The Authority of Empiricism and the Empiricism of Authority: Medicine and Buddhism in Tibet on the Eve of Modernity

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Somewhere around 1670, Dar-mo sMan-rams-pa, one of an inner group of physicians close to the Fifth Dalai Lama, set up a laboratory in a park in Lhasa. He and his students proceeded to dissect four human corpses—two male, two female, two old, two young—in order to count their bones. He wrote briefly of the event in an anatomical treatise, after surveying received tradition on how to count the bones in the body, which were classically said to add up to 360. The number 360, Dar-mo notes, is explained in the texts as based on counting four sections of the skull. But, he says, "I and my students based ourselves instead on there being nine sections of the skull, and thus [we came up with] 365."

We have to admire Dar-mo's deftness. The number of bones that the physician and his acolytes "determined with precision, through naked illustration," confirmed the canonical number of 360, albeit with a suggestion of variability, as when one finds a different number of sections in the skull. But in the very next line Dar-mo goes on to call into question the notion of definitive count altogether, suggesting a horizon of undecidability if, instead of counting, as he and his students did, only the bones that measure between "the span between fingertip and elbow, and the width of a finger," one also reck ons "the numerous small bones that are merely the size of a roasted bean."[1]

If the idea that properties of the physical world cannot be represented definitively by canonical doctrine reminds us of issues germane to the birth of Western empiricism, Dar-mo's experiment may also strike us for its simultaneity with the public anatomy lessons of the Amsterdam Guild of Surgeons, especially memorable from a famous painting by Rembrandt. But Tibet had no part in the European Enlightenment; it saw no radical revolution in science, no salient notion of innova tion, no widespread and publicly touted recourse to repeated dissection and further experimentation.[2] Still, Dar-mo's corpse dismemberment in the Tibetan capital encapsulates a climactic moment in the history of medicine in Tibet. Part and parcel of a series of momentous social changes –which culminated in the consolidation of a centralized Tibetan state under the rule of the Dalai Lamas—was that medicine came into its own as a system of knowledge distinct from mainstream Buddhism. In fact the process by which this coming into its own unfolded involved kinds of arguments and practices that we often associate with the birth of modernity. Participants in a growing network of physicians flourishing under the patronage of the Dalai Lama's court, medical theorists and historians like Dar-mo were caught up in debates about what represented authoritative sources for medical knowledge, and how to constitute and construe the history of that knowledge. A notable part of these debates was a distinctively medical empiricism, with far-reaching implications for the prestige of medicine and its practitioners, as well as for the momentous issue of how medicine relates to Buddhism.

To consider these developments in light of how we think about the emergence of modernity promises to enhance both our understanding of modernity and of Tibetan history. On the one hand, to recognize features—and note that I am arguing that *some* features can be so identified, not all or exactly the same ones—of what is defined as modernity in a variety of historical contexts helps us to realize that modernity is a general process that, while by no means universal, is not in its broad outlines unique to a single time and place. Such a realization stands apart from anything we might say about actual influence or interaction; although it is an intriguing question, we have yet to track an influence of European modernity upon the culture of the Ch'ing dynasty, let alone the Ganden Phodrang government of seventeenth-century Tibet. It is also not to claim that seventeenth-century Tibetan society was modern, only to say that, again, *some* aspects of that society bear com-

parison with modernity. What this paper will do, then, is to examine attitudes and values associated with modernity—among them, a questioning of religious authority, a valuing of empirical evidence, a probative attitude to texts and practices, and a recognition of cultural difference—in the particular ways they developed in specifically Tibetan conditions. To recognize the variety of circumstances that can give rise to such attitudes is both to discover the broad descriptive power of the category of modernity, and to appreciate the rich range of its instances. And on the other hand, to take a category like "modernity" and use it heuristically to study a time and place where no such indigenous category can be identified is not necessarily to force our interests upon an incommensurate object. Rather, if the category is both apropos and general enough—"gender" would be another example; so would "culture" or "religion"—it can help us to recognize connections and identify patterns that we might not have otherwise seen.[3]

