British to examine the terms of their rule, to look into causes of unrest and to initiate large scale carceral and state supported and administered ethnographic practices. They began employing the latest technological apparatuses and anthropometric testing: phrenology, photography, and finger printing, amongst others (Anderson 2004, Pinney 1990). This enabled colonial administrators to make what they perceived to be the necessary and salient distinctions among the populations, in order to account for who was involved and why in the effort to prevent future rebellion. As Embree states: "if the old beliefs [of empire and commerce] were to be retained, or if new ones were to replace them, it was necessary to explain the causes of the violence that had threatened imperial power in India" (Embree 1963: vii). The British attempted to do just this by means of a pictorially defined ethnic identity linked to a range of characteristics such as loyalty, intelligence, and bravery; a practice reflective both of historical characterizations of the Oriental other and an emerging scientific ideology of race (Anderson 2004, Metcalf 1997).

The resulting administrative decision to pursue anthropometric measurement as a way of gaining control and governance over populations allowed the British to make essentialist generalizations about certain populations and castes and their “civilizability” or inherent “criminality” (Anderson 2004, Risely 1915). Further, surveillance of individuals across time was
administratively linked to these anthropometric and ethnographic practices. Once the characteristics of a population could be ascertained, it seemed a necessary next step to be able to identify the individual features which would betray tendencies toward deviance or criminality. Once identified, however, there were further problems in keeping individuals within state control. Prison and police apparatuses adopted tattooing and ear identification as early methods of control and identification (Anderson 2004). But, with the advent of photography and fingerprinting (Pinney 1997) it became much easier to keep track of and document criminal types. These tracking methods permitted the generation of yet another administrative and disciplinary layer of documentation of those features which were considered to be most salient about different tribes and castes. Recall, however, that the significance of features such as fingerprints and physiognomy were themselves derived from sociological and scientific models of representation. Thus, bearing an aura of objectivity, the amassing of data was used to shore up failure in the system of representation.

Thus, colonial representations are a form power which produces “truth effects” (Foucault 1988) articulated in relation to a specific disciplinary structuring of knowledge. The existence of archival and historical networks based on social expectations of what counts as knowledge later serve as independent testimony (Tyler 1984). These archival and historical networks themselves function as material artifacts, which in turn function as a documents or witnesses to the past. Such networks function as data serving to underwrite the truth of a discipline precisely to the extent that the traces of their selection are obscured. Part of the critical project is to interrogate what allows certain images and ideas to stabilize or seem adequate to the phenomenon one encounters. Ideology can be seen, for example, when external contingent forces are projected into and hypostatized as internal states of individuals, cultures, situations, or institutions. It reads
an ahistorical plan into historical products. Yet, representations both mediate and are shaped by ideology. Thus, a critical approach interrogates both the history and the material limitations of the vectors that gave rise to a field or object suitable for projection and the strategic negotiations of truth. For us, the mass of the archive itself functions as an image which can be used in strategic ways by power and reflect back to itself the legitimacy of its own working. Power can succeed in doing so only in the absence of other objects or subjects being allowed or able to speak for themselves in order to bring similar technological and material processes to bear against the workings of power.

Photography, a technology of representation that served as both a scientific and administrative tool, was put into ambiguous service from its inception. It was shuffled easily between two foci of anthropological inquiry of the time: descriptive and salvage (Pinney 1995). The blurring of these boundaries meant that, in principle, any photograph would be serviceable to disciplinary and administrative knowledge. This was so because a photograph could not be mistaken in the sense that a written account could be mistaken. Descriptive photographs would, scientists and administrators maintained, present individuals within a population as they are or were or would be had the British not arrived. Salvage photography sought to preserve the character and essence of populations endangered by the colonial encounter. Thus, descriptive and salvage efforts overlapped with respect to their role in framing administrative taxonomies of racial types.

Consequently, the same features relating to the composition of a shot which would make it problematic in one arena were perceived as having a virtue in the other. For example, a costume no longer in use failed to capture a caste as it existed now, but that very difference – between the then and the now – was taken to indicate how far a particular caste group had
allowed itself to *drift* from its true nature. In this way, lack of anthropometric difference was often taken, not as a refutation of the connection supposed by some between caste and race, but as proof that the difference had been “eroded or polluted” over time (Anderson 2004). Inconsistency and difference in presentation were thereby deflected away from a critique of the method and apparatus and taken to be an artifact of the thing, that is, the essence of the caste.

Recall, however, that such illusions of difference can only remain provided the material workings and limitations of the technological apparatus itself are removed from our procedural and *political imaginary*. Further, social institutions that support the ideological positioning whereby the scientist or photographer is taken to be a neutral observer must be in place. The belief is that whatever the imperfections, the technology itself *corrects for* any bias that might be present. This belief in photography to present the *thing in itself* was quite widely held during the phase of its initial reception (Tagg 1988). The vagaries of the artist’s hand or the empurpled prose of the journalists and diarists of the day were taken to have been wholly superseded by photography. Purporting to give a naturalistic picture of the respective races and castes, such early photographs were not, in fact, privileged glimpses of native life caught *in media res*. Rather, they were painstakingly constructed as “environmental portraiture” (Haraway 1989: 148, Pinney 1995: 80), incorporating all the paraphernalia and scenery that had been taken as the tokens of difference.

However, the data officials collected troubled the ability of what was called “naturalistic” photography to give proof of unambiguous representation. On one level, this problematization was purely dialectical in the sense that the enumeration of difference is itself generative of new distinctions and spaces of difference. As distinctions became more numerous they served to highlight the insufficiency of certain schemes of classification, simultaneously generating more
nuanced readings of a paradoxically ineluctable materiality. On another level, such photographs were anything but natural (Edwards 1990, Pinney 1995). All such photographs were painstakingly composed: lighting, costume, paraphernalia, and posture were all carefully arranged by the photographers to accentuate the differences the administrative researcher took to be native to the population he was studying. Though such practices were common knowledge, scientists and officials thought that the medium of the photograph would convey the salient and verifiable facts of the case no matter how contrived the actual scene may be (Edwards 1990). This was in contradistinction to journalistic writing or field-notes which suffered as a scientific tool precisely because there was no object by which to measure the writer’s account. However, as these photographic systems became more complex, they became increasingly supplemented by “a brief account of what purported to be that group’s essential character” (Metcalf 1997:119). Though photography still required a supplement (writing, arrangement, costume), it nevertheless retained an aura of objectivity because the work of fashioning the representation was not considered part of the representation itself.

B. Implications for Deploying Representations

Thus we have seen that rhetorical, textual, and technological colonial strategies to frame and employ representations of the Other were both administratively focused and excessive. They both facilitated and troubled the workings of the technological state apparatus. And, as I examined in chapter one, it is ambivalence – these excesses and slippages – which some theorists contend made possible other strategies of representation and for communities so enmeshed. It is in these interstices that new forms of identity and representation can arise, that there is a way of employing that slippage strategically and to one’s advantage. For example, Spivak has suggested
that there may be times when groups or individuals can choose to employ a “strategic” use of essentialist tropes, representations, and projections towards positive political ends. However, to carry them beyond their pragmatic domain, to forget one’s strategy and take refuge in essentialisms, reinscribes the whole system of knowledge/power one had attempted to short-circuit (Spivak 1988:16). Abu-Lughod articulates a similar position and a similar pitfall. By engaging in what she calls “reverse Orientalism” one attempts to “reverse the power relationship produced by seeking to valorize for the self what in the former system had been devalued as other” (Abu-Lughod 1991:144), and cites Ghandhi’s use of the Western trope of India’s “greater spirituality” as a counter to colonial machinations.  

In what way is the representation structure “Buddha as scientist” a strategic essentialism, and why has it been able to function so well in the context of neuroimaging research? Following the logic and power dynamics of colonial image production discussed above into the present, our current ability to see the brain at work carries with it the hope of discovering and controlling the mind. With this control over the mind comes the shaping a healthier, happier human, one suitable for functioning within the system and thus also malleable, disciplined, compliant, non-reactionary, efficient, and conformist. I argue that such representations mediate contingent social projects while simultaneously promising to make their subjects tractable through the ostensive display some of the most persistent mysteries of our being. Therefore, it has been possible to ally what are called Tibet’s own ancient sciences of the mind with today’s science of the brain. This has, in some measure, helped deflect the critiques and images of Tibet as feudal and primitive while simultaneously inscribing it into the modern era (Lopez 2008, Scharf 1995). Tibetan Buddhism positions itself in the midst of the discourse and praxis of cutting edge brain science

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12 A position with important resonances today given India’s contributions to the alternative health and therapy market, debates about cultural patrimony and property.
through research on meditation, stress, personality, and governmental concern over the production and management of productive citizens. In this way, Tibetan Buddhism has succeeded, in some real sense, to outmaneuver some of the negative representations deployed against it. In such circles, discussions about modernity and the modernization of Tibet occur within a representational field that takes Tibetan Buddhism to be timeless and resonant with scientific insight.

C. Orientalisms

“Orientalism” is that set of effects outlined by Said (1994) in which Western colonial powers represented Asian societies as the projected locus of an exotic, esoteric otherness: representations which were then valued and coveted by some sectors of Western society and reviled by others. Further, such a framing licenses projects whereby the essence or the object of that otherness is contained and traded. Often this is motivated by the attempt to preserve – or appropriate – a certain tamed potency, native to the other, beyond its contingent association and connection to the people among whom that essence is perceived to have arisen.

As a disempowered other, the representations of Tibet throw into relief the imbalances and excesses of power in the West itself. Thus the encounter is experienced as something that must be ordered and contained. The exotic other, becomes a site for the anxious spectacle of power to enact itself (Douglass 1966, Taussig 1987). Further, in the case of Tibet, we should perhaps think in terms of “Orientalisms” since it is not only from the perspective of Western colonial and academic knowledge regimes that Tibet is perceived as an exotic other. Owing to its history, seclusion, and elaborate rites, Tibetan Buddhist culture is exotic to some of those very countries which the West has traditionally studied as “Oriental” cultures. China’s claim on Tibet
adds yet another layer in that the Orientalism which fuels its gaze of the Tibetan *other* is bound to the cause of modernity which China has taken upon itself to enact on such “traditional” and “backward” areas within its borders. Thus for China, Tibet is both backward and Enlightened; primitive and oppressive as well as the home of esoteric practices of liberation. In a further parallel with Western Orientalism, recent reforms – including hosting international conferences on Tibetan medicine, state supported regulation of monasteries and reincarnations, and upper-class and even party member patronage of Tibetan “living Buddha’s” – have permitted the growth of a more exotic and romanticized view of traditional Tibet. This is particularly so with respect to the spiritual purity of its inflection of Buddhism. And while the “science Buddha” is little in ascendancy in China, the “ecology” and “business Buddha” have begun to take form (Yu 2015).

In this next section, I want to consider the way in which the representation of Tibet as Buddhist has been taken up in a radically different context; namely neuroimaging studies in China conducted on ethnic Tibetans because of their being “Buddhist.” Ironically, it is this representation, by which Tibetan Buddhism has sustained its presence on the world stage, that is now being used against ethnic Tibetans in their struggle for autonomy. As China advances technologically and economically, it increasingly has at its disposal the resources to mobilize science in ways which underwrite government policy. I will discuss the historical background and precedents for such imbrications in China and examine the implications of one neuroimaging experiment which attempts to scientifically study Tibetans using the representations we have been discussing.

**D. China, Buddhism, Neuroscience**
Historically, the relation between Tibet and China is complex. Since the 1950s, almost all of that history has been marked by violence (CTA 2010, Goldstein 1997). While the 1980s saw the relaxation of some of the anti-religious policies implemented during the Cultural Revolution, there remains the question of the return of the Dalai Lama, the efforts to secure regional autonomy, growing resentment over the economic disparity, and the erosion of cultural heritage secondary to state supported Han settlement projects, particularly in Lhasa. Although an official minority, Tibet’s case is problematic. Until 2011, its religious leader, the Dalai Lama, was also its political head. This made offering him obeisance tantamount to sedition. Consequently, for the Tibetans to practice certain aspects of their culture has been, in many ways, liable to construal as a form of open protest and an attack on the state.

In 2007 and early 2008, the PRC took focused action to break up a series of religious festivals in preparation for the Beijing Olympics. Chinese and Tibetan documents also both testify to the fact that there was concern on the part of the Chinese authorities regarding an upcoming ceremony that same year, the Dalai Lama’s reception of the US Congressional Gold Medal (CTA 2010: 3). The PRC had decided to take “preventative” measures using a show of force early on to discourage public assembly, displays of religiosity, and support for the Dalai Lama in the months leading up to the award ceremony. There was concern that if Tibetans felt free to form a large assembly at the time of the award ceremony, it would be an opportune time for Tibetans to try to seize the international spotlight. In this way, they would interfere with the “re-branding” China was attempting to secure on the world stage following criticisms of its human rights record (Barnett 2009).

In August of 2007, the PRC enacted a policy change whereby it assumed “official control in the selection, installation, and education of reincarnated lamas” (CTA 2010: 3). On this last
point, the Central Tibetan Administration comments: “called an ‘important move to institutionalize the management of reincarnation’ by the Chinese authorities, it reveals their intention to vet, legitimize, and conform the core belief system of Tibetans to the diktats and needs of the communist system” (CTA 2010: 3). In 2015, China also started a state database where Tibetan “living Buddha’s” – now regulated by the state – must be registered (Xinhua 2016). Religious expression continued, as did state retaliation and response, including the implementation of political reeducation campaigns in monasteries and schools. There followed a nearly continuous cycle of protests and arrests throughout the Tibetan Autonomous Region (TAR) in 2008, including clashes between religious, police, laity, and military. On March 14, riots surrounding the Olympics followed, as did numerous Tibetan self-immolations (CTA 2010: 4).

In October of 2010, Tibetans again protested, reacting to a state mandate making Chinese, and not Tibetan, the official language of educational instruction in all TAR schools. In Beijing and other areas, Tibetan students staged peaceful protests. Many of these were resolved peacefully, and in at least one case students were allowed to express and submit their grievances in writing, albeit in Chinese (Demick 2010, Tibetan Review 2010).

It is with this background that we turn our attention to a specific case of contemporary neuroscientific research in China and its intersection with the question of representation. This research was undertaken by a neuroimaging facility associated with the University of Beijing in 2010. Building on earlier fMRI experiments which sought to ascertain the “neuro-correlates of the self,” researchers sought to test the hypothesis of whether or not Tibetans, as an ethnic population with specific religious beliefs and practices that purportedly cause them to deny the

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13 For more on minority language policy see Mackerass 2003 and Zhou 2004.
existence of a self, could be scientifically demonstrated to have a different neurological self-activation pattern from that of ethnic Han (Wu et al. 2010). Peking University in Beijing set itself the task to ascertain the *self-style* of ethnic Tibetans compared to that of the ethnic Han and to discover how religious belief shapes functional anatomy (Wu et al. 2010: 324).

As in any standard fMRI experiment, subjects were positioned supine on the scanning bed. To reduce head movement, pieces of foam were wedged into and around the indentation for the head in the platform. Staring up, subjects were asked to view a cue word (self, mother, name of public figure) followed by a trait adjective which was “presented in their own native language (i.e. Mandarin for Han participants and the corresponding Tibetan language that was translated from Mandarin for Tibetan participants)” (Wu et al. 2010 326). These words were flashed at eye level, reflected from computer screen onto a mirror inside the head coil for a preset number of milliseconds. Subjects would indicate their judgment of pertinent to self or not by pressing a button beneath the left or right thumb.

For the researchers, the salient result of the experiment was a statistically significant difference in activation pattern, area, and timing between Tibetans and Han in the medial prefrontal cortex (MPFC). The researchers concluded that this difference indicated that the ethnic Tibetans – as they had hypothesized based on their representation of Tibetan Buddhism – appeared to have “no self” (Wu et al. 2010: 329), thus demonstrating the effect of religious belief on functional neural processing (Wu et al. 2010: 328). Curiously, no information was provided about the religious affiliation of the Han subjects nor the *self-style* indicative of their nationality.

It is unsettling, from an anthropological point of view, too see how much pertinent information was considered irrelevant to the framing of the laboratory task. Left unaddressed in this experiment were questions about the personal history of the subjects; the status of minorities
as mediated through state policy; differential resource access; social status and economic position; regional and religious history; kinship dynamics and family setting, etc. We are told only that the non-Han participants are ethnic Tibetan and that distinction is relevant owing to prior research which showed Tibetans had their own culture and were “eccentric” spiritual seekers who practiced meditation and believed the world was illusory or “empty” (Wu et al. 2010: 325).

Exactly how should we understand the results of this laboratory task and what does it imply about the discursive, dynamic presentation of culture; of reflexive persons engaging others over time in social contexts? Given the complexity of social interaction, should we not be cautious about the attempt to link a neurological pattern activated in a word association task with the self-style of a culture which has been brutalized and occupied by the very state which whose representatives are conducting the purportedly objective research study?

Even if we were to grant that all Tibetans are Tibetan Buddhist – an oversimplification which is parasitic on the unified presentation of the Tibetans themselves – should we not ask what measure the researchers used to ascertain the degree of religious education or depth of commitment of the study subjects? Did the subjects come from a religious household? Were they or their family ardent modernists and cultural reformers? Were they or their families forcibly relocated? What kind of state reeducation programs had they been subjected to? How do we contextualize or separate out from religious influences the effects of official state policy towards Tibetans, and Tibetan Buddhism in particular? This question is most important given that China has been ruthless, lethally discouraging, and unremittingly hostile towards any religious or cultural expression, especially as related to the Dalai Lama (Smith 2010). Consequently, it appears that, in locating the essence of Tibetan culture in a particular practice or worldview,
Chinese researchers believe they will acquire the tools to modernize Tibet, and inoculate themselves and Tibetans from the adverse effects of religious expression.

I will have occasion in the final chapter to return to, in Spivak’s words, this troubling question of “an affinity between the imperialist subject and the subject of humanism” (Spivak 1987:202; see also Taylor 1985, 1989) which haunts neuroscience research. But one point bears repeating: that in this study the researchers conflated the practice of Tibetan Buddhism with being an ethnic Tibetan. From an anthropological perspective, such a conflation ignores decades of state suppression of certain distinctive features of Tibetan Buddhism, the fact that some Tibetans profess other religions, and that Tibetan Buddhist lineages differ greatly on how to interpret and experience “emptiness” or “no-self.” Consequently, the question of what it would mean for a modern Tibetan youth living in Beijing to be religiously, culturally, and ethnically Tibetan is never addressed. It appears that the theatrical state logic outlined by Gladney (1994) – wherein diversity is celebrated in the media but drastically curtailed in practice – is operating at the level of experimental design and interpretation. China acknowledges the difference of the Tibetan, but it is a difference that must be properly interpreted and evaluated if Tibetans are to be brought into the modern fold.

Thus, this experiment employs an essentialist representation that simultaneously serves both the Han and Tibetan projects of identity formation. It allows a scientific demonstration of the difference between the ethnic Han and ethnic Tibetan. In addition, it simultaneously affirms what the Dalai Lama and the Exile Government have maintained throughout: that there is
something distinctive about the Tibetan people and their relation to Buddhism and that the two
are in some sense indissociable.14

So, to return to some of the considerations with which I began this chapter. Recall that
the mobilization of anthropometric techniques and technologies by the British underwrote the
colonial project by systematizing its findings under an administrative and epistemological
imperative. This imperative sought to ascertain whether or not the peoples of India could be
brought into modernity and, if so, who among them and how much guidance and effort would be
required of the British to help bring that about. This assessment itself was situated within a
disciplinary construct which attempted to rank the level of civilization of a given culture within
an historical, unilinear developmental framework. Administrators sought to ascertain where a
culture could be located in that continuum, in the belief that this would help make clear the kind
of policy and rule necessary for ushering these groups to the next stage of civilization.
Anthropometric photography was taken to be a scientific tool to measure both potential and
progress in individuals and populations by yielding *objective correlates* – graphic representations
– of their potential for civilizability.

In the present day, fMRI technology and research paradigms partake in a similar
endeavor. Spurred on and shaped by an ongoing dialogue with Tibetan Buddhist meditators,
these paradigms have become fairly standardized and purport to give a picture of the “culture-
brain nexus” (Duque *et al.* 2010). In attempting to do just that, researchers in China have been
able to use brain imaging research as a new kind of anthropometry: instead of asking the

14 During a recent period of fieldwork in Dharamsala, I questioned a member of the Buddhist
Institute of Dialectics about this point. “It is true”, he said, “that all Tibetans are born Buddhists;
it is an essential part of who they are…though there is wide difference among them in the
understanding of what that means.” For more on the way in which Tibetans think of themselves
in relation to Buddhism, see Moran 2004: 142-145.
question, as did the British: “where in the evolutionary scale of civilized development do these races fit?” the Chinese ask, “how does activity in this localized area differ in a minority population versus that of the Han?”

But, have I overstated my case? What, in fact, is the role of anthropometric science according to Chinese researchers and is there any basis for examining its workings as a colonial project?

In what follows, I want to highlight the social, teleological, and nation-building mission that historically drove the development of anthropology in China given that it informs China’s emphasis on applied cultural neuroscience and brain imaging today. This historical material forms a necessary propaedeutic to understanding the larger context within which the monastic and laboratory science programs and connections are developing. Given that we are talking about the ambivalences of representations and the effects they produce as they get taken up into various systems in unintended ways, we need to understand the historical procession of such deployments and appropriations.

**E. Anthropology in China**

As early as the late 1920s and 30s, Chinese researchers had begun to make contributions to basic cellular research related to the brain, particularly with respect to conductance and plasticity. This research was, however, interrupted by the Second World War (Poo 2010). Today, the funding and apparatus necessary to conduct contemporary research has caused efforts to shift more towards applied research. This is significant in that, within China, such research must not only be recognized the international community, but must also speak to China’s goal of modernization (Cyranoski 2011, Poo 2010).
Some researchers within the contemporary cultural neuroscience field suggest that neuroscience can help inform policy measures related to “interethnic ideology” by studying which “cultural traits have adaptive value” and how this information can be used to achieve “optimal coexistence” between diverse groups (Chiao 2009: 300). In this way, the Chinese colonial project of studying minority groups is similar to the British study of “races” in India. Chinese ethnologists, explicit about their efforts being an integral part in the development of a truly socialist society under the Han, study minority languages as proxy for the degree to which they approximate Han mentality (Xuelian and Qingxia 1990). Minority nationalities are characterized as having acquired more “capitalistic elements” (Lin 1990: 148) – elements here valorized for their role in helping to modernize China – the greater the degree of their contact or proximity to the Han. Such reasoning supports Chinese policy aimed at the partial integration of minority populations with the Han. It also supports a policy that imposes strict proficiency requirements in Chinese language and the rolling back of autonomy. It is a logic which is both paternalistic and hygienic.

The significance of this last point becomes perhaps a bit more clear when we consider the development of anthropology in China. Xin Liu (2004) has noted the strong influence of Malinowski and the functionalist school on the origins of anthropology as a modern discipline in China, which only came into its fullness as a discipline in the 1980s. Prior to that, regional and ethnic studies of the census and administrative variety had prevailed. However, during years of transition and upheaval of China, one student of Malinowski’s in particular – Fei Xiaotong – argued for the importance of anthropology as a tool to help formulate and implement state policy. He hoped anthropology would help effect the modernization of minorities and the greatness of the Chinese nation (Gladney 1994, Liu 2004). According to Liu, Fei insisted that
anthropology in China must be understood in the context of the Chinese encounter with Western systems of knowledge and power: if China wanted to compete and rise to its former glory then it must adopt Western methods while keeping Eastern values. Chinese anthropology, according to Fei, differs not epistemologically but morally from Western disciplinary practice: “I…realized that to make the nation stronger was more important than to make individuals healthy” (Fei, quoted in Liu 2004: 163). Thus, anthropologists must concern themselves primarily with how minority communities are affecting the health of the nation overall. Simultaneously, anthropologists must work to produce the kinds of knowledge that will help advance China’s position in world affairs and its development into modernity, mired as it was in technological and scientific “humiliation” (Liu 2004: 162) before the West. As late as 1980, these concerns were still being voiced by one of the staunchest proponents of anthropology as a separate university discipline, as something distinct from primatology, archeology and paleontology. Liang Zhaotao put it in this way: “All the other countries have this discipline; why not us? …We Chinese must study our one billion Chinese! We can’t leave this science only to the foreigners! Let anthropology make its contribution to the Four Modernizations” (Liu 2004: 167). Subsequent debates within China reflected this concern with anthropology’s potential practical contributions to the modernization of China, contending that such applicability “is an essential character of anthropology” (Liu 2004: 168).

As Liu points out, applied anthropology must perforce take existing populations and their problems as its central focus. This is salient to our present inquiry because much of the applied research in contemporary neuroscience and, in particular, cultural neuroscience and neuroimaging calls for just such applicability. As we have seen, in both East and West, concerns with the health of minority communities must be understood as figuring into a whole economy of
relations nationally, internationally and historically. Some researchers within the contemporary field neuroanthropology developing in the West even suggest that neuroscience can help inform policy measures related to “interethnic ideology.” They aim to achieve this objective by studying which “cultural traits have adaptive value” and how this information can be used to achieve “optimal coexistence” between diverse groups (Chiao 2009: 300).

Thus it is significant that contemporary neuroscientific research (in the West and in China) builds on earlier cross-cultural social and cognitive anthropology studies. Neuroscientific research uses many of the interpretations, methods, and theoretical assumptions of these earlier studies to help frame applied neuroimaging research which shares this concern over applicability (Chiao et al. 2010, D’Andrade 1995). For example, Dominguez et al. (2009) argues for the continued salience of the East versus West distinction to talk about cultural cognitive styles because studies on perceptual processing show differential blood oxygen levels in the brain during foreground/background image tasks in English versus Chinese speakers. Thus, it is argued, studies which try to get at cultural and not just physiological differences can meaningfully employ (within in this system) east versus west distinctions to frame their research question.

To return to our historical parallel (anthropometry in colonial India), we have already seen examples of the use to which scientific research, purporting to give objective assessment of the character and capacity of a people, leads to an exacerbation of institutionalized violence. Making access to resources contingent upon reified differences seen to be either culturally or racially essential yields generational effects which then lend support to initial assessment and predictions. These negative effects are, in fact, maintained though exclusionary practices of administrative, educational, carceral institutions (Gravlee 2009). Differences and inequalities are
further perpetuated and reified by state policies which require individuals to claim a particular race or ethnicity upon which social, education, civil rights, and resource access differentially hinge (Cohn 1968, Hacking 2007).

In China, the question of what constitutes an ethnicity or racial minority within its borders has been an abiding policy concern since its inception as a modern state. The *fiat* which declared state unity over a diverse geographical range did very little to erase regional differences and historical identities (Gladney 1994). Based on a range of criteria, China has many non-Han ethnic groups seeking official recognition as *minorities*. Recognition as an official minority brings with it access to state resources not available to those groups which are not officially recognized. In some cases, such recognition may even yield a limited degree of regional autonomy and the right to preserve defining linguistic and cultural practices.

Gladney observes that the Chinese state is quite invested in presenting itself as a multi-cultural society through a broad range of media. Presenting this image is a way of maintaining regional control while deflecting international criticism (particularly in the case of Tibet). The logic is analogous to that evident in a certain phase of British rule in India wherein the colonial power began to conceive and justify itself in the context of a mission. Colonial power created the conditions for the preservation of cultural difference *in order to* modernize India. As a colonial power conflicted over the question of the continuance of its rule, Britain questioned the wholesale supplanting of Indian culture with its own. Nonetheless, institutions and social practices were evaluated according to European standards and expectations. A curious mix of progressive and conservative policies sought to preserve India as a unique culture. And, after 1857, a version of that culture had been administratively reified and served to mark the limit of India’s likely development. From that time forward, British relations with India were to be
contextualized by India’s success or failure to approximate Western civil, legal, and governmental institutions. Today, in order for China to actualize its conception of itself, minority group identity must become a thing of the past while simultaneously being a very limited social currency in the present. Gladney here notes the evolutionist language in which minorities are taken to be “living fossils” (Gladney 2004: 38). Their display is important to the state, but only to illustrate development and power under the nation.

And so the historical irony alluded to earlier announces itself again as we near the end of this investigation. For Tibet, the link between meditation and neuroscience has been the Dalai Lama’s way of talking about Tibet internationally without being overtly political. It is an approach which has helped to spread the word about Tibet’s plight while at the same time garnering it much needed support. What does it mean for this dynamic now that China has begun conducting neuroscientific research on Tibetans as a minority population? Tibetan-ness now becomes an object of state study the results of which – under the moral, national, and teleological imperatives of Chinese anthropology – must be brought into play in policy pragmatics. How are we to begin thinking about this set of concerns and practices informed by neuroscience? As Aiwa Ong (1996) avers, though race talk has been outlawed in China, the discourse of Han exceptionalism remains strong as China seeks global standing. How will neuroanthropology and brain imaging figure into China’s nation building? And how will the use of neuroscience and neuroimaging as a state tool affect Tibetan identity in the midst of ongoing conflict (Topgyal 2011)? Such questions can only be answered empirically as they unfold. We can, in the interim, perhaps use the perspective of history to sustain our long and necessary vigilance.

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15 For analogous statements about the Indian populations regarded as “living fossils” under the British, see Metcalf 1997: 26.
In this chapter I have shown how claims about the validity of neuroscience have begun to intersect with the “Buddhism as science” discourse. This conjunction owes its continued advance to an encounter with Tibet. We have also seen how the excesses of those representations deployed in that encounter feedback into both state practices and novel opportunities.

However, it may also be questioned whether and to what degree the representational strategies employed at Western laboratories resemble those of the colonial practices of the British in India or of the Chinese. While much of the representational imaginary at work in labs and in the popular press was born out of colonial encounters, there is an important difference in the degree to which Tibetans today participate in, construct and shape their representation in the “science dialogues.” I argue that the relationship appears to be structured as a symbiosis. This is not to say that power does not circulate within laboratory and pedagogical domains. Indeed, the relationship can become one of dominance and suppression, as has been outlined and cautioned in the case of research and marketing of Tibetan Medicine (Adams and Li 2008). However, the dangers of such an engagement must be understood in relation to the historical contexts and functions of Tibetan monasticism within Tibetan society. Only then will it be possible to understand both the nature of the transformation Tibetan Buddhism has undertaken in exile and the risks and opportunities before it.

In the next chapter, I provide this historical and political context of Tibetan monasticism in pre-1959 Tibet. I also provide a detailed picture of the 13th Dalai Lama’s efforts to modernize Tibet and the resistances he encountered. I argue that these efforts opened a path for the 14th Dalai Lama’s efforts in exile and provided the conservative establishment of Tibetan monasticism a way to help frame its encounter with modernity.
IV. TIBETAN MONASTICISM AND MODERNIZATION: Pre-1959

In order to understand the stakes involved in the Monastic Science Initiative and how radical the restructuring of the monastic program in exile is, it will be necessary to have some understanding of the historical, economic, educational, religious, and political framework within which it was proposed. In this chapter, I give a brief outline of the history of Tibet and provide some account of the genesis and significance of the different sects, particularly with respect to the rise of the Gelugpa order and its main lineage holder, the Dalai Lama. This is particularly because the Dalai Lama is the face of the Tibetan people in exile and of the dialogues between Tibetan Buddhism and science.

I also provide an account of the arrival and development of Buddhism in Tibet. I outline monastic structure and its relation to the state. I also outline the “patron/priest” relationship which for centuries structured Tibet’s relations with the states that surrounded it. I suggest that the “patron/priest” relationship is an important key to understand what is unfolding between neuroscience and Tibetan Buddhism (see also Klieger 1992). I conclude the chapter with a detailed examination of 13th Dalai Lama (Thubten Gyatso, 1876-1933) and his attempts to modernize Tibet and its monasteries. Though violently opposed at the time, I see his efforts as prefiguring the reforms that the 14th Dalai Lama has been able to effect in exile.

A. Staging the Path

Immediately prior to the introduction of Buddhism, the area which came to be known as Tibet was a site of struggle between an assortment of kings who themselves presided over a loose collection of nomadic groups. These kings were accorded divine respect and were believed
to be connected with divine powers through the mediation of a celestial rope by which they could ascend or the gods descend (Jisheng 2001: 356). This belief in celestial preceptorship is further testified to in the large burial structures, grave goods, and rites of which the indigenous religion’s priests were the officiators and specialists. This religion, most often referred to as Bon, is today considered to have been part of the Zhang-Zhung culture which predated the arrival of Buddhism (Belleza 2005: 9; Norbu 1989: 15).

Within that early Bon milieu, the kings of the Tibetan plateau pursued military campaigns throughout the region. In the late 600’s, Songtsan Gampo had achieved control over a sizeable area of what became known as Tibet. Gampo’s army was such that in the 700s, under Trisong Desten, Tibetan forces were able to enter China with a strong enough force to compel tribute. Though short lived, the imperial period brought Tibet into extensive trade relationships in the region. During this time, until Buddhism’s eclipse in India in the thirteenth century, Buddhist yogis and scholars were brought from the subcontinent into Tibet, at times under royal patronage (Kvaerne 1984: 254).

Sometime around 790, a Great Debate between Chinese and Indian sages was held near Lhasa at Samye, a site traditionally identified as the first Tibetan Buddhist monastery. At stake was the question of which tradition Tibet would choose to anchor its Buddhism. The central question being debated: was enlightenment and liberation to be achieved and characterized as something arising spontaneously, as the Chinese representatives argued, or did it require training and shaping according to disciplined activity and so to be achieved in stages, as maintained by Indian sages?  

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It is perhaps not difficult to see how the stage model which emphasized learning, discipline, and authority met the needs of an emerging political federation entering a complex political scene. The disciplining of bodies and the creation of a literate administrative group invested in a clear hierarchy would be a great boon. That it was linked to a larger soteriological worldview would ensure that the laity would also defer to the hierarchy (Samuels 1993: 454). The Indian inflection won. Soon thereafter, monks were brought into active government service. Monasteries were exempted from taxes, received large land grants, and were legally granted serfs to work the monastery land. Families, in some cases, would also be compelled to enter their male children into the monasteries in lieu of payment for taxes. The great work of translation and the creation of a specialized script, which merged Zhang Zhung and Devanagari scripts adapted to Tibetan phonology, transforming the Tibetan vocabulary enabling the work of textual preservation (Verhagen 1994).

It is important to recount this early history because it helps to disclose an historical continuity of models of interaction, of authority, and of exchange which (as I will argue throughout this dissertation) have not only sustained Tibet in exile but are actively at work in structuring the Buddhism and science dialogue. Recapitulating this history helps us to consider other ways of thinking and contextualizing this new period in history of the Tibetan people and their involvement in a global network of exchange. Exile dialogues and adaptations are neither simple dominance relations nor are they adaptations without precedent. As we will see, within Tibet there developed several different knowledge systems and lineages which worked to structure Tibetan society and to shape that society into a unified political entity. This cultural capacity to subsume difference, to find a place for different traditions, was not without extreme episodes of violence and repression. More than the Western imaginary alone, Tibet’s own imaginary of itself
– through its literature, histories, and figures which relate a community acknowledged story of its origin, its struggle, and its fate structures the complex encounter which I am considering throughout. An understanding of the historical dimensions of this present dynamic would be incomplete without an account of both sides of the encounter.

**B. The 2nd Propagation: The Rise of Sectarian Political Monasticism**

The period in the history of Tibetan Buddhism known as the 2nd Propagation is associated with a resurgence of a scholastic approach over the sacrificial based processes of early Bon religion. It is said to have begun in 1042 with the arrival of the Indian sage and scholar Atisa in Tibet, thus ending the region’s 150 year Dark Age. Atisa laid the foundation for a distinctly Tibetan monasticism which combined scholastic and tantric elements. He also provided Tibet with a chronology and a taxonomy for understanding and ordering the variety of practices and attainments which have come to be variously valorized and propagated by various schools. This phase of Buddhism was further consolidated at a pan-Tibetan council of lamas held in 1076 (Conze 2008:108). Thus, early practitioners conceived of themselves as preserving what was being lost elsewhere. In such a context it became important for Tibetan traditions to trace their lineage back to an Indian master, themselves held to be a disciple of the direct disciples of the Buddha. What primarily distinguishes the different sects within Tibetan Buddhism is the Indian master or sage (or Tibetan disciple of same) to whom they trace their foundation.

This period of efflorescence was, however, short lived. As Buddhism began to wane in India, Tibet was no longer challenged by a periodic influx of new Buddhist teachers, texts, and novel insights. This meant that the only way of preserving the connection with the lineage of the Buddha, to insure direct transmission of teachings and explications, was to identify root teachers
and *lotsawa* (translators) by which to anchor one’s understanding and to preserve the teachings (Samuel 1993: 225). Thus, after this eleventh century flowering, the sects of Tibetan Buddhism as we know them began to take form, beginning with the Kadampa. Defined by its stress on monastic discipline, it was founded by a disciple of the Indian sage Atisa. The Kagyu took their foundation in the work of Marpa, who was perceived to have been part of a lineage of direct transmission all the way back to the Buddha. Beginning in the twelfth century, the Kagyu emphasized oral transmission and began the tradition of seeking the next lineage holder’s reincarnation in a child (Kvaerne 1984: 263; Samuel 1993: 33).

Arising in the tenth century, the Shakya emphasized a different set of *tantras* drawn from India. Their monasteries and followers were situated near trading routes running through a region which is part of present day Nepal. Thus, they had access to many texts which they subsequently translated, eventually rising to power on the knowledge and wealth they had amassed. This openness to the influx of new textual and scholarly traditions at important points of the development of Tibetan Buddhism provides historical context for the kinds of transmittal and transmission of text occurring within the context of the “Science for Monks” programs.

The Shakya’s prominence was such that in 1244, Mongolia demanded submission from the head of the Shakya on behalf of Tibet. It was granted and in 1276 the head of the Shakya lineage became spiritual advisor to the Khan and the political head of Tibet (Glaubitz 2004: 88). At this moment, the groundwork was lain for what is perhaps the defining dynamic of Tibetan political diplomacy up into the present era: the “patron/priest” relationship (Goldstein 1989: 44; Kvaerne 1984: 261-262). This relationship also set the precedent for much of the monasteries later power in Tibet: freedom from taxation, granting of large land holdings, and a range of other special privileges. As I will argue in my concluding chapter, the “patron/priest” relationship is an
important lens through which we can understand the symbiotic relationship between neuroscience and Tibetan Buddhism. In other words, both the scientist and the Tibetans are dealing with a lack of some kind and each imagines that it is this specific *other* which can fill or supplement that lack. Between exile (Tibet) and disenchantment (Western science and culture) has been conjured the image of the brain to serve as a fantasy of origin and completion.

The Nyingma developed during the eleventh century and emphasized meditation and lay involvement. The Nyingma never developed the degree of centralization seen in other sects, as the *tantric* activity of Padmasambhava superseded the Buddha in importance. Furthermore, the Nyingma claim to be descended from 1st Propagation and *Bon*. Thus there is equal importance given to the monastic and the householder (*lamas*) practitioners. And while the sects are generally divided on which texts are considered authentic or empowered, the Nyingma themselves acknowledge another class of texts and ritual objects. These “hidden treasures” (Tib. *terma*), however, are believed to have been buried by Padmasambhava centuries ago only to be discovered when the time was right by individuals known as *tertons* (Tib. *tern ton.*). and their discovery meant to coincide with the need for a renewal of faith and to provide succor (Kvaerne 1984: 262-263).

By the early 1400s, the three major monastic “Seats” of the Gelugpa tradition (Ganden, Sera, Drepung) had been founded, consolidated through their recognition of Tsongkhapa as their founder. Tsongkhapa himself traveled widely, studied with many different schools, and performed prolonged retreats and rituals. Significantly, he emphasized discipline and the study of philosophy prior to tantric study. By the late 1500s, the Gelugpa were the major religious and political force in Tibet. By that time, the institution of the Dalai Lama had been structured with the Mongols in a re-working of the “patron/priest” relationship. This position was further
strengthened when the 4th Dalai Lama was recognized in a relative of the Mongol Khan, a
process solidified with the 5th Dalai Lama whose wars, with Mongol help, secured the Gelugpa’s
place in the Tibetan state (Kvaerne 1984: 265).

This state of affairs continued until Tibet and its Mongol alliance was weakened by the
invasion of the Dzungars, a nomadic group, and by the Gurkhas, Nepali warriors, in late 1700s.
In both cases, the Qing of China intervened to help defend Tibet. This fact later gave the Chinese
leverage to shape yet another incarnation of the “patron/priest” relationship during the late
nineteenth century, a relationship which this time saw the closing of Tibet and an increased
suspicion of foreigners (Kvaerne 1984: 265-266).

Up until that time, very few Westerners had visited Tibet. The Jesuits had arrived in 1624
and again in 1716. Though their missions were short lived, they did produce important scholarly
works on and in the Tibetan language. In 1707, a Capuchin mission was stationed in Tibet
(Engelhardt 2005: 55). While the Jesuits sought to master the Tibetan religion and language in an
attempt to understand Tibetan Buddhism as a means of refuting and converting, the Capuchins
made startlingly little concession and set to work on the effort of conversion more directly. By
the time the Capuchins were preparing to leave, representatives from British India and Tibet took
some steps toward negotiating a trade deal. However, the invasions alluded to above brought
such enterprises to an end until the British Invasion of Tibet, which culminated in
Younghusband’s 1904 march into Lhasa, and who retreated after securing trade agreements
(Goldstein 1989: 45; Kvaerne 1984: 266). Thus, through a series of “patronage” relationships
and eventual isolation under the Manchu, Tibet had managed to avoid direct colonial rule, but at
the price of leaving them radically unprepared for the events of the twentieth century. In a telling
historical irony, the Tibetan attempt to open itself to outside assistance – in the form of soliciting
support from Russia against the perceived colonial ambitions of Britain and China, whose own
ambitions were given urgency by suspicion of Russian involvement – cast Tibet in a new
imaginary. No longer simply the land which, as paradoxical as its divinities, embodied the most
profound mysticism and appalling poverty, Tibet was now the locus of intrigue. Tibet functioned
as the blank screen on which each player in the Great Game imagined it could read the intentions
of the others amidst the shadows cast by their own projections.

C. The Monastic State

From the time of the 2nd propagation, securing political power in Tibet became the locus of
tension between the separate sects. With the consolidation of separate schools, lineages of
incarnate lamas, and monastic orders, a distinctive and intimate connection between religion and
the government arose. Goldstein (2010) has termed this internal symbiosis “mass monasticism,”
I read Goldstein’s “mass monasticism” as an internal analog of the external “priest/patron”
relation that is itself one of the keys to understanding the complicated history and ethical
structure of the Tibet Question today. This relationship also infuses the political framework
surrounding Tibet’s relation to the powers which surround it. While much has been said of Tibet
being a land of isolation and mystery in the eyes of the West, Tibet increasingly began to
consider itself quite separate and sacred. Tibet actively pursued a program of isolation based on
conception of itself as a religious domain among the worldly (Engelhardt 2005:93; Goldstein
1989: 45). Visiting courtiers and traders and officials were all tightly regulated and monitored.
Officials recognized the superiority of the surrounding states and Tibet had to negotiate for the
support and patronage of at least one of these powers. Though Tibet had at one time
demonstrated military might, the conservative religious forces were of the opinion that direct conquest of others was less attractive than negotiating circumscribed support and protection.

Conze (2008: 117) puts it this way:

…in spite of its outward success, a religious decline set in after the seventeenth century. The Great Fifth Dalai Lama’s (1617-1715) habitual reliance on violence boded ill for the future. The Lamaist system gradually became fossilized. Up to the eighteenth century foreign influences had been welcomed and encouraged. From then onwards the country was shut off and this measure not only reflected the policy of the Peking government, but also a certain inward timidity.

Bound up with what Conze problematically identifies as “timidity” is *choyon* (Tib. *mchod yon*), meaning “remuneration to a priest for performing religious service, offering,” (Goldstein 1989: 13.) The word is itself is composed of the two words *choney* (Tib. *mchod gnas*) “an object to which offering is made, officiating priest, something sacred” and *yondag* (Tib. *yon bdag*) “patron, priest who performs sacrifice, benefactor, giver, donor sponsor.” In such a relationship, religious and political figures deploy codes of honor and deference in ways that simultaneously safeguard and transform traditional modes of understanding by mobilizing doctrine in relation to contemporary problems.

In the case of historical Tibet, it would be meaningless to talk of such a thing as separation of church and state. They each were the other as is expressed in the term *chosi nyitrel* “religion and political affairs joined together.” However, as Goldstein further points out, it was “this commitment to Tibet as a religious state and to the universality of religion as the core metaphor of Tibetan national identity” which was “…to be a major factor underlying Tibet’s inability to adapt to changing circumstances” (Goldstein 1989: 2).

In 2011, the 14th Dalai Lama effected a complete separation of religious and political leadership. Lobsang Songay, a Harvard educated Tibetan, was elected as the first Sikyong (Prime
Minister) of Tibet. Further, the Dalai Lama has even intimated that he will likely be the last Dalai Lama\textsuperscript{17} and stated that if he does return, he will certainly not incarnate in China. Songay and the Parliament – both elected – now manage the affairs of government-in-exile.

The major source of wealth for both the government and monasteries in Tibet were lay and monastic manorial estates. Within monastic institutions lands and resources were maintained through deed passage from one incarnation to another. In the case of incarnates, each was a member of a \textit{labrang}. \textit{Labrangs} were corporate entities that held all property and wealth to be passed to the new incarnation (Goldstein and Tsarong 1985: 35). Serfs were bound to work the land in some capacity for the entirety of their life, receiving no wage and at times having to surrender a child to the monastery as a servant or a religious (Goldstein 1989: 3). Serfs were permitted to support themselves with whatever they could acquire in working their part of the land. Serfs had even to assume the costs of the transport of goods to monasteries and officials as part of their tax obligations. In having the serfs bear these costs, the state minimized the need for developing further bureaucracy and issuing payments. But what Tibet lacked in bureaucratic administrators it made up for in monastic personnel. Citing an interview with former Tibetan official, in the 1950s it was estimated that there were approximately 90,000 to 120,000 monks in Tibet housed by some nearly 2,700 monasteries. This in a population of about one million (Goldstein 1989: 5-6).

As noted above, in Tibet there were three major – in terms of size, political, and religious influence – Gelugpa monasteries in Tibet, all of which have been rebuilt and re-established in India: Ganden, Drepung, and Sera; the “Three Seats.” Ganden was somewhat distant from Lhasa, though both Sera and Drepung were within a few miles of the capital city and each other. Each

\textsuperscript{17} It remains unclear what impact the Dalai Lama’s passing would have on the Monastic Science Initiative or the Buddhism and Science dialogue.
were the size and had the bustle of a small city. The abbots of each monastery were appointed by
the Dalai Lama. Under the abbot were a host of monk officials which oversaw finance,
discipline, ritual, etc. However, there were two rotating officials who oversaw each of the abbots
to make sure all religious matters were in order. Other officials oversaw pan-monastic finances,
resources, and other matters. These and other monasteries had housed a considerable percentage
of the male population for centuries. Surveys in 1694 put the monastic population at 97,528,
which grew to 319,270 in 1733 – over a quarter of the estimated male population at the time
(Goldstein 1989: 21). In Tibet, being a monk was one of the highest and most respected ways of
being in the world. From the perspective of many parts of Tibetan society, the state was there to
guarantee religion and monks represented the pinnacle of religious achievement. Therefore, state
decisions had to further the ends of the monasteries; failing to do so would violate a political and
religious duty.