This essay will focus on a few inflections of what empiricism entailed in the shifting camps of Tibetan medical science from around the end of the fifteenth century through the momentous events of the seventeenth century and their legacy in the following years. In brief, I find two salient clusters of ideas that contributed to such empiricism, both of which fell under the larger Tibetan rubric of "experience."[4] One had to do with the special kind of knowledge that is acquired only in practice, guided by a teacher, and involving daily immersion in the particularities and idiosyncrasies of individual patients. The other concerned the particular type of knowledge that comes from direct perception, that is, from contact between the mind and sense organs of the researcher and something in the material world. These two senses of experience overlapped, but the second was more specific and pointed. Importantly, it had a special authority of its own; in the polemical rhetoric of the medical writers under discussion, it could trump what was predicted by ideology or system.

Germane to this entire investigation will be a troubling of the boundaries of "science" vs. "religion" in Tibet, that is, between medicine and mainstream Buddhist modes of writing and thinking, during the period under discussion. Buddhism and medicine grew up together in Tibet in a shared universe of institutions, conceptions, and modes of discourse. Buddhist texts certainly also were concerned with versions of both of the kinds of experience just mentioned. Still, there is a telling difference in the way that medicine came to construe the value of direct perception and hands-on practice. And so even if, in discerning by the sixteenth century a medical mentality distinct from Buddhism, we are already begging the question of whether medicine in its full-blown form was something distinct from Buddhism in the same period, the juxtaposition allows us to glimpse the special center of gravity that medical tradition came to constitute in Tibet, with its necessary appreciation of materiality, expectations about accountability, desire for autonomy, and, yes, sense of a separate truth of the empirical.

Background: Institutions and Literature

The emergence in Tibet of professional medicine as distinct from the dominant knowledge systems of Indo-Tibetan Buddhism was a gradual process that began with the kings of the Yarlung dynasty.[5] From everything we can tell from Tibetan historiography, the early Tibetan kings sponsored the visits of a stream of physicians from India, Nepal, Kashmir, China, Persia, Greece, and other areas. The process started in earnest at the court of Srong-btsan sGam-po (seventh century). An astonishing number of titles of medical works are recorded from this period that were either translated from other languages, or were new works composed in Tibetan that integrated the various medical traditions represented at the court. The kings' avid interest in such activity is said to have been motivated both by their concern for the welfare of the state and their desire to obtain superior medical care for their own families; contests testing medical efficacy were carried out. By the time of Khri-lde Srong-btsan (late eighth century), there are reports of the title of "court physician" (*bla-sman*) in the royal court, a position that remained through the twentieth century, along with the granting of land and inherited rights to medical clan lineages, including the releasing of such clans from military duty.[6]

After the fall of the dynasty (ninth century), patronage for medical learning was taken up by the emerging Buddhist monastic centers. The premier translator of Buddhist works in the "new" period, Rin-chen-bzang-po, translated in the eleventh century the Indian work *Astangahrdaya,* whose presentation of Ayurvedic tradition was especially influential for medicine in Tibet. It was probably during the next century that gYu-thog Yon-tan-mgon-po (1126–1202) and his students codified the work known as *Four Tantras,* although they attributed its authorship to the Buddha.[7] The *Four Tantras* became the principal "root" medical work in Tibet. Already major Buddhist teachers and writers, such as sGam-po-pa (1079–1153) and rJe-btsun Grags-pa-rgyal-mtshan (1147–1216), had been serving as physicians and composing medical works, and special schools for medical learning, sometimes conjoined with curricula in astrological calculation, began to be established at the major monasteries in central and southwestern Tibet: at Sa-skya sMan-grong during the twelfth century; at Zhva-lu, which specialized in the *Astanga* system, and at mTshur-phu, which saw much eclectic medical scholarship, in the fourteenth century; and at E'i Chos-grva at Bo-dong in the early fifteenth century. By the time that

the Byang line of physicians was consolidating at Byang Ngam-ring, the old Tibetan capital, in the fifteenth century, there were oral medical examinations and regimes of memorization. There was also much medical learning at Lhun-grub sDings Monastery in western Tibet during the same period, and then at La-thog Zur-mkhar, which attracted students from throughout the region and became the home of the other major line of Tibetan medicine, the Zur. The 'Bri-gung bKa'-brgyud developed its own medical tradition, branching off from the Zur.