The monasteries grew to such a prodigious size, in part, because parents would give one
of their children at a young age, either for tax, for payment to a lama for a deity’s cure, for
prestige, or to avoid material hardship. This practice was unlike that in the West or other
Buddhist countries where entering a monastery is usually the choice of an adult. This is not to
say that some children are not drawn to monasticism; one of my informants was such a one,
though my Tibetan language instructor was not. Monastic quantity, not quality, was emphasized
(though that is changing, see Moran 2004: 92-93). Short of committing murder or having sex,
monks were not subject to any weeding out process, though they would be disciplined for
transgressions (Goldstein 1989: 23). Contrary to the contemporary Western view, monasteries
were not quiet spaces composed solely of meditative virtuos and spiritual scholars.
These monasteries were (and are) loud and chaotic, the antithesis of the serene and contemplative domains popularly imagined. The monasteries were divided into “readers” … and the rest. Readers usually comprised less than a quarter of the population. The rest did the work of the monastery or simply lived off of the ritual offerings (Goldstein 1989: 24). If one was a “reader,” the day is filled with periods of group recitation, memorization, two periods of debate, religious ceremony, prostration, and meetings. Monastics receive one day of rest per week. If one had finished basic monastic education, one would attend to the duties which one had chosen to undertake as well their religious duties.

The Three Seats held sway in their respective regions through a network of smaller monasteries scattered throughout the countryside. Within the large central monasteries however, there were separate ruling divisions known as tratsang. Goldstein (1989: 26) likens them to the separate colleges within Oxford. These were divided into separate residential units with their own administration known as khamtsen. An individual monk would enter one of these owing to their regional affiliation. Sometimes there were further divisions in residential units reflecting regional dialect (mitsen). Additionally, there were “aristocratic” organizations within khamtsen, called shagtsang. At these levels, a sense of brotherhood among the monks of a given monastery was founded. The separate levels of identification were brought into service depending on the context. Rarely was one’s identity mobilized on behalf of the monastery as a whole (Goldstein 1989: 29). Thus, the separate colleges of any given monastery aim to instill what many have identified as an uncritical allegiance to the commentarial tradition of one's college and a downright "unBuddhist" antipathy and hatred of other colleges in one's monastery (Dreyfus 1997: 32, Hopkins 2001: 257).
All monasteries use the same Root Texts, but differ in the commentaries ("textbooks") and translators of those texts. Dreyfus (1997: 60) has suggested that such a narrow and exclusive focus works to instill the dedication towards the preservation of a particular worldview. It functions to instill the sense that something is at stake in all of these debates back and forth and that the nuances are consequential. For, if such differences were merely relegated to the realm of opinion, where would monks find the energy for the sustained commitment required to memorize and recite large amounts of text? Sectarianism creates a developmentally appropriate pedagogy that situates the monk in a worldview worthy of his energy and dedication.

D. **Monastic Education**

When children entered the monastery, they were given to an older monk who was to act as a guardian. Formerly, the monk responsible for a youth who had entered the monastery would also be in charge of providing some education and training and direction for the boy. In addition, the youth would be trained to assist the elder in his duties and chores. Consequently, there was a great deal of variability in quality of tutelage and a considerable element of chance in what kind of education and preparation one was to receive. Among the exile monasteries today, each has its own primary school which the young monks must complete until the 8th year before beginning monastic studies. This general education includes the subjects present in primary school, but also includes reasoning and logic. This is significant in that future “science monks” will have the background in mathematics and science and a facility with computers which the present generation does not. Consequently, as these monks mature and enter the science larger science workshops, there will be less need for the kinds of remedial work that goes on now, a change which may free time and resources and permit deeper engagement with the material.
Memorization, vocal repetition, and debate of the core texts and some commentaries are the main focus of the monks’ education after primary school, along with learning the code of discipline. These topics together comprise the Vinaya stage of education, and are drawn from a collection of texts known as the Kangyur (words the Buddha is said to have spoken) and Tengyur (the commentaries and explication of the Buddha’s word). Study usually begins in late teens and may take ten to twenty years depending on the level of Geshe, or education rank, they wish to attain (there are five levels, but all are often simply signified as Geshe).

One afternoon, sitting in one of the many cafés in Dharamsala that a particularly favored by monks in the area, my informant parsed the education at his monastery in this way: 2 to 3 years of logic, 1 year of sensory mind functions (Abhidharma), 7 years of prajnaparamita, 3 to 4 years of Madhyamika, 4 years of ethics, 2 years of Abhidharma. This takes about 18 years and completes the basic monastic training. The next level of Geshe takes 5 to 10 years, working in small groups and going deeper into the fundamental texts. Today, many monasteries will give these important exams together because of the number of monks involved, while in past only a few were allowed to sit for Geshe at any given time and only after they had been nominated.

Dreyfus (2003: 327) observes that in 1995 a change was instituted within Gelug monasteries that written tests over a seven year period were also required for one of the highest Geshe degrees. The new exam includes sections on history and the composition of poetry. Traditionally writing was not emphasized as it was considered too worldly for monks to engage in. Those who could write well were often tempted into vainglory, innovation, business, and government (Dreyfus 1995: 124).
E. Debate

Alongside this brief outline of monastic education, I think it is important to give some account of the practice of debate in order to highlight the area which differs most from the Western pedagogical system. Furthermore, given its distinctive role in the Tibetan monastic system and its place in popular images of Tibet, a few further words on debate seem appropriate. Indeed, debate is so significant to the monastic tradition that monks with training in science have recently begun to adapt the science material for use in traditional debating approaches (while writing this, I learned that monks debated the question of “particle versus wave” before the Dalai Lama at Sera Monastery 2015 following the Mind Life conference). This outline will provide the necessary background for my discussion of science education among contemporary monastics, their behavior and schedule, the focus on manual activities, and the tests and surveys which the “science monks” have to complete during their course of instruction.

Monks (“readers”) generally debate once in the morning and once in the evening. It is a ritually proscribed act. The posture, the gestures, and the phrasing conform to a strict code. The debate starts with a ritual invocation of the god of wisdom, Manjusri, followed by an agreement on the topic. Once a topic is agreed upon, the challenger tries to catch the defender in a contradiction. The debate itself is something wherein the challenger and defender practice mobilizing what has been memorized from the texts. For example, one could debate: is color a constituent of any object or not? In challenging, however, one must be careful not to reveal the strategic range of one’s attack but try to lead the defender into contradiction, getting them to agree with you on a seemingly insignificant point in order to catch him in a contradiction down the line. Debates are very physical and can get quite heated and are often humiliating for the
looser. Sometimes even other monks will join in and offer hostile taunts and challenge the
defender if he is making a poor show (Lempert 2012b: 141).

I recall discussing with one of my monastic informants the symbolism of the claps; he told me that it was simply a way of making a point, to wake up the opponent. I told him that I had heard that there was a deeper meaning, something to do with helping one’s opponent. He laughed and told me “yes, clapping the hands is a way of joining wisdom and path. We hold one hand down to block negative influences and use the other hand to help pull up our opponent. But we don’t talk about this much because when we tell people, they think we are just making up a story to please them.” That being said, the symbolism is more subtle and complex than this broad account. However, Dreyfus (2003: 217-218) notes that few monks are fully aware of anything beyond this broad view and are content with it serving for punctuation and physicality. In Dharamsala, I observed the monks from Namgyal and the Institute of Buddhist Dialectics go out twice a day to debate in the courtyard and open halls around the Dalai Lama’s residence. This debate is a vigorous testing of texts and one's ability to mobilize them. The monks would make their way from their rooms to the courtyard and temple spaces outside the Dalai Lama’s residence and engage each other in debate. The sound of voices, claps, and laughter could be heard above the noise of the street just beyond the walls.

Lempert (2012a: 152) suggests the aggression and antipathy is lessening in exile in order to conform more fully to Western expectations of what constitutes "Buddhist behavior.” The overall thrust is that some aspects of Tibetan Buddhism itself is changing – from the firmness and violence and shaming found in earlier forms – to those which are more appealing to liberal, Western onlookers with romantic ideas about Tibet and Tibetan Buddhism as a pacifistic culture and religion. However, it is also clear that the prominence of debate has been an effective
performance of Buddhism as an active, critical, rational system in the Western imaginary. Such a performance is integral to Tibetan Buddhism being perceived as compatible with science and not simply beholden to religious irrationalisms.

F. The 13th Dalai Lama’s attempts at modernization within Tibet

Before I discuss the monastic science education program currently underway in the context of exile and the reforms of the 14th Dalai Lama, I will consider the important steps toward modernization which were undertaken by the 13th Dalai Lama. In many ways, the 13th set a precedent for the 14th, including the manner in which he dealt with the origin of many of the conflicts which matured during the young 14th’s reign. At one point, the 13th even had cause to flee Lhasa to avoid the Chinese. What he saw abroad convinced him of the need to modernize Tibet’s institutions. However, the conservative elements within Tibet and the military forces outside of Tibet proved far too strong. In what follows I provide a brief history of the reign of Thubten Gyatso (1876-1933), the 13th Dalai Lama and of efforts to modernize Tibet.

During the years after his recognition but before Thubten Gyatso’s installation, the events of the preceding century compelled Tibet to recognize the colonial designs which had begun to mobilize around it, particularly those of the British. And, in the years after the 13th Dalai Lama’s installation, China’s concern about its own foothold in Tibet was growing such that it decided to increase its military presence in the region. In 1910, Chinese armies arrived in Lhasa, crushed the resistance, and determined to take the Dalai Lama prisoner. Hoping to avoid capture and further bloodshed on his behalf, the Dalai Lama fled to India. At nearly the same time, the Chinese emperor was deposed. The Qing had fallen to Republican forces, who then themselves eventually fell to the Communists (Shakya 2005: 145).
The Dalai Lama’s sojourn in India had had the unanticipated effect of strengthening the Tibetan populace. Resistance against the Chinese authorities increased and the Tibetans began to petition the British for assistance, putting aside their suspicion of future designs in the face of present dangers. However, per their treaty with Russia, the British remained neutral. Meanwhile, in Lhasa (in a strange foreshadowing of the events of 1959), monasteries were being looted and officials arrested by the Chinese. Eventually, the Tibetan resistance drove the Chinese out and, in 1912, the Dalai Lama returned. Some of the populace had sided with the Chinese. Those who had, were executed. The Dalai Lama severed ties with China, repudiated their historical “patron/priest” relationship or yoncho (Tib. youn mchod), and declared Tibet a fully independent country (Shakya 2005: 146). Later that year, a Tibetan delegation was formed to meet with British and Chinese officials to reassert the borders of Tibet after these conflict ridden years. Though each of the attending delegates signed the border agreement, none of the respective governments ratified it.

But the question of Tibet’s isolation and modernization lingered. During the 13th Dalai Lama’s exile from Tibet, he began to understand how far behind Tibet was from the rest of the world in terms of material development. In addition to inviting engineers, teachers, and military experts, he also sent four Tibetans to study in England (thus prefiguring one aspect of the Emory-Tibet Program). These Tibetans returned in the 1920’s, having trained in electrical engineering, military strategy, telegraphy, and mining (Goldstein 1989: 159). In 1924, the Dalai Lama authorized English schools patterned on the British model. Additionally, Japanese advisors

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18 Perhaps it was the success of this maneuver which set precedent for 14th and reasonable expectation on behalf of the Indian government that the Chinese would be at some point removed from the country.
helped with the military, postal, and currency services which were to help fund the 13th's modernization programs (Shakya 2005:147).

However, the cost of these modernization programs produced tensions with the monasteries, traditionally sources of wealth, support, and patronage. Opposition to the 13th Dalai Lama’s reforms continued to increase on other fronts as well. The English language school he approved was seen as a threat to traditional values and was forced to close amidst very real threats of violence emanating from the monasteries (Goldstein 2010: 13, Shakya 2005:148). The 13th Dalai Lama also received opposition owing to his openness to receiving and practicing initiations from historically rival sects. This conflict set the stage for the Shugden controversy today (Shakya 2005: 149).

These attempts at reform failed for many reasons. The British did not send the equipment they promised. Further, the 13th Dalai Lama’s policies were being undermined from within by members of his own government. By his own decree, monks could serve in the Khashag, as they previously could not previously. This decree inadvertently made it possible for the conservative monastic establishment to oppose his reforms – politically and religiously – in the name of tradition. Why did the 13th Dalai Lama not try to mount a counter-resistance of his own? The answer perhaps lies in that fact that while he was convinced of the need for modernization, he was also concerned about the effects of modernization. Along with his reform efforts, he banned the import of tobacco and wrote a decree opposing Western dress and display (Shakya 2005: 149).

Concerned, on the one hand, at the closed and conservative elements in his own society and, on the other, of the destructive and iconoclastic forces around him, the 13th Dalai Lama used one of his last speeches to deliver this prophetic word of caution:
…this present era is rampant with the five forms of degenerations, in particular the red ideology. In Outer Mongolia, the search for the reincarnation of Jetsundampa was banned; the monastic properties and endowments were confiscated; the lamas and monks forced into the army; and the Buddhist religion destroyed, leaving no trace of identity. In future, this system will certainly be forced either from within or from outside the land that cherished the joint spiritual and temporal system. If, in such an event, we fail to defend our land, the holy lamas including “the triumphant father and son” [the Dalai Lama and the Pañchen Lama] will be eliminated without a trace of their names remaining; the properties of the reincarnate lamas and of the monasteries along with their endowments for religious services will be seized. Moreover, our political system originated by the three ancient kings will be reduced to empty name; my officials, deprived of their patrimony and property, will be subjugated, as slaves for the enemies; and my people subjected to fear and miseries, will be unable to endure day or night. Such an era will certainly come. (Goldstein 1989: 205, Shakya 2005: 149-150)

These last words proved prescient indeed. Tibet has lost its sovereignty, and both “the father and the son” have left the land. The 14th Dalai Lama has openly suggested abolishing his role and office, making him the last of his line. Monasteries have been looted and monks tortured and disrobed. More recently, both individuals and institutions have been perversely co-opted to serve the needs of the growing middle and upper classes in China.

Acknowledging these losses is not to suppose the destruction of Tibet as an ideal society. On the contrary, for the sake of its people, Tibet stood in deep need of development, modernization, and both legal and economic reform on a massive scale. While the 13th Dalai Lama attempted to effect some of these changes, he could not prevail against existing interests, power structures, and conservative elements. It is in exile where such reforms have begun to take root as traditional structures must respond to the view of potential supporters in the West. The imperatives of cultural preservation are now intimately linked with change and adaptability.

In the next chapter, I explore this link through several encounters with individuals living and working in the Tibetan exile community of Dharamsala.
V. SCIENCE FOR MONKS

In this chapter, I present a brief historical overview of the development of the dialogue between Tibetan Buddhists and Western Scientists. Following a sketch of the contemporary partners and stakeholders in the “Science for Monks” program, I present an ethnographic account of how these interests and histories are mobilized in Dharamsala through the day to day work of translation, curriculum design, event scheduling, and performances of self. I also present interviews with other stakeholders in the program: students at Men-Tsee-Khang, visiting scholars and instructors at the Library of Tibetan Works and Archives where the science curriculum is designed, and monastics who were in attendance for science courses.

Tibetan Buddhists are in a unique position with respect to other historically disenfranchised groups who are driven, simultaneously, both to preserve their culture and adopt the language of techno-science to prove their “authenticity” (Adams 2002; Nandy 1983). Because the modern configuration of Tibetan Buddhism as a “mind science” addresses the well-being of persons, Tibetan Buddhism is brought into arenas in which the notion of subject and health is being questioned. Anthropologists have been attentive to the unique ways in which the very terms used to describe subjects and persons in such arenas are themselves permeable to global and local networks of power, politics and finance (Martin 2010; Ong 1987; Padel 1995). This is particularly the case with words such as "traditional," "self," "subject," and "mind." These terms figure in important and different ways in Tibetan Buddhism and Neuroscience and function as the salient points of intersection between these two worldviews.

This dissertation considers just such interactions in the context of the emerging brain sciences, its technological apparatus, and the assumptions about what kind of truth or facts it
yields. In addition, I examine the ways in which neuroscience is not immune from the logic of earlier state supported uses of technological advances in the health and population sciences. As I have shown, the elision between material image and ideological representation made possible by the advent of photography and its use in colonial India is instructive when considered alongside the development of neuroscience in the contemporary Chinese state. Though conducted in widely divergent cultural fields, both historical moments were driven in part by questions of race, ethnicity, and the overall health of the state as visibly indexed by the comportment of individual subjects (Douglass 1966: 3). Within the context of globalization, recent technological advances in imaging practices – specifically neuroimaging – serve as analogous points of articulation between science and the state. The circulation of such images enacts and shapes a modern politics of representation. I aim to disclose the specific ways recent research in the West and China using fMRI technology identifies correlations between salient differences in the neural locus of “self” and ethnic and cultural variation. Such efforts carry within them resonances of earlier imperial projects which sought to map the body in an attempt to lend material support to colonial ideologies. This is especially important given that the same technologies which are used to study meditation and enable scientists to draw a range of conclusions about the “self,” also figure into ongoing state projects of risk management and social hygiene.

In what follows, I provide a brief history of the 14th Dalai Lama’s move into exile and the establishment of a refugee population formed around a shared goal of preserving Tibetan culture. I then discuss the formation of the science programs at Emory and within Tibetan monasteries. Lastly, I present interviews with those in Dharamsala whose lives are affected by the larger debates between tradition and modernization and the Buddhism and science dialogues.
A. The 14th Dalai Lama and the “science dialogues”: modernization and exile

At about 16 years of age, the 14th Dalai Lama was invested with the political responsibilities of his office. It was 1951 and the Chinese were once again pressing in. At that time, the Tibetans successfully repulsed the Chinese. Soon after, in 1956, the 14th Dalai Lama and the Panchen Lama met in India with Chou En-Lai and Indian leaders. This meeting was organized around the Buddha’s birthday. The 14th Dalai Lama took the opportunity to discuss his concerns about China with India’s leaders and to broach the subject of exile and support. Though concerned about China, Nehru was committed to India’s stance of neutrality in the region following its independence. Nehru suggested that the 14th Dalai Lama return to Tibet and that things would work themselves out (Shakapba 2010: 946).

By 1959, the Chinese had succeeded in taking Lhasa, and hoping perhaps to follow the prudent and successful strategy of the 13th Dalai Lama, the 14th fled to India. Numbers vary, but some estimate that as many as 80,000 Tibetans (Gangchen 2011: 3) crossed over into India at this time. Today it is estimated that there are perhaps 150,000 Tibetan refuges living abroad (mainly in India, Nepal, Switzerland, Bhutan, US, Canada, Australia).

Initially, the Dalai Lama and the Tibetans were settled (in addition to a few camps in Nepal) in Buxa Duar, a region in western Bengal on the border with Bhutan, in addition to a few camps in Nepal. Later, the mass of Tibetans which had accompanied the Dalai Lama were settled by the Indian government in agricultural areas in Karnataka. The Dalai Lama and the main educational, cultural, governmental leadership were settled in Dharamsala, a former hill station in Himachal Pradesh used by the British. The region also had a history of Tibetan settlement in the nineteenth century. Today “little Lhasa,” as it is also known, sits on the site of a major earthquake which split the area into three stratified layers in 1905. Kangra is the valley.
Dharamsala captures the second level and is comprised of government buildings, Delek Hospital, the Monastery of the State Nechung Oracle, the Library of Tibetan Works and Archives, and Men-Tsee-Khang. The third level is McLeod Ganj, where one finds the residence of the Dalai Lama, Namgyal Monastery and the Institute of Buddhist Dialectics. At the very base of the hill is Lower Dharamsala with the large Kotwali Bazaar.

During the first phase of these relocations, representatives of monastic institutions remained in Buxa, near the Bhutan border, setting up as well as they could the rituals and rhythms of monastic life. But there was no real chance of expansion and there was much uncertainty about the prospects of long term support. In 1969, a number of monastics were relocated to Bylakuppe and Mundgod in the southern state of Karnataka. The monks worked to clear the forests, till the land and build the monasteries. At this time, settlement areas were known simply as “lama camp 1”, “lama camp 2”, etc. Gradually, support for building came from Buddhist organizations around the word. By the 1960s, the “Three Seats” of the Gelugpa order had been reincarnated in India, achieving their present configuration in 2002. These monasteries grew from 60 to over 2000 monks in the span of 45 years. Importantly, the Indian government not only supported but encouraged the Dalai Lama’s control of refugees and his role as representative of Tibetans in exile. Such a policy took some of the administrative pressure off the Indian local and federal agencies. Furthermore, “this policy was in line with India’s desire that settlements should be designed in a non-assimilative way as to enable Tibetan refugees to preserve their cultural identity and religious intuitions while in exile” (Norbu 2003: 194). This “non-assimilative” framework worked when both Tibetans and the Indian government believed that the Tibetans would return, but the policy is now being criticized. Tibetans themselves have suggested that they should be looked upon and defined as perhaps a jati, or caste, and so

19 http://www.drepunglachi.org/history.html
maintain their identity while having greater rights (Norbu 2003: 205). Tibetans cite the fact that they bring jobs to the areas in which they are located is proof enough of their contribution to local communities. Most of the workers Tibetans employ for manual labor in fields and the construction of building are Indian. And because these Tibetan communities are tourist destinations, they have brought funds and development projects which otherwise might not have come to the region. But their prosperity also brings new challenges, of growth and direction.

As Shearab Gyatso (2004: 215) underscores, one must consider that there was more than a little urgency animating the early efforts at preservation and survival given that the Tibetan diaspora occurred at the same time that the Cultural Revolution (1966-1976) was under way in China. The Cultural Revolution was a period of systematic destruction of thousands of temples, texts, and lives across China and Chinese held Tibet. Further, China worked to seal the border between Tibet and India, seriously restricting the ability of scholars and lineage holders to join the Tibetan monastic cultural revival underway in India.

These monastic settlements in exile were often near to or within the larger refugee settlements with both groups working to support each other, a radical break from the early social practice in Tibet. However, the climate and the difficulties of the land took their toll on the Tibetans. Unfamiliar with the climate, flora, fauna, and large scale agriculture, they suffered considerable population losses in the early days of settlement through hardship and disease. Ultimately, the communities prospered and today some farmers have ventured into the organic and specialty produce market. The monasteries too have expanded, with several donors, NGO’s, and outside organizations contributed a tremendous amount. At all events, such growth over the years is still a considerable achievement given India’s level of poverty (Norbu 2004: 191).
B. The Development of the Monastic Science Program

You can’t force a monastery or nunnery to accept [science in the curriculum] – we must show them its importance – they don’t speak of [science] in a bad way but it takes time to change and embrace something that is outside the traditions. But if you don’t learn about the modern world then you will not be able to adapt to the changing situation and needs.

Conversation with Geshe Lhakdor, Director LTWA, July 2015

Tibetan monastic scholars, traditionally isolated from the outside world, have also been compelled in recent years to learn science and engage scientists in dialogue …. As our understanding of how phenomena are inter-connected grows – how everything in this world is connected to everything else becomes clearer, we realize the importance of the promotion of secular ethics and universal responsibilities. Hence we believe that Buddhists engaging in science is a critical vehicle for promoting ethical guided investigations.

- Gangchen 2011:3

I wanted to understand science…because I recognized in it a compelling way to communicate insights gleaned from my own spiritual tradition.

- His Holiness the Dalai Lama, in Gangchen 2011:3

The goal of the Library’s science programs is to open the 21st century to Tibetan Buddhism [N.B., not to open Tibetan Buddhism to science] – to support learning and dialogue that bridges Western scientific ideas with Buddhist philosophy and Buddhist science.

- Gangchen 2011:4

In this section, I will focus on the way in which science instruction unfolds in Dharamsala. Following a brief account of how the monastic science program developed, I will consider a two-week science class that was held in Dharamsala in 2015. The class was part of an initiative implemented by the Religious Affairs department and was taught by members of the science staff. The purpose was to provide scientific literacy to monastics from sects which are as
yet underrepresented in the Monastic Science Initiative or who come from smaller monastic communities which cannot afford to sponsor monks to participate in the larger annual trainings.

In chapter two, I briefly explored the history of the Dalai Lama’s interest in science, his participation in conversations with scientists, and how this grew into the Mind and Life Dialogues and Institute. I also indicated that this sustained involvement helped to spawn a rapidly growing field of neuroimaging research into the effects of meditative practice. This involvement also led to the Monastic Science Initiative, the “Science for Monks” program.

The Program had its official start in 1999, less than twenty years after the first Mind and Life meeting. The Ven. Achok Rinpoche, the former director of the Library of Tibetan Works and Archives (LTWA), presented the program to an assembly composed of members of each lineage who agreed to assemble members for a science translation project. The result was a four-week science course given to monks representing each of the major traditions. A year later, fifty monastics from various monasteries convened at Sera Jey Monastery in southern India for a four-week science workshop. To support these developments, the “science for monks” program was formed in partnership with the Boston based Sager Family Foundation in 2001. Thereafter, annual four-week workshops were held with the fifty monk cohort. Over the years, enthusiasm for the program continued to develop in both the monastic and scientific communities. In 2007, the present director, Geshe Lhakdor created a Science Department at the LTWA to oversee the work of translation and the publication of manuals and texts produced for these programs. Originally, the main attendees were from the Gelug order, but Nyingma and Kagyu are now also part of the effort, as are the Sakya and Bon. Increasingly, nuns are also participating.

Many of the instructors for these early programs were scientists from U.S.-based universities and research centers. One of the first was Dr. Bryce Johnson, presently of the San
Francisco Exploratorium. His early work on water quality in the region presented him with the challenge of how to communicate his findings in such a way as to motivate the community to make positive changes. However, he had to do so in a way which was not simply an appeal to the scientific nature of the tests he was conducting as such appeals would be persuasive only to a small percentage of any given community. Accordingly, he designed demonstrations as a way of getting across the importance of what science had revealed to him about the water quality in the area and the need for improvement. Owing to the age, quality, and design of the water system in Dharamsala, intestinal complications are widespread and can be life-threatening. While even now only a few homes have filters, in 2015 a free general use water filtration and UV system had been set up in the courtyard outside the entrance to the Library of Tibetan Works and Archives. Later, Bryce worked with the science staff at the LTWA to design classroom activities to help convey the scientific principles being taught in the classes and assisted with the larger, roving exhibits which are presented by graduates of the “science for monks” program.

It is important to note here that the science classes do not instruct monks to do science, despite Dr. Johnson’s practical goals early in the program’s development. Rather, the science classes aim to provide monks with the basic science literacy and strategies to teach within the monastery and larger Tibetan community. Though it was not explained to me in this way, the logic of this approach appears to be part of a larger move towards introducing science practice. This “stage” model analysis could be construed as arguing that literacy must precede praxis and, for changes to be convincing and lasting in the community, core insights must be transmitted to the community by respected members within it. However, while I did see some evidence of measures being undertaken to give monks greater access to equipment which would facilitate conceptual understanding, there are as yet no plans to integrate monks into the actual practice of
science. Whether this omission is a product of conservative strategy or a reluctance born of respective imaginaries is a question I take up more fully in the final chapter.

Working in conjunction with translators at the LTWA Science Department, visiting professors and instructors from the US and Europe would present terms and concepts at the science classes in those areas of science which the Dalai Lama himself had specified as being the most fruitful points of intersection: psychology and neuroscience, physics and cosmology (Bstan-‘dzin-rgya-mtsho 1990). Subsequently, monks already participating in the science program formed book groups to explore the science the Dalai Lama speaks of in his book *The Universe in a Single Atom* (2005). In this book, the Dalai Lama gives particular attention to psychology and neuroscience. These disciplines formed the basis of the Tibetan inflection of the Buddhism and Science dialogue and, as we have seen above, were integral to psychologizing Buddhist meditation. In large measure, the Dalai Lama is continuing along a path which had its origin in the dynamics of a fraught colonial encounter.

But the effects of this exchange were not intended to be one way. The Western scientists too were being educated in turn. One LTWA publication puts it this way:

> [O]f the western participants who have gone to the monasteries to teach, they write that they have “…gained new appreciation of the connections between science and spirituality, and have returned to their home institutions with a new and more open-minded perspective on the intersection between science and spirituality.” (Ganchen 2011: 4)

Is the West, in fact, asking its scientists to acquire a “more open-minded perspective on the intersection between science and spirituality?” Certainly, something akin to such a perspective is perhaps longed for in the concern over the ethical domain in science and research. But is this “openness” really the most salient justification for these dialogues? The assertion leads us to question what it is that the West is getting from the exchange with Tibetan Buddhism and
perhaps how and whether the Tibetans themselves conceive this as a *quid pro quo*. It certainly seems that what the institutions and scientists are hoping for is an “encounter,” a “re-enchantment” and perhaps even a “permission” under the auspices of Tibet, placeholder of the spiritual, that Western science be able to recover a language in which it can talk about moral, ethical, and spiritual frameworks. I consider why this was thought to be found in Tibetan Buddhism and suggest that it had a great deal to do with the Dalai Lama’s willingness to step into the representation of Tibet as the holder of a spiritual knowledge. This willingness is driven by a need to open and make visible the violence and atrocities being perpetrated by China. To bring attention to the atrocities unfolding within the borders of Tibet, Tibet promised to reveal the ancient secret of moral and spiritual advancement the West had imagined it held. Tibet gained thereby the West’s support in its cause in a way reminiscent of a type of priest-patron relationship it had for much of its history engaged.

By 2008, more monks had begun to participate in the monastic science training being offered in the monastery. And as those who had already participated required a new level of engagement, thirty of the original cohort were selected to be part of a new monastic wide program: The Sager Science Leadership Institute (SLI). The goal of SLI was to teach monks how to teach science and to function as mediators between the science initiative and various monastic institutions. In the SLI, monks would be taught how to design hands-on activities and to develop writing skills focused on “topics of common interest to both Buddhism and science: neuroscience, cosmology, environmental science, and general scientific inquiry” (Gangchen 2011: 7). SLI graduates also reach out to local schools and stage science exhibitions in the community. These exhibitions are developed in collaboration with the San Francisco Exploratorium and the Smithsonian Institution. The 2013 “World of Your Senses” – a traveling
exhibit designed and presented by SLI graduates in select areas in India and Nepal – was received to some acclaim.

In 2011, with the support of the Templeton Foundation, a new program – the Monastic Graduates Project – was started for those monastics who had finished their formal monastic studies. Previously, only those near graduation could participate. This program is for those who have been out of the “exam” mode for a while, several of whom also participate in the Taiwan-based, three year English intensives which have recently attracted many Tibetan monks of various lineages. The MGP is held in late November and ends just before the annual International Mind and Life conferences. This four-week workshop is designed as “…a readily testable mechanism for building the capacity of scientists and monastic graduates to support one another in dialogue” (Gangchen 2011: 10). As of 2011, it was estimated that over 200 monks – and some nuns – had been through some version of the science workshops.

Alongside these developments, another program to encourage science education amongst monastics was started. In 2006, under the direction of the psychoanalyst, anthropologist, and then Dean of Emory College Robert Paul, Emory and LTWA entered into a partnership called the Emory-Tibet Science Initiative (ETSI). The goal was the development of a complete science program, with emphasis on chemistry, physics, math, cosmology, psychology, and neuroscience, for integration into the monastic curriculum. In 2008, the Dalai Lama announced the program to a monastic assembly. The announcement and its ratification marked the first large scale change in the Tibetan monastic curriculum since its inception. Such an initiative was seen to be wholly consonant with goals elsewhere specified by the Dalai Lama: “I have long believed in and advocated a dialogue and cross-fertilization between science and spirituality, as both are
essential for enriching human life and alleviating suffering on both individual and global levels” (Gangchen 2011: 11).

The ETSI has two components. The first is the annual five-week summer workshop for qualified monastics who have facility with English and who are near the completion of their monastic education. These are held in the larger Tibetan monasteries in south India and there is a conscious effort to include monks and nuns of various traditions. In conjunction with these efforts, a set of Tibetan – English science textbooks and primers were produced by Emory and LTWA. To aid in the translation and standardization of this new science vocabulary, Emory and the LTWA annually sponsor an international conference at Emory that brings together scientists scholars and Tibetan translators.

The second component of the ETSI is the Tenzin Gyatso Scholars program at Emory University. From among those studying science in India, six monks are chosen to spend two years studying abroad at Emory. They live on campus, share an apartment, and attend classes. The classes are largely freshman and sophomore level math, chemistry, and physics. There is also a branch of Drepung Loseling at Emory, which is itself involved in developing a compassion based mindfulness program under Co-Director and abbot Dr. Geshe Lobsang Tenzin Negi. Dr. Carol Worthman, an anthropologist at Emory, also has a large part in coordinating teachers and activities for India. Upon completion of their two years at Emory, monks return to their monasteries and assume their role as teachers of science education in the monasteries.

Since 2000, as part of the general science effort, the LTWA has published the biannual *Tibet Science Journal* and, since 2006, the *Science Newsletter*. Both are in Tibetan and are intended to keep the monastic community up to date on recent scientific developments and to foster interdisciplinary dialogue.
It is clear that the goal of the Monastic Science Program is to provide monastics with the tools to become literate interlocutors and teachers of science. But the program is not currently geared to bringing them into the practice of science. Of course, future progress along such lines is possible, but one must then wonder what such a program would look like and what its justification would be. Would Emory scientists bring monks from India to work in their labs? What would be the selection criteria? Would it be possible to partner with universities in India to use their facilities and instructors? What of a “citizen science” approach, where monastics are recruited and trained to conduct a whole host of data collection projects: genealogical, sociological, archaeological, and conservation? Would such an approach help to increase the viability of the Tibetan exile community in India as it struggles for place and identity in the shadow of the 14th Dalai Lama’s eventual passing? Importantly, each of these questions is linked to the ways in which the Tibetans themselves construe the training they are getting and the options before them.

C. My first day of school

It was a summer muggy monsoon morning. I had woken early to the sound of the large prayer wheel being spun in the shrine between the scholars’ residence and the Nechung’s monastery. Beyond the bell, I began to hear children’s voices, worker’s hammers, pensive dogs, startled mopeds, and the mushroom hawker crying, like some forlorn Droog: “harroshah!” “harroshah!” I dressed and anxiously waited for Tenzin’s call to tell me where to meet her for our thirty-minute ride to class.

The text came. I had five minutes to get to the courtyard outside the Parliament building. I found Tenzin, Pema, and a driver waiting for me, standing next to what resembled a VW
micro-bus. We hurriedly piled in. They apologized for not contacting me sooner. The morning’s blackout, which often follows the heavy rains, had made getting their children off to school very difficult and they found themselves quite rushed. I thanked them for having remembered me in the midst of so many other things and found myself thinking both how selfish it was for me to have repeatedly asked to accompany them, and how grateful I was for their having me along.

It took another ten minutes or so just to get out of the government courtyard. Everyone was coming in and out at the same time. Cars nudge closer and closer to each other, each driver trying to manage things so neither party would have to endure the shame of being the one who actually could be said to have yielded. Once outside the government compound, we moved fast down winding roads, playing chicken with cars, mopeds, and pedestrians, dodging holes and unobliging cows. Passing through the Kangra valley, the forest strewn Himalayan foothills rising on our left, towns and rivers to our right, we were greeted by gorgeous vistas framing the derelict trappings of brightly colored shops and dogs half-asleep lounging half in the road. We arrived at an unpaved path that barely emerged from a thick plot of grass. Pulling slowly on to the begrudging gravel, we then made our way down a difficult road with a large river on our right, crisscrossed with lines of prayer flags and laundry.

The Tibetan Refugee Reception Center, which opened in 2011, was funded through a joint effort by the U.S. State Department and the NGO Tibet Fund. With accommodations for up to 500 people, dining halls, recreation areas, and classrooms, it was designed to accommodate refugees newly arrived from Tibet. It provides food, shelter, clothing, medical care, and some basic schooling. In some cases, the Center would be able to provide those newly arrived with connections in the community or instruction in a trade. However, since the 2008 protests in Tibet there has been a drastic reduction in students and refugees as the Chinese crackdown has
increased, with soldiers patrolling the border crossings and threatening, inside Tibet, the families of those who do escape. Given the facility’s capabilities and dorms, the Reception center has proven to be an ideal place to hold the science classes as the monks have ample room and board is provided.

This particular series of science classes is designed for monastics who are working to acquire literacy in science. This series also caters to monks from sects underrepresented in the larger science program or who come from monasteries which are too small to afford sustained science education. 2015 marked the second year this course was offered and was itself an initiative sponsored by the Department of Religious Affairs working in conjunction with the Science Department. The Science Department employed five male and two female instructors, all of whom also engaged in translation and curriculum design. I was told that I would be working with the two female instructors Tenzin and Pema, both married and with children, one with a degree in zoology and the other in physical sciences.

We had arrived early, so I simply sat quietly in the back of the class once it had become clear there was little I could do to help set up. Tenzin told me that this course would be conducted a bit differently than it had been the first time around. Three topics rather than four would be covered in a day, given that the monks had to learn and assimilate the concept, the English vocabulary, and the new Tibetan vocabulary. Late afternoons were set aside for hands-on interactive work. Lunch was held from 1 pm to 3 pm, of suitable length to accommodate the monks schedule and naps. Sitting quietly, I wrote down these details she had just given me as twenty-four monks and four nuns, talking and laughing and horsing around, excitedly took their places at the desks before me. I later learned that some were repeat attendees. Glancing up from time to time, I met many curious looks cast in my direction.
At the start of class, Tenzin introduced me and asked me to say a few words about myself, which she then translated. I explained why I had come and thanked them for being willing to share their day with me. As I sat back down, I noticed the Dalai Lama’s picture above the whiteboard and projection screen. An image of a DNA helix appeared on the screen superimposed and run through with the Vitruvian Man. Class had begun.

The desks are designed for two and the monks seem quite comfortable with the proximity. Ranging in age from mid-20s to late 40s, throughout the class they are touching, remaining close, stretching, standing up to take photos with their iPhones of the Power Point slides. The nuns, too, are comfortable with proximity, but sit together in the back of the room near each other and in front of me. Each has a copy of the subject specific science primers in Tibetan printed by the LTWA.

I try to follow the Tibetan as best I can. I catch words here and there, but it is very fast and much of the vocabulary is specialized. I think about the dynamics at play before me and how much of a break this is with tradition: monks being taught by women and with women and reflect on the Dalai Lama’s initiatives toward gender equality among the clergy. Science education is bringing more than just a certain kind of knowledge about the physical world and how it works. The science classes are venues in which traditional values and practices are challenged and seen in new ways, permitting the individuals within the Tibetan community to negotiate new ways of being with each other and to begin the work of reshaping the future of Tibet’s cultural and religious institutions.

Today, they are learning about core concepts in Biology. As the class proceeds, Tenzin sometimes writes in English on the white board to clarify certain concepts or to show the agglutinated components of a new technical term in Tibetan. From a discussion of DNA, the
lectures went on to a discussion of chromosomes, karyotyping, mitochondria, cytoplasm, and the nucleus. New slides appear presenting a way of thinking about the relation between structure and function and homologies in biological science, followed by a slide in English announcing the “Diversity of Life.” A whole new vocabulary set follows: Tibetan words for bacteria, eukaryotic organisms, unicellular and multicellular life forms. And then, again in English, “Unity of Life.”

The class concludes in a question and answer format. Questions are presented as a patterned explanation from the book with the expectation of a patterned response and which the whole class tries to repeat at the same time. The monks respond enthusiastically, shouting, touching, sometimes slapping or mocking each other if the wrong thing is said. In all it is a jovial, spirited, and playful exchange. I begin to imagine these responses as rehearsals for a new form of monastic debate.

I suddenly become aware again that, except for us, the entire Refugee complex is empty. In the lull of classroom sounds one can sometimes hear birdsong or the light rain rushing to hide itself amidst grass, leaf, and fissure. Lost in these thoughts or intently observing, I sometimes become aware that I myself have become the object of one or more monk’s attention. Later, I notice that they almost always look back at me when they are doing something mischievous to their partner or when a joke is made at someone’s expense. I am unsure how much of what I am seeing is a performance, how much is self-consciousness. I am, however, sure of how much effort I myself am spending to appear the sociable yet disciplined observer.

During the morning break, I learn that the four nuns who are in attendance this year participated last year as well. Two are from a nunnery near Norbulinka, about 9km distant. Walking from the classroom to the great hall with tea and biscuits, a Khenpo from a nearby Kagyu monastery introduces himself. He told me that he left his family in Tibet in 1998,
undertaking the one month trek through the Himalaya to reach Dharamsala. Today, he teaches at his monastery, and is working to generate a Kagyu specific dictionary of philosophical terminology. This is his second time participating in this workshop, and he will soon leave for Thailand where he will work with a Tulku who has set up a three-year English course to work with Geshe and Khenpo only. Our break is short, but he hands me his business card and asks me to stay in touch. As we walk back, others introduce themselves.

Class begins as Tenzin passes a plastic brain model around. I am primed and confused. I am expecting instruction in the brain, but we begin with “nebula” written on the whiteboard. I feel myself become anxious: does she mean medulla? Soon, however, I realize that we are not discussing the brain but the solar system. Other terms and slides follow: fusion, gravity, the name of planets and their relative size. During the lesson, there is a blackout. The instructor continues at the whiteboard: distance, speed, time, velocity. The lights return for the next slide in the series: Cosmic Background Radiation. We continue: crest, wave, frequency, Big Bang.

This list of terms and slides was followed by a video on relative planet and star size, which ended with the words: you are not the center of the universe. I feel myself relax.

It is here that the instructor segues to brain science, covering basic structures, the orientation of the brain within the skull, and a discussion of neurons. A picture of a damaged iPod box provides the occasion to discuss the types and layers of protection; bone, fluid, meninges, and dura. The lesson ends with a more detailed discussion of the planes of dissection and notable brain structures.

I reflect on the fact that the orientation they are getting in their own language is quite good thus far and, though very condensed in presentation, appears to be on par with what undergraduates may receive at the freshman or sophomore level. It is designed to give a
foundation and orientation to the subject so as to make them literate. The presentation also facilitates their ability to link these concepts in English with the new terminology in their own language. And though they are questioned in class, they are not tested. Though testing hardly seems necessary in this context, I note that I am tempted to suggest that something must be done to help them consolidate the information they are receiving. Perhaps, if each were assigned or chose a topic to instruct the class on for five minutes or so on the last day?

But now it was lunch time. A group of monks gathered around me, eager to test my Tibetan and their English. Owing unequivocally to their greater facility with English, I learned that some had come from areas south of Dharamsala which are a three days’ journey on both trains and busses. They told me that many monasteries had begun to integrate science about two years before they become eligible to test for their Geshe degree. The larger monasteries have even begun to integrate English and math as part of the course work for younger monks. They spoke enthusiastically of Bryce and of all he had done to get the program working. I began to wonder what I could do to help: what was I doing here, hanging out, and watching them? Was there a way of doing my research and helping? Were those projects mutually exclusive?

I asked those who had participated in other science workshops how these classes compared with what they had done before. Many felt the quality was similar but the larger courses included more hands-on tasks, experiments, and demonstrations. While nearly all are taught in English and with the assistance of Tibetan translators, they realize that to get further science education, which they are quite hopeful of and eager to acquire, they must work on their English. Several agreed when someone spontaneously remarked how they enjoyed the presentations on the taxonomy of animal life: kingdom, phylum, class, etc.
In a large, open hall we gathered for lunch. The nuns sat together at benches far removed from the monks, though the teachers joined the monks at the dining tables that were arranged in a large square in the middle of the hall. As lunch came to a close, there was time for discussion and I learned that there were representatives from eighteen different monasteries in attendance. Eligibility is determined by interest and facility with English. However, they made it clear that even though they represent different sects and lineages, they all use the same root texts. They only differ in the types of commentaries they employ and in methods of explanation. They further explained that these methods of explanation are evaluated pragmatically within each tradition, not doctrinally. Whichever explanation helps one to understand and fuels and sustains one’s practice is the most pragmatic. To what end? I asked. All, I was told, were ultimately to help one to arrive at the realization of emptiness.

I wondered to myself whether this evaluative approach would also apply to the use of examples or concepts drawn from science to help explain traditional teachings. I could not help but entertain the idea that this idea “root texts” and how traditions use and relate to them would make for an interesting framework though which to think about the West’s focus on the brain. The brain is the West’s “root organ” but there are different interpretations of its role and its function: psychoanalysis, cognitive reductionism, cognitive affective approaches.

While we talked, others played ping-pong and karrom, a type of board game which resembled air hockey, but played with the fingers. Fiercely flicking a plastic disc so as to knock other discs into holes placed at each corner of the board seemed to be the goal. The games were pursued with much gusto for about fifteen minutes and then all promptly retired to their quarters for a nap. I was invited to join them, but – as often happens to me in India – I had to attend to matters alimentary.
I was very early for the after lunch session. As the monks began to assemble outside the locked classroom, we engaged in conversation about what they had learned earlier that day. Some brought up the relation between “perception” and “mind.” As that conversation came to end, one monk asked me, in a disarmingly polite and deferential way, “Please, sir, what is the brain?” Looking back, I am now inclined to think it akin to an opening feign in a good natured debate. But at the time I was oddly affected, and felt a profound sense of responsibility coupled with a sense of being a complete fool to even consider attempting an answer. I opened my mouth and found I was summarizing points which their teacher had told them earlier. But I had not the sense to stop. I kept talking about science’s uncertainty about the relation of the brain to mind, the difficulty of talking about a “brain” and its capacity independent of development, or without reference to the spinal cord, nerves and everything to which it was connected. I went on about the need for new and subtle research which would bring us to the limit of understandings at work in both traditions. I continued about why embodied learning is so important and why it was important for them to one day be in lab to discover how these questions are being asked and answered.

I do not know how much of this was considered an answer. I suspect I should have returned the question rather than answer it. And I am surprised at how easily I borrowed from the rhetoric of the program. But it was now 3pm and time for us to get back to work. Scissors were passed around to each table along with pens and long strips of paper. As they joke with each other and tear the scissors from their packaging, I try to figure out the task they are about to undertake: a continuation of the relative size of planets? A mini-pecha (a rectangular Tibetan prayer book) of science terms in English and Tibetan? The teacher, holding on to her Kent State
tumbler walks them through the task: an illustration of the relative distance of planets from each other. From this task we return to the assembly hall and begin our next hands-on activity.

Large bowls of flour are set on the floor beside buckets of water. The monks take turns pouring and mixing, digging deep into the sticky mass which is beginning to form. In groups of five or six, they find spaces on the dining tables and begin to fashion the large balls of dough into improbably long baguettes. These are divided further into small “demi-baguette” sizes and then smaller and smaller, a prescribed number of each. These pieces are then combined by some members of the group while others write the name of planets on index cards and still others take pictures of themselves and their fellows at work and play. As the day draws to a close, each group has eight masses of dough beneath the name of the planet whose relative size it demonstrates.

As they clean up and the teachers gather their equipment, many approached me to ask if what they were getting was a good education. I stressed that they were having to learn a new terminology in their own language and in English alongside mastering fundamental concepts. I reflected that they were getting an education on par with our 100 and 200 level classes and, even more importantly, that they were getting the literacy necessary to continue reading and researching on their own. They seemed reassured and expressed their thanks to what Bryce had done for them. And that I should try to contact him.