By the early seventeenth century several key medical centers were thriving in the Lhasa area, at 'Bras-spungs Monastery, gZhis-ka bSam-grub-rtse, and rTse Lha-dbang-lcog, where more formal methods of examination were established, and woodblocks were carved for several seminal medical works, including the *Four Tantras*. This was the springboard for the momentous nurturing of medical learning under the reign of the Fifth Dalai Lama and the establishment by his regent sDe-srid Sangs-rgyas-rgya-mtsho of lCags-po-ri on a hill in the middle of Lhasa, which served as the center for the medical academy in Tibet until the Cultural Revolution. Other medical schools continued to appear at monastic centers, now in eastern Tibet, including at sDe-dge at the end of the seventeenth century, and during the eighteenth century at sPal-spungs under the direction of the polymath Situ Chos-kyi-'byung-gnas, as well as at Kah-thog, sKu-'bum, and Bla-brang bKra-shis-'khyil. Some of these institutions developed curricula that were at odds with the medical orthodoxy at lCags-po-ri, creating the conditions for debate and dissent.

In fact medical practice in Tibet was far from limited to these monastic learning centers; healing traditions also abounded in tantric circles, and oracle mediums were involved with healing as well. But even for the medicine fostered by the monastic schools, we know little of the sociology of practice, regarding, for example, what percentage of practicing physicians were actually trained in those schools, what the lay-monastic breakdown was, what the rate of literacy was among physicians, to what extent physicians actually used medical writings, let alone all the questions one might raise about the economics and daily practice of medicine. Moreover, there is every reason to expect that the answers to such questions would vary widely from area to area and period to period. For the moment, we are stuck mostly with generalities. We can only venture, for example, that the degree of professionalization for Tibetan medicine, even during its apogee around the seventeenth century, probably does not approach that achieved in Chinese medicine, due to the centralized bureaucratization there of qualifying examinations for physicians, and, by the Song dynasty, regulations that physicians keep standardized case records.[8] On another note, we can also observe that there seems to have been a unusually widespread familiarity among Tibetans with dissected bodies, due to the long-standing practice of dismembering human corpses to feed vultures; such charnel grounds were used to gather stray body parts for the making of certain ritual instruments, and they also served as sites for Buddhist meditations on death.

Lacking at this point detailed sociological knowledge, I will restrict my attention in this article to insights we can glean from the literature produced by the scholars of the medical colleges. This already provides, however, a huge and rich body of data, with many indications of tensions, debates, and changing mentalities and practices. I already mentioned the *Four Tantras*, a work in four parts that was probably compiled in the twelfth century in Tibet. Some parts of it are closely related to Vagbhata's *Astangahrdayasamhita,*[9] also mentioned above, and the entire *Four Tantras* system is clearly indebted to the Ayurvedic physiology of the three main humors of wind, bile, and phlegm, among other things. The work also preserves medical knowledge from other systems, one obvious example being its pulse diagnostics, which bears similarity to Chinese medicine. But at this point scholars are far from having identified all of the sources for the *Four Tantras*' embryology, anatomy, pathology, diagnostics, therapeutics, pharmacology, and notions of the optimal lifestyle.