And so I did. I sent him a version of the proposal I had earlier offered to the Science Department and Geshe Lhakdor. It reads, in part:

In my discussion with the Science Department staff, we touched on the topic of what MSI would need for it to continue to grow. In addition to more standardized and ongoing instruction in science and stronger foundation courses in the English language, we also touched upon the need for greater laboratory resources (microscopes, etc.) for the monasteries and some familiarity with
laboratory protocol and culture prior to entering into study. These points in fact echoed those enumerated by an ETSI graduate I had spoken to earlier that day.

It then occurred to me that what would be needed here is an apprentice or internship program, specifically for monks who have graduated ETSI and completed at least one SLI program and had a demonstrable record of facilitating science education in their respective monasteries.

What I have in mind then is something which is done on a regular basis with undergraduates in various science disciplines. Students will often seek out – during their undergraduate study or just prior to applying for graduate school – a researcher who would be willing to let them intern in their lab. As I understand it, such interns are responsible for the care and up-keep of equipment even as they begin learning about laboratory culture, the specific protocols (and rituals) associated with developing and carrying out an experiment and the interpretation of results. It is standard practice that such interns have their name included on any publication which directly results from that experiment in which they played a part (an important point not to be dismissed).

While this is basic training, it is necessary for any true movement toward inclusion; in moving Tibetans from literacy to parity. Further, so many discoveries have been made by individuals simply and patiently and diligently attending to – with a fresh and inquisitive mind – the basics and fundamentals.

Further, it seems that such an initiative would be most successful if it were spread across a consortium of Universities, each agreeing to intern one monk (for a year, say) each in a different specialty (the actual commitment by the University to participate in this program should be at least 3 years, thus creating a small peer group of monks interned at the same Institution and same specialization. In this way, the opportunities for disciplinary probity and critique are increased). Such appointments are generally not paid, but may involve things like tuition and institutional cost waivers, etc. The main expense of the program would thus be housing and sustenance. Again, many campuses have dorms, home-stay and meal programs which could be negotiated as part of the Intern Program.

I think that there is further warrant for hope for the success of this project given the increase in the number of programs and initiatives advocating for “interdisciplinarity.” Setting aside for a moment the debates as to whether or not such programs are truly “interdisciplinary” or even what that might mean in the context of the hard sciences, it nonetheless remains that many scientists in many Universities recognize that one possible way of getting free of some of the methodological impasses which overspecialization has wrought is to begin to incorporate thinkers in related – or even disparate – disciplines into their research teams. Note, too, that at the 2013 Mind and Life Summer Research Institute, [there was open consideration of] the inclusion of “contemplative scholars” and representatives of other disciplines on research teams or laboratory environments.
Of course, it remains unclear what this would look like in practice or what form
it would take. I myself will undertake to explore precisely this question this
September when I join Dr. Davidson’s lab at UW-Madison.

The question now becomes: what do we need to focus on so that the monks are
competitive for such Internships? The level of science needs to be deepened as
their time in MSI is prolonged. English, too, is an important requisite. Basic
math skills are important, but so is familiarity with statistics and statistical
software (note: this does not need to be an unduly long process; many programs
can teach the requisite statistics and procedures in a semester).

A few days later, Bryce kindly responded that he had in fact had been suggesting something
similar for some time, but that the largest obstacle was securing the necessary visa’s for such an
exchange. The Emory project still runs into difficulties. One monk in the third cohort was
severely delayed from joining his fellows owing to inexplicable visa issues generated on the U.S.
side.

I returned to the science class the following week. During the morning’s ride to the
reception center, Tenzin told me that last year Emory administered a survey to the monks to see
whether the education they are getting is “helping.” I asked Tenzin to say a bit more about what
“helping” means. She replied that they know the monks like the program, but they do not know
if it is helping. As for the results, she had not yet had a chance to complete the analysis.

I reflected to myself that the notion of “helping” seemed misguided. The program
seemed to me to exemplify a commitment above and beyond what any metric might tell us. One
could, perhaps, test their knowledge, their critical thinking skills, their ability to respond when
confronted to discrepancies between scripture and science, but I was unsure what “helping”
could mean in such a context. Of course to answer that question one would have be very clear on
the goal, or rather goals, of the monastic science education program. But each participant in the
program brings to the table very different agendas born along by very different considerations
and pressures. Western institutions pride themselves on philanthropic and educational endeavors
and garner tax breaks and press in the process. Tibetans bring attention to their culture, are aided in the work of preservation, and are motivated by the need to adapt to and find a place in the modern world under conditions of exile. But these institutional and cultural goals do little to help us understand the kinds of negotiations which the participants in the monastic science program themselves conceive to be the goal and purpose of the program and how their personal goals intersect with the institutional imaginary. I hope to shed light on those negotiations through the presentation and consideration of the ethnographic interviews which follow later in this chapter.

Some months later, during the 2015 Mind and Life meeting, Dr. Geshe Lobsang Tenzin Negi announced the results of the “helping” survey to the Dalai Lama and the assembly. The surveys were given at the end of the 2nd year’s science class to monks at Drepung and Ganden. To the question “is science education having a negative impact on your monastic education?” 2 percent did not respond and 69 percent reported no negative effect. Of the remaining 29 percent who did claim that science education was having a negative impact on their monastic education, the reasons provided included: takes time away from preparing for daily debate; not enough time for memorization; not much time for attending regular classes.

A second question was posed: “has learning science been beneficial to you?” 94 percent replied in the affirmative for reasons such as: can learn many new concepts and facts about particles and so on; helps with understanding Buddhist concepts; strengthens my faith in Buddha and confidence in Buddhism; raises important new questions about Buddhist concepts; opens new avenues for ideas. There were no negative responses and 4 percent said it was too early to say.

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20 https://www.youtube.com/watch?v=_NaRWFUWLgQ
It seems significant that these questions were explored via a questionnaire and not an interview. I am unaware whether the survey was open-ended or whether there were set choices for the monks to “check off.” In an interview, one could explore in what way exactly learning “science” helps a monk immersed in a scholastic education both understand “Buddhist concepts” and “strengthens faith…and confidence” in Buddha and Buddhism. Such responses read more like analogues of Western scientists claims about how, for example, studying the philosopher Nagarjuna helps them appreciate the interconnectedness of phenomena. They also seem framed in such a way as to speak directly to the concerns of the conservative monastic establishment, who are concerned that instruction in science will weaken or significantly alter the ability of monastics to meaningfully engage the soteriological, ritual, and philosophical aspects of their education. Further, science education may interfere with motivation and perseverance, elements not only important in learning the *dharma* but in persevering Tibetan culture in exile.

As Tenzin and I continued to talk, I learned that two of the four nuns were from a nunnery near Norbulinka and the other two from a nunnery near Dharamsala. They told me that the nuns have been very enthusiastic about the program and that some courses have begun to be held at the nunnery.

Before class began that morning, a monk from Dehradun, a fourteen hour bus ride away, approached me and announced that he was very interested in science. I had met him on my first day and had seen him again just the day before as the class toured the government and Library complex. He began:

“*You have a full life; the Tibetan people have only half a life. I see in some stores many kinds of cheese, and meats – many kinds of milk, many, many kinds. Tibet only has one: yak. One butter, one cheese, one milk: same same*”

*How do you see science as important to, as helping the Tibetan’s cause?*
“Science is very important, very important. Give people more food, more things to sell, this helps the people”

*If you could study science, what would you study?*

“Making the food, the clothes, these kinds of things”

*So, you would study agriculture?*

“Yes, very important. Some Japanese people make boxes and plant them and then mushrooms and all kinds of things grow. But, I am 42 and so now another 20 years to study! You are ready for work but I am still a student. So, maybe when I am 70!”

As he spoke, he slapped his hands at several points, as if in debate.

Suddenly, the absence of such “practical” science training seemed conspicuous. Why so much attention to the Big Bang, Cosmic Background Radiation, Neurophysiology? The vast majority of monks would never be able to derive tangible benefit from such education, only the small portion who taught or participated in the Buddhism and Science dialogues. This is *not* to say that scientific literacy is not important, nor that having teachers and respected figures in the community deeply grounded in this kind of learning is not good and empowering in and of itself. However, this monk from Dehradun confirmed in me the need for an expansion of what “science” means in the “Science for Monks” program into areas like agriculture, archaeology, conservation. In these domains, eminently practical, the monks could begin the work of science in ways that simultaneously benefit theirs and the surrounding Indian community. Further, practice of these disciplines does not require the types of expensive equipment and research apparatus which neuroscience and cosmology and physics require.

We continued to talk and I learned that in October he was going to a program in Varanasi. The program is designed to give six monks the opportunity to study English. Throughout the rest of my time in Dharamsala, I ran into him almost every other day, though we rarely had time to talk in this way again.
In the morning class, instruction returned to cells and nuclei, which turned into a discussion of heredity, genetics and Mendeleev the monk, a fact mentioned in passing only. Most of the class was spent covering this topic with the monks asking many questions.

During morning break, I tried to speak with the nuns. I first tried to ask permission, but it was clear that I made them uncomfortable and that were speaking to me out of politeness. Several monks came and sat next to me and, when they began asking me questions, the nuns took the opportunity to depart.

A bit later, I encountered the monk from Dehradun with whom I had spoken earlier and I asked him about his life. He told me that he had come from Tibet, the Kham region, some 21 years ago. But this subject held no interest for him. He began to talk about his love of plants, of flowers, of the mushrooms and the trees he had seen grown by the Japanese in small boxes.

A friend came to join him and they began to have a discussion in Tibetan that clearly had nothing to do with the conversation he and I had been having. I excused myself and walked back into the dining hall. There I spoke with a Kehnpo from Sechen Monastery in Kathmandu. He had attended last year and asked to attend again this year. At his monastery, he is responsible for teaching courses dealing with the subject of “emptiness” in a way that uses contemporary notions about the atom alongside Buddhist conceptions to talk about the infinitesimal. Perhaps moved by all the attention my intestinal difficulties had occasioned — my not being able to eat was a source of much concern and apparent consternation, but also understanding — he spontaneously and reassuringly compared my not being able to drink milk to his not being able to drink cold drinks.

I reflected on the use of science by these monks to teach concepts such as “emptiness” and how popular science writing in the West had for decades used “Eastern” philosophy to
understand the conclusions it seemed compelled to draw from relativity and quantum mechanics, for example. For the West, this was linked to a large post-modern turn which saw a breakdown of classical epistemological and aesthetic categories as well. I wondered whether and if, in the future, we might see the effects of such an engagement — monks using science to teach philosophy — on other modes of Tibetan culture. I wanted to ask how such a pedagogical device was viewed by the conservative elements of the monastery and how teaching in this way had affected his status and mobility and ascriptions of spiritual “progress” in the monastery, but we were interrupted as everyone in the room began to stir and rise almost simultaneously.

I began to mill about and soon asked one of the nuns I had spoken to earlier if I could join them at table. She was a bit shy and said that I should ask her friend. Her friend spoke with me, telling me that she was from Ladakh. She had been in the nunnery there, but decided to come to Dharamsala because the education was so much better. She finds the science classes difficult but likes them very much. The classes are also difficult because she has had a hard time with her vision for about two years and will soon need an operation on her left eye. She turned the subject to me as a few monks began to approach, all very concerned about the fact that I was not eating.

The nuns again took their opportunity to depart, and I began talking again with the Khenpo of earlier. We spoke of retreats and of fasting – appropriately enough – and he told me that during the rainy season retreat is taken for 45 days. It used to be three months, but that was deemed too long; there is simply too much work and study to be done. However, they rationalize that they are still in keeping with scripture because they count the daytime as one day and the nighttime as another day – thus fitting in 90 days of retreat in half the time! During retreat they are not allowed to venture out of the monastery because they might step on an insect and thus harm life.
As lunch was coming to a close, I began speaking with the instructor Tenzin. She expressed her concern that they were teaching so much to the monks at once that it often appears that they go back to their monasteries and are simply more confused. But what else is there to be done? She tries to stress to them that they must read and re-read the textbook, but the Tibetan in the texts is awkward and reflects too clearly its English derivation. She tries to give them context as well as terms and is optimistic that the science centers will help.

After lunch, class focused on touch and the pathways of the brain. There was much joking and this was followed by the taste experiment as they put different things in each other’s mouth holding the nose and then releasing. This was followed by the two-point discrimination test of touch. The nuns turned and asked me to join their group. Everyone, monks and nuns, teased and tested everyone else, some a bit more robustly than others.

D. Points of Departure

As we drove home later that day, I reflected on all that had unfolded since my arrival in India earlier that summer. About a week ago, I had arrived at Delhi airport and waited 16 hours for the twin-engine plane that would take me to Dharamasala. The day was clear but muggy. And being monsoon season, the plane from Dharamsala would be delayed several times, as the conditions near the mountains, trapping the clouds until they release their moisture, created delays which were an accepted part of the schedule. As I sat drinking my tea and waiting in the airport, I was joined by a Tibetan monk. He introduced himself as Gyatso of the Dzongsar Institute where he served the Rinpoche of his monastery. He was just returning from several weeks in Taiwan, visiting Buddhist sites and studying English. But now, he said, he must return
to help with the exam period and continue his work. He wants to return to Taiwan, he says, for there are many chances to learn English and to teach about Buddhism.

Our conversation was interrupted by the plane’s arrival. At the Kangra airport, I negotiated a taxi with several tourists from Israel and Sweden. The taxi had to drop us off at some distance from our destination as the road leading up to the Tibetan government-in-exile and McLeod Ganj was in a profound state of disrepair. The rains, I was told, had made them more ditches than roads. Getting out of the taxi, I began the long trek down the hillside to the Library of Tibetan Works and Archives where I hoped to find a room in the scholars’ quarters.

Drenched in sweat and fatigued from my journey, I arrived mid-afternoon, just in time to secure the last available room. In the LTWA office I met Dr. Ploberger, an Austrian physician and Tibetologist who had also completed the authorized translation of the *rGhyud Zhi* – the foundational texts of Tibetan medicine – into German. He and I had met and become friends during my last visit to Dharamsala and I took this serendipitous reunion as a good sign. After settling in, I wasted no time and began asking around about the science courses which were to begin in about a week’s time. During the course of my investigation, I was directed to speak with the Director of the Library of Tibetan Works and Archives, Geshe Lhakdor and, soon after, I went to the Secretary of the Library to ask for an appointment. As I voiced my request, a monk, who had been in the foyer but by that time was standing next me, good-humoredly interjected and said, “Oh, he’s everywhere. Like hairs and feelers, the shadows bring him news.” Laughing, he introduced himself as Geshe Lhakdor. We made our way out to the Library steps, and began to talk.

I told him of my interest in the monastic science program, in its development, its history, and in how the monasteries were adapting. He stressed how radical was the transformation the
monasteries were undergoing at this time. He also stressed that the Dalai Lama can’t just order monasteries to do what he proposes; there must be consensus and the monastery leadership must themselves come to recognize the need for it. He continued:

Many monks and scientists have been trained but we now need to build facilities - and that requires money. We try, but then, too, what is the need? The West has all of the equipment and so you can just share your knowledge with us! But our goal is not to re-prove or redo what has been done but to preserve and grow Tibetan culture – each new science term is a new word in Tibetan which was never there before and is also a contribution to Tibetan literature. I was the Dalai Lama’s translator for sixteen years and I was with him on many of the conferences and talks with different scientists. The former Director of the Library, the Ven. Achok Rinpoche, started the science programs. It is now in the 12th year and, while we have done a number of science education programs, there is still much to be done. We are building on site [on a hill behind the LTWA main building] a demonstration laboratory so that people can see what is actually in their water, what effect bad foods have on us, that kind of thing. People are affected by technology but ignore the science from where the technology came… they have no understanding of how much science is at work in our lives.

I asked him about the science classes here in Dharamsala and about how such integration was progressing. He replied:

The monasteries in the south are huge, and so we started the programs there - the ones here are small. The large ones have the money, but even so it is never enough.

Recalling that several of the monks at Namgyal and the Institute of Buddhist Dialectics had voiced their interest in science, I asked whether any of the monks here in Dharamsala had requested science instruction or to participate in the programs in the south. I also asked whether any who have completed the Emory program had been appointed to a lab in the US or India:

No we have not had any monasteries ask for monks to participate as they are caught up with their day to day curriculum. None have been appointed to a lab…Those who have been trained by the Emory program but then they come back [to teach and train others, supervise programs, and share what they have learned]. And they now have basic science laboratories in many monasteries in the South.
As we continued, I asked him about his thoughts on the relevance of Buddhism to science, and what he sees as the benefit or effect of science on the world:

Buddhism may be great but it has no knowledge of the physical world. It talks more about the mental world, so it also needs a more science through which you can show things. We are not trying to authenticate Buddhism through science but show how Buddhism is supported by scientific findings.

Our talk was brief, but already I knew it had set the tone for my research and made clear the types of questions I needed to pursue while in Dharamsala. As we parted, he directed me to the Science Department to see if I could attend the upcoming classes. But the office was closed; I would have to wait until the following day.

I later discussed all of this with a visiting Western academic residing in Dharamsala. He shared with me his opinion that many at the Library and at MTK want to do what the Dalai Lama says but are concerned that they will not do the job well enough or produce favorable results. Nor do they understand why they are doing some of the studies in the way they are. He also noted that many of these projects require staff to work with foreigners. But though the Library and Men-Tsee-Khang will collaborate and receive support, they rarely do the added effort of setting up permanent staff to work with those international contacts. For all of the studies which are undertaken with international collaborators, there is no Westerner yet on staff at MTK to facilitate communication, translation of terms and constructs, study design, publication, or interpretation of outcomes.

At this point he suggests that the science education monks are getting is not very deep and so they can’t possibly participate in a real scientific investigation. The goal, as he sees it, is to have monks conversant but not proficient, to secure a portion of Tibetan culture in the modern world – to combat “backwardness” they say. He also suggested that it may be difficult for the
monks, whose main task and skill is to memorize texts for purposes of preservation and liberation, to design research and think critically through a program. What the West wants from Tibet – through its texts and accomplished meditators – is a certain kind of innovation.

There are two questions which must be addressed fully to ward off misunderstanding. First, what is meant by innovation? Second, is the West simply holding out the promise of “exchange” so it can work its own agenda? If so, what is that agenda? While this thesis explores the larger cultural and historical frames which structure this relation, here I want to underline something very specific about the concerns which are at work in the “Buddhism and Science” dialogues in their contemporary neuroscience and psychological form.

The devalorization of interior experience, of the first-person lived domain of the subjective sense of self and world, has been something which has both shadowed empirical psychology and helped to turn it into a robust field by claiming a methodological precision born of the application of Ockham’s razor to the categories of mind and experience (Harre 2002). However, this has also produced a tension in that the prescriptions for understanding individual subjectivity is structured by domains which do not adequately take into account individual variation.

My hypothesis is that the attempt to mobilize “Tibet” in dialogue with scientists and talk of the planned integration of contemplatives in meditation specific neuroimaging is one way in which scientists hope to address the question of first-person experience within the broader field of neuroimaging and psychological research. In presentations and breakout sessions at the Mind and Life Summer Research Institute (MLSRI2013), participants expressed deep, disciplinary wide concern over the methodological difficulties involved in integrating first-person accounts of experience within the research frameworks presently employed in neuroimaging and empirical
psychological studies (Bitbol 2012, Heeger and Ress 2002; see also Descombes 2001, Bennett and Hacker 2003, Harre 2002, Varela et al. 1991). Preliminary interviews and discussions revealed the pervasiveness of this concern, but views diverged widely on how this could be approached in laboratory contexts. The success of such integration would have wide ranging consequences. For example, neuroimaging research which focuses on the nature of consciousness, identity, group affiliation (Losin et al. 2010, Wu et al 2010), and self and other attribution (Chiao 2010) all share the same methodological shortcoming: the inability to integrate the phenomenal dimension of first person experience. While there have been disciplinary attempts to adjust for this lack (viz. cultural neuroscience and neuro-anthropology), their methods are inadequate to the task of integrating the phenomenal experience of the subject. These methods remain far from anything resembling an ethnographically rich account of the individual person (Cervone and Lott 2007, Duque et al 2010, Laughlin and Throop 2006, Rilling 2008). Recently researchers and scientists (see Lutz et al. 2015) have begun designing theoretical models to answer such concerns by integrating frameworks and language drawn from the growing body of research on meditation.

Later, I reflected on what had brought me here and of where I would be in a few months’ time; a major neuroimaging research center with connections to the Tibetan community whose founder was a key figure in the Buddhism and science dialogues. I considered too how the Varela award, which is designed to encourage innovation, will be what makes that Laboratory time possible. It was here that I had begun to think that perhaps something could come of having select monks apprentice in the lab.

A few days later I met Kerry. A Western teacher/educator and longtime Tibet supporter, she had been employed as a volunteer by the Library of Tibetan Works and Archives (LTWA) to
teach English to translators each year and to help prepare the monks who were selected to go to Emory. English was essential to their studies, so learning from a native speaker was important. And, as a woman, she functioned in some ways to help the monks deal with possible “culture shock,” getting them used to being around women, both in positions of authority and as peers. Kerry was invited by the LTWA two years after the Emory program started. However, during her time with the program she has not had much communication with or guidance from Emory other than attending the Mind and Life Dialogues, discussing issues with Science staff, and briefly meeting some of the Emory teams visiting. She admits that this was, in part, because of her own research and study schedule.

Kerry felt that everyone seemed pleased at the progress of the Emory program, but English still remained the biggest hurdle the monks face in the US. At first, the English classes were done in tandem with computer instruction, but by the third batch there was less time for English because math and science were added to the curriculum. Even so, she was told the English classes needed to be structured in such a way as to make it possible for the monks to do the TOEFL exam within eight months from their start date. She felt this was a little difficult to accomplish at this stage, particularly considering the entry level English standards of some monks. However, it turned out that the final English exam sent from Emory was just a simple multiple choice exam, with little writing required; two monks had already done the exam previously. While getting feedback about the exam results was slow. In all, she feels she has been successful in helping the monks improve their English, despite the significant range of proficiency levels in any one class. And though she felt it was important that the process was in place, the coordination and instructions and communication could be improved.
As she has been a teacher for three decades, Kerry also felt Emory could have used her to greater effect and that she would willingly have assisted in the curriculum design had there been more contact and feedback. Nevertheless, she has taught the course a few and times and this experience has helped her refine the way she teaches, incorporating what she has learned from the monks who have returned from Emory. However, no-one from Emory itself has ever contacted her directly.

Kerry spoke highly of the monks’ dedication and commitment, but notes too that there are some difficulties and differences among them given that they come from radically different monasteries and have different individual academic strengths, particularly in English. All have come back from Emory reinvigorated, giving presentations and some teaching science, but not all may be able to carry on because of other monastic demands. Others have come back and led workshops and taught in their monasteries and have even begun to bring science education to the nunneries.

Commenting on the level of science education the monks received at Emory, Kerry thinks that it seems to be at a good entry level overall; upon returning most are ready to teach high school science classes with what they have learned, are prepared to do teacher training in their monasteries, and several were keen to keep going beyond the two years (which is not possible at this stage in the Program). However, based on the feedback she received, she does feel that the preparatory program she runs should include more hands on tasks in learning to navigate a lab, what the tools are, what certain types of equipment are used for, etc. (she will endeavor to arrange for this in the future).

Kerry pointed out that her understanding of what happens in the workshops is limited because she has not yet observed any. In her last cohort she suspected that one student would
have a rough time at Emory because his difficulties with English. She expressed her concerns several times about this, but the Library was in a difficult position given that it was committed to representing all institutions as widely as possible in the program. She would have liked to see some procedure in place whereby the monks could be assessed more effectively before they came to her for eight months. Despite these difficulties, Kerry stressed that she supported the program wholeheartedly and saw all these issues as “teething problems” to learn from, and was keen to see it all succeed as per His Holiness’ vision.21

When asked, Kerry said was not too concerned about the monks’ ability to adapt to life outside the monastery, as she was impressed by them as a group, and their commitment. Despite having not known each other well before their time at LTWA, they formed solid friendships and worked well together. Citing their resourcefulness and passion, she mentioned one cohort’s recent journey to Nepal to present a science exhibition. They negotiated the borders, paid the necessary “refugee travel fees” (which they are used to but most people would resent) and co-organized television conferences and press meetings and talks. They also travel huge distances between their monasteries and the LTWA for workshops and to stay connected in their own studies. Several have been geshes or are nearly geshes and the science courses are all extra work on top of their demanding studies. She notes how very savvy most of them are about social media, and their high degree of interest in computers. When I asked her why there were not science programs in the local monasteries, she thought that though some of the monks wanted

21 When I spoke to her later in 2016 she explained that the selection processes had changed, and that it was now more rigorous. There was also a stronger emphasis on English. Additionally, the fourth batch will include two nuns, as per Emory’s request. As there are now Science workshops happening in Bhutan, she requested that three monks from Bhutan join the new LTWA-Emory English class, which may make it more lively and varied, as several of these Bhutanese monks have now done the Translator’s course at LTWA. She enthusiastically reported that the new group was very keen, intelligent, and dedicated.
science education, not all the administrators were keen nor were there teachers available. She also told me of monks who, having completed their exams, leave their monastery to go and study elsewhere due to a keen interest in the science program. At that, she put me in contact with a monk then studying at LTWA who had just returned from Emory.

**E. A Monk’s Story**

When I met Pema, he told me of his interest in physics and developmental biology and was very eager to keep improving his English. He had been a Tenzin Gyatso scholar at Emory and, as we sat outside the Library canteen, he began to outline the program for me.

Selection was based on one’s achievements in Buddhist learning and proficiency in English. Prior to going to Emory, monks spend about six months studying with Kerry at the Library: American culture, English, computers. At Emory, the classes they take are 100-level biology and chemistry and math for the first year. If they fail, as he did in Chemistry, they must repeat the course the next year in addition to their other studies. The biggest obstacle, he notes, is English. “At Emory, the English doesn’t sound like the British English we are taught.” The second year of their time at Emory is spent on the next section of these subjects with the addition of physics, the philosophy of teaching and learning, and developmental biology. Upon returning to India, he became part of the Sager Science Leadership program and assisted teachers in teaching science in the workshop.

I ask about the amount of time the monks spent in labs while at Emory. He said that they did what the other students did, but no more. The main focus of the program is to prepare them to teach others. In the monasteries, science is a year-long, separate class that one is eligible to attend only after a decade or more of Buddhist study.
We began to talk about the type of education they receive in the monastery, and what it is like to begin studying science after spending years studying scripture. He suggests that I should be a teacher in the program and so could then see for myself. He stated that Buddhism has much to contribute to science, particularly to the domains that explore the mind and cosmology. When I asked him to be specific, he pointed to the things which Buddhism can focus on and which only it has the tools to study, but which remain opaque to Western science.

He spoke of scientists who try to use scientific equipment to study monks near the end of their life. “But, what is there to find?” he asks. “The gross mind has departed.” But, he continues, it is true that some monks can control the dissolution of the elements of their body as they die. The subtle mind is there, but not the gross mind with which the brain is associated. And if the brain is dead, there is nothing to detect. However, though scientists are at an impasse, the monks can study such phenomena through meditation, through the work of tantra, and by observing the characteristics and rates of decay after the monk has died. If the body, particularly in the climate of the south, resists decay, resists noisome odors and rigor mortis, etc., then the deceased monk is said to have controlled the dissolution of elements. He knew of a few which had happened in Dharamsala, but expressed his opinion that bodies do not corrupt as fast in the cooler weather. Thus the real cases, the impressive cases, are those of preservation in the heat of the South.

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22 I later learned, during my time at Davidson’s Lab, that Pema is speaking of thukdam (Tib., thugs dam). Thukdam is a state wherein consciousness is said to persist in the physical body for a certain period of time after the cessation of respiration and cardiac activity. In practice, individuals assume (if possible) a meditative posture in anticipation of the moment of death. Persons are said to be in thukdam when their bodies exhibit warmth, dermal elasticity, and an absence of both odor and rigor mortis for days or weeks past the time of death. The Davidson Lab has been involved in the scientific study of such phenomena for several years and has recently initiated a new phase to collect data on features deemed relevant to the question by Tibetan Buddhists and Western forensic scientists: measurement of low levels of electrical activity of the brain, cardiac and respiratory activity, cellular metabolic activity as reflected in CO$_2$ and O$_2$ levels, and overall metabolic activity as reflected in core temperature.
He then began to speak of feats such as *tummo*, a breathing practice leading to control over certain physiological processes, and of evidence for the most subtle level of mind which, he said, was the only way to make sense of the oracles which speak in the divine language, or of the *delogs* (Tib. *‘das log*): monks and accomplished lay folk who die and then return to life. But, he said, the most compelling proof was in the children who can speak languages they’ve never been introduced to or who are able to recall events of past lives such that parents of the recently deceased child recognize their lost one. But, he said in closing, he had had a full day in class and was now eager to get home. We parted and agreed to talk more in the days ahead.

Later that day, I had my first meeting with Karma, a member of the Science Department and its translation officer. We met in his office and spoke while other members of the team were at work at the computer and tending to children. These were the class instructors I was to accompany during the following week. I asked about the training which the monks were getting, and we began to speak about how few chances the LTWA has for offering them lab experience. Most of the teaching, he said, was in relation to math and pedagogy, and was highly focused on clarifying issues at the intersection of science and philosophy.

I asked whether he felt the program was challenging for the monks and, if not, what more would be needed. He responded immediately: computer classes, lab items, and microscopes – this is what is needed. I asked him then about the science centers which Geshe Lhakdor had mentioned. Karma replied that the science labs, though part of the monastery, will in time, develop into research centers focused on exploring the brain and mind and consciousness. At present, there are science classes which are held there when no special program is underway, but they are as yet poorly equipped and need everything from microscopes to telescopes.
Are these, then, the subjects the monks are most interested in? I asked. Besides the brain and consciousness, monks are most interested in astronomy, physics of the change or transition state from one state of matter to another, the functions of matter and its levels of integrity and deterioration, and biology – specifically, developmental biology and evolution. However, there is little interest in materials chemistry as it is perceived as a destructive and detrimental practice. And then there is the problem of translating chemical names into Tibetan. To address this, the Tibetan translation group meets annually at Emory with US and Indian scholars to work on developing new terminology.

We then spoke about the history and separate divisions of the “science for monks” program and I asked him how the upcoming classes in Dharamsala fit into that scheme. He said that the two-week event in August 2015 was jointly sponsored by the Religious Division and the Department of Governmental Affairs, but that the Science Department was administering and teaching. The program was begun last year and its purpose was to provide an opportunity for the smaller monasteries and non-Gelugpa traditions to participate in the science program. It also gives monks of smaller monasteries (where science is, generally speaking, not so popular with the abbots) a chance to participate.

We then discussed some of the difficulties that remain in trying to implement these programs. Time seemed to be the biggest obstacle, as one month is so very limited when trying to convey so very much. Monks must also have some proficiency in English as well for, even though a great deal is being translated, there is so much more yet to be done. Furthermore, to participate in the latest research and to communicate with peers, they will one day have to achieve some fluency in English. For those who do have proficiency in English and have completed the course, there seems to be nowhere for them to go to improve, or to gain lab
experience. And, of course, there are so many kinks to be worked out both in designing the
course and trying to integrate a new subject into a several hundred year old tradition.

A few days later I met with Pema again in the canteen next to Library. Since our
discussion was very technical, very impersonal the last time we met, I began our conversation
informally sharing some details about my travel, my life, and why I was there. I then inquired
about his life.

He told me that he was born in Nepal. I asked whether his parents pushed him to become
a monk. No, he said, it was my choice to become a monk. I am the youngest and have an older
brother and sister. My parents wanted me to stay in school, but I did not like it.

His parents had left before the Chinese entered in 1959, emphasizing this connection
saying “we generate from Tibet but live in Nepal. In Nepal we own land and hire Nepali people
to work the fields, growing vegetables and rice mainly. I grew up working in the fields, too.”

I asked him about how he came to be a monk at such a young age. “There are many in
our community who have studied in south India and Dharamsala. Our community has many
monks who come back and talk to us.” He told me that when he had left his family to study in
India that it was not so difficult, as he had already chosen to be a monk and had lived away from
home since he was 6 years old. But in the Nepali monastery, the focus was on ritual and
memorization and there was little in the way of philosophy, and no science. Many of the visiting
monks stressed to him that he should go to India to study. And, in 1992, at 15 he did just that.

He arrived in time to join a cohort of nearly 240 monks, many from Tibet and most five
to ten years older than he. In time, that number became about 100. Many left for other countries,
others returned to Tibet, usually because of family issues. Others disrobed, and still others
simply decided that being a monk is not for them.
He tells me he began to study science in 2006, after his philosophy training was nearly complete. Those who study science have as part of their duties to teach the younger monks. Preparing them to be teachers – not scientists – was also the main focus of their education and training at Emory. Successful graduates will also run the monastic Science Centers once they open. And though he enjoys teaching, he feels he needs much more preparation and he himself regularly seeks out new information on the subjects covered in their lesson plans.

I asked him about the circumstances around him having been selected for the Emory program. He informed me that his main advantage over others who were also studying science in the monastery was that he had a good foundation in English. This, more than anything, he stressed, was the reason for his being chosen. Listening to him speak, I wondered also if there wasn’t some degree of modesty at work in his telling.

Pema continued saying that much of the education they received at the monastery from the instructors from Emory was “at a high level” and focused on neuroscience; on how the brain works. But he found grasping the material difficult without having a background in chemistry or biology. However, he sensed that if they were teaching it, then it was important for him to try to grasp.

He tells me that he was also very interested in physics; in “atomic and sub-atomic realities.” He continues:

In the “science for monk” program the teaching is high level; they are not doing basic step by step – they are talking about quantum physics – hard topics – with PowerPoints [so they can] teach us quickly…[They teach] us quantum physics and subatomic physics, so I am very interested. First … about classical physics and after modern physics – and the contradictions and details in quantum physics…I am very interested in this.
As our talk ended, I reflected again on what it would mean and what would be involved to bring Tibetan monks into a neuroimaging center as researchers or to send them into the field as conservation scientists. I also reflected on why some of this science instruction couldn’t be done in partnership with Indian institutions. This conversation (and my earlier discussion with the monk from Dehradun) came to mind when I met with an Indian wildlife conservationist several months later at the Field Museum in Chicago. I suggested to her that we work with those monks in the south who had achieved literacy in basic science and train them on observational methods and data collection according to the model of citizen scientists. This way, as individuals living daily in the protected areas she wished to study, these monks would be doing science and not just reading about it. They would be trained to record their observations for use by other researchers and so contribute directly to the preservation and continued viability of their environment. While enthusiastic, she wondered about where support for such a program would have to come from as there is likely not much the Indian government would help with. Such support would have to come from donors from the West.

F. A Reunion

I ran into Inga and Dolma in early August. Former students of mine, I had met them in 2011 when I taught a two week Basic English and Science terminology course at Men-Tsee-Khang (MTK). When I saw them walking from the Library, they were getting ready for MTK’s annual three week trip to Manali to pick herbs and had to leave the next morning. However, they agreed to meet with me for an hour. They later confided in me that they said they had to pack and only had an hour to talk in order to have an excuse to leave early if I was boring. They took me to the noisy government café located on the steps between the Library and the Parliament
building. With the TV blaring, the three of us talked for a bit over two hours and we ended on a plan to speak again in the future.

Inga is from Eastern Europe and is in her early 20s. She left home roughly five years ago to work in Moscow. She was raised Catholic, wanted to be a nun and later developed interest in all religions. In Moscow, she befriended a group of Indians at the restaurant where she worked and they helped each other with their English as they had no other common language. Through them she was introduced to some Tibetans, and worked with them for a year during which time she formed an intention to study Tibetan medicine. The Tibetans wrote a letter of introduction for her and helped her secure a letter from the Dalai Lama. With these recommendations, she was admitted to Men-Tsee-Khang. Her parents weren’t too happy about her decision, but she now has a lot of “fans” on Facebook who are enthusiastic about her decision. She wants to go on studying yoga and naturopathy and to perhaps even be principal of a medical school. When she arrived in Dharamsala, she did not speak Tibetan or English very well.

Inga is now in her 4th year at MTK, learning Tibetan and English together while studying Sowa Rigpa (Tibetan Medicine). To do this, she wakes between 3:30 am and 5:30 am to study and memorize.

Dolma tells me that she herself recently undertook a one month retreat at Drepung monastery designed specifically for amchi (Tibetan physicians) to learn more about Buddhism and meditation. Inga couldn’t attend because she had to go back to Moscow to work, something she’s only had to do once before. Dolma continued, remarking that the important thing about Tibetan medicine is its focus on the root cause of disease: it does more than simply treat symptoms, as Western medicine does. She feels strongly that astrology too can help identify and treat the root causes of disease. This is something they both want to study more deeply, but
Astrology requires another five years of schooling. Dolman feels it is important look into even one’s past life or other forces to determine the cause of disease. For example, if one picked a plant and accidentally disturbed a water spirit, it would lead to a specific kind of illness. She wants to focus on comparative embryology and considers herself fortunate that she is good at learning things last minute and at memorizing. The second youngest of five children, her emigrated from Tibet in 2000 when she was about nine.

Dolma and Inga both want very much to work as physicians but do not see themselves at Men-Tsee-Khang. This is primarily because they want to be using their skills as physicians and the jobs which are available at MTK are mostly administrative. They both see memorization as being key to their ability to truly help their patients. For it is only then, when one can command a great amount of material with ease that one is able to properly synthesize the range of details necessary for a proper diagnosis and understanding of the root cause of disease.

In hearing Inga and Dolma talk of their studies, I recall the kinds of issues the monastic leadership and the monks themselves have faced in engaging science. Time for study, the role of memorization, the need to preserve tradition: all of these elements have begun to surface in the context of traditional Tibetan medicine, the domain of Tibetan culture most in contact with the Western scientific enterprise after monasticism. However, the stakes are quite different. While research is being done on Tibetan meditation relative to certain categories and strategies outlined by psychologists, Tibetan Buddhist monasticism per se is not being tested or studied. The case is much different with Tibetan medicine as the question of its efficacy bears directly on continued support. And, as I was about to learn, Ment-Tsee-Khang is trying to facilitate such engagement.

I ask about how things have changed since I was there in 2011. They think the present Director is very good, is very committed to the Dalai Lama, and both think he is strong and good
for MTK. However, they both laughed when I asked about the *Mind, Life, Body* conference, a recent program MTK begun in association with Emory. “They [MTK and Emory] think they have some big plan, but they are not really sure what they are doing. The first conference was boring and the second a bit better.” Both resented the conferences because it takes away the time they have to study for exams,\(^{23}\) which are scheduled a few days after the conference. What’s more, attendance is required and taken.

Yet, they emphasize, both are happy with the great privilege of being able to study at MTK and think that to study medicine one has to have the right intention, and that spiritual development is absolutely important. Still, it would be nice, they say if MTK would build a new women’s dorm, as they are for the boys.

Here, in the structuring of Inga and Dolma’s spaces and priorities, we glimpse the fault lines generated in the encounter between traditional Tibetan culture as it struggles to preserve and advance in its encounter with modernity. Traditional identities, such as that of being an *amchi*, carry a unique significance in exile even as they bring new responsibilities to meet the demands of science. And not only to meet it. These students, like the monastics, must learn to navigate the agendas of their profession, their local community, and those which have been set up within the Buddhism and Science encounter. In the next section, we will examine some of the tensions produced in the very process of trying to bridge each of those domains; specifically, the struggle to produce findings which ground Tibetan medicine according to Western standards of validity.

\(^{23}\) Recall the complaints of some monks (discussed above) about the impact of science classes on their traditional studies.
G. Researchers’ Insight

At Men-Tsee-Khang (MTK), at the far end of the courtyard behind the administrative offices, I passed through a curtained door into the Clinical Research Department. I told the three amchi who greeted me that I was an anthropologist who had been teaching at MTK and was interested in the research that was being conducted by them. I also wanted to know their opinion of the research on Tibetan medicine underway in America and Europe. Before saying anything, one of the staff looked at me and put her hand over her right eye. Laughing slightly, she said that without proper grounding in the tradition, Western attempts to study Tibetan meditation would always go awry. This is why they think the work of translating the rGyud Zhi (the foundational text of Tibetan medicine) is so important. Western researchers who study Tibetan medicine must be familiar with theory and practice. In the meantime, MTK has also partnered with groups in Israel and Austria to study a range of conditions.

However, they also find that some individuals, in Tibetan and Western institutions, are suspicious of the intent behind this research. On the MTK side, there is much concern about what will happen if this research ends up discrediting Tibetan medicine. What if this is, in fact, the aim of Western researchers? Then, in partnering, they will have failed their people and the Dalai Lama. On the Western side, there is also much concern and suspicion as some see Tibetan medicine as something of a fad which is draining resources from what Western scientists see as real and important medical research.

Beyond these concerns, it remains true that in partnering with overseas groups, MTK is able to conduct research in ways which they would not otherwise be able to undertake. However, most of the statistical design and analysis must be handled abroad. As of 2011, the MTK staff has not yet been trained in how to employ or evaluate such procedures to the degree necessary.
Furthermore, there is no active research training program at MTK, so students and teachers are ill-equipped to evaluate and critique the studies which are being produced. I inquired how it was that they came to be in the Research Department. “Destiny” one said, and each laughed. They were chosen at graduation to staff the Department and have been involved with the program since 2004. In that time, they have come to recognize that one of Western medicine’s strengths is that it focuses intently on one thing and studies it in detail. But, from their perspective, this is also Western medicine’s weakness in treatment and in research. 24 They inform me that in Tibetan medicine, treatment is a complex and dynamic process, treatment changing as the body changes in response to the care delivered. Consequently, they can never “sign off” on any research into Tibetan medicine unless it reflects this dynamic strategy of working with mind and body.

I asked them about how and what they felt about the attention which Tibetan Buddhist meditation and philosophy had received through the Mind and Life dialogues. I also asked why, given the dynamic interconnectedness of mind and body which is foundational in Tibetan Buddhism, representatives from MTK did not regularly participate in those dialogues yet many Western M.D.’s had. They expressed their unanimous admiration for the Dialogues and suggested that, were they invited, their participation could add much to the discussion. In the meantime, they give lectures in the community, at MTK, and solicit volunteers through the network of MTK clinics which operate in Tibetan refugee communities throughout India.

Given my interest in the West’s use of meditation in clinical settings, I asked about their Buddhist education and whether “meditation” is something they ever prescribe or recommend their patients do. They replied that being Buddhist is simply part of who they are, part of their

24 See Adams 2001 and Adams and Li 2008 for a detailed examination of the kinds of difficulty such research presents in the context of Tibetan medicine.
culture, and so they do not really get a formal education in it. They replied similarly to the question of “meditation.” It is something they just do if needed; it is not something which would be recommended as part of a health regimen. Being Tibetan is to be Buddhist; it is part of and comes through all that they do.

Feeling I had taken enough of their time, I thanked them and set out toward the Library. Walking the road back to the Library I met a Western academic who had occasionally worked with MTK over a number of years. I told him of the conversation which I recounted above.

He notes that the Clinical Research Department are under a terrible amount of pressure to prove that Tibetan medicine works. Consequently, they are afraid to speak up about what they lack in terms of education or resources for this will simultaneously reveal where they are deficient (and so weaken their claims to efficacy) and burden them with more responsibilities if their requests are granted (thus increasing their chances of making mistakes).

He also notes that things are getting more complicated. In 2010, Tibetan medicine became recognized, along with Ayurveda, one of India’s indigenous medical systems (Kloos 2010). Sikhs patronize Tibetan medicine the most, while those Tibetans who can afford it often go to Western doctors. It is also no secret that many of the best students go to work and live in the West, even settling to be taxi drivers or office personnel. He also thinks that there is little incentive for scientific study of Tibetan medicine: if it comes from the mouth of the Buddha, what more is needed? He laments the lack critical engagement as many of the scientists simply do not have the necessary grounding in Tibetan Buddhism (medicine or philosophy) to engage the monastic or medical students properly.

This refrain, of wanting to effect a strong standing in the world (through science) for Tibetan ways of knowing, yet being fearful of losing that culture in the effort and failing in their
appointed tasks reflect the high stakes involved and it highlights a deep tension which troubles the Tibetan inflection of the Buddhism and Science dialogues. As the accounts of both monastic and other cultural stakeholders seems to attest, Tibetan culture is valued for what it can bring the West and it must deliver if it is to continue being invited to the table. Furthermore, as the West works through its own epistemological and cultural transformations, it needs Tibet (as I will argue more fully in my concluding chapter) to function as a placeholder of the kind which it has served for centuries in the Western imagination; a locus of projection for both fundamental truths and future potentials. Whether monks or amchi, for the West to train them in anything beyond the literacy required for “cooperative” experiments and dialogues designed by Western scientists (Adams 2005, Adams and Li 2008) is to move Tibet out of the imaginary function which it serves; it “corrupts” their purity, as it were. And while Tibet requires the West’s attention and engagement for its own survival, to counter Chinese claims that Tibetan civilization is “backward,” and to keep global attention on its plight, it nevertheless leaves Tibet in something of a double-bind. Tibetan agency is enacted in these dialogues but only on the condition that it speak and condescend to be spoken to in a certain way.

In my concluding chapters I will explore more fully the reasons why I feel this to be the case. But before I do so, it is important to consider how these rhetorical dynamics which I have begun to outline are maintained in and through the everyday workings and negotiations of one of the premier neuroimaging labs involved in the study of Tibetan meditation.
What is the Center's relationship to Buddhism?

The Center is a secular organization that studies well-being. As a part of this, our researchers study contemplative practices, many of which have been around for thousands of years in Buddhist traditions. This exploration into how practices such as meditation shape the mind has been a growing interest of many scientists, scholars and world leaders.

Center for Healthy Minds Founder Richard Davidson and colleagues have collaborated with the 14th Dalai Lama to better understand how the mind works and how to harness research findings for the greater good. The two met in 1992 when His Holiness challenged Davidson to apply the rigors of science to studying healthy qualities of mind such as kindness, compassion, gratitude and empathy. The Dalai Lama is passionate about scientific research and visits Davidson and the Center regularly to hear updates on the work. Studying traditions, including Buddhism, also allows scientists to examine practices that are largely uniform in how they’re taught and executed.

We’re also asked why we refer to the Dalai Lama as “His Holiness.” This international title shows the highest level of respect and is akin to other titles such as “Mr. President” in the United States.

- From Center for Healthy Minds FAQ page;
  http://centerhealthyminds.org/contact/faqs

A. The Rigorous and the Good: An Introduction

“Rigorous” is a key word in Richard Davidson’s account of the work unfolding in his lab. In the strategic planning document it occurs seven times to rhetorically bracket and characterize the scientific work undertaken at the Center for Healthy Minds. It is used in conversations, publications, and presentations for the same purpose. It functions both to deflect and to affirm. It serves to deflect accusations that the objects of the lab’s research – meditation, compassion, and well-being – are wishy-washy, theosophical, new age pabulum. Simultaneously, it affirms the commitment of the Center and the researchers to use cutting edge technology, analytic methods,
and research designs to approach the phenomena under consideration within the experimental environment.