Although it may emerge that the *Four Tantras* was not the undisputed principal or "root" text for Tibetan medicine from the start, it was by the fourteenth century. By the fifteenth century, writing a commentary to the *Four Tantras* had become a major way for leading medical scholars to demonstrate their learning and debate points of controversy. Other common literary genres included instructions that supplemented the root text, manuals for the preparation of medicines, manuals for medicinal plant recognition, and manuals of therapeutic techniques.[10] Another key genre that provides clear evidence of a conscious effort to identify medicine as a separate tradition is the historical overview of medical personalities, literature, and institutions. Two very influential examples of this special medical history were written at the height of the consolidation of medical tradition, in the sixteenth and seventeenth centuries.[11]

"Writing from Experience"

One other distinctive, if curious, medical genre that may be traced to the sixteenth century is the *nyams-yig,* literally, a "writing from experience." This genre serves especially well as a flashpoint for the emerging empiricist dimensions of the medical mentality, and this is so not only because of its name. The very manner in which the genre is constituted alerts us to the fact that it has a special function. For one, the label only infrequently

actually appears in a text's title.[12] One is immediately led to ask how it is known that a text is a *nyams-yig*. Beyond the occasional specification that a given text was written on the basis of the author's experience,[13] being a *nyams-yig* appears to be a matter more of reader reception than of authorial intention. Frequently the term is only retrospectively applied, as is the case for the famous but oddly titled *Bye ba ring srel* (Relic of Ten Million), a work describing a variety of medical practices written in the fifteenth century.[14] It may well be that the term was only used after the sixteenth century, with the explicitly labeled collection of one hundred *nyams-yig* by Gong-sman-pa.[15] The entire conception of it as a prestigious genre written by an elite expert class may be the product of the very period we are looking at.

One of the main purposes of the *nyams-yig* seems to be to convey the special kind of knowledge that comes from hands-on practice: in short, the first sense of experience sketched above. In general the content of the *nyams-yig* seems to be construed as superior to the results of mere book learning. sDe-srid even ventures in his own *nyams-yig* that the *Four Tantras* are of little use for actually treating patients, other than to provide information on recognizing medicinal plants, laying out the basic structures of medical knowledge, and locating the channels in the body. Even previous *nyams-yig*s didn't support actual treatment sufficiently, he claims, prescribing "one medicine for one hundred diseases," and failing to describe the course of an illness fully from beginning to end.[16] That is what sDe-srid implies his own *nyams-yig* will provide, and thoroughness based on hands-on experience becomes the signal virtue of the *nyams-yig*. In the eighteenth century sDe-dge-bla-sman maintains, "I wrote this *nyams-yig* from my own experience and what I have become familiar with; this would be equivalent to a vast textbook of what has been heard of the kind actions [of former teachers]."[17] The point is developed further in the nineteenth century, with the influential *nyams-yig* of Kong-sprul, who chastises physicians who never had "oral teachings from an experienced teacher and experience based on a long period of familiarization," and stresses that merely checking the pulse and urine (the basic diagnostic tools of the *Four Tantras*) are not sufficient to diagnose disease. He insists instead upon asking a set of detailed, particular questions to the patient and listening carefully to the response.[18]

sDe-srid labels his work a "supplement" to the *Four Tantras,* but the ineluctable trend is that the *nyams-yigs* were beginning to supplant the root text. The upshot was that the *Four Tantras* fell out of use, even if the medical colleges still compelled students to memorize it.[19] At least by the nineteenth century, authors of *nyams-yig*s could speak directly of the *Four Tantras*' limitations, as when Kong-sprul describes the many sources to which he had to resort for information that was lacking in the root text, while Mi-pham can distinguish the way he found to read pulse based on his own experience from an array of authoritative precedents in Tibet and China alike.[20]

Innovation if not actual deviation from the authoritative was always a risky business in Tibetan literary culture. What was gained, in the face of the risks, from bringing forth one's own experience as valuable can be seen in the rhetoric surrounding the fact that so-and-so wrote a *nyams-yig*.[21] Equally, the information that a *nyams-yig* conveyed became valuable property. In that sixteenth-century collection of one hundred, each *nyams-yig* was dedicated to one of the author's students, whose name and often clan or toponyms were specified. Here the *nyams-yig* would be a kind of patrimony, a possession to be guarded against competitors.