One of the aims of this ethnographic chapter is to show how problematic are our received conceptions of an experimental environment as something contained, confined, and insular. Ethnographic projects informed by Science and Technology studies (STS) aim to encompass both the institutional contexts in which knowledge is produced and the procedures which are carried out in laboratories and research centers to produce such knowledge (Knorr-Cetina 1995: 141). In other words, STS explores the methods, practices, epistemological, and social frameworks in and through which scientists produce and find persuasive certain “facts.” In STS, the emphasis is on the manner in which such facts are constructed by – not descriptive of – things in the world (Knorr-Cetina 1995: 142).

The use of STS informed ethnographic approaches are particularly salient here given that the research generated by psychological and neuroimaging laboratories is often taken up – and increasingly geared toward appropriation by – government, business, educational, correctional, and health systems (Mafoud 2014: 8). Funding for medical and psychological programs is heavily tied to national agendas. Agencies and citizens demand that deliverables, in the form of a healthier more productive population, should ensue when public funds are spent on research (Cozzens and Woodhouse 1995: 538). Tied as such research is to life and governance, we must be wary of the types of power that are supported by ostensibly objective choices to do research in certain ways. We must also inquire after the authority structures that are reified in doing science (Cozzens and Woodhouse 1995: 540). With respect to the research unfolding at the interface between neuroscience and Tibetan Buddhism, what might we learn about the kinds
of scientific facts produced when we consider the political, cultural and economic forces – like funding institutions and mechanisms – supporting such research?

An embedded, ethnographic approach allowed me to examine how both individuals and institutions embody and enact the worldviews that inform neuroimaging research on meditation and to critique the conclusions which are authorized from within that field of activity (Cozzens and Woodhouse 1995: 536-538). As an ethnographer, situated amidst the day to day unfolding of ideas, projects, experiments, meetings, funding concerns, and negotiations, I will endeavor to show how scientists themselves think about their own work, what policy and social concerns are mobilized at which point, and in relation to whom.

As I show below, “experiments” continue through meetings, seep out into halls and across parking lots, are permeable to the protocols and agendas embedded in grant proposals and renewals, people’s schedules, chosen or available collaborators, wider disciplinary concerns, publication and graduation deadlines, etc. All of these things influence how data is shaped and how it is presented and interpreted. This has significant implications for our understanding of how “rigorous” is employed in neuroimaging research on meditation and well-being.

As for the “good,” the research undertaken at the Davidson Lab is geared toward understanding the mechanisms of “well-being.”25 Davidson and others believe that certain meditative practices can help people deal with the kinds of stressors that occur in their lives. The inability to adapt and respond in positive ways to such a system is understood to be a sign that the individual is cut off from their innate human tendency to orient toward and assist others.

25 Given that Western political, philosophical, medical, and economic conceptions of “well-being” are circulating in the lab alongside (purportedly) analogous Tibetan Buddhist formulations, I have chosen to address each separately and in those contexts which they seem most salient. For example, in this chapter I will discuss “Buddha-nature” and its recent framing as “basic goodness” within contemporary debates about the moral and social foundations of human morality. In the chapter “Neuro”, I discuss “well-being” in relation to the biopolitical.
Davidson maintains that there can be a scientifically grounded secular ethics and that there is scientific evidence which shows that humanity is not innately warlike, but innately social and other concerned. I also examine what rhetorical force, given the responsibility attendant on the suggestion that we are responsible for the “plasticity” of our brains, is embedded in framing contemporary research on such sociality as “innate goodness.”

The question of an innate or basic “goodness” also has implications for what I have explored in the preceding chapter, in which I examined Tibetan Buddhist and Tibetan Buddhist-affiliated institutions which have begun to seek the kinds of methodological innovation that would lend empirical support for certain aspects of Tibetan Buddhist doctrine. A key element in this latter strategy would be to have more individuals schooled in Tibetan Buddhist philosophy and practice traditions participating in the design and framing of research protocols drawn from Tibetan Buddhism. Mind and Life, in part, has begun by working for the integration of contemplative practitioners into neuroimaging laboratories. Brown University, the University of Virginia, and the Emory-Tibet Partnership, have each actively taken steps toward designing programs to facilitate this goal. However, these programs are still quite new. Consequently, my analysis here will focus on research as it is currently shaped and unfolding. Importantly, it remains unclear to many in the neuroimaging field exactly how contemplatives will be integrated into the research process and how their effect – and effectiveness – will be measured.

It is also unclear how these attempts to integrate Tibetan Buddhism into laboratory contexts will affect Tibetan Buddhist practice and the ways in which Tibetan Buddhist teachers in the West and in exile monasteries frame elements of doctrine. Will the science which monks are being taught form another type of commentarial literature of the kind which have historically distinguished nuanced interpretations and transmission methods between lineages and monastic
houses within the same lineage? Will the conclusions of contemplative/Tibetan monastic research carry more weight or seem more “authentic” as a result of having “actual” Buddhist scholars allied with the framing of research problems?

To highlight this point, consider that the main research programs in meditation seek to highlight the effectiveness of a daily practice in bringing about benefits in health and happiness. At times, meditation is even compared to exercise.\(^\text{26}\) Though such research claims to be radically indifferent or opposed to the doctrinal and soteriological concerns which accompany the range of Buddhist practices used in the laboratory, Buddhists themselves use the results of that research to reflect on and situate their beliefs, practice, and experience in a larger political milieu (Bstan-'dzin et al. 2006). Thus, in the remaining chapters, I will also inquire about the implications for traditional Tibetan Buddhist practice when it works to define itself in relation to such research.

But here it is important that I situate contemporary research into meditation and the secular ethics it promises as an attempt to introduce a bias free, ideologically neutral set of goals and practices by and through which to manage one’s person. Such methods are also introduced as a way for schools, government administrations, and companies to manage their respective populations. Research into meditation purports to provide a way of circumventing the obscurations of religious and ideological projects because it is guided by the use of science (here, neuroscience and psychophysiology). However, the physicalist paradigm that underwrites such assertions impinges on the soteriological dimensions of Tibetan Buddhism, which the sciences we are considering draw on for rhetorical and methodological support. For example, while science claims that the mind is reducible to the workings of the brain, Tibetan Buddhism argues that the mind (Tib. \textit{s}ens) exists independent of the brain (Tib. \textit{klad} \textit{pa}). This is not just a

\(^{26}\)http://news.wisc.edu/changing-brains-for-the-better-article-documents-benefits-of-multiple-practices/
methodological or metaphysical difference, it is also an ethical one. If all things and events admit of causes, and if all cause-and-effect relations must – fundamentally – be physical, as science argues, then there can be no such thing as mind independent of the proximal effects of a functioning brain. If there is no basis for a non-material mental domain (sems), then it follows that it is equally impertinent to populate the world with things such as self, spirit, mind, rLung, etc. If there is no medium of karmic desire to purify then there are no karmic repercussions. But if there is no mental or karmic realm sui generis, then there is nothing to be done. Buddhist ethics fall by the wayside. Meditation becomes, at best, a way of bettering one’s health. Compassion becomes a way of stimulating one’s own positive affect neural-circuitry. Considered from this perspective, Buddhism qua religion and science represent potentially irreconcilable epistemologies, troubling the rhetoric of the compatibility of the two worldviews.27

Thus, one of the primary goals of my time at the Davidson lab was to explore whether and how such conflicting worldviews are negotiated in a research setting. Believing that there would be an ongoing collaboration between Tibetan Buddhists and neuroscientists at the Center,28 I defined some of my research concerns in the following way: 1) how prevalent is talk of Buddhism in the research context? 2) What practices and methodologies are influenced by the difficulties associated with reframing Tibetan Buddhists’ views on mind-body interaction into models which are amenable to hypothesis formation and testing in neuroimaging contexts? 3) If monastics are participating in research, are they expected to innovate at the level of hypothesis formation, research design, and interpretation once they enter the lab? If so, how is such

27 I will consider this in more detail below in relation to the question of “Buddha-nature” or “basic goodness;” a notion which can be thought of as an attempt to reconcile the physicalist and soteriological domains.
28 This was, in fact, not the case. While some early studies had been done with Tibetan and Western Tibetan Buddhist monks, the research presently unfolding in the lab draws mainly on the Madison area population for its subject base.
collaborative innovation expected to affect meditative practice given the technological limitations and prevailing epistemological frameworks in neuroscience?

In previous chapters, I have provided a history of the dialogue between Science and Buddhism with the goal of providing context for what follows. And while scientists from a range of disciplines continue to be involved in these dialogues, I will focus specifically on how Buddhism is increasingly entangled with contemporary neuroscience research. I will touch on the development of the Mind and Life Institute and the laboratory and research of one of its most well-known members: Richard Davidson, of the Center for the Investigation of Healthy Minds at the University of Wisconsin-Madison. Davidson’s career since his time as graduate student in psychology at Harvard has been deeply shaped by his practice of meditation and, since 1992, his relationship with the Dalai Lama. This relationship and Davidson’s career trajectory were themselves shaped by the ongoing work of the Mind and Life Institute.

### B. The Mind and Life Institute

Mind and Life was co-founded by Adam Engle, a business man and entrepreneur and Buddhist practitioner, with the Dalai Lama and Francisco Varela and began with the Mind and Life Dialogues of 1983. MLI’s purpose was to “legitimatize the scientific study of meditation” and, in doing so, be of benefit to humanity. The first Mind and Life dialogue to occur in India

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29 I first met Richie (as he prefers to be called) at the 2013 Mind and Life Summer Research Institute. One of the topics under discussion that year was how to integrate scholars from other disciplines into the neuroscience of meditation process. I approached Richie after his talk and asked if he thought having an anthropologist in the lab would help to address some of these questions. He answered in the affirmative, but made it clear that I would need to have my own funding for such a project. A Varela Award from the Mind and Life Institute itself permitted me to conduct ethnographic research at the Lab in the Fall of 2015.

30 Material and quotes in this section drawn from the online interview with Engle at http://www.buddhistgeeks.com/author/adam-engle/
– they had previously been held in Europe and America – was in 1987 in Dharamsala and was attended by several prominent scientists. These scientists were invited to discuss the findings being generated in the field of cognitive science. These dialogues continued and eventually grew into the Mind and Life Institute (MLI). MLI is “dedicated to the intersection between the neurosciences…and the Buddhist contemplative path” and is trying to create “…an active collaboration between scientists and contemplatives.” Starting in the late 1990s, MLI began to publish its dialogues, focusing each year on a different theme. In 2003, Mind and Life focused on the emerging neuroscience of meditation. This was also the year the dialogues became public.

At the same time, Davidson and Engle decided to start the Summer Research Institute so that established researchers and graduate students could interact and develop beyond the “pilot study” stage. To help younger researchers in this, the Varela Awards were created and made available to former attendees of the Summer Research Institute.31

What was the source of the optimism which underwrote the Mind and Life project in its early years? Engle is of the opinion that such dialogues are important and possible because Buddhism and science each use different, but complimentary, empirical methods:

Science, of course, proves itself through the scientific method and technology and objective verification. Buddhism, and the other world’s living contemplative traditions, use the human nervous system, the human mind, refined by meditation, as the instrument of investigation [presumably of the mind and “fundamental reality”]. But they’re both very, very empirical in a sense. And [until Mind and Life] there really wasn’t any way for them to share their findings to collaborate…so we thought that if we could find a way that science and Buddhism could actually be in dialogue, share their findings and collaborate, there were two very, very powerful systems of knowing that used different instrumentalities, but that humanity could benefit…

Engle continues:

31 My time at CHM was made possible by a Varela Award.
…our founding premise…observed that science is the dominant paradigm for understanding the nature of reality in modern society, and providing a knowledge base for improving human lives. And Buddhism, while it is a path of liberation, is not based on faith or theology, but is based on also understanding the nature of reality and then using that to provide a knowledge base for improving lives.

The word which seems to jump out of Engle’s account is also: “…is not based on faith or theology, but is based on also understanding…” Perhaps he had meant to say “not only.”

Nevertheless, the possible parapraxis highlights one of the questions which arises out of the intersection of Buddhism and science; namely, the degree to which the “Buddhism” which is presented in these dialogues conforms to any definition which individuals of historically Buddhist cultures would themselves identify with. Further, to what degree can any Buddhism be free of “faith or theology?” Who are its practitioners? And why is it important that we name what the scientists wish to interact with – this “also” – Buddhism? Are there other words which could take its place, and what would be lost or gained in using a different term?

Of course, those who use the word Buddhism in such contexts may argue that it simply denotes an emerging register of meaning and significance which is still taking form and has yet

32 Note that Engle here, though discussing Mind and Life and the Dalai Lama, does not specify Tibetan Buddhism but says, rather, that the dialogue and the tradition he is speaking of and for is “Buddhism” simpliciter. Recall Almond’s (1988) discussion of “Buddhism” as a disciplinary construct and how Buddhism’s supposed unity (textual, historical, genealogical, epistemological) is here in play.

33 Though consider how, in the previous chapter, monks reported that science helped them deepen their “faith” in the Buddha and Buddhism. What can be made of this? Perhaps such a claim from the monks is meant to reassure the conservative establishment. Perhaps it expresses what the Dalai Lama has claimed; that the Buddha and other figures within Buddhism had penetrated into domains of knowledge which it took the West thousands of years to uncover (and finding itself ill-equipped to deal with the ethical, logical, and conceptual consequences of so late a discovery). Or, more likely, for the monk, Buddhism is a religion which entails faith (however much that notion may trouble Western fantasies about the scientific nature of Buddhism). It is unclear, however, whether those who think Buddhism is primarily an empirical technique would see this claim to a deepened “faith” as anything other than colloquial move (akin to claiming to put one’s faith in x) that will become outdated as the dialogues progress and monks are given another basis for their tradition’s apparent insights.
to find itself (Goldstein 2002). Critics (the countercharge may run) would thus be guilty of a
disciplinary reification and of reinscribing Western power by insisting “Buddhism” conform to
something specific and textually grounded. Could the critic, in turn, suggest that her or his push
to specificity is itself a critical technique, a kind of “skillful means” meant to expose a subtle
reification and reduction in which the “Dialogue” participants may engage? One could also ask
what practicing Buddhists - Tibetans or otherwise - are surrendering given the resource and
power imbalances underwriting this colonial-haunted science encounter. This question becomes
most pertinent when Buddhists themselves use “Buddhism” in the singular or enter into dialogue
with scientists. And how do we go about critically tracking these shifts in what “Buddhism”
denotes without delegitimizing the types of Buddhism already in circulation, themselves
testaments to unanticipated hybridities (Danyluk 2003: 130).

Perhaps one way to approach these questions is to ask what we can learn when we look at
the political stakes involved in such deployments and arrangements. We must inquire after the
economic and social incentives at work when redefining Buddhism in a way amenable to
science. In the previous chapter I considered the monastic and stakeholder side of the
Buddhism/Science dialogue. In what follows, I will consider the questions being asked of the
scientists and by the scientists. It is out of the contrast of these domains that I hope the core
issues will be more fully elucidated as well as the work which “Buddhism” is doing in these
varied contexts.

Even as MLI was developing, other projects which were to prove instrumental in laying
the groundwork of the dialogue between Tibetan Buddhism and science had already been
underway. In 1979, the Dalai Lama was approached by Herbert Benson, a Harvard researcher
who pioneered research on the placebo effect and studied the health benefits of intercessory
prayer. He had become interested in the “relaxation response” after studying practitioners of Transcendental Meditation and thought the physiological effects of the same would be easy to study in advanced meditators (Bstan-'dzin-rgya-mtsho 1990: 210). In 1982, Benson published the findings gleaned from his research with practitioners in northern India (Benson et al. 1982). These studies were done with practitioners of tum-mo (Tib. gTum-mo), a practice in which individuals are able to subdue the “grosser levels of consciousness” and experience “the subtlest [levels of consciousness]…those apprehended at the point of death. One of the aims of Tantra is to enable the practitioner to ‘experience’ death, for it is then that the most powerful spiritual realizations can come about” (Bstan-'dzin-rgya-mtsho 1990: 210). Benson was able to show that there is a physiological corollary that results from this type of mental control, including significant increases in body temperature, even in extreme winter conditions, and a drastic decrease in respiration. While the mechanism is still not fully understood, the Dalai Lama did see these findings as a “clear indication that there are things about which modern science could learn from Tibetan culture.” He continued:

I believe that there are several other areas of our experience which could usefully be investigated…I hope one day to organize some sort of scientific enquiry into the phenomena of oracles [meditators between physical and spiritual realm, not prognosticators], which remain an important part of the Tibetan way of life. (Bstan-'dzin-rgya-mtsho 1990: 211)

Following this statement (taken from his biography Freedom in Exile), the Dalai Lama goes on to explain the nature of the Nechung oracle and its role in policy decisions of the Tibetan government. He also gives recommendations for other areas of study: Tibetan medicine and the theoretical frameworks of Madhyamika views of reality. He concludes the chapter with a few observations on the importance of Buddhism and of science:
I am well aware, however, of the danger of tying spiritual belief to any scientific system. For whilst Buddhism continues to be relevant two and a half millennia after its inception, the absolutes of science tend to have a relatively short life. [Thus] I cannot agree with our Chinese brothers and sisters, who hold that Tibetan acceptance of these [e.g. tum-mo, oracles] is evidence of our backwardness and barbarity. Even from the most rigorous scientific viewpoint, this is not an objective attitude.

…we must be careful in our investigations, especially when dealing in an area where scientific experience is slight. It is also important to keep in mind the limitations imposed by nature itself…whilst scientific enquiry cannot apprehend my thoughts, not only does this not mean that they are non-existent, but also that some other method of investigation cannot discover something about them – which is where Tibetan experience comes in. Through mental training, we have developed techniques to do things which science cannot yet adequately explain. (Bstan-'dzin-rgya-mtsho 1990: 211)

In his later book, *The Universe in a Single Atom* (2005), the Dalai Lama highlights the benefits of Tibetan Buddhism for resolving another issue which has occupied those opposed to scientism and strict materialism: the question of first person experience. For the Dalai Lama,

[T]he contemplative method, as developed by Buddhism, is an empirical use of introspection, sustained by rigorous training in technique and robust testing of the reliability of experience….the Buddhist understanding of mind is primarily derived from empirical observations grounded in the phenomenology of experience…if we want to observe how our perceptions work, we may train our mind in attention and learn to observe the rising and falling of perceptual processes on a moment by moment basis. This is an empirical process that results in firsthand knowledge of a certain aspect of how the mind works. We may use that knowledge to reduce the effect of emotions such as anger or resentment…but my point here is that this process offers a first person empirical method with relation to mind. (Bstan-'dzin-rgya-mtsho 2005: 144)

Inspired by Benson’s earlier investigations, a research team composed of Richard Davidson, Francisco Varela, Cliff Saron, Allan Wallace, Jose Cabezon and others undertook their own field project in 1992 (Houshmand et al. 2002). As had Benson in the 1980s, this team journeyed to Dharamsala with computers and monitoring equipment, inviting hermits in retreat to collaborate in designing research protocols for the study of the physiological effects of

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34 Compare with Engel’s use of “Buddhism” as discussed in footnote 35 above.
meditation. Specifically, they were asked to “provide insights both from the formal teachings of their own tradition and from their own direct experience of meditative practice to help shape the ultimate design of the experiments” (Houshmand et al. 2002: 4). Funded by the Fetzer Institute—which supports projects aiming to build a “spiritual foundation for a loving world”35—the goal of these scientists was to try to conduct research on “mind” and “compassion” by studying the brains of Tibetan Buddhist hermits secluded in the hills surrounding Dharamsala. As one researcher told me, the goal was “to see if there was a there there”.

Why did these scientists to consider these individuals a promising experimental subject population? Practitioners of Tibetan Buddhism maintained that the mind could be trained while the prevailing Western scientific view held that emotional and mental capacities were relatively fixed by a certain age. Furthermore, Western science stated that such capacities were shaped primarily by genetics and, to a lesser extent, the environment. Thus, this cohort of researchers was not concerned to document unusual feats or abilities but to demonstrate the cumulative effects of certain practices across a range of domains which Western science considered biologically determined; primarily those involved in attention and emotional regulation. Significantly, training attention is both a prelude to and component of most forms of meditative practice. As Davidson himself often notes, the importance of the skill of attention, this capacity, is echoed to us from all sides today. Furthermore, the training of attention was held to be deeply significant by William James, whose 1890 work, Principles of Psychology, was itself well received by the Theosophists, with whom he was well acquainted. In it, he stresses the importance of attention for all aspects of emotional, social, and mental functioning and remarks

35 http://www.fetzer.org/
that having some proven way of training this skill would be a great boon to society (James 1890: 424).

Upon their arrival, the first challenge the scientists faced was to explain to the monks what they were going to be doing. When they first demonstrated the equipment and experimental procedures, the scientists announced they were trying to study the mind. As they placed the sensors on the head, the monks began to laugh: in Tibetan Buddhism, the mind is in the chest, in the heart. Surely, the scientists were playing a joke.

Despite this fundamental difference in worldview about the nature of the mind, the team pressed on. Besides being burdened with bulky and minimally sensitive equipment ill-suited to field conditions, the hermits themselves were both reticent and disarmingly polite. The researchers were often met with self-effacing subjects who claimed that their abilities were too, too poor to be of use to the scientists. The hermits suggested that the scientists would have better luck with someone further up the mountain where there are some so very much more accomplished. Other monks, when approached, would laugh openly at the idea, wondering why anyone would think they could study compassion that way. Instead, they suggested the scientists set down their burden and meditate with them for a few years. Little data was collected during this field operation, but the seeds were sown. It was after this adventure that, in 1992, that the Dalai Lama challenged Davidson to scientifically study positive emotion and well-being.36

Researchers who consider well-being have noted that much psychological research has devoted itself to studying negative affect, psychopathology, and maladaptive behaviors (Urry et al. 2004: 367). Contrastingly, well-being researchers direct their attention to the study of what allows “humans to flourish [and achieve] happiness, fulfilment, and enrichment – well-being”.

36 Much of this material has been written and spoken of publically by several members of the team. For a written account, see Houshmand et al. 2002.
Well-being itself is further parsed into two distinct domains: *eudaimonic* and *hedonic*. Eudaimonic well-being is described as “the extent to which respondents endorse high levels of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.” Hedonic well-being includes “life satisfaction, satisfaction with important domains (e.g., work), frequent pleasant emotions, and infrequent unpleasant emotions.” Summarizing, the authors write: “Hedonic well-being thus embraces positive affect as a defining feature of well-being, whereas eudemonic well-being emphasizes that purpose, growth, and mastery may or may not be accompanied by feeling good” (Urry et al. 2004: 367).

But how to understand the fact that individuals vary in the way in which they emotionally respond to a variety of social and developmental events? We know that, in part, this is influenced by the way in which they have learned through religion, culture, and family to construe events as salient. In turn, the salience of an event brings into play efforts of self-regulation and action, called for by prevailing moral and disciplinary standards of conduct, which the individual may or may not be successful at engaging. These individual differences are themselves further influenced and constrained by what Davidson calls the “circuitry of adaptive emotional responding” (Davidson 2004: 1395). Thus, “effective context-modulation of emotional behavior is a hallmark sign of well-being and promotes adaptive emotion regulation” (Davidson 2004: 1401). The capacity for emotion regulation, for positive affect, and self-report are framed by neuroscientific findings which correlate these individual differences with activation, morphology, and connectivity of different regions of the brain – notably, the amygdala and anterior cingulate cortex, and the prefrontal cortex.

Davidson’s research has also shown that positive affect can influence both immune function and brain morphology. In a 2003 study, Davidson and others were able to show that
individuals who had received training in meditation and then received an influenza vaccine showed both higher antibody titers and greater changes in brain activity compared to controls. Davidson, before alluding to the Dalai Lama’s support for such a position, contends that “these findings suggest that training procedures designed explicitly to facilitate well-being result in demonstrable and predictable changes in brain and immune function” (Davidson 2004: 1407).

Further, that it may now be possible to transform “this circuitry in adulthood with specific methods designed to cultivate positive affect…” (Davidson 2004: 1408).

Thus, for Davidson, “well-being is a skill…fundamentally no different than learning to play the cello.”  

He notes four components of this skill which the research conducted by he and others seems to support. They are resilience (how we recover from adverse events and get back on track; seems to be correlated with a sense of purpose); outlook (the ability to sustain positive affect); attention (the ability to not be distracted; the implications for “productivity” are manifest); generosity (being kind and giving to others has a positive effect on the doer as well, activating “circuits in the brain that are key to fostering well-being”). Further, each of these components helps to uncover what Davidson and others have spoken of as our “basic goodness;” an innate capacity for compassion and sociality.

1. **Basic Goodness as Skillful Means? An excursus**

“Basic goodness” and “skillful means” are notions which figure deeply in what I have just outlined. First, the study of compassion and well-being undertaken by these scientists is understood by them to be rooted in a view of human nature as fundamentally good. Further, this capacity is something that can be strengthened. This notion appears to be drawn from an idea in

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37 Statements delivered at the 2016 Well-Being at Work conference. A summary and video can be found here: http://www.mindful.org/science-reveals-well-skill/
Mahayana Buddhism which I will discuss below. Second, while the Tibetan monks in India may have thought it funny to try to study the mind by studying the brain, for the Dalai Lama this is clearly no laughing matter. Perhaps, for him, permitting research is a form of “skillful means;” part of a project to present the dharma to the West in a language it can best understand. Viewed in this way, presupposing a basic human goodness is one way to motivate individuals to look for and to work towards bringing it forth, helping them create the effect desired. And, from the Dalai Lama’s perspective, to allow scientists to study Tibetan Buddhist claims about the mind by studying the brain may be one way to lead scientists to a confrontation with the limits of their tools and concepts. This would potentially open them to alternative approaches, and the viability of Tibetan Buddhism as one of the key alternative approaches. It may even be a way of prompting the Tibetan tradition to innovate as it confronts new facts about the world and competing epistemologies and ontologies.

Thus, my intention in the following section is to highlight those points which bear directly on the understanding of the Tibetan Buddhist notion of “basic goodness,” which intersects with the rhetoric of the neuroscientific study of meditation and the benefits which are said to accrue through the practice of meditation.

The Buddhist approach to the mind and to psychology which is most often cited in the philosophical, psychological, and neuroscientific dialogues with the West is the Abhidharma, a collection of texts composed in India between the third century BCE and the second century CE (Williams 1989: 16) Here, the human is said to be composed of “five psychophysical constituents” with no underlying unity; what we perceive to be a unified self or person is merely a function of the tendencies inherent in and propagated by the activity of these separate constituents (Williams 1989: 16). Understanding how the human functions psychologically, one
masters that functioning to achieve release from the suffering produced through attachment. The fundamental approach advocated by the Abidharma for overcoming these tendencies is a detailed conceptual analysis and dismantling of the projected unities or essences or substrates within and upon which the objects of our desire and control are said to be based. However, some schools inquire further, inquiring after elements may or may not exist beyond our ability to conceptually dismantle. What, they ask, permits experience, however delusory, in the first place? One supposition advanced in response is the Mahayana notion of “Buddha-nature” (Sk. Tathagatarabha; Tib. de gshegs snying po).

To the faceted question of ultimate existence the Buddha is said to have refused to give definitive answers. Some things were said to lie outside the metaphysical categories we try to fit them into: what transmigrates? Is there something which endures and attains Enlightenment (Bstan-'dzin-rgya-mtsho 2005: 77, Williams 2000: 126)? How does one reconcile the fact that there is no “self” to become Enlightened, but one must pursue the Enlightenment of that non-existent self and which is said to have a fate and produce effects beyond death? In this context, the notion of “Buddha-nature” is one late attempt to resolve these dilemmas, locating the substrate of the perceived unity of beings or persons as an inherent motivation to seek enlightenment (Williams 2000: 160). The Path which the Buddha advocated could never have been recognized as the Path by one still mired in delusion were there not been some intimation of the Path, of Buddha-nature, always already abiding and knowable (Ruegg 1989: 18).

The first sutras to articulate this idea were likely composed in India sometime in the third century CE. However, Williams (2000: 162) notes that the philosophical elaboration of the notion of the Buddha-nature received greater attention and development outside of India. Within

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38 See Williams 2000: 161 for a list of sutras which speak of “Buddha-nature.”
India such a doctrine was motivated less by an attempt to answer the ontological concerns outlined above than as a way of accounting for the experience of non-duality resulting from conceptual analysis and meditative practice. Thus, the notion of the tathagatagarbha (in the Indian context) appears less an ontological assertion or wager than a motivation for the “specifically religious issues of realizing one’s spiritual potential, exhortation, and encouragement…” (Williams 2000: 162). The sutras give “a series of examples showing that even though one is in the midst of defilements there dwells within all sentient beings a tathagatagarbha [Buddha-womb/embryo/seed; for further framings, see Zimmerman 1998: 150] … something supremely valuable is contained within all the dross [claiming] ‘do not consider yourself inferior or base. You all personally possess the Buddha nature’” (Williams 2000: 162).

However, as the concept was elaborated, doctrinal and philosophical concerns were mobilized within various schools of Buddhism to give an account for ontological status of this Buddha-nature (Ruegg 1989: 23). Some schools went so far as to equate Buddha-nature with the idea of an enduring self which, Williams (2000: 163) suggests, may have been political and socially motivated by attempts at conversion. Specifically, the idea of Buddha-nature may have developed as a way of countering the charges against Buddhism that it was nihilistic. In this instance, the notion of Buddha-nature becomes itself an example of skillful means (Williams 2000: 164, Zimmerman 1998: 154). There may be no self, but the Buddha abides, seeded within each of us. And so is refuted the charge of nihilism. Other Buddhist texts argue for other interpretations suggesting, for example, that the Buddha-nature is not a self, but the “natural luminosity of the mind” or the “pure dependent aspect” of interrelated being (Williams 2000: 164).
“Skillful means” (Sk. upayakausalya, upaya) is a term used to denote the Buddha’s (or any enlightened teacher’s) ability to shape her or his teaching to reach most directly the minds of those who happen to be listening at the moment. It is the capacity to meet people where they are at (Williams 2000: 169). Within the context of scriptural tradition, this notion helps explain contradictions, inconsistencies, and elaborations of certain doctrinal points, smoothing over the dissonances produced. In this way, the variances in scripture are not perceived as flaws, but an abundance capable of reaching multitudes in ways they can most make use of. If one really needs a “self” to cling to, then best to let them think of it as a budding Buddha.

The ideas of Buddha-nature and of skillful means have both been put into the service of contemporary neuroscientific research in the context of the unfolding dialogue between Tibetan Buddhism and the Sciences. “Basic goodness” is now defined in terms of capacities and potentials for social awareness and responsiveness, something which the grade school meditation programs being developed at CHM seek to foster. Though having their root in Tibetan Buddhism, the notion of “basic goodness” is further connected in the “Buddhism and Science” milieu with an understanding of the human infant produced in research centers such as that of the Dalai Lama.  

39 In his 2011 blog post, Richie writes: “…consider an alternative to the tradition New Years’ resolution. Instead of focusing on a behavior we wish to change or a habit we may not like, reflect on the possibility of strengthening or nurturing those parts of yourself that reflect your basic goodness…Indeed there is an increasing body of empirical science which firmly indicates that basic goodness is part of our human repertoire. Paul Bloom and his colleagues at Yale demonstrated that infants as young as six months prefer an individual who helps another to one who hinders another. …These studies clearly establish the fact of innate basic goodness. From the youngest of ages, we are oriented to prefer altruistic others and to engage in altruistic acts. Of course, we all engage in these behaviors, but sometimes they become obscured amidst all of the other input we encounter on a nearly constant basis…One of the simplest ways to sustain positive emotion is to become more aware of it when it is there…Together, as the Dalai Lama has reminded us, we can genuinely transform our minds to cultivate happiness by deliberately selecting and focusing on positive mental states. This is possible because the wiring in our brains is not static, not irrevocably fixed — our brains are adaptable.”

Infant Cognition Center (ICC) at Yale University, whose work Davidson references in public lectures and elsewhere.

Under the direction of Paul Bloom, researchers at the ICC contend that humanity’s “intensely social nature provides both opportunity and risk” (Hamlin et al. 2011: 1). In this view, our aggressive tendencies arguably stem from that mixture, they do not precede it; aggressiveness is coextensive with the element of risk perceived in social encounters. Citing research which shows that infants under a year old show preference for individuals who act, or appear inclined to act, in a “prosocial” way towards others, researchers at ICC contend that such results are reflective of a moral disposition rooted in our evolutionary make-up and perhaps even serve as the basis of punishment by directing other’s behavior toward sociality in systems of law and morality (Hamlin et al. 2011:1). Researchers at ICC suggest that some sense of right and wrong, of “good and evil seems to be bred in the bone” (Bloom 2010). The education and rearing of children should mold this instinctual sense in ways which support and conform to the behavioral domains of a particular culture. As social interactions become more complex and individuals are able to undertake more efficacious action in the world, long range planning – beyond the immediate valuation of the act – begins to shape moral codes and action (Hamlin 2011:1).

Thus, the pressing political and scientific question appears to become not one of how society can raise moral members but how it may be inadvertently interfering with a “natural process,” namely, the development of sociality and compassion. This sounds a bit nostalgic, 

40 Quotes and details of research drawn from Bloom’s own account delivered as an online article for The New York Times Magazine http://www.nytimes.com/2010/05/09/magazine/09babies-t.html?_r=0
reminiscent of longings for a primitive innocence. It also begs the question of how humanity went so fundamentally awry, while lending credence to arguments which suggest that social ills multiply with the increasing complexity of societies. Humanity is thus a victim of its own success. As civilization develops, the elements become too complex for biologically encoded responses to handle. Humanity thus devises new codes in the form of religion and ethical systems of conduct. But these codes themselves – in their justification, formulation, and enforcement – breed further difficulties. This appears to be the narrative at play.

But exactly how have researchers at ICC arrived at their conclusions? What experiments could one devise to study “infant morality?” The key method researchers have devised to study preverbal cognition of babies is to use the time infants spend looking at or being engrossed in a thing or occurrence. Time spent looking at a thing is taken to be a function of preference. Researchers deduce from this method, for example, that babies have a “naïve physics.” In other words, at just a few months old, infants will look longer at events or objects which appear to violate some natural law, such as a magic trick leaving something floating in mid-air.

Bloom and colleagues have also found that babies have social expectations: when a formerly expressive face, such as that of a caregiver, suddenly becomes unexpressive, babies become very distressed at the lack of response, particularly by the absence of facial expression. On the face of it, this appears to make intuitive sense: babies may not be able to act on the world but it seems “natural” that they should have some understanding of the world and others such that they are able to learn from it and them.

But “morality” is not a physical object in the world; it is a highly coded, behaviorally and developmentally nuanced effect of culture. Even so, how should we understand – independent of the particular variations it may take – the shared sense humanity has of there being such a thing
as right or wrong? Here, researchers at ICC claim that infant reactions to the facial expression of sadness or the sounds of others’ distress points to a rudimentary, biologically innate form of compassion or empathy. Infants will react with more distress to the recorded cries of other babies than of their own, though not all infants respond to the same degree.

In one of the more well-known experiments from the ICC (a video of which Davidson has shown at public talks), infants observe as a cartoon ball tries to make its way up a hill. In one condition, the effort to get up the hill is facilitated by a “square” character, nudging the circle on when the ball becomes fatigued near the top of the hill. In another experimental condition, as the ball reaches the top of the hill it is knocked down by a triangle. After about six months of age, infants spent a longer time looking at the ball when it approached the triangle versus the square. How do we discern whether this was empathy or schadenfreude? The effect was increased when the geometric shapes were given facial features. The results of this experiment suggested to researchers a possible link between hardwired social expectations and the development of a moral sense.

The question of whether or not humanity possesses a basic moral goodness and of compassion is deeply important and merits an extended treatment which I cannot here provide. However, it is important to outline these themes given the actuarial, political, and social implications of such research and motivations of the researchers.

Questions of how to govern, how to raise a child, and how human society arose are each surrounded by cultural myths and disciplinary fantasies concerning the origin of humanity. Perhaps we believe that a convincing tale of how humanity began will give some direction to our potential, tell us how to govern ourselves, provide us some clue as to what our future may hold. Variations on this theme of origin circulate widely: from the biblical story of life in a peaceful
garden, sullied by disobedience, deceit, and envy, to the tales echoing Hobbes’ caveman clubbing compatriots in casual fits of hunger or lust, born along by vain efforts to prolong a life which is “nasty, brutish, and short” (Hobbes 1986: 186). We know these constructions well: politicians and family members alike appeal to these fantasies whenever they want to make an argument for the soundness of their opinion as they make sweeping and often shocking generalizations about humanity or the radical nature of their proposed and equally shocking intervention. Further, the elision of suppositions about what humanity was in its origin, and in its present “infancy,” informs the theory and practice of childrearing and education. Fantasies about our origin are further constrained by the prevailing political, social, and moral order we think we want to bring about (DeMauss 1974, Rousseau 1968, 1979).

Whether one allies oneself with a story about humanity’s origin which supposes an early war of all against all, in which civilization must be imposed – arising through the power strategies of a few as they attempt to maximize their access to resources – or one in which cooperation among all was necessary in order to nurture helpless young, learn language, amass enough food to thrive, defend in groups, learn new adaptive strategies such as tracking and medicine, there is much at stake in what and how we choose. Much of psychology and recent philosophy, popular and academic alike, has stressed that humanity constructs the social and conceptual world in which it operates (Hacking 1999, Kukla 2002: 5). We are ourselves responsible for the fantasy, the myth, and the motivation supporting our choice of whether we are fundamentally good or not.

One persuasive argument in favor of the position that humanity is not fundamentally “good” derives from the idea that humanity is primarily motivated by the gains to be gotten by whatever means. Even the rituals of limited warfare, which do end in death for some, seem to be
staged lettings of blood to lubricate the transfer of goods (Keely 1995). Those opposed to such a view may argue that such a position ignores the kinds of cooperative exchanges that occur much more frequently within and between societies. Further, claiming that humanity has a propensity for warfare does nothing to militate against an equal propensity for cooperation, whether institutional or consequent of benefit, as in breeding and childrearing (Kramer 2010: 419), and in which violence is contextualized as an enforcement mechanism.

And so, in order to lend weight to a conception of the human as fundamentally pro-social, scientists have begun to conduct research on what was formerly portrayed as a tabula rasa or instinctual monster: the infant. The infant, embedded in a social milieu to be sure but significantly before entering into language, seems to prefer certain social occurrences over others, certain personal actions over others. Researchers suggest this is indicative of a certain moral compass, of something innate which, though not denying warlike and aggressive tendencies, is perhaps equipotent. Such a propensity should be given training and be culturally valorized, as we do with aggressive behavior, so this peaceful nature can develop.

Such a view of the human, in the research domains I am here considering, is seen to align with the notion of “Buddha-nature” discussed above. Its formulation as “basic goodness” perhaps stems from Chogyam Trungpa’s essay “The Meeting of Buddhist and Western Psychology.” First published in 1982 (and later reprinted), Trungpa asserts that

Buddhist psychology is based on the notion that human beings are fundamentally good. Their most basic qualities are positive ones: openness, intelligence, and warmth. …this idea is ultimately rooted in experience – the experience of goodness and worthiness in oneself and others. This understanding is very fundamental and is the basic inspiration for Buddhist practice and Buddhist psychology…coming from a tradition that stresses human goodness, it was something of a shock for me to encounter the Western tradition of original sin ... there seems to be great concern with the idea of some original mistake, which
causes later suffering – a kind of punishment for that mistake. (Trungpa 2003: 543)

He then translates tathagatagarbha as this inhering human goodness: “According to the Buddhist perspective there are problems, but they are temporary and superficial defilements that cover over one’s basic goodness (tathagatagarbha) … [this goodness] is rooted in the experience of meditation and in the healthiness it encourages” (Trungpa 2003: 544).

It is important to note that in both Williams’ (above) and Trungpa’s account, the assertion of “basic goodness” is taken to be rooted in an experience borne out and developed in practice. In this way, contemporary researchers in meditation and infant moral propensities are alike able to stress the importance of context and repetition. By focusing on kindness, compassion, and moral action, the capacity for each – socially, neurologically – is developed. The claim is that a certain kind of person, a certain kind of citizen is produced. In short, a healthy mind.

C. Healthy Minds

Davidson had been a psychology student at Harvard in the early 1970s and notes that though they spent most of their time in William James Hall, “we read very little of William James” (Davidson 2015, personal communication). Beyond the grounds, he would often hang out with Richard Alpert (aka, Ram Das), and eventually he and his wife took a summer to do a Goenka meditation retreat in India; a move which, he comments, was near career suicide at the time. In 1984, he became the Director of the Brogden Laboratory of Affective Neuroscience at the University of Wisconsin-Madison and, in 2001, director of the Waisman Laboratory of Brain Imaging. Later, Davidson succeeded in securing an National Institutes of Health grant to help upgrade the imaging and research facilities in what is now a seven story tower addition to the
Waisman Center. This facility and its staff comprise what is known as a “core service;” a user fee-for-service system. Anyone who uses the imaging facilities (hereafter “Core”), including members of the Davidson lab, must pay for scanner time. The funds which are generated pay for the necessary insurance and technical, maintenance, and support staff.

In 2005, alongside these career developments, Davidson lobbied successfully for the Dalai Lama to address the annual Society for Neuroscience (SfN) meeting. It is important to note that his enthusiasm for bridging Buddhism and science was not shared by the neuroscientific community at large. Over 500 neuroscientists signed a petition against the Dalai Lama’s scheduled talk. Scientists protested what appeared to them as another move in the continued appropriation of neuroscience to substantiate metaphysical and religious speculation (Adams 2005). The following year, Davidson was named among *Time Magazine*’s “100 Most Influential People”.

Alongside his work at Brogden (Psychology) and Waisman (Neuroimaging), another project had also begun to take shape. The Center for the Investigating Health Minds (renamed in 2015 as “Center for Healthy Minds,” CHM hereafter) came about as a result of Richie’s discussions with the entrepreneur Ulco Visser (who was also on the Board of Mind and Life International and the Christian charity *The Impact Foundation*41). Visser gifted Richie half a million dollars to get the Center started following a challenge he gave Richie to put into writing what more he wanted most to be able to address in his career.

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41 It “draws on contemplative practices from across traditions, and works to design and promote learning programs that are relevant and applicable to the modern world. Our goal is to reintroduce contemplation into the mainstream, through the thoughtful integration of wisdom traditions and scientific rigor.” (http://www.charity-charities.org/Colorado-charities/Aurora-1661975.html). Further, it boasts a “501(c)(3) … helps donors maximize the impact of their giving by offering a streamlined solution to invest charitable assets in venture funds, private equity and private companies.” (www.impactfoundation.org)
Presently, CHM is located in the Waisman Center, a facility founded in 1973. CHM recently became its own division within the UWM system and is in the process of a several year, staged move-out plan from their offices in Waisman to a new location. The Waisman Center itself grew out of a Kennedy-era initiative for a multi-disciplinary approach to the “understanding, treatment, and prevention of mental retardation and other developmental disabilities.” This initiative continues today with a focus on autistic and developmental disabilities and has a pre-school on the grounds devoted to interaction between children with and without disabilities. Several members of the Lab send their children to this pre-school. The Waisman Center also houses a leading research center on stem cells.

At its opening, CHM was hailed as the “world’s only translational research facility to combine a brain imaging lab and meditation space under one roof.” It was through CHM, Davidson says, that he was able to fully continue the challenge the Dalai Lama had delivered to him in 1992 to study not just negative emotions and pathology, but positive emotions and well-being. The focus of the CHM’s research was to use contemplative practices in such a way as to take advantage of the plasticity of the adult human brain by creating targeted interventions based on the findings produced in the lab. These are intended to “promote compassion, kindness, and joy.” The first projects involved work with veterans suffering from PTSD and the promotion of...
“compassion and kindness” among grade school children (Flook et al. 2015). Commenting on the kind of work coming out of CHM, Mark Lefebvre of the UWFoundation said; “This [research] is not an abstraction. Once you get your hands around it, you’re picking up real tools with which to build the future.”

Between 2014 and 2016, Davidson served as a member of the World Economic Forum’s Global Agenda Council on Mental Health, during which time CHM received another large donation. This resulted in several changes. The name was changed to The Center for Healthy Minds and dropping “Investigating,” a decision which surprised some members of the scientific staff as they saw “investigating” as the term which best defined what they were doing. Additionally, several endowed chairs were set up at the University of Wisconsin-Madison to seed an interdisciplinary approach to the study of well-being with faculty in Religious Studies, Social Work, Psychiatry, and Psychology. In late 2015, CHM was named its own division within Liberal Arts and Sciences and has begun its move a new location. Further, HMI – Healthy Minds, Innovations – a for-profit corporation, has been set up to help finance the outreach projects undertaken by CHM. The goal of the projects – and of the Lab’s research – is expressed in its Ten Year Vision: to share with “the world …what is likely the most hopeful, compelling and promising message of our time: that you can learn well-being, be happier and suffer less” (CHM Strategic Planning Document, unpublished data).

One may here observe that, as pleasant and well-meaning as this rhetoric sounds, it at first seems to be little different from any of a range of utopian projects built on the hope that we can one day all just “change and get along,” and that the individual themselves is responsible for their own happiness or suffering. Social context, generational effects, economic hardship, etc. are

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45 https://www.supportuw.org/news-post/a-dream-takes-shape/
not to blame; the individual is the “master” of their own fate and thus disposition. It is this idea of “mastery” which perhaps gives the ideological game away; it is the same trope used in neoliberalism, where by the individual is entitled to all because of their purported self-sufficiency and self-mastery. The neoliberal framework disallows accounting for inheritance of wealth, power, and host of other generational and social effects which frame lives. And whether meditation is different from neuro-linguistic programing, Erhard Seminars Training, psychedelics, or any of a host of other methods propagated throughout the 60s and 70s which promised “self-mastery” and sought to transform individuals as a way of transforming the world is an open and, the researchers wager, an empirical question. But part of the appeal of such methods and techniques is that they purport to give us a sense of mastery, self-sufficiency, and certainty in how to proceed in the world, to provide us with at least a sense of being effective at our jobs, at disciplining ourselves, at “mastering” our emotions. We seek sanctioned methods to make the world in a way we desire. The difference here is that, in the case of meditation, the authority structures used to ground these methods are neuroscience and Tibetan Buddhism.

Another way of posing the critical question is to ask what kind of citizen is being produced as a result of the methods? What kind of subject and what kind of subjectivity? What is valorized in this model? Is it adaptability, efficiency, courage, a commitment to struggle against injustice, or calmness in the midst of a hectic day? Does being emotionally flexible and resilient dampen or undermine the impulse to critique the systems which perpetuate the stress and injustice one so ardently seeks to cope with while sitting on a cushion? What kind of a subject valorizes these adaptations over resistance? I critically explore these questions over the course of the next three chapters. Below, I provide CHM’s own understanding of these questions and provide an account of its mission and goals and the long range implications of its project.
D. Theories of Change

In their Strategic Plan, CHM leadership speaks of their multiple goals as a unified “Theory of Change” to be pursued along three interrelated paths: Research, Innovation (translational products and services), and Movement (communication, public awareness, marketing). Davidson is also a regular speaker, meditation practice interviewer discussing one’s progress, difficulties, and experiences during formal meditation. He is also a member of the Board of the Madison branch of Tergar International.46

Tergar is an organization of practice communities headed by Mingyur Rinpoche, a Tibetan monk from Nepal who has been a participant in Davidson’s EEG and fMRI meditation research. The Tergar community meetings in Madison are held on Tuesday evenings and I attended many during my time at CHM. Tergar emphasizes that its teachings, though rooted in Buddhism, are secular. And because they are secular and require no change or profession of faith or religious, metaphysical, or philosophical training, they are accessible to a broad range of people in the community.

Davidson has been very open about his commitment to and relationship with Mingyur Rinpoche. In a public lecture at Tergar one September evening, Davidson remarked that though he and the Dalai Lama shared a strong friendship and he sees His Holiness as a profound catalyst for change, Davidson has never thought of him as a teacher. But with Mingyur, he said he felt drawn, that his heart had opened. “I met him at Dane county airport and everything changed. I asked him to teach me over dinner at Himal Chuli.47 And he himself was at the first Mind and Life and had so many questions…just a wonderful, piercing intellect; some of the most fruitful discussions I have had with a nonscientist – a teacher, for me” (Davidson 2015, public address).

46 http://tergar.org/
47 A Nepali restaurant near the UWM campus.
In this Tuesday night lecture, Davidson remarked on the newness of the field of scientific research into meditation and its shortcomings. Compared to what has been developed in the East, he suggested, Western psychology is still at the kindergarten stage. But the large and attentive crowd was already convinced and enthusiastically supportive. Davidson went on to stress that, knowing the practices and knowing the science behind them, “we” are now in a position to take responsibility for changes in our mind. He points out that the Tergar practice of open awareness is an instance of a technique which, though rooted in Buddhist practice, was refined for use by the Tergar community in collaboration with scientific research in the lab. On the screen behind him, Davidson shows a picture of Mingyur with a flower, eyes wide open: “this is what open awareness looks like.” This image is preceded by a slide presenting EEG readings of Mingyur Rinpoche meditating in open awareness. What they found during this task is that Mingyur was able to sustain gamma oscillations at a frequency which only shows up in deep, restorative sleep. The significant finding was that this restorative state was present in a fully awake individual and could be induced at will (Lutz et al. 2004).

Building on this, Davidson mentions that he is currently writing a book with Dan Goleman: Altered Traits of Consciousness, an allusion to Charles Tart’s 1969 Altered States of Consciousness. The book will concern itself with how to bring about lasting changes in the brain as a result of meditation. He further notes the positive effects meditation has been shown to have on immune function and inflammation response (Rosencrantz et al. 2013).

Davidson states that what such research shows is that while not every disease or suffering can be prevented by meditation, there is evidence which suggests that there is more that is in our control than we previously thought. Further, he contends, science has discovered evidence that

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48 As I discuss in chapter seven, this is strikingly similar to Theosophical claims in which Eastern spiritual understandings are construed as being well in advance of our own.
we come into the world with an innate bias for altruism, goodness, and cooperation. With this as a foundation for a secular ethics, Davidson suggests, it is our moral obligation to both promulgate and to practice those techniques and habits which encourage well-being and to not obscure it in ourselves or others.

Davidson pauses to take questions from the audience. Many have to do with practice: how often should one meditate? In short or longer periods? Is daily practice enough or are retreats important too? I notice that there are many middle age and retirement age folks in the room, though there are also a few college students, and one or two parents who have brought their son or daughter with them. A woman, who was perhaps in her seventies, raises her hand and asks how they, as a meditation community, might participate and help in the research being undertaken at CHM. Davidson responds that in fact CHM is in the process of designing a computer based curriculum and log where people can enter their meditation time, answer specific questions about their practice quality and style, and take simple behavioral tests. Though it is not yet ready, he envisions that this will enable researchers to collect important and nuanced data across a varied population and over a significant period of time. And he anticipates that the data generated will help unlock the potential for transformation and change of which we each are capable.

In considering Tergar, I have provided an account of how the space of the “lab” extends out into the community. In the following two sections, I wish to continue with my account of the structure and atmosphere of the lab itself. In what follows, I provide an account of the physical space of the lab proper and of the ways in which members of the scientific and research community interact with that space and with each other.
E. The Field Site

1. The Core

The northwest corner of the building – which now houses the Center’s meditation space, meeting rooms, and staff offices – was where most of the imaging work had been done before CHM’s expansion. With the construction of the new research tower in 2001, Core staff and scientists were relocated to the first two floors of the same. On the ground floor of the tower, a single door opens into a long hall with offices along the west wall facing the marsh, sports field, and parking lot. Many offices are staffed two to three to a room. Space is at a premium, but many enjoy the camaraderie and the ease of being able to walk a few doors down to brainstorm with an imaging specialist, statistician, psychologist, IT personnel, or engineer. It is this aspect which many cite as a unique quality and opportunity presented by the Lab and one which they hope will be retained in the new space after the move. Scientists have placed on the walls of either side of the hall posters presenting the lab’s research and technical innovations.

Continuing down this hall, one enters a large, open meeting room whose windows curve and follow the semi-circular construction of the tower. Here, meetings and the weekly “Design and Analysis” sessions are held, in which graduate students present ideas for potential research and receive constructive feedback, work through a difficult issue presented by their data, address statistical issues, or rehearse a job talk. Individuals schedule themselves in advance. A door at the far end of the meeting room opens into a large computer bay where many of the undergraduate RA’s complete their brain mapping and registration work, coding, or other data tasks. Opposite the door by which we entered is another which opens onto the fMRI, in front and to our left, and psychophysiology room on our right. Continuing down the hall we find the room where biological samples are logged and preserved by RA’s, following which is the PET room,
the linear accelerator (for making the isotopes used in the PET experiments), and the machine shop (reputed to be the Dalai Lama’s favorite room in the lab). This brings us back to a position directly opposite the door through which we first entered the hall of staff offices.

On the second floor is the Wiley Auditorium, where weekly lab meetings and Waisman Center presentations are held. Opposite the Auditorium is the large, open “break out” space, where much of the day to day impromptu work and meetings of the lab occur. Here, people take coffee breaks, new RA’s receive orientation, scientists discuss ideas, and graduate students plan through meetings with Richie. Continuing towards and following the curve of the tower as we did below, one would encounter the offices of the Lab manager, Richie’s office, and that of his personal assistant and Lab specific HR personnel. Further down are the offices of other key statistical, administrative, and scientific personnel.

2. **The Center**

Built in 2010, the Center is nestled in the corner of the building across the hall from the child care center. It is situated opposite a bank of soundproofed psychological testing booths where study subjects complete their psychophysiological behavioral tests following fMRI testing. The Center’s reception area is situated opposite a kitchen and meeting space, just before the meditation room. Time is set aside for optional staff meditation between 11:30 a.m. and 12:00 p.m. on Tuesday’s (unguided, rarely utilized) and Thursday’s (guided, regularly attended). Outside the meditation room is a large meeting room, where most of the weekly study meetings were held. The room is situated at the end of a hall which opens on to staff offices and a larger cubicle area for project personnel. Undergraduate RA’s were in an office down the hall from the Center itself.
As of late 2015 and early 2016, many key personnel from the Center and the Core have moved into the Keystone House. A short distance up the hill from the Waisman Center and near the Children’s Hospital, the Keystone is reputed to be the oldest building on campus and it was gifted to CHM. Occupying the House is the first step in the lab’s move plan and it coincided with CHM becoming its own division within LAS. The reasons for this change are many. In part, the growth of the Lab and the attention it is getting has created a huge drain on Waisman HR, in addition to sparking tensions with other researchers in Waisman. Film crews, donors, and visitors – all are an awkward addition to Waisman, a facility which primarily provided treatment and therapy to children with disabilities – primarily autism spectrum disorders – and bench science.

Waisman and the CHM are both eager for the move, but the new location and the building’s design are currently being decided. While that is unfolding, some CHM staff will be moved into an interim space. The fMRI and other imaging equipment will stay in Waisman as it serves other research projects in the larger UW community. Further, Richie and several other scientists, as well as newly hired endowed faculty, will have offices in the Center.

As the Center and the Core are at opposite ends of the building, individuals must cross from one side to the other several times a day. Early on, following my orientation to the lab, I took up residence in my “office”: the break-out space outside the Wiley auditorium. In the beginning, on most days I would situate myself at the tall tables near the large windows and across from the auditorium trying to look simultaneously engaged, yet approachable. The strategy largely worked, for I soon discovered people would regularly meet in the area to talk research strategy, budget concerns, to brainstorm research and data analysis, to orient new staff and undergraduate researchers. The mentorship here is open and active – students meet at least once a month with one of the science co-directors who hears them out. Here I had many
opportunities to meet members of the lab while they were on break or waiting for someone to show for a meeting.

On Wednesdays, after lunch, the staff scientists and graduate students, as well as administrative, support, and research personnel (about 75 persons) would meet in the large second floor Wiley auditorium. Meetings began with a practice called “clearing the lens” in which one CHM member would guide the attendees in some type of movement or meditation or stretching to set a common feeling tone for the meeting. This was then followed by general announcements; anything from whose band was playing to mention of an interesting event or article. Next, two individuals, whose name had been drawn from a bowl by the presenters at the meeting prior, would present “5 minute updates:” short PowerPoint presentations on what they had been doing in life and at CHM. Following these, graduate students (on a rotating basis) were required to present the progress of their research and receive feedback and critique from Richie and the larger community. Meetings generally ran an hour and half and, until mid-Fall 2015, all members of the community had to attend for the entirety. At present, only the scientific community is required to stay for the research presentations.

Admittedly, I was a bit perplexed by this change. Upon arriving at the CHM, I had been quite impressed to see this doubling of the Center and the Core and took it as the CHM’s attempt to embody the kind of awareness which it was advocating. I inquired about this change and was told that many of the Center staff felt that their time could be better spent working on the planning, recruitment, and study projects they were responsible for especially since only a fraction of them were full-time employees. Further, while Center staff understood the importance of being knowledgeable about the research being undertaken at the lab, none of them were
trained scientists capable of participating in the critical discussions which often ensued or to provide feedback on methodology – the two primary purposes such presentations were given.

Not long after my arrival, the lab undertook to include me on their National Center for Complimentary and Integrative Health (NCCAM) III IRB so I could attend the weekly study meetings. NCCAM meetings were held on Thursday afternoons in the CHM Center, at the opposite end of the building from scientists’ offices and the fMRI. NCCAM has the express mission to determine the safety and efficacy of alternative health interventions. The Center has received a several year, multi-million dollar grant\(^\text{49}\) to study meditation and well-being in relation to asthma, utilizing a variety of behavioral and physiological markers, comparing long-term meditators and individuals who are meditation naïve. Those who are meditation naïve receive short trainings in meditation or exercise. Those who are considered long-term meditators have 10,000 hours or more of practice, including retreats. This study sought to garner 240 participants inclusive of all conditions.

The premise of the study is that since meditation has been shown to affect the “stress-response” and that inflammation processes are exacerbated in stressful situations, reducing stress through meditation will reduce asthma symptoms and incidence. Recruitment websites have been set up for all conditions and staff initiated follow-up with participants is a crucial aspect to their retention. To manage the data, the Center, along with several other institutions, is piloting a collaborative system of data entry and management which it also helped to design: COINS (Collaborative Informatics and Neuroimaging Suite). Scan data, personality and behavioral assessments, and session notes are all uploaded into COINS and made available in real time to the entire study team and other researchers connected to the system.

\(^{49}\) This helps cover scientist and staff salaries, recruitment costs, laboratory and scanner time, participant payment, institutional overhead, etc.
Prior to study enrollment, individuals are screened via the web, on the phone, and in-person. The data from each of these screens is entered into COINS. Once admitted into the Asthma study, individuals would then be brought to the lab for three separate testing sessions. The first two are separated by nine weeks and the last by approximately five months. During this time there would be some form of intervention, either MBSR or a Health Enhancement Program (HEP) which entailed exercise and eating right. Others would be waitlisted and later randomly assigned. During the first session an fMRI scan would be run and RA’s would conduct behavioral testing. The second and third sessions also include fMRI and behavioral assessments. Further, subjects also bring in salivary cortisol and will have responded to texts prompting them to report on their mood at certain times of the day throughout the preceding weeks. The night following the testing sessions, subjects would visit the sleep lab for overnight EEG testing.

In an attempt to show how interconnected this experimental environment is with other research agendas and institutions, I will present a brief outline of other studies running concurrently in the lab. Following this outline, I will present my observations from a sleep and fMRI/psychophysiological study in order to show how the day to day activity of research is conducted and how data are gleaned and used to construct scientific facts and theories.

F. **Concurrent Studies**

In addition to the study discussed above, CHM also participates as member of a network of several labs working on several large-scale, longitudinal studies. In addition to facilitating basic, translational, and clinical science domains these other research projects could also be seen as reflective of CHM’s larger “mission”: understanding the social and biological correlates of healthy development and well-being. It is important also to note that the research in the Lab is
interconnected with a host of other efforts and interests, problematizing further the idea of speaking of the Lab as anything other than a permeable node in a shared enterprise. Heavily weighted and occupying an influential position, but a node nonetheless.

One such study is the Baby Brain and Behavior Project. The goal of the project is to understand how early life experiences during infant development influence later development and emotional well-being. Expectant mothers are interviewed about their experiences during pregnancy and are asked to complete a variety of questionnaires at home during the course of their pregnancy. After delivery, a smaller sample is asked to return to the lab (starting at one month old) for fMRI and follow up on the infant’s health until 24 months.

Participants who are part of the full study may receive up to $605 for their participation. The amount is paid in installments contingent on their keeping scheduled appointments as it costs an enormous amount of time and money to reschedule, not to mention the difficulty it introduces in statistical assessment. Sessions can last between 2 and 3 hours, for a total of 15 hours over the two year commitment. Additionally, participants are asked to give a special kit they are provided with to the natal nurse so that the nurse may collect cord blood at the time of delivery. This blood will be used to generate stem cells whose character and development can then be compared to the way in which cells develop in the infant, enabling an examination of the way in which emotion, environment, diet and other factors affect cellular processes.

The MIDUS study – Midlife Development in the U.S. – is yet another long-term research project in which the lab participates. MIDUS began in 1995 and is now in its third phase of research. The study is sponsored by the MacArthur Foundation in association with the National Institutes on Aging. MIDUS draws together scientists from several fields “to investigate the role of behavioral, psychological, and social factors in accounting for age-related variations in health
and well-being in a national sample of Americans. The study combines data about health, socio-economic status (SES), and family structure with psychological assessments of personality and well-being and conducts extensive phone and follow-up interviews (Ryff 1989). The third phase, known as the MIDUS Refresher, is set to end in 2016. It is a longitudinal follow-up and expansion of the original study and is being run in conjunction with a similar MIDUS-type program in Japan. Both the U.S. and Japanese studies are structured in such a way as to allow researchers to garner more information on the social contexts in which participants move.

At one point, I had occasion to speak with one of the scientists working on MIDUS. She emphasized that the Lab’s role was but a piece of a much larger effort. Given Richie’s research focus on the scientific study of personality, the Lab is tasked with researching individual differences and the affective processing which underlies those differences, specifically in relation to the large range of data which MIDUS affords. The undergraduate student RA’s who work on these projects must be willing to make a long term commitment because of the complexity of what is involved, the degree to which they need to be trained, and to ensure reliability and consistency. It takes several months to train students to recognize and mark the specific brain structures of interest using computer imaging programs. This requires the scientists to repeatedly check results until a level of specialization has been achieved by the RA.

While she spoke, it occurred to me that there would in fact be need for little in the way of change of protocol should the lab one day bring monks on board as part of the research staff. Again, this would be a key move from literacy to parity, as having monks understand and participate in an actual scientific study is an important step in facilitating a truly critical dialogue between scientists and representatives of Tibetan Buddhism. I wondered why so many I had

http://www.midus.wisc.edu/scopeofstudy.php
suggested this to before had commented on the training of monks as being an impediment; it seemed that the Lab is regularly undertakes the training of research naïve individuals to conduct research.

I asked about the Lab’s involvement and commitment to the local Madison community. Her sense was that the Lab was not so much committed to the community as it was researching the community. I asked her to clarify the point. She recalled a project she was part of in another Lab in another city. There, community involvement took the form of periodic “science days” for under-privileged youth. She and other scientists would try to get them excited about science, to get them to make presentations, to get them to critically engage. She remarked that she would like to see the Lab undertake something similar in Madison.

She also felt that the lab should research well-being strategies other than “mindfulness”: meditation is just not her thing. She would like to understand the things which people who have well-being themselves report as being significant, listening to music or knitting. These activities share some interesting features with the way in which MBSR is operationalized and studied in the lab; e.g., counting stitches rather than breaths. She is also concerned that mindfulness may be very counterproductive for some and that it should not be thought of as a panacea.⁵¹

Another long-term project with which the Lab has been involved is the Kindness Curriculum (Flook et al. 2015). The Curriculum teaches prekindergarten students to focus on developing the skill of paying attention, of attending to their body and breath, and what are called caring practices. It has already been incorporated into several sites within the Madison Metropolitan School District. These practices are hypothesized to “enhance the children’s self-

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⁵¹ Recently, the Lab held an internal competition among the scientists for funds to conduct a pilot study of some sort. A project examining the way hobbies, like knitting, contribute to well-being won the competition.
regulation skills…and influence positive development of traits like impulse control and kindness” (Annual Report 2015: 9). Exercises include thinking vividly and lovingly of a person who is helpful to you in daily life. Researchers measured actions such as sharing and impulse control and delayed gratification for a reward. Commenting on the necessity of such a program, researchers argue that

there’s increasing recognition of how social, emotional, and cognitive functioning are intermingled; that kids may have difficulty in school when emotional challenges arise and that impacts learning…can you imagine how this could shift the climate of our schools, our community, our world, if cultivating these qualities was at the forefront of education? (Annual Report 2015:9).

It is important to note that programs like this are underway in other parts of the country as well. And, recently, there has been some backlash. In February 2016, the National Center for Law and Policy submitted, on behalf of Michelle Conover of the Dennis-Yarmouth Regional School Committee of MA, an order to cease the Calmer Choice mindfulness program offered to elementary students. Conover and NCLP argue that mindfulness is based on Buddhism. Consequently, to offer Calmer Choice in public schools is to violate the separation of church and state to offer it in a public school. In a statement, the Center contends that “even purportedly ‘secular’ (Mind-Based Stress Reduction) programs have been documented as having a religiously transformative impact, acting as a gateway to Buddhism and a Buddhist worldview. MSBR [sic] simply does not belong in public schools” (Legere 2016).

Conversely, while the meditative techniques used in both research and curriculum are drawn from a variety of Buddhist traditions, some members of various Buddhist communities I have spoken with voiced concern about the ways in which meditation is being spoken of and

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52 “A legal defense organization which focuses on the protection and promotion of religious freedom, the sanctity of life, traditional marriage, parental rights, and other civil liberties”. From the organization’s website: www.nclplaw.org
researched; they themselves are reluctant to call what is produced “Buddhist.” Despite Davidson’s commitments to the Dalai Lama, in all of the research undertaken by CHM, the link between cognitive flexibility and emotional resilience – the ability envision new ways of dealing with difficulty and psychologically withstand the necessary changes – is what is emphasized and explored in the hopes of increasing both, not the “Buddhist” aspect. And meditation is treated as one tool, like prayer or positive thinking, but with research claiming to document targeted physiological changes to effect such an increase. Davidson further suggests that well-being and emotional skills can be learned and integrated into the workplace. It is an “investment”: “it’s not how we recover from the burnout, fatigue and tension; it’s how we change the way we manage these stressors so the outcome isn’t burnout, fatigue and tension. To me, that is the power of this message – we can approach work in a different fashion, like preventative medicine versus curative medicine.”

This view of meditation as a tool to effect changes in our lives and the workplace is something which concerns some in the Buddhist community. Using meditation to become more efficient at doing the kinds of activity which increase or are reflective of a deluded worldview seems to run counter to the soteriological project which informs Buddhism as such. And yet, as the NCLP lawsuit seems to suggest, other members of the public in fact do construe the teaching of mindfulness as a missionary activity. In the next chapter, I enter more fully into these critiques of “mindfulness” in Western economic and political contexts. In what follows, I want to provide an account of how such research actually unfolds in the Lab. Does “Buddhism” enter into the day-to-day doing of research and should its presence or absence influence our reception of the data generated by the scientific study of meditation?

53 Uwcultivatingwellbeing.com
G. Research: day to day

Who is it that conducts the day-to-day research at the lab? Scientists train RA’s and data analysts and they oversee their work. Some projects can have up to twenty students involved in testing, analysis, coding, and correction. Candidates are mainly drawn from undergraduate research programs. There is also a special summer research program some students attend where the Lab can scout potentials; both programs are sponsored by the University. Lastly, some promising high school candidates contact the lab themselves and begin working even before their freshman year. In this way, the Lab gets well trained individuals committed to several years on a study.

1. An Observation: Diurnal

It is 10:00 a.m. and I am waiting in the Waisman foyer, talking with the RA as we kept a watchful eye for the subject soon to arrive. The RA asks why I am observing, what I had observed so far, what did I plan to do with observations. I spoke of that which I have recounted above and thanked him again for allowing me to participate. I assured him that I would do my best to stay out of his way. When the participant arrived, the RA introduced me as an observer who would be shadowing them both. When asked, the participant offered no objection to my presence.

We went through a series of doors, down the first floor hall lined with research posters, and to the interview room adjacent the fMRI. The room was simple and white save for a large brown supply storage cabinet, two small tables, and three chairs. A glass framed Monet painting of a vase of flowers was hung directly above the computer monitor. On the computer table sat a rather worn ceramic mug with cartoon lettering: “Have a nice MRI.” A small table to the right of the computer dejectedly offered a worn issue of People magazine.
For this phase of the study, participants were meditation naïve. Many were graduate students at the University in need of extra income. Others were lower and middle class members of the community looking to earn money. Still others were motivated by curiosity and wanted to see what the research was about.

Today, a graduate student from South Asia was the study participant. The RA asked the participant questions about his schedule and habits and medications since his last visit. In accordance with MRI safety protocols, he was asked whether he had had any surgeries. Implants? Tattoos? Piercings? Had he been shot? Gotten fragments of metal in his eyes? (Each of these can be heated by or torn from the body owing to the strength of the magnet.) The participant responded directly and simply: no. He was then asked to fill out a special form for payment required of those who are on a student visa. Once all was in order, the RA set him to complete a set of practice tasks on the computer to familiarize him with the protocols and the arrangement of response buttons, as his position in the scanner would make it impossible for him to see what he was pressing. He also had to complete a gut judgment task: flashing images of multi-colored squares (called, appropriately enough, “Mondrians”) mask millisecond flashes of facial expression. Some individuals could make them out only fleetingly in this pre-test phase; not at all in the actual scanner test. Participants were asked to judge whether they like or do not like the “faces” on the basis of their gut reaction.

After his hands were fitted with electrodes the participant, along with the RA and myself, entered the fMRI control room and met with the technician. I remained in the control room and watched as the participant was positioned on the scanner bed, fitted with the thoracic and abdominal respiration belts, pulse oximeter, and the finger clamps which would deliver the mild electric shocks which accompanied a later anticipatory stress task. The participant was also
provided with a safety bulb which could be squeezed at any point to stop the test and alert the staff. Throughout the study, staff could hear and communicate with the participant via intercom.

As they fitted the participant with head cushions, ear plugs, and special glasses for viewing the screen above him on which were projected the instructions and trials, I brought my attention back to the control room where I was standing, still able to hear and see all that was going on in the scanner room. I noticed there were several monitors. Two were lit with various images of the brain from equally varied angles and bordered with sine waves. Others displayed electrophysiological readings. Still others bore words in large type: instructions for the first task. “Silent Vision” was the brand name advertised by one set of boxes and junctions. Next to the box, was a small screen providing a sepia and grey image of the participant’s eye. I then noticed the one eye projected, Gilliam-like, onto several screens measuring dilation, saccades, and fixation.

The technician and the RA joined me in the control room. They spoke of the difficulty of getting someone comfortable and making sure they are hydrated but not wanting them so comfortable or hydrated that they fall asleep or feel compelled to interrupt the scan to urinate. Inside the control room, the RA makes sure that all of the equipment reads things as it should and signals to the tech that it is time to run the first registration scan. This scan will help with structural alignment of the functional data and takes about seven minutes to establish. As the RA monitors all of the equipment, he enters settings and data into the COINS system. The loud “zee–zumm” of the scanner begins.

My attention is caught by an actively billowing and pixilated black, white, and grey image which keeps asserting itself on the large control monitor; a magnetic-frenzied Pollack; a pulsing explosion of data which disappears and recapitulates itself the moment it touches the
borders of the monitor. On another screen, a series of brain slices rush in hurried procession as the fMRI technician flips between screens to make adjustments.

The scan session is now entering its twelfth minute and the participant is asked to keep their eyes open and focused on a “+” in the center of the screen. The scanner noise in this task is high pitched and fluttering, but not disturbing or piercing. It is almost a “white noise,” but less static, more treble. This, I am told, is the Default Mode Network (DMN) scan. The DMN functional image of the brain when not involved in any specific task and which will serve as comparison for active trials. The participant, however, seems unable to keep his eyes open and closes them often. The RA notes this in COINS, informing me that the scientists will know to look for it and they can pinpoint when it is occurring and judge how it may affect the data. Physiological measures change markedly when eyes are closed.

Once the DMN scan is completed, the RA checks in with the participant to see if he is experiencing any discomfort or is in need of a break. The participant signals that he is fine with proceeding to the next task. The RA reads aloud the instructions as they flash on the screen. This new task takes physiological measures while the participant attends to the words: tumor, suffocate, pain, divorce, bench, passage, puff, etc. Each word is a different color and the participant has to press the button of the appropriate color, ignoring the meaning and any interference in judgment and reaction time caused by the meaning. Reading them (having deliberately undertaken this observation naïve about the experimental aims of the task), I find it difficult to control my associations and seeing them as nodes in a narrative or argument or disclosure, almost as if they were priming an overall mood.
At the end of the task, the participant activates the squeeze ball alarm; a very unpleasant noise. The strap for special corrective lenses is digging into back of his head. The RA and tech go in to adjust.

Upon completing the fMRI session, the participant is given a food voucher for the hospital cafeteria. After lunch he returns to CHM and completes a series of behavioral tasks in a different part of the building. Sometimes a different RA is assigned to this phase, as was the case during this observation.

Talking with the new RA, she tells me that most of the students running these studies are undergraduates who have little or no prior lab experience. While some apply to the Lab because of its reputation, many were directed to it by their professors. Spontaneously, as we are talking and walking back from the room where saliva samples are stored to the participant’s testing room, the RA exclaims “we used to have iPads, but they stopped working. I liked them because it made us feel dispassionate and professional. Like a real psychologist.”

There are some RAs, however, who have had some previous study experience, having worked for a time interviewing and collecting data at a nearby penitentiary. One such RA, a very enthusiastic and energetic undergrad, was both thrilled and concerned by her own fascination with the incarcerated with whom she works, preferring that work to the kind of work she does at the lab. What is significant for her about the Center is the Lab’s reputation. In fact, none of the RAs I interviewed were drawn to CHM because they identified with or had any interest in Buddhism or meditation. This RA too lamented the loss of iPads, and talked of how polite most research subjects seemed (in the lab and the penitentiary), of how most were men, and some homeless.
The COINS system allows RA’s to monitor participant progress through the questionnaires and tasks and RAs will often use the time to complete other work, such as pipetting, logging and storing the salivary cortisol samples which the participants bring, and to keep updated with COINS entries.

A few weeks later I had the opportunity to conduct a second fMRI observation. This RA had had multiple lab experiences as an undergrad, with appointments lasting between nine months and one year (including three months of training). Like many, he is at the Lab on a study specific appointment.

The participant today is in his 50s. He addressed me before he was told I would be shadowing: “Who are you: CIA, NSA, FBI, some other acronym?” I responded that I was just here to learn how the research was conducted. The participant continued in a jovial and sarcastic vein throughout the day, taking every opportunity he could to make a joke and try to elicit some kind of an “off-script” response from the RA. Early in the orientation, he remarked that all the scripted explanations offered were overkill and he was looking forward to the one hour in-person interview. The RA paused and informed him that such an interview is only part of the first session protocol. “Too bad” he says, “I enjoy talking about myself.”

As the tests begin, the participant continues trying to make jokes to break up the RA’s rhythm and to get some kind of reaction, to make a connection through and past the delivery of task scripts. The RA and technician try to ignore the jokes and good naturedly redirect him to the task at hand.

The RA starts to prep the monitors and enter data into COINS. Once the scan is in progress, the RA joins him. In all, the subject goes through a resting state scan, asthma Stroop test (the “chromatic words” test), emotional anticipation (six shocks total), and the “Mondrian”
faces/gut reaction task. I ask the RA whether the order of tasks is felt to produce some kind of a priming effect. He remarks having wondered the same thing, and thinks that it is curious the kinds of things which are or are not considered to influence the testing session overall. For example, he informs me that in the preceding version of this study, they used to have the participant head straight over to the fMRI lab following the sleep study. Being fatigued must have had some impact on the study, he suggests.

As the scanner is running, we talk about recruitment for these studies. Because the exclusion criteria require that participants need to be meditation naïve, have no metal implants, be psychologically healthy, etc., only 70 of about 1700 people make it into such a study. The RA notes that many people come in because they are thrilled to do a study for Richie, are retired and looking for something to do, or are simply looking for the money. Some, he remarks, bring their children in for a study hoping to have the opportunity to meet with Richie. It is a bit like little league, he suggests, parents pushing kids in order to satisfy their own aspirations. Once in the study, some parents and participants try to challenge staff with questions, and some have problems with listening to people younger than them. However, with long-term meditators (LTM’s) – who are flown in and given different treatment – they have a different rapport and relation. Purportedly, things go much smoother.54

2. An Observation: Nocturnal

The sleep lab is located in a research park forty minutes by bus from Waisman. I arrived there about an hour before the participant was scheduled to arrive so I could meet the staff and take a tour of the lab. The lab scientists and technicians do not directly run the study but oversee

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54 On this I cannot report as the LTM phase was not underway during my time at CHM.
and monitor the recording equipment and, to some extent, the RAs themselves. My tour of the sleep lab continued as the first shift of study RAs arrived. The atmosphere was light and collegial and jokes about the amount of “voodoo” the technicians had to employ to get the several recording devices to work in tandem without crashing the system formed the bulk of our exchange.

Participants arrive at about 6 pm and shower in their room. Located several feet from the control bay and down a wide hall, the study space is a very large hospital type room, filled with monitoring equipment, recording devices, and computers. When the participant arrives, they are greeted by the two undergraduate RAs who then perform the rather lengthy process of configuring and calibrating the 256 separate scalp electrodes of the geodesic sensor nets. The process takes well over an hour as each electrode has to be individually gelled (for conductivity and adhesion) and checked for receptivity and signal strength. Once the net is validated, the participant is seated in what looks like a large barber’s chair. The RA uses a registration device resembling a plastic dowsing rod to touch (in a preset pattern) each of the 256 electrodes. As he does, so a camera captures the position of the electrodes and maps it onto the anatomical scan of the participant’s brain that was obtained in the earlier fMRI study. This is done so that regional activity can be properly assessed and calibrated.

Once the calibration is complete, the participant begins the behavioral testing. Seated at a computer in the room, the RAs connect the long tail of wires leading from the geodesic sensor net to the computer system interface. The RAs read aloud the first set of instructions, confirm the participant’s understanding, and then position themselves behind a small, mobile office divider placed in the room near the participant. I myself am seated in a position where I can see the participant and the RAs simultaneously. As the participant begins his testing, the RAs, who have
been a bit out of synch with each other all evening, position themselves on the other side of the partition and each begin to do their own thing. One sets himself to homework; the other, to texting on her phone and watching a video on her computer. On several occasions throughout the testing session, she laughs audibly and quite unselfconsciously, seemingly unaware of her surroundings or the disapproving sidelong glances which her associate periodically casts in her direction. They periodically interrupt their activities to set the next task and to read the participant the study task instructions.

During one such instruction session, the participant asks the RAs for a copy of his brain scan. The RAs are unsure how to respond and direct him to the next task. He is asked to watch a short, violent *Tom and Jerry* style cartoon, followed by a task where the participant focuses on tones. Later in the night, the participant will be woken up and asked if the tones just played in his sleep before waking matched those which he had heard earlier. It is during this session that the male RA audibly shushes his compatriot for repeatedly laughing out loud to something she is watching on her computer.

At about 10:00 pm, the tasks and questionnaires have been completed. However, a host of calibration issues remain before the participant can be allowed to fall asleep. On this night, RA’s and scientists had to go in and out of the participant’s room to turn equipment on and off several times. This was done in the hopes something will work and the data will begin coming in in a coordinated way. At one point they nearly despaired of getting the system to work at all…but then it did.

Once these issues were resolved, the RA’s and scientists of the evening shift give way to those who will run the overnight portion of the study. The two earlier RA’s leave and the overnight RA (a UWM psychology undergraduate) enters and sets up her homework by the
monitor. She begins to instruct me in what she looks for in the EEG. She knows they are in REM, she says, when eye lines start to move and converge and “chin line” goes flat from sleep paralysis. She periodically looks up from her work and checks the monitor and timers to see when the participant has entered REM. Once she is sure the participant is actively dreaming, she wakes the participant up via intercom. Once awake, she interviews the participant on what they were dreaming and asks them to elaborate. They are then allowed to fall back to sleep. This sleep-wake-question-sleep cycle repeats itself throughout the night until the subject’s specified wake up time in the morning. Towards end of study, nearing morning, the RA reproduces for the sleeping participant the tones which he had earlier been exposed to during the cartoon. The participant is again woken and asked whether he recalled hearing anything and whether what he heard was familiar.

Upon waking, the participant is given another questionnaire to fill out. The net is removed and washed while the participant showers. He is offered something small to eat. Participants are usually out of the Sleep Center by 8 am.

**H. A Talk**

Eager to get perspective on the observations I had conducted thus far and curious to hear how CHM personal felt about the association of the lab with Tibetan Buddhism. So, I signed up for one of the last remaining “Design and Analysis” slots open in the semester. So, in late November, I gave a two-part presentation. The first part concerned itself with Neuroanthropology: what was it? How would it unfold? Is the lab already doing something like this? What could neuroscience and anthropology learn from the other? This also allowed me to talk about what I had observed thus far in the lab. My talk was attended by nine of the lab’s
scientists and all seemed to be in unanimous agreement that having an anthropologist on the
team would help to “humanize” a process which some participants found cold. They
acknowledged the importance in letting someone tell their story openly, and thought such
interviews could help generate future research directions. The question, however, was how to
move from the qualitative to the quantitative and back again productively and with rigor.

The second part of my presentation concerned itself with my proposal for a Monastic Science
Internship Program. Reflecting on the goals of the Monastic Science program and what I had
understood to be part of the intention of the Mind and Life Institute, I wanted to hear what the
scientists at the Lab thought of such a proposal.

Despite the criticisms which my suggestion had previously received – that the monks were
too old to be trained anew; the science education they received was too basic; engaging in
research requires core competencies which the lab does not have time to teach – I now felt
equipped to counter point by point. I shaped the talk to elicit a discussion of logistics and
organizational issues in the States and in India. Things, however, took a rather unexpected turn.

The bulk of the discussion centered on “why them?” Why Tibetans and not African-
Americans, or Native Americans, or Papua New Guineans? What makes the Tibetans so special
that they deserve these resources and the lab’s attention? Couldn’t such resources and attention
which could perhaps be more equitably spent on those who were local and disadvantaged,
especially since it was a public University with a commitment to the local community?

I had not expected this response. I had anticipated a nuanced discussion of the laboratory
context, of the kinds of training which would be required, the cultural obstacles, the move from
being a group studied to begin a group studying others, of the social capital involved in doing
something of this kind. Wanting to elicit more but not wanting to lead the discussion, I pushed
back a bit. I pointed out that already at places such as UVA and Emory such programs – though not at the level or of the kind I was recommending – were being considered. One scientist noted that undertaking something of this kind at a private institution like Emory was much different if only because of the kinds of allocation responsibilities to which public universities were subject. Another scientist indicated that he wanted to respond to the earlier comment about “Why Tibetans?”

This scientist began by stating that it was because of the philosophical subtlety of Tibetan Buddhism and its tradition of investigating the mind through detailed methods that the Lab should bring in the Tibetans monks. For, in marked distinction from other cultures, the Tibetans had demonstrated that they had something which they can bring to the scientific table.

Some had tried to interrupt him, but he asked to be allowed to continue. When he was finished, others in the room began to murmur. Several found themselves taken aback in hearing what they construed to be a claim for the superiority of one culture over another.

Also present was an economist from India who was visiting the lab. She suggested that, from her perspective, the main question seemed to be one of equity. She herself was concerned, in her own research, with issues of identity. She was interested in how students of various ethnicities were reacting to research rooted historically in experiments conducted on their own people or people like them. The intellectual and religious traditions of India and of Tibet had been used by scientists in the West for their own agendas and for so long, that in making them partners and giving them some control over how their methods and techniques were being used seemed to her an important step in itself.

She then inquired as to whether Indian Universities could not themselves train Tibetans in science. I responded that there was no political will to do so. Opposition is already present given
that seats in medicine and engineering are set aside for lay Tibetan refugees who compete for these seats among members of their own community and not the larger Indian population. I also remarked that there is the further consideration of the Dalai Lama’s age. Like many other minorities and scheduled tribes in India, Tibetans have very few political or financial rights in India. Once the Dalai Lama passes away, what is there to buffer their position unless the Tibetan community can offer some kind of material advantage and social capital to their respective communities? In this vein, Tibetan refugee communities have begun to practice things like organic agriculture. Also, Tibetan medicine is now considered an indigenous medical system of India and training in Tibetan medicine is now a recognized degree. I also remarked that there was precedent for educating specific ethnic and religious groups in Western institutions to conduct research in areas which scientists could undertake otherwise.\textsuperscript{55} This too would allow for a new wave of cross-cultural research, as those being so educated would themselves be part of a larger community of scientists. Monastics could conduct longitudinal research on and within their own or allied communities or in areas such as Bhutan where outsiders would have enormous difficulties securing permission. In response, she remarked that the Dalits have begun to build connections to the Tibetan community and noted how, in these communities, Buddhism was spoken of as still making possible a type of freedom, a way to leverage out of their caste inflected political situation. As such, she said, there are perhaps synergistic effects brewing and which may be precipitate out once the Dalai Lama passes and they are forced to draw on themselves.

\textsuperscript{55} For example, in 2002 scientists of the Field Museum in Chicago invited, supported, and trained Bhutanese conservationists to undertake research on bird populations in Bhutan. See \textit{In the Field: The Bulletin of the Field Museum of Natural History}, 73(3).
I. Conclusion

In this chapter, I have given an overview of the history of the development of meditation research in the context of the Mind and Life Institute and the work of Richard Davidson. I have shown the ways in which contemporary research on personality and individual differences, well-being, and meditation are linked both conceptually (through the idea of a “basic goodness”) and institutionally (multiple labs working together to generate and interpret different facets of longitudinal research projects). I have presented an account of the separate research spaces, in the laboratory and the community, and how individuals interact with those spaces and each other. I have also detailed the ways in which day to day research in the lab is conducted and data generated. Over the course of the next three chapters, I will consider the social, political, religious, and institutional ramifications embedded within those interactions which continue to constrain both popular and disciplinary specific rhetorics pertaining to the inclusion of, and the support lent by, Tibetan Buddhism in Western neuroimaging research on well-being.
VII. MINDING MINDFULNESS

In the preceding ethnographic chapters, I demonstrated how the language of the “Buddhism and Science” dialogues are at play in two radically different contexts: that of a neuroimaging research facility in the Midwest and a Tibetan exile community in India. I explored the ways in which “being Buddhist” and “being a scientist” functioned as representations strategically deployed in contexts which, while historically and geographically divergent, are woven together through participation in the transnational networks of neuroscience research on meditation. In this chapter, I examine the cultural history and scientific reasoning behind the extraction of Tibetan Buddhist meditative practices out of their historically and ecologically nuanced domains with the goal of reshaping them for neuroscientific research.

In doing so, I will further consider why it was that Tibetan Buddhism came to occupy such a prominent place in the neuroscientific study of meditation and mindfulness at a time when many other types of Buddhist traditions were both popular in the US and actively studied by a variety of researchers (Lutz et al. 2007, McMahon 2008, Wilson 2014). In what follows, I will provide an account both of the rise of Tibetan Buddhism as a disciplinary object and the way in which an imaginary Tibet (i.e., both primitive and psychologically advanced) was mobilized through the work of overlapping discourses at play in the academy and in the popular reception of Buddhism generally. As I will show, it is a story intertwined with the development of new technological devices that permitted new questions and disclosed purportedly new registers of phenomena. I examine how these parallel trajectories came to intersect at certain points since the Victorian era, the period during which “Buddhism” was defined as a religion and as a Western discipline. To anticipate, it was a time when science generally and psychology specifically, turned towards a mechanistic conception of life, a move that heightened the already developing
social unease ushered in by modernity. Science presented itself as a way of addressing the plurality of religions and the diversity of cultural practices by offering to abstract aspects of those domains of phenomena and experience – through graphic, technologically mediated presentations – formerly authorized by religion. In this way, science claimed right of arbitration by being able to reveal subtleties which the texts and savants of religion had not.

Though the technologies employed today serve ends which diverge in important ways from their predecessors, there is still the question of genealogy (Foucault 1975); of the power effects which attend the use of disciplinary forms of knowledge in certain contexts. My wager is that by juxtaposing these nodes of confluence – between the development of brain imaging rhetoric and technologies and the shaping of Buddhism in the West – I will demonstrate how this relationship has been structured through the various domains of science, technology, and disciplinarity amidst radical historical changes; industrialization and disenchantment in the West, invasion and exile for Tibet.

Here, I begin with the question: how has Tibetan Buddhism come to occupy the preeminent place it does in neuroimaging and meditation research? Why, when Zen, Insight Meditation, Vipassana, Transcendental Meditation, yoga, and various other traditions which have been prominent in the West and could have been chosen but were not? In previous chapters I alluded to aspects of this question through an examination of the context of Tibetan exile and the relationship between Davidson and the Dalai Lama. Here I will consider parallel developments: culturally, the history of the West’s crafting of Buddhism as a disciplinary object, and technologically, the history of graphical representation of psychical states leading up to fMRI.
A. Tibetan Context and the Dalai Lama

I will begin by outlining something of the early encounters and views of Tibet in relation to the West, the shaping of Buddhism as a disciplinary construct, its entry into popular culture and the rise of meditation as a research domain. I will also speculate on the person of Tenzin Gyatso, the 14th Dalai Lama, and his unique role in this latest phase of the Buddhism and science dialogue.

Taken as a compliment to Almond’s (1988) study of the formation of Buddhism as a disciplinary construct in Victorian Britain, Tweed’s The American Encounter with Buddhism (2000) considers the ways in which America responded to Buddhism in the Victorian era. In particular, Tweed discusses the role which notions of “individualism” may have played in America’s initial uneasy encounter with Buddhism. Tweed’s account is significant for our examination of the Tibetan inflection of the Buddhism and science dialogues. Tweed argues that it was not until the early part of the last century that Buddhism could really begin to take root in America, for Buddhism was initially seen as being at odds with Victorian values. These Tweed identifies as “theism, individualism, optimism, and activism” (Tweed 2000: xviii). As late as 1855, Christians debated whether Buddhism was a religion at all, stating that Buddhism, “because of its rejection of theism and individualism [emphasis added], was not a religion” but a rather poor philosophical system (Tweed 2000: 122).

Victorian era thinkers asserted the view that Buddhism fits uneasily if at all in the category “religion” because it does not proclaim a creator god and holds loosely the social and individual elements which the West considers foundational to its political and religious efforts (Tweed 2000: 7). Notice that these same assertions are today explicitly addressed in the rhetoric coming out of laboratories and monasteries alike. Optimism, social engagement, the well-being of the
individual, the fulfilment of one’s life in an ethical way, the interconnectedness of life and the
consequences of living – all are present in the discourse surrounding meditation research. The
only issue not directly addressed is the question of theism. As we have seen, the success of
Davidson’s message – the brain’s plasticity indexes both hope and responsibility – is augmented
by Dalai Lama’s portrayal of Tibetan Buddhism as the provider of just such a secular ethic
(Bstan’-dzin-rgya-mtsho: 2011).

The question of the existence and relevance of an obligation grounded in the notion of an
individual self produced nuanced complexities in the meeting between the ethical systems of
Buddhism and the West. For, as Tweed notes, American progressives were committed to the
supposition of a self-examining, objectively examinable, juridically framed individual. However,
this commitment produced a troubling ambivalence. While the supposition of an actually
existing person as something worth saving did the work of licensing and mobilizing optimism
and activism, it nevertheless remained that it is persons themselves who are the sources of evil,
injustice, suffering, and difficulty (Tweed 2000: 11). Buddhist teachings about the mind’s role in
the nature of suffering resonated with and served to heighten this ambivalence.

Yet another set of discourses circulating in the Victorian era – alongside a vocal anti-clerical
sentiment and a quasi-militant progressivism – are described in Poul Pedersen’s work on the
the

ideas of Eastern religion and psychology became more clearly defined in terms
of current Western psychological paradigms [and] that various Eastern religious
practices—-and in particular meditation—-would be seen as techniques for the
attainment of mental health or, in other words, psychotherapy.
The rise of materialism and positivism in science left many in the Victorian era searching for a new way of securing the dignity of man. Materialism had displaced notions such as “the soul” in favor of a “self” which was permeable to therapeutic intervention and displaced the divinely inflected telos of the world with one guided by thermodynamics towards inevitable extinction. Theosophy and occultism sought a basis of hope in what they took to be the shared wisdom at the core of all religious traditions, but reflected more clearly in the East. This suggestion lead them to propose the existence of a “rational religion” built on the core capacities and dispositions of humanity which had become obscured over time (Pedersen 2001: 152).

One of the key figures of the Theosophical movement which worked to articulate such a basis was Madame Helena Blavatsky (1831-1891), a Russian traveler and mystic who presented Theosophy as a higher integration, a bridge, between science and religion. In articulating the ancient wisdom which purportedly formed the substance of this bridge, Blavatsky transplanted its popularly conceived origin from Egypt to India. Such a transposition was not without precedent. Antonous Georgius, in his 1763 *Alphabetum Tibetanum*, maintained that the Tibetan religion and culture was heavily laden with Manichaeism, and that many Tibetan deities have names which resemble those of Egyptian provenance, thus helping to structure a “view of Tibet as a secret abode of prolific syncretism … an essential part of the myth of Tibet” (Kaschewsky 2001: 18). While Georgius’s work was sustained by creative etymology, Blavatsky sought to work such a transposition by other means and for other reasons. Initially, Blavatsky associated with the Hindu reform movement. Perhaps wanting to distance themselves from the political implications of such an association (a distancing which was also desired by the Hindu movement itself), she and her compatriot in the Theosophical effort, the American Colonel Olcott,
converted to Buddhism in Ceylon. Blavatsky also made the unverifiable claim that she had traveled to Tibet and that her primary teacher was Tibetan (Pedersen 2001: 153).

Save for the few travelers’ accounts which came into Europe from time to time, Tibet was shrouded in mystery and would remain largely unexplored until late in the period of the Great Game. Blavatsky anchored her spiritual authority with a claim that could not, at the time, be confirmed or denied. Though her claims of having a Tibetan master were ultimately proven fraudulent, tens of thousands joined the Theosophical society in pursuit of the wisdom and connection supposedly descended from the mysterious Tibet. Importantly, Blavatsky’s claims and the rise in membership unfolded during a time when scholars viewed Tibetan Buddhism as “degenerate” (Pedersen 2001: 156), thus positioning Theosophy as an entrenched anti-establishment movement which claimed (falsely) direct familiarity and access to a deeper authority or wisdom.

And while the Theosophical society had numerous branches and published a considerable number of Eastern texts in a format made available to a large section of the American and European population, Pedersen notes that the even more significant effect of the Theosophical Society was

… their introduction of Western interpretations of Eastern traditions to the educated Asian elites. Much of this would become part of Eastern national and cultural identity formation and provide intellectual frameworks for political maneuver and cultural assertion…One significant aspect of this exchange was the increasing psychologization of the East. (Pedersen 2001: 158)

By psychologization, Pedersen is referring to a double movement which both recapitulated and reshaped representations of the East. First, mythological and soteriological accounts presented in Eastern religions (such as the kinds of horrors which unfold in the afterlife) were taken to be allegorical descriptions of subjective experiences. In other words, they were cast as
 psychological experiences or states or phenomena, and could thus be submitted to psychological (and, later, psychophysiological) study. And, once taxonomized as psychological states, Eastern religious experience was taken to be a prefiguration of Western science. Thus, the literal and “religious” interpretations of such accounts were viewed as historical accretions and concessions to the lay public which infiltrated over time the monastic orders. Second, “educated Asian elites” began, in part, to view themselves and their traditions in this same light and worked to adopt the language of science and psychology to frame their encounters with Western elites as well as the larger population. Crucially, the early twentieth-century Western reimagining of Buddhism as “psychology” paves the way for contemporary understandings of Buddhism as science, and locates the roots of that imagining in the colonial encounter. When representatives of Buddhism are reluctant to (or outright refuse to) speak of Buddhism as a religion, then we must ask ourselves whether the colonial mentality is still operative in the Buddhism and Science dialogue. What is at stake in the encounter if representatives of Buddhism were to openly speak of it as both a religion and a “science”?

The colonial context of this encounter, the way in which the work of Empire effected new connections and new permeabilities, is provocatively discussed by Jill Galvan. Her work discusses the unrest in colonial India – unfolding during the same period which saw the rise of Theosophy – was taken up in European fiction and popular imagination. Speaking of the Eastern and Theosophical dimensions of Stoker’s Dracula, Galvan writes that the imperiled British identity is, like certain [Sepoy] Mutiny novels’ thrilling stories of surveillance, a conflict centered on information and information networks: the West’s technological prowess is tested against the insidious occult exchanges of the East…even as Dracula conjures ideas of British heroism, it also gently disconcerts them, pushing against the patina of Western superiority by insinuating the unplumbed depths of Eastern mystical powers. (Galvan 2015: 437)
Galvan also remarks that those in the Victorian era were “…fascinated with mesmerism and hypnotism, readily associating them with India. Western mesmerists looked to Asia as a place where latent powers of mental and bodily control through trance had long been understood, particularly by religious figures like fakirs and yogis” (Galvan 2015: 441). Here we see the way in which anxieties about Empire (and the systems of knowledge which underwrote and sprung from it) were projected onto the East: the systems of the West are rational and should work anywhere, but the East has access to something outside of reason. Perhaps their power too could be tamed and used for effect (or debunked by making it answerable to science). One way to begin that process of reworking and taming is to “psychologize” miraculous claims and operationalize them for study; propose models, design experiments, etc.

As Pedersen notes, this move towards psychologizing Buddhism built on this early fascination but was also given further impetus born of a larger cultural critique of materialist science. In such a view, science was increasingly seen to be at odds with, and potentially endangering, what was considered to be humanity’s true, spiritual nature. While it may at first seem odd that the Theosophists would use a scientific discipline such as psychology, and later physics, to argue for the renewed integrity of the spiritual, this was not so radical a position at the time. In this period, psychology encompassed the kinds of things we would call spiritual and para-psychological, precisely those things which Galvan alluded to above. However, as psychology became more empirically minded and to model itself on the natural sciences, it sought knowledge through measurement, testing, and experiment. Blavatsky can be seen as part of a general reaction against the instrumentalism and technologization of what was supposed to be a science of the human. Psychology was increasingly moving away from being a discipline investigating the spiritual nature of man to being a technique of reducing even the human as one
facet of a measurable material monism. Part of her appeal was that in Blavatsky, science and spirituality through a serviceably constructed, imagined representation of Tibetan Buddhism were seen to have been coherently woven together, each element illuminating the other (Pedersen 2001: 160). My contention is that such a weaving was possible not because of any inherent truth or efficacy in the approach, but because neither discourse – science or religion/spirituality – can by itself give a full account of the world. In the meeting between science and Tibetan Buddhism, each uses the language of the other to address a certain lack, real or imagined, which is brought into relief in their very encounter.

The efforts of the Theosophists were largely successful in shaping Western popular understandings of the East and in making such engagement respectable. Thus, by the 1930s, it was possible for Jung to become the champion of Eastern religion, helping to legitimize it for subsequent generations of psychologists. Eastern meditative and esoteric practices (not exoteric and lay practices) were extracted out of the cultural histories and frameworks within which they were fashioned, labeled as the “essence” of Buddhist practice, and operationalized by the West to serve the interests of the state mental health apparatus. In a parallel fashion, the adoption of the language and weltanschauung of the Eastern teachers “quoted” by the Theosophists was seen as the cure for the systemic illness the West suffered as a civilization, nay, as a consequence of its own relentless civilizing impulse (Pedersen 2001: 160).

The point is worth emphasizing: though they figured imaginatively, Tibetan Buddhists themselves were not actually part of this initial exchange; Blavatsky purportedly received her communications “telepathically.” Tibetans themselves did not enter the discussion until after 1959 when they stepped into an image (a historically situated representation contingent upon power and disciplinary interests) which had already been prepared for them. After 1959, the
Tibetan diaspora permitted Western laypersons and scholars to study with the largely inaccessible (only a select few had succeeded previously) Tibetans. And it also meant that those in the West no longer had to settle for tales of European travelers supposedly returning from the unknown; the Tibetans themselves now came to the West: Geshe Wangyal, Tarthang Tulku, and Chogyam Trungpa were among the first (Fields 1992). Tarthang and Trungpa both consciously addressed themselves and shaped their teachings for use in the psychological and therapeutic milieu (Pedersen 2001: 162). Toward this end Chogyam Trungpa even sponsored an early science and Tibetan Buddhism conference in 1979 (predating the Mind and Life meetings) entitled “Comparative Approaches to Cognition: Western and Buddhist” (Wallace 2003: 418).

It is important here to underscore again that the West structured a representation of Tibetan Buddhism (and of the East generally) which served ideological and colonial interests. This representation was taken to be credible insofar as it was fashioned within modes of Western disciplinarity; an enterprise considered objective precisely to the degree which it was able to prune away all of the “corruptions” and “accidents” of history and lay practices and reveal a core, an essence, a defining practice or belief. The social and historical contexts of Tibetan Buddhist practice had to be jettisoned for the operationalization of Tibetan Buddhism in Western frameworks. To participate in the “dialogue” between the West and East, Tibetan Buddhists perforce had to adopt the only register of language and framing which their iconolizers (if you will permit the neologism) and patrons would accept as legitimate: Tibetan Buddhism was accidentally a faith, essentially a science. And while Tibetan Buddhists have, more than any other Buddhist group it seems, worked to shape themselves to the “Buddhism as science” representation, they have also used that representation to reconfigure (in partnership with some Western scientists) what is taken seriously in the field of science. They have also worked to draw
a distinction between scientific ways of knowing and other ways of knowing (as we will see in the chapters which follow). In the end, however, it is still science which is the arbiter, and even what falls outside its purview must justify its continuation relative to the standards of science.

B. Meditation and Mindfulness as Disciplinary Objects

The early twentieth century saw an enormous rise in the amount of activity among Buddhists of all traditions working to assist each other in resisting Western imperialism and the influence of Christianity. Wilson, in *Mindful America* (2014), notes that the texts produced by these revitalizing movements – shaped by the need to answer emerging Western constructs of Buddhism – were consumed by lay and elites in West and East alike, along with the Theosophical materials produced in the West (Wilson 2014: 25). However, meditation did not become a core or defining element of this dialogue, Wilson argues, until the work of Nyanaponika Thera, a German Jew ordained a Buddhist in Sri Lanka where he had fled the Nazi movement. In his 1954 *Satipatthana, the Heart of Buddhist Meditation: A Handbook of Mental Training Based on the Buddha’s Way of Mindfulness*, he suggested that “mindfulness” was not just the province of those with special powers or sainthood, but that it was suitable to everyday life and was the basis of all meditation.56 Mindfulness, Thera states,

> provides the most simple and direct, the most thorough and effective, method for training and developing the mind for its daily tasks and problems as well as for its highest aim: mind’s own unshakable deliverance from Greed, Hatred, and Delusion…[it] is the indispensable basis of Right Living and Right Thinking – everywhere, at any time, for everyone. It has a vital message for all: not only for

56 The relationship between “mindfulness” and “mediation” is a complex one. The term “mindfulness” itself is meant to refer to several processes that lead, for example, to a recognition of the momentariness of existence or being present in the “now.” “Meditation” is a Western disciplinary term to denote the wide range of practices in Buddhism (and other Eastern religions) that are designed to bring such awareness about. For a complete overview, see Dunne 2015. For more on the development of the term “mindfulness” itself, see Wilson 2014.
the confirmed follower of the Buddha and his Doctrine (Dhamma), but for all who endeavor to master the mind that is hard to control and who earnestly wish to develop its latent faculties of greater strength and greater happiness [and well-being, self-control, and balance]. (quoted in Wilson 2014: 25-26)

Here, Thera continues the psychologization of Buddhism: meditation is a tool which improves one’s daily functioning and well-being. Buddhist meditation is not merely for those seeking Enlightenment (no longer a soteriologically-motivated religious practice primarily), but for all who seek to serve their role in society in a more ordered and hygienic way.

Wilson also notes that at about the same time that Thera’s presentation of Buddhism appeared, Walpola Rahula’s *What the Buddha Taught* (1959), was also released. It too was widely read. It was a book which selectively presented “…Buddhism as a rational, humanistic religion that uncannily fits with modern times” (Wilson 2014: 26). Rahula discusses the practice of mindfulness as being essential for developing the concentration necessary for higher spiritual attainment. Also, it is good for one’s physical health and making one calm and peaceful. Even so, this was not yet mindfulness’s time: “for Americans not born into the religion, the attraction of Buddhism usually wasn’t mindfulness, but rather its alternative world view and the way Buddhism allegedly combined pacifism and ancient purity with a modern scientific sentiment and freedom from dogma” (Wilson 2014: 28); the union of logic and compassion. Thus, the psychologization of Buddhism and the representation of Buddhism as essentially a technique of self-fashioning was shaped by the language of a monk writing for Western lay and elites, providing the West with a technique which today is characterized precisely as a way to develop a rational and compassionate worldview.
These publications, alongside the work of D. T. Suzuki and the increasing popularity of Jung, functioned in such a way as to bring Buddhism’s esoteric and wisdom – as opposed to the quotidian practices of lay – traditions into the mainstream. Jung had earlier spoken for the need of the West to study – though not to practice – Eastern forms and rites while Suzuki promoted Zen as therapy and psychology (Harrington and Dunne 2015: 622). Even so, many of the early Western teachers of meditation had as their goal the use of meditation in therapeutic contexts. Many of these early practitioners in the Zen and Vipassana traditions went on to obtain advanced degrees in counseling and humanistic psychology (Harrington and Dunne 2015: 624). And while meditation and mindfulness are still very much part of the “toolkit” of many clinicians, the language supporting such interventions draws its strength from appeals to brain imaging effects and the findings of the latest neuroscience. I suggest that the increases in the kind and precision of technological apparatuses which enabled contemporary scientific psychology and neuroscience were major factors in the choice of those interested in Buddhism to choose laboratory research over clinical practice.

One further contributing factor to the psychologization of Buddhism was the fact that the 1960s was a period of turmoil and increased social awareness and engagement. Into this period of social transformation stepped the Vietnamese Buddhist monk Thich Nhat Hanh. Hanh explicitly offered meditation as something through and by which to be socially engaged (Wilson 2014: 34). He did this by suggesting that control over one’s emotions would facilitate selfless action in the world. Additionally, the Chinese takeover of Tibet in 1959 and the Dalai Lama’s

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57 Problematically, Suzuki also wrote that meditation was simply a technique and that it could be put to the service of almost any endeavor, good or bad. He himself had written on the utility of meditation for making soldiers dispassionate, professional, and exacting in Japan’s military efforts in China (Pu 2014: 17). Recent interest in meditation research by the US government and corporations has made some in the meditation community very concerned about the way the research is being used and the ways in which such funding is directing research.
message of peaceful resolution to conflict occurred at a time in which the rhetoric of the Cold
War era was being actively countered by popular movements extolling peace. In this milieu,
Western Buddhist teachers with an interest in Zen as an aide to humanistic psychology (teaching
people to become detached from negative thoughts and problems, to be more in control of their
emotions, and thus agentic) began to see Buddhism – exemplified in meditation – as a technique
to address the “existential, social, and even spiritual” problems relentlessly unfolding
(Harrington and Dunne 2015: 623).

Many Westerners participating in these early movements were also interested in studying
mental illness through the lens of Eastern accounts of mystical experience, a trend bolstered by
an emerging interest in cybernetic theory and cognitive psychology. Andrew Pickering (2010,
2011) offers an informative account of this surprising conjunction, and I will draw on his work
here. Reviewing this material will also help put into perspective the kinds of changes, arguments,
and conjunctions which inform the present day operationalizations of Tibetan meditation in
neuroscience which I will explore below.

Asking the question “how can we make sense of this outbreak of esotericism in recent
science?” Pickering suggests

We should start with the brain, the original referent of cybernetics. Since the
Western Enlightenment, our standard understanding has been of the brain as the
organ of reason and cognition … in which reason is precisely what distinguishes
us from animals and things and elevates us above them….the cybernetic brain
was…performative rather than cognitive, immediately engaged in bodily
performance and goings-on in the world…[so] if thinking is what distinguishes
us from animals and things, performance is instead what we have in common
with them; and, in turn, this ontological shift is what set up cybernetics’
openings to the East... who knows what a performative brain can do? In
cybernetics, this question translated into an intense interest in altered states and
strange performances [madness, epilepsy] … Eastern traditions were also taken
up as a source of information [think tummo and attentional feats, and
physiological control] precisely as interesting examples of what a performative
brain can do. (Pickering 2011: 350)
To address why such a conjunction was both plausible and desired, Pickering notes the crisis in physics – the disciplinary framework that structures Western ontologies and which other sciences are called upon to emulate or are judged in comparison with – to frame his account of the intersection between psychology and Eastern practices:

the ontology of mainstream physics is a modern, dualist one, in as much as physical thought revolves around a material world from which anything human is absent, and the human leftovers fall to the humanities and social sciences. [But with quantum mechanics, as with the post-modern turn generally the] boundaries between observer and the observed start to unravel [and here] one finds all sorts of resonances with the East…resonances with the East spring forth in Western science whenever modern dualism starts to fray around the edges. (Pickering 2011: 349)

Thus, in an attempt to devise conceptual frameworks that would help them deal with the implications of their discoveries, scientists drew on Eastern philosophical and religious traditions. Primarily, they gravitated towards those that had a tradition of techniques said to induce realizations and experiences and an account of states said to help explore the boundaries between observer and observed, and a philosophical system which would make sense of those experiences.

Importantly, for the neuroscientific research on meditation here under investigation, the mutual permeability of self and world meant that individuals were not unified entities but responsive elements in a larger system. Cybernetics offered a testable, mechanistically representable model for how systems without a “center” or “controller” (whether it be god or the self) could still meaningfully participate in the world. Organisms were now conceived as sets of organized systems and capacities that achieved order through dynamic interplay with their
environment. Adjusting the levels and capacities of those systems meant greater adaptability to
the world in which those systems were embedded; the promise of “plasticity.”

From another angle, the cybernetic brain was not just performative but adaptive, understood as the organ that helps us get along in a world that can always surprise us. The model for this was … the homeostat … built in 1948, which randomly reconfigured itself in the attempt to come to dynamic equilibrium with its environment, which was in turn modeled by more homeostats. Modeling the brain and the environment with identical machines … [provided] a vision of the brain and the world as structurally isomorphous, and again provided an opening to the East. And if the cognitive brain can be understood as a stable center of will, calculation and planning, the notion of adaptation spoke instead of a brain and self intimately caught up in the thick of things, continually reconfigured in a decentered dance of agency – which is, more or less, the Buddhist analysis of the self. [Some early cyberneticists even] spoke of dynamic equilibrium as a state of nirvana – a sort of calm detachment from worldly inputs. (Pickering 2012: 350-351)

Thus, for “cybernetics, the East offered a set of fascinating examples of altered states and strange performances, and important concepts for thinking about decentered selves and adaptive states of equilibrium” (Pickering 2012: 351). And it is precisely these elements – the decentered self (also in terms of “non-attachment” and “compassionate focus on others”), adaptability, feats of concentration – that played such an important part in sustaining the representation and operationalization of Buddhism in scientific research.

Gregory Bateson’s Steps to an Ecology of Mind (1972) was also very influential in helping to effect this suturing of psychology, neuroscience, and Eastern thought. In introducing the cybernetic modeling of society to a general public, Bateson aided those looking to find a language for the intersection of spirituality and modern science. This emphasis on the cybernetic was further brought into connection with Tibetan Buddhism through the work of Francisco Varela. Varela (one of the co-founders of Mind and Life) had worked with Humberto Maturana in articulating autopoiesis; a conception of living systems grounded in cybernetic theory. It forms
an important link in our story insofar as autopoesis stood for a way of thinking in which order emerged as a result of the characteristics of a system, without the need to postulate a creator or a self directing the whole (Maturana and Varela 1980). Varela also co-authored (with Eleanor Rosch and Evan Thompson) *The Embodied Mind: Cognitive Science and Human Experience* (1991). Here, the authors were explicit: Buddhist concepts of the self and of the mind had enormous utility for the emerging cybernetic and cognitive sciences. Their argument was that Buddhist notions

frame experience in ways which, while they trouble traditional notions of the unified and continuous self or person, appear to provide the kinds of theoretical wagers which accords with advances in computer models of the brain. For example, the idea that the brain processes sensory information modularly and that language and experience shape the way in which information in the brain is changed to meaning, accords broadly with the Buddhist Abhidharma tradition which outlines that each sensory domain has a consciousness particular to it. (Pickering 2010: 438, n. 8)

What allows this cybernetic approach to not come across as atomistic and reductionist, I argue, is precisely the Buddhist framing; it wed the cybernetic self to the representation of Buddhism as a rational ethical framework. This Buddhist reframing of material processes is represented as being independent of the Western colonial enterprise of control (i.e., traditional), generated within an ancient, “pure” domain free the eugenic history and overtones of Western attempts to deduce social policy from scientific experiment. Such a reading seems to accord with the fact that the West found in the Dalai Lama and the Tibetan plight a representation of Buddhism which has become synonymous with an ethical and compassionate way of life. As we have seen, this reading builds on the Victorian era representations of Buddhism as harboring a unique though universally applicable moral system that is conveyed in the practice of mindfulness independent of the cultural or pedagogical framework through which it is dispensed.
While such rhetorical strategies have helped secure the mainstream acceptance of meditation, it also seems to open mindfulness practice to accusations of being a kind of fetish or cargo cult; the gestures themselves are mistaken for what is essential. Culture-free and ahistorical positioning of meditation ignores the growing research on the adverse mental health effects of mindfulness practice for some and the fact that the ethical frameworks of Buddhism have historically been used to justify Japanese nationalism and killing in the name of virtuous action (Victoria 1997). This latter fact ties in with growing concerns over the military’s interest in using meditation training to help soldiers avoid and deal not only with PTSD, but to be more efficient analysts, snipers, and steadfast in battle conditions.

Thus, I suggest that one of the most significant things which the Tibetan Buddhists offered to the cognitive scientists and cyberneticists were explicit techniques of control – over body temperature, attention, visualization, memory – and a willingness to share and model those techniques for researchers. This was especially important for those scientists who were convinced that there was something to the study of meditation, but wanted to distance themselves from the forms of meditation whose practitioners were making sensationalist claims.

Benson’s work on the “relaxation response” and Tibetan tummo practices in the 70s and 80s, helped further the West’s view of meditation as a health technology and not some mere superstition at a time when meditation was increasingly seen as the defining practice of Buddhism as such. It is these developments which, in 1979, allowed Jon Kabat-Zinn to develop and implement the clinically oriented Mindfulness Based Stress Reduction (MBSR) method (Kabat-Zinn 2011). A graduate in molecular biology, Kabat-Zinn drew from various Buddhist,  

58 See Willoughby Britton’s work with individuals experiencing adverse effects resulting from meditation practice: http://cheetahhouse.org/ 
Hindu, and even Christian and Islamic traditions to shape a secular technique intended to complement the care of those for whom standardized medical treatment was not working and to address the issues of stress and pain which accompanied routine interventions. Harington and Dunne (2015: 627) underscore that all the traditions Kabat-Zinn drew on were “reform-minded in nature” and which had
centuries earlier insisted that the highest levels of spiritual practice could be undertaken without vows of obedience to a monastic code of ethics, extensive study of the old texts, or any of the traditional, laborious approaches developed for use by people in monastic settings. They had also taught that the more proficient one becomes in one’s practice, the less important formal ethics outside practice time becomes – because practice itself was thought to release one’s innate capacity for wisdom and compassion [emphasis added].

I suggest that this last point – the belief that it is the practice itself which is sufficient – was a key maneuver to both the distribution and operationalization of meditation. It is a representation of Buddhism which fed into the disciplinary and administrative maneuvers to cast Buddhism as a technique of meditation, and simultaneously served to justify the disciplinary work of jettisoning accounts of the historical, political, and religious registers of Buddhism. Meditation as a technique operationalizable independent of the ethical framework and historical conditions of its development supported the representation of Buddhism as compatible with science. I will explore this link further below, but introduce it here to show its significance for parallel developments in Tibetan Buddhist exile community. For, alongside Kabat-Zinn’s work, the 14th Dalai Lama (as we saw above) continued to hold dialogues between scientists and Tibetan Buddhists and supported the operationalization of traditional techniques. In what follows, I consider the logic behind and the stakes involved in such an approach to tradition.
C. The 14th Dalai Lama and the task of modernization

[B]because I am outside Tibet, the pure form of Tibetan culture has survived. Now today, strangely, the true Tibetan culture or community is found outside Tibet, not inside.
- The 14th Dalai Lama, quoted in Mehrotra 2009: xviii

His life mirrors the wider picture of classical Tibetan culture’s encounter with modernity.
- Thubten Jinpa, Official Translator for the 14th Dalai Lama, quoted in Mehrotra 2009: xxii

Writing of his youth in Tibet at the Potala Palace – the historic residence of the Dalai Lama’s in Lhasa, Tibet – and of exploring its many halls and rooms, the 14th Dalai Lama pauses to mention the two most striking things he found: reliquaries containing the bodily remains of the former Dalai Lama and an assortment of mechanical objects such as tripods, watches, and telescopes (Bstan-‘dzin-rgya-mtsho 2005: 18). What I want to consider in this fascinatingly Gothic narrative is the way in which these specific domains are bound together in the place of origin of his own religious and political formation. He finds these objects in what has become his home, bequeathed to him by himself (in the form of his earlier incarnations). The bodily and the technological, the reliquary and the equipment room, the past and a possible future, are woven in the moment of his recognition of these objects as connected in some way to him. It is a story which bears overtones of the recognition ceremony during which he was recognized as the new Dalai Lama. A ceremony in which he chose, as an infant, among so many things presented to him, those items which belonged to his previous incarnation. This origin story seems to authorize cultural transformation, effectively weaving together tradition and modernity in and through a story of recognition and discovery.
In this context, the Dalai Lama also speaks of his later meetings, as a young man in 1956, with Nehru and of how he was impressed by Nehru’s vision of modernizing India through technological and industrial development (Bstan-'dzin-rgya-mtsho 2005: 23). He further observes that, in talking with others about science and its practice, he noticed a similarity with the Buddhist approach, which itself moves from observation to prediction. “Although Buddhism has come to evolve as a religion with a characteristic body of scriptures and rituals, strictly speaking, in Buddhism scriptural authority cannot outweigh an understanding based on reason and experience” (Bstan-'dzin-rgya-mtsho 2005: 24). He goes on to note that while science proceeds by experiment, “contemplative investigation [here taken to be synonymous with Buddhism] proceeds by the development of refined attention, which is then used in the introspective examination of inner experience” (Bstan-'dzin-rgya-mtsho 2005: 25). And again, “...one fundamental attitude shared by Buddhism and science is the commitment to keep searching for reality by empirical means and to be willing to discard accepted or long-held positions if our search finds that the truth is different” (Bstan-'dzin-rgya-mtsho 2005: 25-26).

Note that, as I have shown in chapter two and elsewhere, equating Buddhism and science is something which has its roots in the colonial and missionary encounters since at least the 1830s. However, it is Tibetan Buddhism, under the leadership of the Dalai Lama, which has most fully embraced this representation, re-working it for complex political, economic, cultural, social – and perhaps religious and soteriological – ends.

It is important to note that the Dalai Lama’s writings on these matters are not designed solely for Western consumption. Many of the monks I have met in India, for example, regularly allude to The Universe in a Single Atom – its Blakean allusion recalling the Romantic, Victorian, and Theosophical contexts – in discussions of Buddhism and Science. And, as I noted in chapter
five, monks have formed reading groups to discuss this and other texts by the Dalai Lama. These
texts help guide monks as they bridge disparate domains, working to unify tradition and
modernity. Having a shared body of texts on this subject also aides in the ambassadorial function
which many of the monks – especially in Dharamsala – serve as they are approached by tourists
from Western countries; staying on message is important for a unified front. However, this
message, important as it has been, is perhaps beginning to have unintended consequences. In
chapter five, I discussed how some of the monks discussed with me the desire to study
agriculture, animal husbandry, even archaeology; none of which are discussed in *The Universe.*
While focusing on neuroscience and cosmology may be a good way of generating popular
interest, it seems to have had the effect of constraining the subjects being taught to monks to
domains which require a level of technological sophistication and money that far exceeds what
can be mobilized by this community. This “constraint” on the material covered and subjects
discussed, I suggest, has its roots in part in the earlier efforts toward the psychologization of
Buddhism generally and the perceived conceptual apparatus Tibetan Buddhism offered the West
for dealing with cybernetic models of the self and quantum mechanics. For Tibetan Buddhists, to
embrace the representation of “Buddhism as science” is perhaps a form of strategic essentialism
which, while limiting in the kinds of subjects it can approach, permits a well-defined field in
which to deploy and rework the ways in which Tibetan Buddhism itself has been represented by
the West, potentially in ways which help Tibet achieve certain goals while being in exile in the
modern world.

Nevertheless, speaking of Buddhism as a science, or as a system of techniques and
realizations, has led to the operationalization of tradition. In other words, fashioning Tibetan
Buddhism into a strategic representation meant to foreground its “scientific” character comes at a
cost. Such a move places other cultural and religious expressions of the tradition on rather shaky ground and reifies Western imaginings about Buddhism which misleadingly omit much of its social, historical, and performative actuality. It is precisely this essentialization which, in part, makes it possible to extract “meditative practice” from the tradition of Tibetan Buddhism and operationalize it for use in laboratory contexts, inserting it into the disciplinary apparatus of psychology and neuroscience which have themselves been shaped by Western ideologies and are permeable to economic, political, and social concerns. It is these effects which I explore in the next section.

D. Graphematics, neuro-standardization, and Tibetan Buddhism

In what follows, I will look at the technological changes which were developing, between 1850 and 1950, in parallel to the joint effort of Western academics, Theosophists, and Buddhist elites to construct a representation of Buddhism as a science. I suggest that these parallel developments have now converged in a way that makes possible the “science for monks” program and the new articulation of the Buddhism and science dialogue we have been exploring.

As I discussed in chapter three, technological progress in the West was freighted with the ideological hope that instruments could be devised which would permit unmediated access to “things in themselves,” untainted by the subjective impressions or position of the observer. We have also seen in chapter three how photography was deployed by colonial administrators with such a hope. Below I want to consider the development of another technology which is linked genealogically (both in terms of its power effects and its assumptions about what is said to accurately reflect the truth of the subject) to modern day EEG and fMRI research instruments and practices. “Graphical machines” were devices which were designed to record the patterns
(and reflect aberrations in) the physiological process of the body. In this way, researchers hoped to get to the physical basis underlying psychological phenomena, to its “truth,” bypassing the subject entirely. Self-reports were deemed unreliable; they are too easy to influence and too coarse a measure, and they could not detect (or accurately indicate) the extremely subtle and anticipatory processes of the body as it was perturbed by emotion or cogitation (e.g., changes in heart rate, respiration pattern, skin conductance).

Etienne-Jules Marey, who already in 1886 had developed a range of instruments capable of recording pulse and respiration, had this to say about his graphical machines:

At their first inception...the self-recording instruments promised to offer physiology the authentic expressions of the phenomena themselves. Unfortunately, however, things turned out not to be that easy. Soon technicians realized that the same phenomena, transcribed by different devices, yielded variant inscriptions. (Marey, in de Chadarevian 1993: 287)

Marey felt the growing problem reflected the increased sensitivity of the instruments themselves; their functioning produced disturbances in the readings. This problem was intensified given the lack of suitable models of action which would help scientists tease out the very phenomena they were studying. In due course, Marey proposed an international commission be set up for regulating devices and standardizing physiological models (de Chadarevian 1993: 288-289). The goal was to tease apart how the workings of technology confounded the technology itself. I would argue that such a confound continues and that brain imaging today is at a similar crossroads, where the statistical packages and the machines themselves (manufactured by several different companies) produce widely different results, making meta-analyses difficult (Griffanti et al. 2016). It is only recently that the issue of replication and reliability and reproducibility has come to the fore and labs – Davidson’s included – have joined the effort to standardize the field. However, this seems curiously behind the curve given historical precedent.
But the overall effect of these efforts – in Marey’s and our time – is to have created models which are called “normalized;” models which are in fact tuned to the limits of the technology, erasing much of the subtle effects of individual differences. If physical processes must be governed by the laws of physics, and the laws of physics can be generalized, so too (it is argued) could physiological processes. Indeed, something like this must be true given our shared biology and is already evinced in the logic and practice of medicine. However, the move from physiology to psychology (likely having roots in Western humoral theories and phrenology), while it seems reductive, remains a quite dominant elision today (Bennett and Hacker 2003). Just as the West, in its drive to create essentialized representations that are then generalized to cultures, prunes away or invalidates much of the variety and variance within a given culture (viz. Buddhism), so too do models of physiological function insofar as they are taken to be reflective of psychological and cognitive dispositions. The models are designed foremost with an eye to what technology (or ideological imperative) can capture. So too with all representations; they are shaped by the technologies themselves (and the administrative practices by which they function), and as such are “natural” only in the experimentally (and administratively) defined and controlled context.

60 To indulge in a bit of speculation, I wonder if one could explore whether this move towards standardization derived some of its impetus and plausibility from the success of “well tempering” with keyboard instruments begun about two hundred years before Marey’s time. And just as music, dance, and melody (and “high” culture) were shaped by “well tempering” perhaps too there is an analogy to be made with Marey’s – and those who research the effects of meditation – desire to effect controlled, ordered, “well-tempered” subjects. The aim of each is to reduce the variance within the system and between different instruments (or classes, etc.).

61 It is a reductive move, however, which plays into Romantic notions of there being some kind of Ur-force or substrate of mental and material life; prana and steam and electricity were all different manifestations of the same universal energy, so permitted a kind of spiritualized monism (Green 2015: 386).
Marey’s optimism about the reliability of his recording devices was rooted in his experience as a researcher. In the 1870s, Marey was enlisted in a French effort to build on Alexander Bell’s work using graphical instruments to work with the deaf. Marey and others hoped to be part of a larger disciplinary effort to bring the study of language from a focus on textual philology to the study of articulate speech and thus fully under the purview of the sciences, using the “precision of machines” thought capable of revealing “the language of the phenomena themselves” (Brain 1998: 259). It was the first project aimed at the simultaneous recording of all of the physiological dimensions at work in the act of speaking. However, Marey and colleagues did not study spontaneous speech production, for such an approach would not readily admit of standardization and reproducibility. And while they could have chosen any text for this experiment, they chose the Vedic text Pratisakhya. This text describes the proper way in which to pronounce sacred mantras. This choice was itself part of a larger rivalry among French and German linguists rooted in colonial era philology and appropriation.

According to the Pratisakhya, proper pronunciation was key to the induction of the types of consciousness said to be indicative of spiritual attainment. Yet these mantras could not be properly pronounced to induce such states unless one in some way had already achieved something related to those states. Thus the Pratisakhya gave detailed instructions on which parts of the body participated in the production of each syllable. Nevertheless, there was some confusion among the Hindu practitioners. For, although they followed the instructions in the text they were unable to come to agreement amongst themselves whether some tone pairs reflected “mute” or nasalized consonants. Robert Brain – whose account I have here relied upon – characterizes the effort in this way: “The French savants set out to first resolve this dilemma of Vedic linguistics. But the stakes were higher: if successful, they would show the limits of
phonetic self-experiment in general…” (Brain 1998: 260). In other words, the capacity of the subject as such to reliably control and to report on what was happening at the level of physiology was at stake. If the “truth” of the matter could only be decided with Western technology, then the Eastern traditions which purported to bear witness to the inner workings of the material and mental worlds through introspection and experience were making, at best, deluded, or worse, mendacious claims. The validity of introspection and self-report – East or West – as a mode of knowledge or truth production was at stake.

The importance of the judgment passed here on self-experiment should be borne in mind when we read below about the ways in which Tibetan Buddhist texts are mined both by researchers and, increasingly, contemplatives for shaping to the parameters of research methodology. To unpack this a bit further, the Pratisakhya project succeeded in showing that science, not self-experimentation, or textual study, could lay bare the truth of the phenomena which were really at play in the religious texts and practices. Thus Western science, and not Eastern text or tradition, was shown capable of resolving and refining what had been only imperfectly communicated in sacred texts.

This Marey era push towards standardization and elucidation was followed by Hans Berger’s efforts in the late 1880s. Berger, building on extant recording devices, sought to measure changes in blood supply to the brain and crania by attaching sensors to the skull. Berger’s efforts led directly to the development of the EEG. His aim was to achieve an

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62 Contemporary EEG equipment is structured in such a way that an array of electrodes is placed on the skull in order to detect the electrical impulses given off by the brain. EEG records patterns of brain activity. The EEG readout is then examined for patterns, spikes, and aberrations. Those events are then correlated to behavioral tasks the subject was engaged in at the time of their recording. Researchers then draw conclusions about the types of mental process and areas of the brain most likely to be involved in the experimental task and analogous behaviors.
objective reading and recording of “psychic states” (read: psychological; mental and emotional processes). As a Danish contemporary of Berger put it, “Once all psychic states are investigated and their specific patterns characterized, the plethysmograph [general term of an instrument which measures a change in volume of a given body] will work as a real psychoscope, an instrument for a reliable diagnosis of a person’s disposition” (Borck 2005: 81). Facilitated by a host of other technological advances resulting from WWII war efforts, EEG had become commercially available in the 1940s.

By the 1950s, William Grey Walter – a leading figure in the development of EEG technology – was using EEG research to argue that we have unique electrical “fingerprints.” Walter went so far as to suggest that such EEG readouts be printed on diplomatic passports, thereby facilitating assessment and negotiation. Young couples could also be regularly tested to ensure compatibility (Hayward 2001: 626). For Walter,

> the brain was pictured as a kind of hopeful, if sentimental, radar searching for comfort and stability among the random patterns of the world [a notion which ties in well with the cybernetic view of the person]. The EEG became a crucial technology since it revealed both the normative content of our longings [reduced to what and how a healthy brain responds to stimuli] and the possible strategies we might deploy to obtain them. (Hayward 2001: 626)

However, it was not until 1982, when oxygen levels in the brain were measured using Magnetic Resonance Imaging (MRI), that psychologists began to truly feel that they were close to having a “real psychoscope” and by 1991, fMRI was being used with humans (Raichile 2008).

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63 A claim, with a slightly different spin, which is now beginning to be suggested among some FMRI/DTI-connectome researchers; the connections between the parts of our brain can be read like a “fingerprint” or “signature.” It is not clear how such researchers account for “plasticity” when making such claims.
Alongside these developments, in the early 1990’s the portable computer made digital EEG recordings and analysis possible (Collura 1993).64

All of these inventions purportedly made possible the scientific study of the “interior states” discussed above; scientists could now claim to be able to demonstrate the physiological correlates of cognitive and emotional dispositions of research subjects. Further they could confirm them in others based on the standardized analytic frames or models which earlier empirical psychological research had produced. In the context of what we are considering here, the question for researchers of meditation became: which meditative tradition is best suited or most easily adapted to the scientific study of psychological processes and interior states? At the start, many different neuroscientists and psychologists used Transcendental Meditation, Mindfulness Based Stress Reduction, and contemplative styles drawn from Islam and Christianity. So why has Tibetan Buddhism become central in the scientific study of meditation?

I have approached this question elsewhere through a consideration of Davidson’s relationship with the Dalai Lama and his position as scientific director of Mind and Life. I have also considered the Dalai Lama’s complex set of motivations stemming from the position of exile, the role of Theosophy and subsequent psychologization of Tibetan Buddhism, and the advent of cybernetics and the interest in extreme states of consciousness. However, what remains to be

64 On the economic front, along-side these technological changes, the Bayh-Dole Act of 1980 ceded the rights of intellectual property stemming from research funded by federal dollars to Universities in the hope of supporting more research by enabling researchers to bring products quickly to market (Rose and Al-Rasheed 2013: 19). Of course, while this helped give a boost to technological advance it meant less income for the government agencies which fund science. Thus, research and educational facilities must increasingly reach out to businesses for support, which in some cases can generate significant conflict of interests. As we have seen in chapter six, the Davidson Lab has followed other University research departments in opening its doors to donors and business funding and has even set up an entity to design and market education and training programs which build on its research.
examined is how the researchers themselves frame the decision to use Tibetan Buddhism in the laboratory.

The clearest articulation of such a position was published in the 2007 *Cambridge Handbook of Consciousness*, entitled “Meditation and the Neuroscience of Consciousness: An Introduction.” In this chapter Antoine Lutz, John Dunne, and Richard Davidson begin by cautioning against the tendency in the field to conflate a range of meditative traditions under the singular rubric of meditation – a practice which continues to make meta-analyses very difficult. Reflecting on the benefits which pharmaceutical companies and Western medicine have gained in following closely the particularities of specific folk medical traditions, they state:

> the value of consulting a specific tradition is precisely that – through accident or expertise – the tradition may have gleaned some valuable knowledge or developed some practice that is not found elsewhere…This attention to the particularity of contemplative traditions is related to another aspect of the approach we adopt; namely, that it is also strongly consistent with our knowledge of the neurosciences. Specifically, cognitive and affective neurosciences …understand something about the brain mechanisms that subserve different attentional affective processes. Meditation techniques that target specific underlying processes are thus likely to engage different neural circuitry. If, however, the particularity of a tradition’s claims and practices are not examined, the possibility that a practice targets specific processes will not be noted. (Lutz et al. 2007: 501)

Framing the problem as one of “attentional affective processes,” however, introduces a new difficulty: “the need to discern which parts of a traditional account of meditation are useful in formulating a neuroscientific research strategy, as opposed to those parts of an account that are not suitable for that purpose” teasing apart the “close descriptions of meditative techniques and states from the metaphysical or soteriological requirements that must be met by those states” (Lutz et al. 2007: 501). It is thus “crucial for [the researcher] to separate the highly detailed and
verifiable aspects of traditional knowledge about meditation from the transcendental claims that form the metaphysical or theological context of that knowledge” (Lutz et al. 2007: 502).

It is important that we see this research strategy in light of the history of graphematic research on psychical processes which I outlined above. Recalling Marey’s efforts to both standardize experimental paradigms and graphic standards as well as his involvement with a project which situated the scientist as arbiter of the religious and the textual, we can see that this approach to the use of Tibetan Buddhist texts as source material for experimental design is part of a larger cultural and historical tension between authoritative forms of knowledge and discourse (religion versus science), as well as the question of the validity or empirical status of self-report. It returns us to the question of whether the scientist is the one qualified to undertake the work of separating the operational wheat from the soteriological chaff. This point has not been lost on the scientists and awareness of the complex issues involved in analyzing texts in this way have prompted researchers in this field to begin incorporating contemplative scholars and monastics into the design phase of research. However, this effort is only just now underway and it is too soon to speak of its effects.

The authors go on to say that the use of Buddhist contemplative practices to structure laboratory research is not merely the product of historical accident; rather, Buddhist contemplative traditions are particularly well suited to the development of [scientific models of reproducible effects]. The reason, in brief, is that unlike many contemplative traditions, Buddhist traditions tend to offer extensive, precisely descriptive, and highly detailed theories about their practices in a manner that lends itself readily to appropriation into a neuroscientific context. [emphasis added] This emphasis on descriptive precision stems from the central role that various forms of meditation play in Buddhist practice…some type of meditative technique must be employed if one is to advance significantly on the Buddhist spiritual path… (Lutz et al. 2007: 503)
Notice that such a statement is intelligible only once we have accepted the premise that the situated cultural and soteriological dimensions are tangential to the descriptions, practices, and states under consideration. For example, reference to mechanisms of action, celestial beings, or soteriological ends are not properly considered part of the “practice” for scientific purposes. Of course, science always proceeds through such a reduction. But given the history of Buddhism and its relation to the West, it is important to underscore that these states and practices are under consideration by scientists not because of their metaphysical suppositions, but because they purportedly tell us something about the working of the mind. Traditional accounts are important only to the degree to which they suggest we can control physiological processes and, from the perspective of Davidson and his lab, help us understand how to develop capacities leading to greater “well-being.”

Notably, when experiments that operationalize practices in this way fail to produce desired outcomes, this is rarely seen as a threat to the tradition per se. One may even argue that a failure to achieve results following the operationalization of certain practices serves, in Tibetan and “holistic” circles, as an argument for the limits of science and the importance of engaging tradition.

The authors offer further support for their choice of Tibetan Buddhism over other traditions given that its literature distinguishes states produced during meditation and after:

Meditation on love and compassion, for example is alleged to inhibit the occurrence of anger between meditative sessions. From the Buddhist theoretical perspective, such post-meditative changes are often at least as important as the states induced during the meditation itself, and success in a practice is often measured by the strength of the effects that occur after meditation. (Lutz et al. 2007: 508)
Thus, from the perspective of Western scientists, the goal seems to be one of demonstrating something about the mind and the brain and the kinds of practices and behaviors one can engage in to foster desirable traits. From the Tibetan Buddhist perspective (as I discussed in chapter six) the concern is connected to demonstrating that Tibetans are not “backward” (part of China’s justification for invasion) and that there is knowledge which deserves to be preserved in the religious culture of Tibet. Further, that Tibetan Buddhism lists practices which focus on the “post-meditative” states suggests that Tibetan Buddhism crafted techniques which could be used to better this life (not just the ones that follow) and so is capable of providing scientists with an ethical framework that can be secularized through scientific study.

However, the authors do acknowledge that researchers are most likely to encounter practitioners of Zen and Theravada traditions. Nevertheless, it is the case that the modern inflection of Vipassana and Zen and Tibetan Buddhism have teachers across a range of traditions who work to accent similar sets of practices based on popular conception and expectation, those that are appealing to lay persons with a focus on basic practices. Thus it becomes possible to argue that they all share (qua Buddhism) foundational mindfulness practices; e.g., focusing on the breath, redirecting the mind once one notices it has wandered (Lutz et al. 2007: 508). Yet, despite their foundational similarities in practice, these meditative traditions diverge widely in terms of goals and practices as one advances. And it is these goals which influence how terms like “mindfulness” and “awareness” are inflected and operationalized. Thus, in the Tibetan context, it is claimed, there is a nested hierarchy of practices – from the basic mind training techniques to the more intricate ones which are directed to the alleviation of suffering – which
inform the basic practices of the Tibetan Buddhist tradition\textsuperscript{65} in a way they do not in Vipassana or Zen.

Lutz and colleagues also observe that it is important to conduct research on advanced practitioners – known elsewhere as Long term meditators (LTM’s) – because, they hypothesize, LTM’s can generate on demand the state and trait data peculiar to meditative states. Thus, LTM’s can reliably reproduce meditative experiences being studied and “provide more refined first-person descriptions of their experiences than naïve subjects.\textsuperscript{66} In this way, the neurophysiological counterpart of these first-person accounts can be defined, identified, and interpreted more easily by the experimentalist.” (Lutz et al. 2001: 521).

The authors then identify areas where neuroscience can profit by examining meditative experience. Since Buddhism – here, Tibetan Buddhism – claims that emotions and experiences can be influenced and reconditioned by practice, it provides an independent system of techniques which can be studied and made subject to verification through scientific research. Further, this system accords well with modern developmental theories that recognize practicing attention and control can affect the structure and function of the brain, even into adulthood; e.g. neuroplasticity. Further, they argue, the idea that experience affects gene expression (and thus

\textsuperscript{65} However, in writing of “the importance of attending to the particularity of a contemplative tradition” (Lutz et al. 2007: 510) in this way, they do not give sufficient attention to the tradition’s own emphasis on the importance of the teacher, allegiance to one’s linage and, in speaking of Tibetan Buddhism, compassionate action, the acquisition of merit, and the other devotional and experiential frameworks at play in different traditions.

\textsuperscript{66} Studying LTM’s is difficult because researchers must rely on the individual’s attestation that they have practiced a set number of hours per week over years, must have been trained in a meditative tradition similar to what is operationalized in the study, and must be willing to engage in the study. There are simply not a large number of people who meet the study criteria in Madison. Subjects often have to be flown in from elsewhere.

\textsuperscript{67} Here, one may recall Marey and the role of self-experimentation and description and textual validation. One should also recall what I have written elsewhere of the hope science has to discover in Tibetan Buddhism a method for releasing itself from the difficulties generated by its reductive and materialist tendencies and its separation of the ethical and methodological.
synaptic and neurotransmitter characteristics) opens the way to study self-induced experience as a focused modulator of the brain’s composition and function. This in turn opens up the possibility of researching the way in which thoughts influence mood and even immune function (Lutz et al. 2007: 522-523). Lastly, the focused study of LTM’s may help us understand the neural dimension of subjective experience and those mechanisms which support consciousness as such (Lutz et al. 2007: 525).

This final point provides an important segue for my concluding sections. Consider that the alliance of Buddhist and Hindu traditions with contemporary neuroscience and psychology, held promise for both the Western scientists and the Eastern traditions. First, neuroscience provided the Eastern traditions with the opportunity to reposition themselves amidst a colonial encounter. Framing themselves not so much as “religions” but as proper systems of “knowledge” whose work was the domain of “interiority,” “the East” could claim to have progressed beyond anything in the Western tradition of introspection (Bishop 1989; Harrington 2008; Lopez 2008); a tradition which the West had since largely banished from its own heritage as alchemical, gnostic, and ecclesiastical mystagogy.

Second, Eastern traditions afforded neuroscientists and psychologists a way of describing the operations and features of the mind (or consciousness, or the phenomenal self) which could be operationalized and tested (Arnold 2012, Bstan-‘dzin-rgya-mtsho 2005, Davidson and Harrington 2002, Pickering 2011). This was possible because, as we saw in the discussion of cybernetics above, the “self” was being conceived in Western psychological science as a “process” determined by earlier actions and contexts. Buddhism helped take the ghost out of the local machine while inscribing an ethical framework in the “between”: this life and an/other, this moment and an/other. Buddhism, on this selective reading, was seen to bear witness to the
possibility of an ethical framework that did not need to reify a soul or self and so complimented the reductionism of Western science.

Furthermore, relative to Tibetan Buddhism, Zen, Theravada, and Hindu practices were popularly seen to be drawn from Eastern approaches which failed to engage robust social critique. Strict hierarchy, caste based oppression, and fidelity to the guru were all seen as failures of those systems to develop autonomous agents; a social concern sharply at odds with the scientific operationalization of the self as a set of process and interactions with the world. I suspect that “goodness” and “compassion” are taken within the neuroscientific study of meditation to be the prime homeostatic mechanisms; making oneself more “adaptable” with respect to one’s surroundings is perhaps perceived as a way of lessening the pressure in the social system and thus helping it to equilibrate. However, with Tibetan Buddhism, an added urgency with respect to the social was reintroduced, if only owing to the larger political situation and social history of Tibet.

Perhaps a form of this introduction of the social can be seen in the discussions I outlined above which framed the choice of Tibetan Buddhism with respect to its commentaries, which hold the experiences between meditative practice to be significant indicators of the efficacy of meditative practice. In this view, meditation is seen no longer as solipsistic endeavor, but a hygienic practice that disciplines oneself for the good of the social, for the other. This focus on the “between” of meditation sessions also allowed researchers to link individual “plasticity” outcomes with behavioral measures. In light of what we have been considering, each of these moves function as a way of introducing individualism, activism, and optimism – all of which we have seen previously outlined by Tweed as being particularly salient to the acceptance and shaping of Buddhism in America.
E. Is meditation research “Neuro-Orientalism”?

In this section I want to revisit the question of Orientalism raised in chapter two. I do so here because I feel it is important to return throughout to trace and critically examine the various pathways – historical, cultural, political, economic, technological, and imaginary – which helped shape the contemporary Buddhism and Science enterprise. I think that the best way to ensure the viability and integrity of both projects is to discuss the respective enterprises critically and, I hope, constructively.

By *Neuro-Orientalism* I mean to highlight that range of effects outlined by Said (1994) which may be operating, despite the best of intentions, within the neuroscience and Buddhism dialogues as I have considered them here. Recall that in the case I am describing, a people is framed as the (projected) locus of an exotic, esoteric *otherness*, made answerable to a representation which is valued and coveted within a technological framework thought to be free of biasing effects. Further, such a framing licenses projects whereby the essence of the object of that *otherness* is contained, defined, circulated. Such a project invariably attempts to commodify or objectify some element of that *otherness* in the attempt to preserve a certain potency. The effect is carried beyond its contingent association to the people among whom that *otherness* is perceived to have arisen. Further, in not having distilled and commodified it themselves, it is argued that they do not know how to value “it” properly, however much they may identify with it and use it to support certain elaborate rites and practices.

I suggest such a position finds support in Rofel’s *multiple* and *gendered* modernities as framed in Jennifer Chertow’s analysis of changes in childbirth practices in rural and urban centers of the Tibetan Autonomous Region (Chertow 2008). Following Rofel, Chertow observes that the material constraints of any given community shape and inflect its manner of intersection.
with, and thus the articulation of, modernity. Deeply intertwined with such conditions are the formulations of desire, need, and want that shape meaning, motivation, and class. Chertow sees such modernities being articulated in the preference of Tibetan women to give birth in “modern” hospitals where things like examination gloves and injections are available. Such items are valued tokens of modernity. In seeking them, such objects also index an individual’s desire to comply with State policy, itself reflecting what is taken to be a progressive taste for a modern way of life over the old. At times, such a desire can be powerful enough that some women will endure difficult traveling conditions and separation from family to obtain “modern” care. Supplementing these observations, Chertow notes that the Tibetan word for biomedicine translates as “Chinese hospital” and that among Tibetans, the newborn child is today often greeted into the world with the Chinese word for “hello” (Chertow 2008).

Alongside such individuals so disposed within the Tibetan community are the many ethnic Han Chinese who take on the challenge of settling in formerly Tibetan territory. They do so as much for the government incentives and opportunities as for (initially) the pure exoticism of it; the chance for Enlightenment and of confronting something ancient and endangered. Curiously, Tibetan medicine has become quite an exotic and accepted alternative to Chinese biomedical practices, with many Chinese companies involved in manufacturing Tibetan “precious pills” (for issues related to manufacture and resource depletion see, Pordie 2008).

It is within this context that Chertow addresses the question of Orientalism. The case of Tibet is unique, since it is not only from the perspective of Western colonial and academic knowledge regimes that Tibet is perceived as an exotic other but – owing to its historic seclusion

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68 See also Adams (2005) for a further discussion of gendered modernities and of the pride with which some Tibetan women adopted the protocols of Chinese family planning in the name of progress and the State.
Tibet is exotic to those very countries which in the West have been traditionally studied as “Oriental” cultures. Tibet is an otherness enfolded in otherness. China’s claim on Tibet adds yet another layer in that the Orientalism which fuels China’s gaze of the Tibetan other is bound up with the cause of modernity. Modernizing Tibetans and other minority populations, as I discussed in chapter three, is an explicit project within the Chinese state. For China, Tibet is both backward and Enlightened; an exotic people who labored too long under an oppressive religious government. It is also the home of esoteric and liberatory practices. Thus, notes Chertow, all of the elements which Said had identified and critiqued as the *sine qua non* of Western Scholarship on the East, can be found in China’s discourse about modernity in relation to the “pre-modern” cultures within its own borders; a language which reached its peak under Mao in a conception of “’the past’…where tradition [becomes] an enemy of the State” (Chertow 2008).

In a further parallel with Western Orientalism, recent reforms in China have permitted the growth of a more exotic and romanticized view of traditional Tibet, particularly with respect to the spiritual purity of its inflection of Buddhism. Chertow notes how, in interviews with several Chinese business owners, she discovered that many “came to Tibet looking for Tibetan Buddhist enlightenment while simultaneously marketing Tibetan wares and food to sell to Western and Chinese tourists” (Chertow 2008: 146). Such Orientalist forms, bear an uncanny similarity to certain traditions in the West vis-à-vis Tibet….political claims by [China] that Tibet was liberated from its feudal bindings co-exist with popular Chinese views of Tibet as a Buddhist holy land where spiritual liberation is possible. The resulting mixture objectifies [Tibetan religion and culture] as…*simultaneously a contribution and a threat to national sovereignty* [emphasis added]. (Chertow 2008: 146)

Pointedly, she continues:

Tibet is the terrain that is fought over discursively in order to uphold different projects of hegemony stemming from Tibet’s exile government, the West, and Beijing. Through an analysis of … narratives of their encounters with health development projects, I extend this analysis of hegemonic control of Tibet to local elites and their attempts to create a monopoly not only on what constitutes Tibet, but on what constitutes the needs and desires of Tibetan[s]…by identifying them [women] as central to the government project of development. The method by which local instantiation of hegemony works is in the construction of a special racialized, class… (Chertow 2008: 146-147)  

While Chertow’s work focuses specifically on women in Tibet, the logic of her analysis is applicable to the position of Tibetan Buddhist meditators with respect to the attempts by the Dalai Lama and supporters of the exile community to maintain and use that exotic otherness which is associated with Tibet to further certain cultural and political ends. I want to suggest that the logic at work in two separate arenas – childbirth in Chertow’s example, and “the mind/brain/self” as I have written of them here – attempt to locate and control in the other what we consider the most intimate aspects of life, and so deserve critical assessment in light of those larger political, economic and epistemological projects.

I will consider the extension of this logic, under the banner of neuro, in the next chapter.

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70 For a further discussion of this kind of “internal colonialism,” see Hostetler, L. 2001.
VIII. NEURO: SELF-COLONIZATION?

Neuroscience may seem an unlikely ally of progressive social thought, but its truth effects could surprise us (241) ... those who advocate such strategies think of neurobiology not as destiny but opportunity (5).

– Rose and Abi-Rached, Neuro (2013)

A. On the mutual constitution of brain and world

In their 2013 book Neuro: The New Brain Sciences and the Management of the Mind, Nikolas Rose and Joelle Abi-Rached rightly observe “that a number of key mutations – conceptual, technological, economic, and biopolitical – have enabled the neurosciences to leave the enclosed space of the laboratory and gain traction in the world outside” (Rose and Abi-Rached 2013: 9). In this thesis, I have chosen to explore as well the ways in which the outside world has also entered the lab and the monastery. Having in previous chapters attended to the ways in which Buddhism is represented and deployed within the neurosciences, in this chapter I turn my attention to the discursive ways in which “the brain,” “mindfulness,” and the whole complex set of truth effects that stem from those representations and practices (which Rose and Abi-Rached dub neuro) are sustained.

Given that such representations were crafted and are sustained within very specific historical, political, social, and economic frameworks, I ask: how is it that particular representations are maintained and are deployed? What kind of distortions attend (or are enabled) when our conception of the human is framed in these limited terms? What kinds of distortions do such representations hope to avoid by framing the human within these same limits? What is at stake in
obscuring (insofar as they are presented as “objective”) the political and social dimensions of these representations? What is at stake in “psychologizing” (as we have seen in the case of Eastern religious experience in chapter seven) notions such as “well-being,” or “goodness”? Put somewhat differently: when “well-being” is defined as a psychological state belonging to an individual, what space is left for a critique of the political and social contexts within which “well-being” is produced and ultimately takes on meaning? How and why is it that viewing human society through the representations given by psychology and the neuro are so persuasive? What are the political, social, historical, and economic factors which sustain these representations as “truths” in our world and which they are designed to support?

Further, in our consideration of both the social and discursive use of the “brain” and of “mindfulness” we would do well to recall Lévi-Strauss’ observation that the anthropologist addresses her or himself to the “diversity of social forms,” spatially and temporally, and how that diversity is negotiated within and between groups (Lévi-Strauss 1966: 256). Thus the ethnographer’s focus is not on a given object of experience, but on the systems by which the “illusion sustained by the demands of social life” maintain and support an event or social relation as an object in the environment; an illusion woven of the actions, practices, and institutions external to the subject.

In this chapter I will also show how, in having internalized a way of thinking about the “brain” as “plastic” (representing it as the malleable target of “self-improvement”), we become convinced of ways of viewing ourselves and our problems as being the kind that require us to adjust ourselves rather than our circumstances. Thinking about ourselves and the world through such (ironically) brain- or self-focused representations makes plausible a host of “solutions” which are largely designed to make administrative and corporate systems more profitable by
making individuals more tractable. To use Victoria Pitts-Taylor’s coinage, the result is a “flex
subject” (Pitts-Taylor 2010), a person who has internalized a set of discourses about the self that
(more often than not) work to enact the power of a neo-liberal agenda. In other words, the
“plastic brain” has become the focus of an entrepreneurial ethic, where the individual is enjoined
to shape themselves according to a commodity logic of persons; an effort the success or failure
of which is the individual’s alone. It is this logic which should give us pause when considering
notions such as “well-being” and “basic goodness” that frame much of the Buddhism and
Science dialogues.

Rose and Abi-Rached argue that, in thinking about ourselves in neurological terms, we
have at our disposal a practical and no more ideologically loaded tool than any other for shaping
ourselves as agents in the world. Their argument reflects what the neuroscientific community
itself considers foundational in its optimistic view of the benefits which will accrue to society
through its research. Consequently, I will enter into an extended discussion of their thesis in
*Neuro* as a way of engaging the larger science and policy issues involved in what has come
before. I argue that their optimism is linked to a certain forgetfulness with respect to where much
of the psychological research underlying neuroscientific approaches comes from and the
domains in which such research is circulated. In this chapter, I will also recall some of the
historical and methodological dimensions which were omitted in Rose and Abi-Rached’s
analysis and provide a critical counterpoint to their optimism. All of this is significant with
respect to the representations of Buddhism I have been considering throughout, given that it is
within the neurosciences that the utility of meditative practice to shape a certain kind of self is
most fully argued.
Recall that one of the concerns animating both the hopes for and the disenchantment with science in the Victorian era was its tendency toward reductionism. Eliminating the “metaphysical” from science (ideas of essences, souls, selves, etc.) increased science’s methodological rigor but simultaneously invalidated (or called into question) religious or spiritual ways of being and thinking about the world. A similar concern can be found today, as some fear the growing focus on the “brain” as the source of who we are and what we can become is itself a form of reductionism. However, Rose and Abi-Rached do not see neuroreductionism (where the person becomes elided with or reduced to their brain in administrative and everyday discourse; cf. Bennet and Hacker 2003, Vidal 2009) as a serious concern. While they acknowledge that “each of the major conceptual shifts that led to the idea of the neuromolecular, plastic, and visible brain was intrinsically linked to the invention of new ways of intervening on the brain, making possible new ways of governing [i.e., shaping policy and disciplining one’s self] through, and in the name of, the brain” (Rose and Abi-Rached 2013: 9), they do not see a new threat, but rather a new opportunity; the advent of the neuro.

Rose and Abi-Rached conceive the neuro as a discourse through which and by which we understand ourselves (and humanity as such) through scientifically and technologically grounded research on the brain. As noted above, this optimistic view of brain research is not shared by all and some have seen in it a reductive project, an elimination of the self and of the person in favor of a more tractable “brainhood” (Vidal 2009). Such critics suggest that when science tells us the brain “feels,” “acts,” “thinks” in a certain way – in other words, when we ascribe agency to a part of the person and not the person themselves – we efface the historically and socially situated domains of human meaning, agency, and signification.
Countering this fear, Rose and Abi-Rached suggest that the “brain” is simply a new register of what was formerly accounted for by things like fate, god, spirits, magic, destiny, the unconsciouness. These entities represent a set of processes which influence us and which also are permeable to a range of practices (e.g., propitiation, prayer, sacrifice) by which we hope to influence those constructs or domains and ourselves and others. Rose and Abi-Rached argue that the brain has rather “become a rich register for narratives of self-fashioning. There are now many neurobiological technologies of self-hood, that is to say, practices that seek to mold, shape, reform, or improve aspects of one’s person – moods, emotions, cognition, desire – by acting on or through the brain” (Rose and Abi-Rached 2013: 221). The authors note the rising number of religious and philanthropic websites which promote ways in which one can affect the brain by acting on the mind (e.g., training attention, developing the capacity for visualization) and heart (e.g., meditation on compassion, cultivating feelings of love and kindness) and acting in society. From this they conclude “it is not that you have become your brain … but you can act on your brain … and in so acting you can improve yourself – not as a brain, but as a person” (Rose and Abi-Rached 2013: 222).

The claim is that by fashioning the brain, one fashions a self. This mediation – the substitution of an object of representation, “the brain”, for the contested notion of the “self” – is essential. This elusive narrative of mediation and representation is essential to the process of self-fashioning. One fashions oneself into something and as something; a certain kind of citizen, subject, man, woman, person. For Rose and Abi-Rached, the self — the “you” that occupies such an uneasy place in their discourse — is still envisioned as something other than the brain, but by “act[ing] on your brain” as an object one shapes a self, not just the brain. Here, the “self” and the “brain” are representations which are being employed to rhetorically suture the lack, the
insufficiency which representations (including “the brain”) as such must bear. Pointedly, they argue that:

[T]he wish to fashion the self is not a recent phenomenon, nor is the belief that the continuous work of improving the self is a virtuous exercise of freedom [emphasis added]. In the liberal societies of the West, from around the 1960s, at least for some of the middle classes and for many young people, such self-fashioning became no longer the privilege of the elite... the radical democratization of self-fashioning over the closing decades of the twentieth century has been taken into new territory with the spectacular diversification of authorities of the self in the age of the internet. What is novel ... is not the aspiration to shape, improve, fashion oneself, but the source of authority that underpins it, the technologies that it deploys, and the target or substance upon which it operates – the brain itself. [emphasis added] (Rose and Abi-Rached 2013: 224)

That individuals have, in shaping their brain, a means of adapting to and becoming “normal” is an optimism and style of argument present in many of the “neurocircles” through which I have moved over the course of my research, particularly at CHM. And as laudable as the lab’s stated goals may be, it seems the responsibility of the critic to remind us that similar intentions have historically effected great harm; e.g., speaking of psychiatric disorders as “brain illness” perhaps removed some of the stigma attached to it when conceived of as a defect of character, but created a new, essentialized view of psychiatric illness (Watters 2010). One of the responsibilities of the anthropologist to analyze such rhetoric and practices in the light of history and contemporary social formations lest they produce unintended consequences.

With respect to the neuro, consider that neuroscientific research into meditation evaluates the effects of meditation by monitoring changes (or stability) in an individual’s brain and behavior. Such research argues for the significance of those changes through an appeal to socially and historically situated standards of analysis. For example, meditation is said to help refine one’s powers of concentration and self-control. A justification proffered for why one should improve these capacities is that it would make them more productive at work, less
emotionally reactive, etc. For the analysis I am presenting here, it is crucial to note that the personality psychology and social neuroscience that underwrites mindfulness research are themselves disciplines which use psychological testing and fMRI to parse individual from cultural differences. These disciplines and practices are problematically embedded in the types of administrative representations I have discussed throughout, and particularly in chapters three and seven. Thus, when social neuroscience tries to define culturally appropriate experimental tasks designed to tease out “cultural” differences which have shaped and influenced the “cultural” functioning of a given population of brains, they are studying, in actuality, “differences” that are themselves but operationalized representations of a culture; e.g., that all Buddhists practice meditation and believe the world is “empty,” as discussed in chapter three (see also Chiao 2009 for further examples in the experimental context).

The specific issue here – and which tends to get lost in Rose and Abi-Rached’s discussion – is that a scientist often address the question of what is “appropriate” to her or his analysis without acknowledging the power and contingency of the representations of individuals or cultures that structure, and even predetermine, their analyses. In the case of neuroimaging, designing tasks require that statistical data from individual brains be “normalized” or standardized. In this very gesture we have moved from the individual to the general. In other words, individual differences are analyzed through normalized models akin to those discussed above in connection with Marey. Cultural differences are measured through a modeling procedure which has already gone through the step of normalizing individual brains into a population. And here it is important to bear in mind with Foucault that the general is not synonymous with “cultural,” but with populations, themselves defined by goals of multiple knowledge regimes (Foucault 2007). And it is these populations of data, extracted from
individual brains, which are compared to brain templates – generalized structural and functional models of the brain. It is on this that mapping is based and which is later used to define “cultural difference.”

Social neuroscientists will insist that approaching cultural differences in this way is important as it helps to ensure “…that stimuli used across cultural contexts carry similar meaning to both populations [asking representatives of more than one culture about the stimuli in question] is critical for ensuring that the psychological and neurological processes that one wished to study are indeed received by the subject properly” (Chiao et al. 2010: 358).

Importantly, such a statement allows no room for comment upon the disciplinary and cultural practices that govern how a given “stimulus” is fashioned or is judged as having been “received by the subject properly.” In other words, social neuroscience is either blind to – or opportunistic with respect to – the historical and political contingency of such generalized representations of culture. We cannot escape the fact that the practice of defining what is “shared” about a stimulus is to have already enacted a culturally, historically, and politically bound representation. And it is unclear what can these models can tell us about a “culture” or an “individual” when both are divorced from the historical and dynamic nexus of their insanitation. Below, I give an account of how such a research approach developed and how it has been used to underwrite a very specific conception of the human: the neo-liberal self.

B. Of surveys and models

Building on my critique of the way in which representations are used in social neuroscience, consider that many of the psychological models, terms, and survey instruments used in neuroscientific research have been drawn from an earlier era of empirical psychology; a
survey approach to the psychology of persons and which employed experimental conditions to test behavior and elicit self-report (e.g., subjective accounts of experimentally salient experiences or challenges). Overall, the emphasis was on problematizing human psychology in such a way that it became objectively measurable – as opposed to interpretive or dialogical – via instrumentation that could be used across populations. For example, empirical psychology gave rise to the standardized personality assessment measurement tools which are widely used today in business, governmental, and educational institutions. Standardized measuring procedures allow these institutions to make what they define as “objective” assessments and predictions about individual behavior and performance; e.g., the data which forms the basis of so-called scientific management of personnel and institutions. It also helps these institutions propagate a standard of behavior and thought linked to material gain and status, thereby providing incentives for people to shape and discipline themselves in ways that benefit these institutions (regardless of the effects on community forms of life or ways of being).

How did this approach to psychology and the human come about? Broadly speaking, within psychology, the early twentieth century turn from studying formal logic as a model of linguistic processes and thus of human cognition to the study of “natural language,” or everyday speech, led to the development of self-report and survey measures. However, defining exactly what “natural language” was proved problematic – recall Marey and colleagues’ use of the Pratisakhya. Deciding the proper means of studying “natural language” led to two distinct paths and methods of inquiry. With respect to the psychoanalytic and psychodynamic traditions (relational therapy, dialogical therapy, etc.), we saw an approach to language in which the elements of its use are thought to reflect or adumbrate relatively “deep” categories of perception and psychological processes. These are further revealed by patterns of behavior and aberrations
in language use. This approach is interpretative and dialogic and rarely employs standardized testing or measurement.

A quite different approach to “natural language” use sought to conceive of language in a way that would permit quantifiable analyses; a conception of language that eschews context and the individual, favoring an entity of the average (a model drawn from populations but taken to be representative of an “individual”). These psychologists focused rather on the individual words of a given language (as opposed to its syntactical features or the dynamics of interpersonal exchange) that are used to talk about, label, or otherwise characterize persons. The idea being that the most reliable or salient features or personality traits in a cultural system would be encoded in precise terms under which could be subsumed a variety of distinctions (try here to think of all the related words for describing a person’s temperament and how you would parse or categorize them). Evaluative terms (such as nice, quite nice, scoundrel, etc.) were then used as “stimuli” in experiments (Saucier 2003). These individual terms are understood as being reflective of personality traits and are taken to stand for an “essential feature” (Saucier and Goldberg 2001) of persons that has been captured as a single term in a language (McCrae and Costa 1996, Saucier and Goldberg 2001, Saucier 2003).

These lexical-trait models of psychology have generated much interest and debate over the past few decades. As noted above, its research findings have been incorporated into a number of testing and diagnostic procedures used in neuroscientific, clinical, political, educational, and business settings. In addition, they have had an influence on the lexicon of psychology itself.

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71 In this context, “stimuli” refers to the presentation of words to a test subject with the aim of eliciting a response, association, or evaluation.

72 This approach bears some resemblance to the eliminative and essentializing work involved in constructing representations which I have been discussing throughout.
However, different approaches within the Lexical-Trait line of inquiry have arisen, each acquiring its own appellation, such as: the “Big Five,” the “Five-Factor Model,” and “Lexical Indicators of Personality.” This related set of investigations all take as their fundamental premise that the most essential features of persons will become encoded in language as single terms with discrete meanings with respect to persons (Goldberg 1981). These terms relating fundamental features are therefore representative of, constitutive of, and causally reflective of the traits of persons. These traits are simultaneously (tautologically?) the categories and attributes of what and how we communicate about others and ourselves.

These trait categories were arrived at in the following way.

A dictionary of a given language is mined for words (nouns, adjectives or verbs) that are held by the researchers to be “person-descriptive” (Saucier and Goldberg 2001). The resulting number of words is usually in the several of thousands. Raters and judges fluent in the language being considered are then asked to reduce these thousands into a few hundred based on usability and native frequency. Study participants are then asked to rate the suitability of a given word to describe themselves and others. Based on the number of participants that used a particular term to describe themselves or others, either in response to certain questions or by selecting the most appropriate from a list of words and their antonyms (often weighted by evaluative adjectives), statistical methods are applied to ascertain which categories of response are the most prominent and internally reflective of other terms in the category (Goldberg 1981, Saucier 2003). The sets of data that reveal such cohesion are then labeled with respect to the terms prominent in them (e.g. “agreeableness”). When terms co-occur with statistically significant frequency within a category (“clustering”) that category is taken to be indicative of an essential feature of persons, i.e. a trait. It is in traits that individuals show variation, having more or less neuroticism, for
example: all people have “it,” they just vary in how they and others perceive that trait as
descriptive of them. Although some languages seem to more easily conform to trait categories of
lesser or greater than five with respect to a given part of speech (Saucier and Goldberg 2001), the
traits (the broad, universal categories through which each person can be described and assessed)
are generally taken to be: Openness, Conscientiousness, Extraversion, Agreeableness,
Neuroticism (some of the other possible candidates are Intelligence, Emotional Stability, and
Imagination).

The Lexical-Trait approach is rooted in the idea that the meaning of such words in their
discrete form (the representative categories which have been constructed through the procedure
outlined above) directly reflects and corresponds to the most important features of persons. To
take this position, one must assume a number of different things. The first is that it is meaningful
to speak of persons as being possessed of attributes or traits as though they actually inhere and
constitute the person. Second, the meaning of a single descriptor in natural language constitutes a
valid measurement which is capable of operating as a discrete unit of stimuli with respect to
those essential features of persons. Third, that the meaning of words is sufficient to the
description of persons, regardless of the elements of exchange that occur in natural language use
(tone, inflection, personal history, construal, agenda). These presuppositions lead us to question
the Lexical-Trait hypothesis in this way: if it is the case that a) the exclusion of context and
nuance cannot truly constitute a study of ordinary, natural language, then b) their claim to be
describing something about persons is, perforce, untenable. Further, the very idea of “natural
language” is itself a representation which reinforces our tendency to view the words which we
use to parse the world as having some link to a “natural” ontology as opposed to a shared, social
epistemology. Believing our words are somehow connected to things in themselves and in the
world, representations become mistakenly linked to cultural suppositions about knowable, objectifiable elements of the world, their historical and political character obscured or erased.

If such representations (under the rubric traits) are untenable, what about the other broad representational frameworks which theorists and scientists use to approach cultural difference? Consider that with respect to the “subject,” Western conceptions such as gender, self, citizen, and person have shaped the horizon of Western encounters with the “East;” from the discourse of gender which permeated the colonial projects of British India (Metcalf 1997) to the notions of person and property which underwrote debates on legal reform and the question of India’s formation into a nation (Dirks 2001, Risely 1969). Such notions, though highly contested and ambiguous within the West itself, were employed with a confidence they did not merit in administrative categories and disciplinary heuristics (e.g., racial and caste differences essentialized). Yet, in order to counter the effects of these categorizations and profit by others, subjects find themselves constrained to work within existing systems, which they thus inadvertently help to reify (Nandy 1988).

As an example of the kind of categories which subjects are constrained to work in and thus help to reify, consider that nearly all psychological and neuroscientific research, design, and interpretation is shaped by (historically recent and politically driven) Western notions of the self; i.e., a singular, self-aware, and self-interested, self-directed, responsible agent whose goals are shaped by biology and culture. And as the means of researching the “self” is rooted in the lexical-survey work discussed above, we should perhaps pause to interrogate the effects of such studies on individuals and communities who do not share the same conceptualization of the self or person. As Western scientists and researchers draw on Western formulations of the self and attempt to ascertain the personality or capacities of individuals in non-Western cultures they
reenact the systems of power out of which the West’s notions of the self and the methods appropriate to its study were crafted, thus imposing the disciplinary effects of their own working (Foucault 1980) on non-Western cultures.

Consider too that research is now being generated into what is referred to as the *self-style* of different cultures. Ostensibly, this is the set of traits and behaviors which a specific group of people encourages in its members and which a given culture recognizes as reflective of its “character;” a form of representation shot through with colonial imperatives. Further, research on such presentations are today designed and funded by marketing interests (cf. neuroeconomics, neuromarketing; see Chiao 2009). Much of this research is taken up by transnational corporations and administrative bodies to help shape management training, education, placement, and assessment. Thus the need to maintain effective conditions of production across cultures (i.e., insofar as they are represented and enact that representation) has led to a kind of selective pressure on the framing of research agendas. The kinds of people and citizenry studied are the kinds which international corporate interests and governments need to valorize in order to reproduce themselves – in terms of productivity, trustworthiness, discipline (Thompson 1967, Weber 1930). Efficient, selective hiring practices shape access to resources within populations and differentially reward the behaviors of persons most capable of taking on the traits required of a globally distributed management and trade network (Taylor 1985).

In response to these critiques, proponents of such research attempt to frame science as *primarily* a formal process – about which we postulate abstract rules of functioning – as opposed to a politically and economically fraught practice. And, in so far as science is taken to be an essentially formal process, researchers are empowered to objectively study anything, including such a culturally embedded representation as the “self-style” of cultures (and “selves” or
“subjects” generally), provided that proper methods and procedures are employed. In this way, researchers can study constructs which are problematic in other disciplines by an appeal to the scientific method whose rigor other disciplines cannot match. The claim is that method allows science to avoid the pitfalls which plagued earlier attempts at studying people and cultures using such constructs. Further, improvements in technology and methodology ostensibly help scientists avoid the kinds of unnuanced and ideologically motivated research on persons that characterized the colonial era. And, until recently, arguments about the formal structure of science have served to direct our attention away from the actual doing of science, where science is a social practice – the negations of power in a lab, the limits of resource, the provisional nature of the interpretive heuristic.

For example, Nandy (1988), addressing the early techno-scientific alliance within the emerging Indian state, directs us to be wary of the discursive employment of abstractions such as scientific temper, which places the scientist qua “scientist” outside the influence of economic and social pressures. This representation of the “scientist” is born of particular historical and political trajectories and has been employed both to legitimate and obscure the ways in which scientific research is not immune to a certain realpolitik. Nandy cautions us not to lose sight of the violence which often arises at those points where the needs and interests of pure science finds itself at odds with the needs and interests of the larger society in which it is embedded. For example, suffering now is legitimized in the name of a future possibility or imagined threat (see also Scott 1999.

Such a situation is complicated all the more in that since the costs of advanced research today greatly exceed what individual scientists or research groups can afford, states and transnational corporations alone have the resources necessary to support such endeavors.
Corporations and states advertise their support for scientific research as a way of justifying their ubiquity and continued existence, rhetorically advancing what they take to be the mode of progress unique to their participation in research. Such a contribution is also framed as a sacrifice for the nation that in turn is portrayed as contribution to humanity at large.\(^7^3\)

Here, I want to bring this consideration of science and representation to bear on our discussion of the neuro which opened this chapter. Having traced the history of one of its sources of data above, we can now ask whether it makes conceptual sense for neuroscience to engage a disciplinary heuristic such as “culture” as an object of research.

In what way is mindfulness sustained as “an object in the environment” for us, for the mindfulness movement, for neuroscientific researchers? In what way is this object supported by its connection with the representations of Buddhism I have considered throughout? In what follows, I seek to highlight once again the ethical frameworks at play in the idea of the neuro, the view that brain research affords us the least ideologically freighted means of shaping and improving our lives. How is a subject’s choice to work on themselves in the way in which it is specified by the rhetoric of neuro seen as a testimony to their own agency; i.e., compliance as freedom? Should we agree, as Rose and Abi-Rached argue, that science’s injunction to self-fashioning should not cause any qualitatively different alarm beyond that of previous injunctions? If so, what are we to make of the fact that Rose himself has noted elsewhere that scientific, state supported injunctions to self-fashioning are deeply problematic and present us with unique challenges for critique (Rose 2010)? Just as previous rights discourse was shaped by power (even as they claimed to derive from a value free domain), so too science purports to be

\(^7^3\) Nandy frames this issue with a discussion of Kennedy’s rhetoric around the space program in the context of the Cold War. I would argue that a rhetoric of the exploration of “interior space/states” functions in some measure as a proxy of a State’s legitimacy with respect to employment, financial, and well-being measures.
free of ideological and social frameworks and to be unique in its ability to present its information with minimal distortion.

As an instructive case, consider that the universalist notions by which human rights discourse is shaped are, in fact, neither universally recognized, nor are they universally applied to all groups in the same way (Lake 2010, Leve 2007, Rose and Novas 2005). Rather, discourse about rights is cognitively and administratively fractured around such “social facts” (Durkheim 1895) as gender, class, ethnicity, etc. and are in fact potentially problematic in contexts where individuals rely on other notions (e.g. karma) to contextualize suffering and narrate meaning (Adams 1998). I have shown in chapter three how, within the work of anthropology’s own disciplinary history, the bodies of others became the target of state action, identity construction, and colonial and neoliberal agendas (cf. concern over the physical/psychological hygiene of the worker; Ong 1999). Thus the language of health, rights, and compliance is deeply intertwined with policies and practices which serve as much to increase desired health outcomes as to adversely affect them; to shape notions and forms of subjectivity as to destroy them. To get greater theoretical purchase on such dynamics, they may be profitably viewed through the interplay of such Foucauldian concepts as governmentality, biopolitics, and technologies of the self.

C. Internalizing Perspectives

For Foucault, these three terms are intimately linked. Governmentality is both the governing strategy which parses civil domains into discrete populations for the purposes of

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74 As we have seen, since social facts are sustained by the cultural conventions and the ideological framework of language, they can become invested with power in such a way that their political, contingent, and historical character becomes obscured and they are mistaken for “natural” objects.
management, synchronization, and control and the enactment and internalization of those
governing strategies. This doubling lends the whole a self-perpetuating legitimacy (Foucault
2007). What comes to be framed under the notion of the biopolitical are the disciplinary,
rhetorical, and material strategies which situate the bases of such divisions, managements and
controls at the level of biological “nature.” Consequently, a transformation in discourse occurs
away from rights (good or bad) to that of truth (effective/ineffective; efficient/inefficient). Or
rather, the effective or efficient is taken to be synonymous with the good (Williams 1998).

These several facets of government and power, in turn, are instrumental in shaping a
“biopolitical body” (Agamben 1998, Foucault 1988); a body that takes the “good life” said to be
possible within a given regime to be a reflection of its own desires and in comparison with which
“mere life” is insufficient. Consequently, those processes and demands of life (or one’s personal
character) which threaten the individual’s ability to conform to the “good life” are variously
framed (by the individual and the state) as pathological, alien, or animal (Agamben 1998).

One example of the ways in which these elements are intertwined is the manner in which
AIDS is deployed to shape our understanding of government, politics, economics, and the role of
human life within their working as systems (Comaroff 2007). The two axes around which this
new understanding is taking shape are the question of access to life saving/prolonging
medication and personal/regional responsibility. The first axis forces us to reexamine intellectual
property, proprietary drug patents, and the role of government as facilitator of global business, as
opposed to being an instrument which helps to protect the populace from the excesses of such
interests. This system has been constructed in such a way that the cost of any particular life need
not factor in (Foucault 2008). Along the other axis, the question of the intractability of human
nature, or the intractability of nature itself, becomes representatively embodied in and projected
onto geographical regions (equatorial and Southern Africa in Comaroff’s example, Tibet as imaginary here).

*Technologies of the self* are the social and personal practices through which a subjectivity is formed; practices in which the individual internalizes and sees as the effects of his or her own agency) the strictures and disciplines which must obtain in him or herself for a certain governance-mentality to cohere (Foucault 1988, Foucault 2010). However, such practices (and failures to adequately implement or internalize them) are not without personalistic or moral valence (Conrad 2007, Dakwar and Levin 2009, Good 2006). In an attempt to understand themselves, individuals internalize the social order, itself informed by policies and practices stemming from a system of rule formed in response to a certain logic of life. In this way, it functions as a mechanism by which a certain social hegemony is achieved (Gramsci 1972).

Foucault also perceives a further elision and historical oscillation between the language and practices attendant upon *rights* and *truth* discourse (Foucault 2001). He notes that a subject is considered *modern* in so far as it has taken the language of *truth* (efficacy or inefficacy) as the discourse of legitimacy, facilitating the effects of governmentality over himself and others. Given the global asymmetry which prevails in the access and distribution of life’s essentials and medical care, the logic of biopolitics indexes a host of complex relations in which health inflected governmentality supports a very particular type of structural violence (recall the problem of AIDS discussed above). Such imbalances are made plausible through state discourse requiring the elimination of undesirable elements of the population in order to reduce the risk of threat to the body politic as a whole (Foucault 2008).

Thus, to internalize the state’s discourse is in some sense to bear witness to having been prepared, shaped by the effects of power to internalize its objects. Today the very technologies
that make possible the types of analyses, surveillance, and control linked to the modern state
have been successfully marketed to large segments of the population (Brennan et al. 2010).
Computers, pagers, cell phones, and other devices can be linked up with satellite based networks
that provide real-time feedback of one’s location, physiology, and activity patterns as it records
that information for its own marketing and demographic purposes (Abbas and Dervin 2009).
Even in the wake of the long history of state sponsored eugenic practices, this linking of
surveillance to the consumer demand for goods has been a remarkably successful new method by
which corporations and states get individuals to internalize, finance, and even valorize the
mechanisms of their own control.

But how are such internalizations and valorizations sustained? Building on Foucault’s
analyses – and in a spirit radically different than that which he evinced in Neuro – Nikolas Rose
has introduced the notion of biological citizenship (Rose 2011, Rose and Novas 2005).
Biological citizenship is intended to help us think the about the interface – mediated by
biological metaphors of health – between the way in which states and social apparatuses
administratively frame those populations which they mean to regulate and the ways in which
individuals come to understand themselves in relation to those enactments and claim certain
rights. Rose (2011) offers a discussion of this notion in relation to the Chinese idiom of “quality”
or suzhi.

In its concern to shape the nation as a manifestation or extension of Han nationality,
China frames the issue of minority groups within its borders in terms of progress and
development. Seeking to guarantee the health of the nation, China imposed a one-child policy
hoping to spur economic growth. Given that many minorities live in rural agricultural areas, the
policy was variably or little enforced among them (Adams 2005). However, this in turn raised
the concern of potentially “diluting” the numerical superiority of the Han nationality with “backward children,” heightening anxiety China already felt about the “quality” of the nation’s population and its position as a global competitor.

But as internal reforms and privatization increased, a middle class was formed. The term *suzhi* began to be used to mark those who aspired to and were willing to work for those things that would speak to Chinese superiority and taste. Accordingly, a parent’s concern over the opportunities, well-being, and educational advantage of their only child, and their willingness to plan and sacrifice for it, was taken to be a sign or species of *suzhi*. In caring about the quality of one’s child and family, one increased the quality of the nation. Technological innovations and increased privatization of medical facilities gave the middle class growing access to assisted reproductive technologies and genetic screening of embryos for disease, gender, and disability.75 Rose sees these developments in the context of larger “neo-liberal” transitions, where it is the individual’s responsibility to maintain themselves in an “economy of hope” and participate in their duty to be and to generate healthy members of society (Zhang 2011).

Thus, in introducing the term “biopolitical citizenship,” Rose asks us to be vigilant about the dangers attendant on the internalization of state teleological projects mediated by notions of hygiene since they reinforce the idea that *the individual is solely* responsible for their or their child’s well-being. “Biopolitical citizenship” indexes a way of thinking about ourselves and acting in relation to the state which foregrounds the citizen’s responsibility to the state and obscures the state’s responsibilities to its citizens. Such a warning seems at odds with the view which Rose articulates with Abi-Rached in *Neuro*. Namely, it is hard to see how what he

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75 It could be argued that a similar trend is occurring in the growing field of neuroscience. Alongside the “mindfulness” rhetoric considered in this dissertation, brain imaging studies in China and Britain are being used to shape “proactive” policy, treatment, and surveillance measures; Rose 2010.
valorizes as the “neuro” is not species of “biopolitical citizenship.” In both “neuro” and suzhi, the injunction towards “well-being” is focused on persuading individuals to discipline themselves toward transformation; the practices, the images, the “rigorousness” of scientific research (on childrearing or meditation) are all said to be guaranteed by the hermetically sealed analyses undertaken in scientific spaces. The knowledge produced by scientific and administrative efforts to shape individuals according to state and corporate ends emphasizes the need for the individual to discipline themselves to work within the system. In other words, the focus is not on somehow transforming the political, social, and economic structure such that it becomes just, equitable, and minimally impactful. Rather, the individual must adapt to the systems which support the state. By encouraging a science supported rhetoric which claims that individuals must attend to their “brains” through specific practices designed to increase their (its?) emotional resilience, to capitalize on the plasticity of their brain, individuals internalize a conception of their relation to society through a very specific set of practices (e.g., meditation) designed to shape a very specific object (“the brain”) and subjectivity. This technologization of the self is mediated by a conception of the individual in relation to the state (the biopolitical); a relation which effects an internalization and valorization of the system's administrative control (governmentality).

D. Mapping Plastic Interiors

Recall Rose and Abi-Rached’s contention that the project of neuro is qualitatively similar to earlier projects of self-fashioning, and so offers no unique cause of concern. I am prompted by their claim to consider in this section an historical analogy, one that helps frame some of the issues that may be at play in global neuroimaging collaborations and their role in nation-
building. Their position seems difficult to maintain given what I have discussed in the previous section. Further complicating the matter is precisely the “plasticity” of the brain, the malleability of it, which makes it difficult to argue for limits on what is being expected or asked of the individual in terms of “self-fashioning” in relation to the state.

Mary Louise Pratt, in *Imperial Eyes: Travel Writing and Transculturation*, provides an account of “Europe’s first major international scientific expedition” (Pratt 1992: 15), in 1735, to determine the exact shape of the earth (Pratt 1992). The several nations involved were interested as much in the race to claim the prestige associated with the discovery of “truth” as they were to ingratiate themselves in various ways to peoples met along the way, gaining thereby the rights to explore the mineral riches of the interiors. The project itself never achieved its goal as the question was resolved by others much earlier. However, it did help to define science as an international *topos*. “Science” became a literal “system of truth” (Foucault 1975: 23) wherein economic interests could be paradoxically advanced by overcoming nationalist conflicts in the name of an internationally sanctioned domain of activity and discourse. The project of mapping itself enacts a colonial representation of knowledge, supposing that a graphic display could capture the characteristics of a region for exploit and control (Hostetler 2001, Thongchai 1995, Yee 1992)

The 1735 Expedition had a common goal, a clear project, around which agendas could be organized and read. Can the same be said of the neurosciences which focus on meditation? I want to suggest that international collaborations and interdisciplinary ventures in the neurosciences, increasingly rallied around the effort to provide a complete structural and functional maps of the brain and its connections are no less fraught with intrigue, agendas and imperial romanticization of the “interior.” Importantly, research into meditation both contributes
to and draws on such research. To “map the brain” is to fashion a representation of “the brain” in such a way that it stands for all brains. “Mapping” is part of a knowledge production system embedded in a contingent political milieu. Through that knowledge system, not only is “the brain” mapped and made the object of power, but the “brain” of each individual is claimed to be as well.

Talk about the complex networks of the brain and its circuits are terms still used by scientists today, largely under sway of the metaphor of the brain as computer. Circuit language functions easily alongside talk of the brain as a tangled mass of flora waiting to be named and catalogued by intrepid explorers. It is as though this “diagrammatic” metaphor for speaking about the brain simultaneously objectifies and obscures the deeper colonial cartographic resonances born by the “mapping” metaphor. Speaking of the importance of international collaboration, one group – whose work focuses on functional maps of the brain – lays out its position this way: “we believe that neuroscience is ready for a large-scale functional mapping of the entire brain circuitry [a process that would require the cooperation of research institutions around the world], and that such mapping will directly address the emergent level of function, shining much-needed light into the ‘impenetrable jungles’ of the brain” (Alivisatos et al. 2012: 974). The authors acknowledge that their statement is itself a reference to the pioneering neuroscientist Ramon Cajal (1852-1934) who meticulously documented the separate species or taxa of neuronal types in the hopes of providing aide, he said, to those researchers who had previously become lost in those very jungles. Consider too the language of Sebastian Seung who, in his 2012 book Connectome: How the Brain’s Wiring Makes Us Who We Are, uses geographic process to talk about how repetition strengthens memory: “every successive recollection of the sequence will further strengthen the connections of the chain by... plasticity. This is analogous to
the way that the flowing water of a stream slowly deepens its bed, making it even easier for the water to flow” (Seung 2012: 84). Earlier in the book, he uses the same metaphor, elaborating on William James’s “stream of consciousness” to speak about the formation of personal identity:

> Over a long period of time, in the same way that the water of the stream slowly shapes the bed, new activity changes the connectome. The two notions of the self – as both the fast-moving, ever-changing stream and the more stable but slowly transforming streambed – are thus inextricably linked. This book is about the self as the stream bed… (Seung 2012: xix)

The 1735 Expedition sought to ascertain the shape of the earth. Such knowledge promised to facilitate already developing technologies and improvements in trade via ever more accurate cartographic productions and the establishment of a globally integrated chronometry. So, too, international efforts to determine the localized systems and functional connections of the brain allow nations to claim a certain prestige or social capital on the international stage all the while participating in research which they hope will unfold the conditions of possibility of the brain as “plastic” entity. Here “plasticity” is synonymous with exploit; just as “the brain” can be shaped in ways that befit larger social projects, so too can land and place be reworked in the name of the larger systems which work to effect the change. “Peoples” of a place, through their “brains,” can be shaped in ways which support global enterprise.

This “plasticity” is doubly valenced throughout the literature. In neuroimaging studies which purport to examine the developing brain, the social brain, and the industrious brain commerce and education,76 “plasticity” is used to mark the potential of the individual. “Plasticity” promises to release him or her from the deterministic connotations of the language of “mapping,” making one sensitive to the ability of the brain to be effected by its environment and

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76 Perhaps an analysis of the various types of “brains” which are emerging (as supported by specific discourses and injunctions) could be modeled on Schepers-Hughes and Lock’s (1987) idea of the three bodies.
the “brain’s” thinking about itself. Mapping, on the other hand, suggests the brain as a structure is largely fixed, knowable, and exploitable. However, it allows one to rhetorically evade the complex problem of neural processes and networks which are greater indicators of brain function than discrete structural models.

But how is this double valance sustained amidst this new techno-chorography? We must examine the interface between the way in which states and social apparatuses conceptualize those populations which they mean to regulate and the ways in which individuals come to understand themselves in relation to those enactments in order to claim certain rights; a process which is itself mediated by biological metaphors of health. “The brain” as a heavily funded and valorized object, functions as a kind of cultural screen on which and through which the “impenetrable jungles” of subjectivity are tamed and a civilized, healthy, modern subject who recognizes the truth-effects of “efficiency” is fashioned.

Victoria Pitts-Taylor (2010: 647), in her analysis of the ways in which the rhetoric of discipline and “plasticity” reinforces neoliberal conceptions of the self, coins the term “flex subject” to talk about these registers of plasticity and reliance. Her and Catherine Malabou’s (2008) concerns about the way in which the language of plasticity and flexibility parallel neoliberal and global capitalist rhetorics remind us to remain attentive to the type of person being envisioned as produced within and through anything with the imprimatur neuro affixed to it. As I noted in my section on Davidson’s lab, this becomes important to consider given that the CHM is now actively partnering with companies and businesses who have a stake in the outcomes of the research being conducted on well-being and efficiency. Such partnering with business has become de rigeur for many research institutions – both public and private – given the radical funding cuts to higher education and the sciences and the reluctance of the respective sectors to
institute sweeping reform. However, it should be the cause of some concern when such institutions claim objectivity when authoring recommendations for daily life and society and when they speak \textit{ex cathedra}, as it were, on the ethical and moral basis of the \textit{human} as such.\footnote{Note, however, it is an arrangement with which Tibetan Buddhist monasticism, historically supported by traders and the business elite, are quite comfortable; a relationship which is traditionally mutually reinforcing. See Goldstein 1989: 35. For the Indian Buddhist context, Schopen 2007, Ray 1994.}

This should also alert us to another dimension in which “plasticity” is employed; namely, as an index of consumer malleability. Research on modeling, predicting, and influencing consumer choice is also allied with the recent efforts in social and cultural neuroscience which builds heavily on the earlier cross-cultural psychological research which helped to structure human resource departments and hiring practices, through the use of personality assessments, team building scenarios, etc., in domestic and international companies. Such tests, in other words, functioned as a kind of filter and “selective pressure;” individuals from cultures other than those in which the tests were designed could be hired only to the extent that they had disciplined themselves to think and feel a certain way. Today, research on such surveys and filters continues and is increasingly used by corporations to identify those culturally selected-for traits which would facilitate peaceful coexistence (in society and the workplace) or lead to a breakdown or disruption in, say, a work team. For example, an “individualistic self-style” will be adaptively advantageous in different a cultural and historical (or corporate) milieu than a “co-operativist self-style.” Researchers in this field believe that – by knowing which “self-style” an ethnic or minority culture is working with and knowing what kind of self-style is to be favored by business and government imposed changes in economic, industry, and education sectors – such knowledge will make for smoother transitions and a more prosperous and integrated community, even helping to diffuse inter-ethnic conflict (Chiao 2010). Such is their contention.
However, we have seen how deeply problematic are such representations and how much a legacy of power and control structures the West’s thinking about culture in this way (viz. that they have a certain essence or “style”). While such research has even gone so far as to label itself “neuro-anthropology,” the notion of culture which sutures its research problems was long ago abandoned by “non-neuro” anthropologists. Additionally, in being uncritical participants in projects of globalization and control, social neuroscience reinscribes colonial era representations in the service of power and control.

I want to now consider a few instances from the field. The first draws from the University of Pennsylvania’s Neuroscience Bootcamp that I attended as a participant observer in 2013. The Bootcamp is a week-and-a-half intensive covering everything from single neuron action potential recording and summation methods to the ethical and policy issues related to the use of neuroscience in courtrooms and corporate settings. Of the 44 attendees, 20 were directly involved in the legal system – attorneys, judges, mediators. The only other group to rival that number came from the corporate and personal management sector: 16. The remaining number included school counselors, three philosophers, one sociologist, one psychologist, one activist, and an anthropologist (the author). The attorneys were primarily from states which still gave out the death-penalty. Their focus was on understanding the science behind the fMRI images and to use that knowledge to help mitigate the possibility of death-sentencing for their clients. Many were actively working to help bring about the abolition of the death-penalty in their state. Their hope was that by showing their client had an organic dysfunction, by providing a compelling case for the attenuation of responsibility owing to a malfunctioning brain, that institutionalization or life imprisonment would be the only legitimate options left before a jury. In this instance, the language of brain “maps” allowed lawyers to argue that correlated and
objectively locatable regions of dysfunction in their client were immutable features, determinants of action insulated from any possible influence outside its regional activity. Note that the language of region also encompasses process here; these areas are largely functionally defined. Thus, the terminology of mapping simplifies and obscures the complexity of what is being discussed and so works to reinforce an already problematic representation.

By contrast, those who represented the corporate sector (life coaches, personnel managers, human resource supervisors) repeatedly pushed against the determinism implied by a language of “maps.” Structure talk makes possible projects like “mapping;” activation licenses “plasticity.” Repeatedly, the representatives from the corporate sector asked presenters to return to the theme of “plasticity.” What, they asked, can I take back to my client and say “do this, and your brain will improve/change/rewire itself to make you a better whatever-it-is-you-want-to-be”? How long does it take to “rewire” the brain? Can we speed that process up? Once it is reformed, does it stay that way? If not, how long does it take to return to its former shape (here “plasticity” an index of both anxiety and promise)? How can I help my clients capitalize on the brain’s “plasticity” in their marketing campaigns or training sessions?

Thus, “maps” and “plasticity” were both employed as keywords to talk about the brain, but were valued and valenced differently by different groups. “Maps” implied limits to growth and potential and change for the corporate sector. “Plasticity” was heard by lawyers as a word that let back in a discussion of personal responsibility and so threatened their project. However, both groups were keen to know both the structure of the brain and the ways in which it could or could not be influenced. Thus, each group took the brain to be an object of the kind whose “interiority” (its working, its potential) is, in principle, wholly externalizable (objectifiable) and reconfigurable. Further, since from the empirical research perspective a “person” is but a
convention of misplaced concreteness for the workings of a brain, reference to social and interpersonal processes were at best ways of bringing into prominence the physiological determinants of the “brain.”

Recall that within neoliberal discourse, the valued individual is one which is supposed to be flexible and at ease with the pace and magnitude of all changes in the corporate and social sector. Such an individual is said to exhibit agency precisely to the degree to which she or he can adapt and shape their mood to the relentless pace of change, welcoming change and opportunity. In such a view, the narrative focus offered by the neoliberal conception of the subject is one which downplays the idea of a subject bound in alienation on the Procrustean bed of modernity in favor of a Protean self who, though in the grip of an intolerable circumstance, enacts its agency insofar as that subject makes the decision to discipline itself to ceaseless adaptation. Less spoken of is how this commitment is driven by and masks a fear that one’s lack of activity will reveal to one’s own emptiness. This notion of the individual can be seen in apologists across the spectrum, from Bhagwati (2007) to Sassen (2008), each valorizing a certain type of subject in a Panglossian effort that masquerades as pragmatics, extoling the prevailing economic system and to put forward a conception of the type of person best suited to it.

But such a strategy only works for a time and does little to address the larger conditions which relentlessly reinscribe the conditions of alienation. Such a strategy reduces the human to that which is destined to prepare itself for anything so as not to impede production or efficiency in their own life, and thus, the system. It is a subject governed by and as risk (Foucault 2007). Within the domain of “mindfulness” research, production and efficiency have become semantically and contextually grouped with wisdom, love, compassion. Even now, among some of my informants in the lab, there is concern that “mind wandering” is being posed as a problem
certainly for all kinds of labor activities – for which the solution is training in mindful attention. What is being eclipsed is the leisure necessary for generation, creation, and a different conception of individual “well-being” (Balrd et al. 2012, Mrazek et al. 2013). Perhaps the idea is that economic and social forces will now supply the creative impetus; a misguided policy structured by the view that it is always with those who can adapt that innovations arise.

Thus, because the link between the language of neuro and of the market and of labor is not just accidental, we need to continue to inquire and be vigilant about its effects. And as we have seen throughout, part of the effect and power of the neuro is our expectation and desire for science to give us the answer to how we are to structure our lives in a way that makes them immune to the confounds presented to us by other systems of knowledge we have appealed to; e.g., to look to science rather than to religion (a very problematic distinction in the scientific study of meditation) for answers and validation.

But science in the service of all things neuro is not just a method. Like all science, it is a praxis and thus also a judgment. It shapes its evaluation of data according to social imperatives, the facts which are seen through a social lens. It is cognizant of the market and this must make us cautious as we embark on shaping things in the name of a knowledge which is answerable to power configurations which we have been historically reticent to acknowledge in the domain of science.

I follow Rose and Abi-Rached in acknowledging that we transform ourselves in working to understand ourselves, but pause to ask: whence this motivation and what are the power effects which are made visible in trying to understand ourselves in certain ways and not others?

The language of “self-improvement” makes it such that to not feel this imperative in oneself is to neglect the world and others. The moral choice of the individual is thus bound with
a citizen’s imperative. In this way, to not work to improve oneself is to turn one’s back on society; a form of self- and other- neglect which can readily be medicalized. Thus, the plasticity of the brain brings an obligation. The potential for something to be done brings forth questions of what should be done, what limits to draw, what questions to consider when, and by whom (Malabou 2008). Even if we can take an action, should we? Must we? All of these questions and decisions stand witness to the mutual permeability of the individual and the social, and the disciplinary-specific knowledge which bring us the news of plasticity is generated by the same sciences we look to for guidance in our decision. This is so in part because, in communicating plasticity, a language is used which links the projects of world transformation and individual transformation. And this what we increasingly clamor for: technical solutions to personal problems. The hope for such solutions is carried along by, and allows us to evade, the social and political responsibilities and dimensions of the troubles and difficulties which plague ourselves and others. In choosing to psychologize and not politicize “well-being,” for example, “well-being” becomes a problem localized within an individual and the responsibility for dealing with it becomes that of the individual. This logic is wholly consonant with a neo-liberal and atomistic conception of the self and, as such, even plays into misrepresentations about the amount of agency and control one has in one’s life. Such a view may, for example, maintain that if one loses their job, the salient problem is the way in which one “chooses” to handle that situation. Does one get angry, depressed, distracted, rebellious, unruly, or indignant? Or does one temper their reaction and “adapt”? To not adapt is to hold on to a former (and necessarily false) conception of one’s self; to resist the “plastic” drive to adapt. And since “the brain” is “plastic,” to gain “well-being” one must simply discipline one’s self to a new mode of being in the world.
This is not to say that all limits and forms of self-control are simply effects of state or corporate power; part of maturing as a person is recognizing that one is not omnipotent, that there are limits imposed by one’s abilities, time, and the workings of the world. If taking time to meditate helps reconcile oneself to that fact and helps direct one’s energies toward changing and doing what can be and needs to be done, so be it. But, having generated the critique outlined above, we can perhaps now hear what is amiss in the neuro, as when Rose and Abi-Rached (2013: 224) write: “…the wish to fashion the self is not a recent phenomenon, nor is the belief that the continuous work of improving the self is a virtuous exercise of freedom [emphasis added].” It is their characterization of the “continuous work of improving the self” as a kind of freedom which should give us pause.78 For, we have seen how historically contingent, politically embedded, and epistemologically freighted are our scientific notions of the self. Furthermore, I would argue that the “continuous work” suggested here is quite a recent notion, and that the more “virtuous exercise of freedom” was, rather, in the very ethical systems Rose and Abi-Rached seem to be appealing to, a working for the social good, the community or the family. And, to be sure, proponents of meditation would argue that “improving” oneself is itself a (traditionally and scientifically) proven way to ensure that one acts in a way to effect local and global social change. However, in Rose and Abi-Rached’s formulation, a specific form of this position emerges: the attempt to valorize what is already an assumption embedded in the neo-liberal conception of the self. “Improving” normalizes the endless task of adapting to a system of power, as opposed to transforming or challenging that system.

78 Consider E. P. Thompson’s 1967 article referenced earlier in this chapter, in which the industrial injunction to “improve” was considered conformist and oppressive. Virtue and freedom were not corollary functions of a “continuous work” to improve the self, but were to be seen in an individual’s independence from such injunctions and schedules. My thanks to Mark Liechty for discussions on this point.
In learning the language of the brain and plasticity, in learning to think of ourselves within the *neuro*, for better or worse we open ourselves to the plausibility of contingent technical solutions, to disciplinary power, to a governmentality which itself is framed by questions of risk and efficiency, an ethos of neoliberalism. In brief, biopower: the way in which disciplinary knowledge and state power are indissociable effects of each other, working to shape life in so far as it provides the models, images, metaphors, and narratives which enable us to understand and create meaning within a certain ideological frame.
IX. CONCLUSION

We have had to wait until the middle of this century for the crossing of long separated paths: that which arrives at the physical world by detour of communication, and that which as we have recently come to know, arrives at the world of communication by the detour of the physical. The entire process of human knowledge thus assumes the character of a closed system. And we therefore remain faithful to the inspiration of the savage mind when we recognize that, by an encounter it alone could have foreseen, the scientific spirit in its most modern form will have contributed to legitimate the principles of savage thought and to re-establish it in its rightful place.

-Lévi-Strauss 1966: 269

[1]In order to understand the productivity of colonial power it is crucial to construct its regime of “truth,” not to subject its representations to a normalizing judgment. Only then does it become possible to understand the productive ambivalence of the object of colonial discourse – that “otherness” which is at once an object of desire and derision, an articulation of difference contained within the fantasy of origin and identity. What such a reading reveals are the boundaries of colonial discourse and it enables a transgression of these limits from the space of that otherness.

-Bhabha 1991b: 67

Throughout this dissertation I have considered issues of representation and localization, and imaginaries reified through narratives of agency and deployments of power. In particular, I have considered the ways in which the West has responded to perceived or imagined insufficiencies in the epistemological, administrative, and technological systems in which it operates. It does this by projecting representations onto peoples and into regions where and in whom the solution the West longs for imaginatively lies. A domain where the disclosing of the interiority of the self coincides with the unveiling of the extremity and mystery of the East. It invests the other with certain redemptive qualities which the West is reluctant or unable to authorize within itself. I have shown this logic at work in two radically different domains – neuroscience and Tibetan Buddhism. It has been a complicated history in which – to draw on the
epigraph by Lévi-Strauss above – the West analyses the “Eastern mind” using scientific frameworks and congratulates itself insofar as the “East” confirms the truths the West has arrived at, ostensibly free of all of the “Eastern” savagery and superstition and religion.

I have also explored how the deployment of biometric technologies and the logic of the biopolitical facilitates the management of subjects in colonial and contemporary contexts. Such systems formed the historical backdrop supporting the construction of representations which were formed by extracting individuals from the social and historical contexts in which they are embedded. Today these representations get their force insofar as they intersect with the idea of an “image-able” brain. The West has constructed a represented the “brain” for itself which indexes the most intimate and essential part of ourselves as persons. To effect a change on the “brain” means we simultaneously transform ourselves at the most fundamental level. The techniques of such transformation speak of the brain as a seemingly detachable part of “ourselves” and yet the most intimate. The “brain” is itself a representation reified; a recursive prosthesis working to effect itself.

From the perspective of my own field encounters, I have also considered the work of several scholars on the development of Buddhism as a disciplinary construct and as a cultural imaginary. With a logic apparently the inverse to the subject and its relation the brain, the “East” became transposed from the geographic to the internal; the esoteric wisdom safeguarded in “Tibet” was represented as the realization of what is psychically most fundamental to all humanity (viz. “basic goodness”). The “journey East” and the “journey inward” each came to be metaphors for the other.

This tension and longing between the out there (the “East”) and in here (the “brain,” the “self”) – echoes the troubled imaginary and geographic loci which Almond describes as having
shaped the Victorian construction of Buddhism into a reflexive remedy for the instrumental alienation unfolding in that era. It also structures the present encounter between Tibetan Buddhism and the *neuro* as considered in the previous chapter. What representations of both the “brain” and “Tibet” share is the designation *terra incognita*, enchanted topoi wherein resides the “truth” about who we are. Today these are the territories which modern science works to expose, map, and shape for specific ends. In either case, once exposed, each must be maintained, for its “own good” and to safeguard the “truth” they contained but which could not be instrumentally framed or known as truth until mapped by science.

In this respect, we have seen how at least one research domain within the neurosciences has employed what it defines as a Buddhist technique (meditation) to effect, not (ostensibly) a moral transformation of the soul or person, but a reconfiguration of the brain itself. Such a position is supported in its articulation by the social, economic, and ideological imperatives that constrain science to work in the service of the supposedly impartial and objective goals of utility and efficiency. Yet these notions are quite value-laden and morally inflected (viz. “well-being,” “happiness,” “adaptive”). Importantly, such claims to objectivity and utility are sustained by a relationship of patronage: the West needs Buddhism to supply the parameters of an ethic which it fears has been lost and undercut by its struggle for “progress” in the world; a struggle which the capitalist and neoliberal project commit us to. To shield itself from negative effects and the moral bankruptcy of its notion of the “good life,” the West craves re-enchantment. The West looks desperately towards the horizon, expectant of the arrival of a priest, a healer. Secularizing meditation for objective study may be an attempt at “auto-re-enchantment” but one which, nevertheless, seems unable to sustain itself without an *Other*. 
This relationship, this need, was perhaps inscribed within the conception of the subject which was formed at the dawn of modernity. Mark Liechty (in press) has described this in terms of a Western response to the modern conception of the self newly conceived of as an instrumental, discrete, and independent agent. Others have noted that modernity so problematizes the subject because modernity has

two sides: material progress, but also the manipulation of subjectivity and individual choices, which subverts the achievements and spiritual basis of modernity itself. In Weber’s usage, “modernity” contains the idea of “progress” through production and accumulation of wealth and the mastery of nature (that is, “social modernity”), as well as the idea of emancipating the rational subject. The nature of specifically modern culture is to subvert not only the traditional or pre-modern, but also those accomplishments which come to characterize “modern culture” itself … [and these aspects of modernity] conflict with the other: the conditions for subjective freedom run up against the conditions for objective control. (Scaff 2000: 103)

Thus, as modernity carried with it a rejection of the religious beliefs and structures which would potentially help to frame both subject and subjectivity in terms which were not merely reductive, some individuals sought re-enchantment by embracing the “pre-modern” and the occult. In looking East, the Western counterculture sought out what it had felt it had lost. It did not seek to embrace the “East” as such, but only its representation of the East, fashioned in such a way as to hold the promise of what the West had imagined itself to have sacrificed to progress and civilization. As we have seen earlier, this enabled occultists and Theosophists to tell a story of science being in the service of a world sacralizing project. And though the West itself had formerly failed to recognize it, it alone held the key.

Relatedly, in his article *The Global Occult*, Nile Green observes that in the early modern period some sought to cope with the effects of alienation through an involvement with the occult. “At the heart of the project lay a newly imagined self – an occult subjectivity formulated within
the context of secularized modes of inquiry but dedicated to a spiritualized understanding of the ‘I’” (Green 2015: 387). In earlier chapters, I have outlined some of the ways in which these formulations were at work in domains as disparate as Theosophy and experimental science. Alongside these narratives and projects, European colonial enterprises had to manage some unanticipated effects, such as anti-colonial rebellions in the East, increased numbers of Eastern immigrants in European cities, and a growing amount of resistance at home and abroad. Thus, some Europeans were provoked by a growing anxiety to imagine a new, perhaps reparative, framing of their encounter with the East, though not entirely rethinking their strategies of domination and oppression. In this context (quoting Gauri Viswananthan), Green emphasizes that the “…otherworldliness of the occult offered alternative possibilities for imagining colonial relations outside a hierarchical framework” in which the presentations of Indians as “masters” meant that “in the practice of the occult the relations of domination and subordination were necessarily inverted” (Green 2015: 388). As I will argue below, something akin to this dynamic is still at work. But the moment has become more complex, as Tibetan Buddhism and Science vie with each other to be open and to incorporate (subsume?) the representations each has of the other. Science asserts itself in arbitrating Buddhist tradition; Buddhist tradition authorizes itself in explaining to science the meaning and significance of its own workings (Weber 1994).

But here, I want to suggest another model for thinking of the relations of power which have sustained the complex representations of Tibet within Western science that we have been considering. It is a model which helps us understand the ways in which the very act of

79 Problematic for Green’s argument, however, is the fact that Blavatsky’s imagined interlocutors from the East were in fact white “Aryans,” an imaginary which James Hilton’s Lost Horizon is itself structured around. Further, the missing or salvific knowledge to be supplied to the West by the East was meant to secure a reinvigoration of the West, not a raising up of the East. The West imagined itself to the rightful heir and arbiter of what constituted knowledge and how best to use it. My thanks to Mark Liechty for discussions on this point.
constructing a representation of an *other* inscribes the positive and negative elements of a perceived potency. Representations aimed at disempowering some despised “other” have a way of simultaneously empowering that *other*. This happens when the fear which drove the construction of a disempowering representation by those in power morphs into a set of beliefs about the magical potency of the powerless *other*. All subsequent mobilizations of a particular representation of an *other* are thus continually in dialogue and permeable to the relations of power and contingency which gave rise to that representation. Of the work generated within the ambivalence of representations through these repeated iterations and encounters, Said remarks:

> Something patently foreign and distinct acquires, for one reason or another, a status more rather than less familiar … a new median category emerges, a category that allows one to see new things … as versions of a previously known thing … such a category is not so much a way of receiving new information as it is a method for controlling what seems to be a threat to some established things….the Orient at large, therefore, vacillates between the West’s contempt for what is familiar and its shivers of delight in – or fear of – novelty. (Quoted in Bhabha 1991b: 73)

As we have seen, Tibetan Buddhism has been represented in the West both as a corrupt and regressive, a stultifying mass superstition and a system of the highest insight safeguarding a spiritual purity for generations. However, the power that shapes the fashioning of a representation of another culture as a way to anchor or “control” an excess or lack in one’s own culture cedes, in some measure, to that other culture another kind of power. The material basis to which the representation refers (in this case, “Tibetan Buddhism”) must be guarded from change for, if the culture were to change too radically, it would challenge and therefore upset the function the representation plays in the ideological framework of the representing culture – here, the West. Thus, representations must be both valorized and held in contempt – a distancing and controlling move – in the work of safeguarding a particular value system (Douglass 1966: 3).
One way of modeling this tension, of the work in representing an *other* as a work of power, is to recall the priest/patron relationship which structured Tibet’s relations with regional powers over a period of centuries. To explore how this priest/patron relationship functions in the context of the Buddhism and Science dialogues, I will examine a different priest/patron-patient relationship, one which played itself out in another time, in another part of the world. In the penultimate chapter of his *Shamanism, Colonialism, and the Wildman* (1987) – an exploration of the excesses of torture and control committed by the colonial rubber traders in Columbia – Michael Taussig considers the relation between “patient and healer.” Specifically, Taussig asks how it is that the same white traders who had committed atrocities against the indigenous peoples they encountered nevertheless were fascinated by them and attributed to them powers of second sight, healing, and magic. Having first brutally exploited them, Columbian elites then turned to the same indigenous people for healing, ascribing to them a mystical power inversely proportional to their status in colonial power relations.80

In what follows, I want to consider Taussig’s insights into the dynamics between “patient and healer” in the light of the “priest/patron” relationship which structured for centuries Tibet’s relationship with the powers which surrounded it. And I would suggest that, in the contemporary imaginary, the West is the patron, and Tibet the priest; science is the patient, Buddhism the healer.

In the preceding chapters I have considered suggestions by McMahan and others that the West’s fascination with the East, and Buddhism in particular, was driven by its search for an

80 Such a dynamic perhaps too structures the way in which China has begun employing Tibetan Buddhism as a tool of state, especially given the violence which has and continues to be perpetrated (Yu 2012). The use of Tibetan Buddhism by the middle classes of both the US and China speaks to the possibility of structurally similar effects (of simultaneous repression and empowerment) occurring in both cultures, mediated by the representations of Tibetan Buddhism we have been considering throughout.
antidote to the “disenchantment” consequent of the administrative, industrial, and rationalistic reframing of social interaction and meaning. This instrumentalization, fragmentation, and alienation is considered consequent of modernity. Buddhism seemed to offer a conceptual framework which appeared to have come to terms with the material basis of the world without losing its ethical and moral framework, even finding a way in which to operationalize its understandings in techniques such as meditation. However, such a view could only be maintained by the radical psychologization of Tibetan Buddhism in which its multitudinous hells, gods, demons, and beings were explained away. In other words, Tibetan Buddhism is considered a worthy interlocutor for science precisely to the degree that it is willing to represent itself as anything but a religion. The centuries of ritual, myth, daily observances, and the beliefs which offer hope and succor and rationalizations of injustice to millions have no place in the “Dialogue.” By removing all of the “religious” elements from the representation of Tibetan Buddhism as it is maintained in the dialogues with science, it was possible to maintain that Buddhism was committed to an empirical consideration of the nature of the mind and suffering, whose modes of understand were culturally inflected but of sublime import (Lopez 2012). As I suggested in the Introduction, this is a form of cultural “dispossession;” in order to participate on the global scene, Tibetan Buddhism must work to conform to a representation which endangers its connection to its tradition by letting questions of what counts as “Tibetan Buddhism” be arbitrated by unequal relations of power and exchange.

That is one way of looking at it. But is also important to note how this critique itself draws on a representation of an “authentic” Buddhism that leaves little room for the kinds of change and negotiations which occur through debate, conflict, exchange, compromise, fear and
desire. Consider that, in underscoring Buddhism’s purported openness to empirical truth, the Dalai Lama has been able to effect important social transformations in Tibetan culture.

Nevertheless, the Dalai Lama also maintains that while scientific investigation is important, it has some limits. In the dialogue with Tibetan Buddhism, science will come to know its own limits and come to open itself to another mode of knowing. Such a view of Tibetan Buddhism efficacy in this regard could be supported because, as an inherently global enterprise, the occult\(^\text{81}\) connected cultures and knowledge systems to create new communities [and] by promising mastery over the hidden forces in the world. If Marx revealed the invisible forces of capital, then the many new prophets of the occult claimed to reveal a whole spectrum of similarly “subtle” powers that determined the workings of the world….With its technical hardware and complex procedures, as both paraphernalia and performance the occult held firm to the paradigm of science even as it promised to go beyond its discoveries. (Green 2015: 386)

The Hindus and Buddhists who worked with the Theosophical society proclaimed that the same energy that takes the form of steam here, electricity there, and moves the world itself is but another manifestation of \textit{prana}, the breath, the vital force that animates all life equally (Green 2015: 386). In this way, the counter-cultural West could “re-enchant” the workings of technology and progress, for there the “universal” could be found also. In other words, they sought to change science by engaging it, transforming it from within.

\(^{81}\) Green (2015: 384) defines the “occult” in this way: “a label for the varied output of the many new religious firms that flourished between around 1880 and 1930 through their characteristic claims to access hidden knowledge/power by the performance of specialist techniques. As outcomes of Victorian globalization, these new religious firms were typically cultural hybrids that bonded newly accessible non-Western traditions with newly discovered Western technologies. Through such fruitful hybridizations, new religious entrepreneurs promised practitioners access to timelessly ancient powers via reassuringly modern means. Magical rituals were conducted with scientific precision; Yogic masters of \textit{pranayama} traveled to “parliaments” of religion by train; spirits were rendered visible in photographs and audible on phonographs; meditation and breathing exercises were linked to the newest findings of psychology and physiology; and mail-order catalogs promised reliably manufactured paraphernalia.”
But can the same logic be at work in the West’s present relation to Tibet? It is both significant and important to note that the West never colonized Tibet; thus, the West was able to preserve its ambivalent representation of Tibet as both pure and primitive, even into the present. Further, the encounter between Tibetan Buddhism and Science resembles in structure (though not in the particulars) the West’s Victorian longing and which bears important similarities to colonial encounters. Here, I quote Taussig at length:

[The colonizer] may not have got from the Indian all the secrets for which he asked in his letter. In fact he probably has none of them … And there is a lesson in not giving that, for in that direction lies the realm of magia and deeply commoditized magic that dances with the magic of money … it is a simple sounding social function. The magic invested in the Indian by the civilized assuages the envy that comes from inequality among the whites … But how this is done and how the figure representing inferiority, savagery, and evil comes to have this power – that is not quite so simple. But for the referents of this history and of these practices, namely the Indians who are called upon to provide magical power to blunt the evils of inequality in the rest of society, there is doubting about the reality. This uncertainty at what we might call the fount of the system of magical curing has curiously curative effects for us because it cautions against the search for magical power in a unitary being such as the Indian shaman, and instead advises us as to where that power creates itself; namely, in the relation between the shaman and the patient – between the figure who sees but will not talk of what he sees, and the one who talks, often beautifully, but cannot see. It is this that has to be worked through if one is to become a healer. [emphasis added throughout] (Taussig 1987: 446)

Taussig speaks of the “not giving” which is a kind of magic; a withholding which keeps alive a potential revelation; the power and promise of the “yet to come” which is also at work in science and its story of progress. Early popular engagements with the East (viz. Blavatsky) located knowledge and knowers in lands which were then inaccessible and uncolonized, such as Tibet. In this way, they sustained the promise of future

82 I here cannot refrain from drawing the reader’s attention to (invoked for me upon first reading this passage) Tarkovsky’s Stalker (1979). A guide through a technologically ravished land leads seekers to a place where they confront the emptiness of their desire, their hope, and their ambitions.
revelation while safe-guarding their supernatural claims from verification. The remoteness in time and place reinforced the longing, deepened the hope, and safeguarded certainties. But the savagery of which Taussig speaks – as something which both mirrors and deflects the West from its own inequalities which have persisted and, in many cases been augmented with “progress,” seems to also be a narcissistic reflection. The promise of Tibetan Buddhist meditation for the West is the promise that, though inequality and violence may endure, we can adapt ourselves to the prevailing system in a way that will nevertheless ensure our “well-being.”

Perhaps.

Taussig again: “the resolution of [the dominated’s] illness is to become a healer, and their pursuit of this calling is a more or less persistent battle with the forces of illness that lie within them as much as in their patients. It is as if serious illness were a sign of powers awakening and unfolding a new path for them to follow” (1987: 446). Thus, the illnesses – whether of colonization, invasion, exile, or disenchantment – are all trials and preludes to transformation. Here tragedy and illness are seen not merely as a consequence of the violence or injustice of another or a system, but as a “sign” of one’s own “path;” to refuse it — to look for the cause and remedy in something other than oneself – is to have missed the point.

How does this relate to what the West, and the scientists we have examined, works for in sustaining a certain representation of Tibet? Some see in Tibet’s prior feudalism, its centuries of isolation, and its present tragedy, the signs of an illness which it has borne in order to be transformed to become a world healer – the Dalai Lama himself oft tells the story of Tibet going through a tragedy and suffering to bring the dharma to the world. If one replaces dharma with
“civilization,” the overtones of the narrative of progress through suffering are easy to hear. Thus, through something akin to the tale of the “arc” and “ripening” (the rise and fall) of successive civilizations in the world, this inflection of the story of Tibet as dharma-spore to the West is the West’s own myth echoed back to it. Here, the West glimpses in Tibet a way of curing the disenchantment which Weber and others have noted; of curing its alienation, the malaise of the times.

A vision of a way out of that crisis was proffered in the Victorian era in the form of a set of letters which the Theosophists ventriloquized in the figure Koot Hoomi (an Aryan master of Tibetan wisdom, and figment of Blavatsky’s imagination) which

uncovers the evolution of life forms whose progressive differentiation results in the fragmentation of a uniform world consciousness. Even as he shows that such fragmentation is the essence of sectarianism, he also points to a much larger biological process that is integrative in its impulses. The revelation of occult secrets thus becomes a mechanism for imagining a future in which a world consciousness might be recaptured from its moments of rupture. (Viswanathan 2000: 16)

Perhaps, then, one reason for the cultural appeal of the study of meditation and of the work scientists conduct with Tibetan Buddhists is that it functions (like Koot Hoomi’s letters) as something to shelter us from the tragic effects of what we have wrought – at times unknowingly, at times in bad faith – on the world and those around us. “Buddhism” and “Tibet” are representations, words of power which index a space primitive and unknown; which index what we do not know or do not care to admit to ourselves about the workings of those things which we have set up before us as guarantors of our trajectory and development. But they also betray a hope of return to some imagined origin or power, a desire for redemption and re-enchantment, buttressing the hope once placed in science’s potential recovery of the truth of the human and not merely its alienating effects. Through “Buddhism” and “Tibet” we hope to see that our alienation
and disenchantment are themselves part of a spiritual maturation, and that “method” and “technical mastery” is what we must cling to in order to effect that maturation. Thus, the East qua representation, like Hilton’s “Lamasery,” guards what we have always known until we are ready to receive it.

It is a persuasive tale: each of us know a version of it in our own lives as the narratives of overcoming, of meaning making, and of agency which sustain us as we are buffeted by the errant workings of the world and ourselves. And in this encounter between the oppressed and oppressor – self and other – there is the crafting of what Taussig frames as a kind of “implicit social knowledge” that gives rise to new social institutions (Taussig 1987: 449) as each party serves the other’s purposes:

[T]he power of shamanism lies not with the shaman but with the differences created by the coming together of shaman and patient, differences constituting imagery essential to the articulation of what I call implicit social knowledge… it comes from *the joint construction of the healer and the sick* [italics added] in the semantically generative space of annulment that is the colonial death-space. (Taussig 1987: 460)

I suggest this passage be read in light of the coming together of science and Buddhism, each interrogating the lack of the other by acknowledging the power in *otherness* as such. The West’s experience of disenchantment with its own system creates a space in which it becomes possible for Buddhism to be presented as a remedy. But the West also has other images of Tibet at its disposal, images which permit the West to distance itself from this need; e.g., Tibet’s “Lamaism” and “backwardness”. Such representations, while they seem to contradict narratives of purity, allow the West to not be too threatened in that relationship, to keep a space apart, to remind the West that there exists in the relationship a space where the West (supposedly) has leverage. Yet it is this representation of Tibet as somehow “backward” which Tibetans in exile continue to
trouble. Consider the work the Dali Lama has undertaken in this direction in, for example, ceding political power, opening the governance of the exile community to the democratic process, and advocating for the rights of female clergy.

And to Tibet, as we have seen, science offers the tools to circulate aspects of its culture on the global scene, the instruments to tease out important discourses within its own tradition, the (albeit uneasy) guide for what is and is no salient in tradition, and to buffer the challenges of exile. Taussig again:

[Y]et both figures, that of the shaman as certainty and that of the patient as doubt, only acquire this configuration by their coming together, because both contain within themselves, taken as individuals, the same vexation with regard to the credible impossibilities that course through life’s contingencies as much as through the ambiguities of social relations. The creative delicacy of their coming together as patient and shaman lies in the different yet complementary ways this relation allows them to ease or resolve this vexation. (Taussig 1987: 462)

So too in the case we are considering; both Science and Buddhism doubt and both are certain, differently. And though the place where the two of whom I speak meet is not the yage ritual of the Amazon riven by the rubber trade, I have spoken of the conference room, the monastic hall, the meditation meetings in Wisconsin, the virtually empty refugee reception compound beneath the Dhauladhar range of the Himalayas. What enables these different frames to cohere is their relation to a set of representations, an agglutination of frameworks: technology, statistics, and the brain all set alongside tradition, interiority, and Tibet. Each element mediates between the abstract concept and the concrete sensory impression: the idea of mind, of self, of the brain and actual experience. And owing to the imprecision of the lexicon proper to each, Buddhism and science are able to work together to hold at bay and sustain the soteriological wager which drives the other. In other words, each has a view of the world which it hopes will be reflected by the
other. To sustain this hope, each party is complicit (though differently) in the representation of both the other and themselves.

Lastly, it is perhaps the case that a consideration of the patron/priest relationship also helps to further elucidate the Dalai Lama’s considered permission to allow scientists to approach monks for the scientific study of meditation. In this context, granting permission could be considered as opening a new field of merit for those who agree to be framed as research objects while also aligning with the ways in which Buddhists have historically seized upon opportunities for patronage, thus widening fields of merit (Schopen 2007: 291). Nevertheless, individual monasteries have a great deal of autonomy and, as I alluded to in my discussion of the response of the monastic establishment to the 13th Dalai Lama’s modernization program, are fully capable of resisting unwanted commands and interference.

In this light it seems fitting to end on a note of caution, one that comes from the Tibetan monastic leadership itself. In 2010, Geshe Ngawang Samten, Director and Vice-Chancellor of Central University of Higher Tibetan Studies in Sarnath participated in a panel at Emory University entitled “Tibetan Buddhism in the Modern Academy.” Speaking of the influence of science on traditional teaching, he had this to say:

In the modern academy…there is a tendency of being innovative and creative. Of course there are rooms for being innovative and creative. But in Buddhist tradition – as I said there are rooms – but at the same time there are certain traditions to be maintained. There [is] the teaching lineage, the teaching transmissions, and the realizational phenomena … which are based on the teaching transmission; we attain the realizations. So realizations can be obtained through practice and in such cases we cannot be very creative. When we hear about creating new Buddhism by picking up some elements from many other different traditions, as His Holiness said this morning, that I don’t think would work. One has to be very serious about these things. If one ponders very deeply into the tradition and starts studying the very deeper insightful phenomena of the tradition then one can understand whether some superficial things can replace these traditions, these profound phenomena. So therefore I would like to
suggest that for such ideas of being very innovative – of course there are rooms – one needs to be very careful in being creative and innovative.\textsuperscript{83}

Geshe Samten’s words of caution are important here. He asks, in part, whether the “Buddhism and Science” dialogues are in fact simply “dialogues” or a costly wager that risks severing Tibetan Buddhism from its experiential, living tradition. Geshe Samten points to what he sees as an abiding threat to Tibetan Buddhist monastic culture. His comments highlight the importance of the Tibetan cultural context which sustains the meaning and validates the experiential registers of the techniques studied experimentally in the laboratory. He references a context in which these techniques are studied and practiced not because they have been shown to be useful in one way or another or effective independent of human testimony (the witness of a life lived in accord with these teachings); they are important because they sustain a way of life, a way of relating to the world, a mode of knowledge which arose outside the scientific model. Geshe Samten suggests that what the West appears to be searching for in Tibetan Buddhism is an exotic basis for projects which the West has already committed itself to through science; namely, shaping individuals to function in society in very specific ways. The West is not seeking a mode of knowledge outside of itself, but a reenchanted way of thinking about its own myths of progress and methods of control so as to reestablish and rebrand them. Geshe Samten seems to be suggesting that the Dalai Lama and the Tibetan community should be cautious and wary of their eagerness to concede to “science” the power which it has thus far allowed. Perhaps, too, it is a word of caution which reminds those Tibetan Buddhists in dialogue with science that the only way Tibetan Buddhism can maintain its role, its function, within the Western imaginary is

\textsuperscript{83} https://www.youtube.com/watch?v=CEyFIdd6yZM
to not give too much of itself away, to underscore (in Taussig’s words) the “not giving” even in the midst of “dialogue.”

**CODA**

At least one reader of an earlier draft of this work suggested that there would be a certain symmetry if I ended this last chapter in the same way in which I concluded the first; namely, with a reflection on Hilton’s *Lost Horizon*. The suggestion was that the story of *Lost Horizon* enacts the “bad faith” or “false consciousness” at the heart of the representations which the West has constructed of the East. Consider the “High Lama”: he is not Tibetan, but rather a European safeguarding elements of European culture in the separate cells of this rebuilt ruin of a Tibetan monastery. He holds them in anticipation of a time when the West would be able to receive them again – presumably through the marketing skills of someone like the American Barnard. The High Lama then is a literally literal presentation of the West seeking its own lost “glory” in the East. Thus, it is not the *Shangri-La* of the Tibetans which Western readers seek in Hilton’s novel – though they have for decades convinced themselves otherwise – but the representational form the West itself had placed there.

What are we to make of this so persistent and pervasive a misrecognition? Hilton’s High Lama (perhaps a version of the Prester John myth, the long lost clerical figure presiding in the East, holding the seed of Christendom safe amidst a heathen horde) keeps safely hidden away not just the objects but the persons, the clerisy of Europe’s Golden Age until such a time when the West would have exhausted itself on the violent and treacherous slopes of progress, longing to
return to its “rightful” development (something akin to the vision articulated later in Hesse’s *Magister Ludi*); to its own “lost horizon.”

I too had thought of concluding with Hilton’s eerily prescient novel whose elements seem to have strangely configured the odd resonances which have since unfolded in our own time and which I have recounted in this dissertation. However, ending with a reference to the novel occurred to me for two different reasons. First, consider that Conway and his group do not stay, but leave the monastery suspended beneath the mountain Blue Moon. Conway, brilliant and battle weary, was to have taken the Lama’s place. But he refused. What do we make of this refusal to take up European culture in the locus of the East and in Eastern guise? Or, having escaped, of his longing to return? His continued ambivalence as a way of maintaining *Shangri-La*?

Here, I am reminded of a film done considerably later than Hilton’s novel, but which may hold a kind of answer. The *Circle of Iron* was a story (later made into a film in 1978) sketched by Bruce Lee and James Coburn. David Carradine plays multiple characters, each some version of the Eastern guide archetype/stereotype to have been played by Lee had he not died. This guide challenges and shapes an Aryan “seeker” named Cord who seems bound to a “punch first, ask questions later” mode of interaction on his path to Enlightenment. Cord eventually reaches his goal, a monastery located on a distant island and presided over by a figure named Zetan. Zetan guards the book of all wisdom. Cord, being the first seeker in many long years to have succeeded, is slated to be Zetan’s successor and guardian of the book. Cord demands to see this book before agreeing to anything. It is said to contain the answer to all life’s questions, all its mysteries, all of its hopes. And Cord has won the right to see it having survived the trials. Cord is
bathed, anointed, and robed. Seated on a terrace overlooking the gardens, the book is brought to him. He turns page after page, each page a mirror.

Cord laughs and rises. Zetan pleads desperately for Cord to “release” him, for Cord to do his duty and assume his place as keeper of the book. Cord rejoins his former guide; a seeker who had also refused the role of keeper.

What does this tell us about the function of the representations at play in the Buddhism and science dialogues? About Conway’s refusal to take the place of the High Lama at the end of Lost Horizon? Conway sees the several elements of Europe’s high culture preserved; Cord sees multiples of his own reflection. Perhaps it says something about the claustrophobia of roles, of fitting into them, of having to assume only them. This is a lesson which can be found in Buddhism as well, when we consider how the Buddha abandoned kingdom, duty, wife, and child in order to become Enlightened. What allegiance do we owe the constructions, the duties, the representations projected on us? Our lives, to be given to sustain them? Does not the world become sterile, the place of Eliot’s Hollow Men when all are left but roles and the “keeping up of appearances”? Is this the only way to safeguard a “culture”? Conway went his own way; an errant who lived a story which helped spawn a whole generation of seekers longing for the “East,” caught up in seeking Shangri-La themselves. When science uses Western representations of the East and Tibetan Buddhism – both rooted, as we have seen, in colonial era imaginings – to lend an aura of “wisdom” to its proscriptions designed to help us reconcile ourselves to our present social roles more fully, how shall we respond?

The second way in which I imagined returning to Hilton’s Lost Horizon was to echo the scenario with which I ended the first chapter. Recall that we read the story of a “lost horizon,”

not a “lost valley.” What is the difference captured within this play between the vertical and the horizontal? Hilton ends his novel describing the neurologist returning the account of Conway’s confession to its amanuensis. Then, a reflection on depths plumbed through seeking, on an “ultimate dream,” on a questionable destiny:

We sat for a long time in silence, and then talked again of Conway as I remembered him, boyish and gifted and full of charm, and of the war that had altered him, and of so many mysteries of time and age and of the mind, and of the little Manchu who had been “most old,” and of the strange ultimate dream of Blue Moon. “Do you think he will ever find it?” I asked. (Hilton 1933: 241)

It seems not too much of a stretch to suggest substituting “the West” for “Conway” in this concluding reflection; the imagined youth of Western civilization, the wars it had endured; the secrets which enticed it, the yearning which drives it.

Perhaps one can also detect, in the elusive dream of the monastery shadowed by the inaccessible peak of the Blue Moon, an allusion to Novalis’ “Blue Flower” (described in the tale of that other seeker Heinrich von Ofterdingen and appearing most recently in Nolan’s 2005 film Batman Begins).85 The Blue Flower came to be the symbol for a longing for the historically, aesthetically, and experientially unattainable which pervaded German Romanticism (Hansen 1987: 204). Here the Blue Moon, the peak hovering above the monastery perched on the side of the mountain and which was given new life by the European Lama, represents a doubly unrecoverable hope. A place, like the Grail Castle in the legend of Parsifal, which cannot be returned to again, if at all, until one endures long penance and struggle.

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85 Appearing to Bruce Wayne in a Chinese prison, is Ducard (with an accent perhaps from Luxemburg, like Hilton’s High Lama). He claims to speak for Ra’s Al Ghul (an amalgam of Egyptian, Arabic, and Tibet in transliteration) whose goal, we later learn, is to clear the “brush” from society so civilization can once again flourish: “If you are bored of brawling with thieves and want to achieve something, there is a rare blue flower that grows on the eastern slopes. Pick one of these flowers. If you can carry it to the top of the mountain, you may find what you were looking for in the first place.” When distilled, the flower yields a substance which, when inhaled, brings one face to face with one’s worst fears.
But exactly what is this place, this horizon – itself an illusion, a thing never attained, receding from us even as we seek it – which has been lost. Is it Europe’s regeneration through the project and projection represented by Conway and the High Lama? The “hope” promised by the idea of the East? But wasn’t this “something” imagined to have been lost long before Conway’s flight, before the High Lama even? The West’s projections into the East are both symptom and cause. It is the gesture which participates in the loss it fears. The “horizon” was conceived in the same imaginative gesture which secreted meaning away for fear of being lost; of being shown incomplete, flawed, contradictory. The West, in refusing to come to terms with its own limits and projecting salvation into the East, authored thereby one aspect of the disenchantment it feared. The West has charged its representations of Buddhism and the East with a power, a power which the West tells itself both is and is not its own.

If this sounds a bit much like “history psychologized,” recall that Lost Horizon is a story based on a certain representation of Buddhism and the East. A story which we read over the shoulder of a neurologist. Consider too that the story I have here written (and which you have just read) deals a great deal with psychologists and neurologists reading and writing the story of a certain representation of Buddhism. What does the West yet long to recognize there? And can we recognize it in the way in which Tibetan Buddhism is constrained to respond to that longing? Put differently, I imagine it must have occurred to anyone while reading the novel: what does the reader with whom we are reading see in this story? What is he looking for? What does he think he has found?


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AWARDS

2015 **Wenner-Gren Historical Archives Grant**
Pl. Prepared/Archived research materials of Dr. Waud H. Kracke (UofC’73 / d. 2013). Field work notebooks, interviews (University of Illinois at Chicago); digitization of field interviews conducted in the endangered Parintintin language (Archives of Traditional Music, UI-Bloomington); repatriate Parintintin artifacts (Museo do Indio, Brazil).

2014 **The Francisco J. Varela Award**
To conduct an ethnographic research at the Waismann Laboratory for Brain Imaging and Behavior at UW-Madison.

2013 **Mind and Life Summer Research Institute**
Research Fellow. Interviewed researchers from UW-Madison, Emory, UCLA, and Aarhus regarding Neuroimaging and meditation experiments.

2013 **UPENN-Summer Neuroscience Program**
Training in fMRI, SPECT, PET, EEG procedures and protocols.

2011 **Provost’s Award**
Supported pilot research among practitioners of traditional Tibetan medicine in exile (at Men-Tsee-Khang in Dharamsala, India).

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**PUBLICATIONS**

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2016  “From Inner Territory to Interiority: Mapping the Plastic Brain” Panel presentation at the American Comparative Literature Association Annual Meeting, Harvard University, Boston, MA. Mar 17-20.


2012  Neuro-anthropology: from Interiority to Inner Territory. Second City Graduate Anthropology Conference, University of Illinois at Chicago, March 3. Chicago, IL.


TEACHING

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  ANTH 444 – Dreams, Dreaming and Dream Beliefs

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