The Weight of Experience

Both to the extent that the *nyams-yig*s described what was learnt idiosyncratically in the clinic, and that they recorded information not known in the *Four Tantras,* the genre reflected an important direction in which medical practice was moving by the sixteenth century, one that left open the possibility of newness and innovation.

There can be no question that in tandem with this move was a recurring insistence on the value of textual study and the learning of system.[22] Certainly such a value is evident in the perduring popularity of writing commentaries to the *Four Tantras,* and it reminds us once again of the shared universe of values between medicine and Buddhist scholasticism. Part of this popularity had to do with the prestige accompanying scholarship in Tibet by this point, not to mention the rhetorical potential of displaying such learning as a way of disqualifying other physicians who lacked academic pedigree. We often find three principal sources of valid knowledge—scriptural authority, logic, and experience—invoked in the medical commentaries of the period;[23] empirical examination and critical analysis are also valorized.[24] But the medical writers very frequently emphasized experience in particular, and denigrated the barrenness and even dangerousness of a physician with only book learning.[25]

A critique of book learning alone and a valuing of experience are also encountered in Buddhist rhetoric, especially with regard to meditative practice and spiritual advancement. We also know that doctrinal innovation was common in Buddhist scholasticism; in Tibet, new doctrinal manuals frequently supplanted earlier ones in monastic curricula. But differences can be detected. Tibetan Buddhist writers display a decided ambivalence about experience as a valid source of knowledge, unless it has been thoroughly informed by "right view" on key points of doctrine.[26] The issues involved might be com-

pared to debates about empiricism and the relation between mind, matter, and divine design in early modern Europe.[27] In Tibet neither Buddhist nor medical writers considered experience ever to be entirely free of ideational content. Hence their presumption that it is necessary to educate experience in the right way; left uneducated, experience is subject to emotional prejudice and error. But while medical writers worried about physicians who practiced only on the basis of their experience, we find far less suspicion of experience as a category as such than we do in Buddhist epistemology and meditation theory. Experience appears to have been unambiguously a good thing in medical learning, even if it could not suffice on its own.

I would suggest there was a fundamental disparity in basic orientation that really overdetermined this difference. The goal of medical practice, the orienting horizon of what constitutes success, was the patient's recov ery. The ascertainability of this telos—its empirical demonstrability—is of an entirely different order than that of the Buddhist summum bonum of "enlightenment." The success of the latter was determined by a far more socially complex set of criteria than the pretty indisputable fact of whether or not a patient died.[28]

I suspect that the very different ways in which these goals were ascertained affected the mentalities of their respective traditions in far-reaching ways. But we can also note more generally a greater respect for the realities of the physical world in medicine than in Buddhism, particularly in the substantial medical commentaries that were being written by the sixteenth century, and whose debates we will consider below. One finds there sometimes an openness to the physical world revealing itself in ways that no discursive knowledge can fully anticipate, in a confidence that there is something out there that has its own integrity—the number of bones in the body, say—that stands fully apart from what any text might say, and that one can consult and find new information from. This becomes particularly clear in the second, more specific notion of experience at play in medical tradition by this point, namely, the authority of direct observation. In the following sections we will consider arguments that sometimes turned on "what can be seen in actuality" or what is known "through direct perception" as a way to prove someone else's theory wrong.[29] While we might find some analogue in classical Buddhist epistemology regarding the role of direct perception in moments of meditative breakthrough, that is a very different matter, since what is perceived then is not everyday reality. And on those few occasions when Buddhist polemicists did invoke some obvious fact in the everyday world, it was more a rhetorical ploy than a precise argument, since for Buddhist theory what appears to direct perception in the conventional world will on close analysis prove to be but an illusion.[30] Again, the contrast is instructive. The medical tradition had no interest in arguing that the physical death of a patient is an illusion.

With their ultimate goals so disparate (and despite the frequent characterization of the Buddha himself as healer par excellence), we find medicine in Tibet struggling with classical Buddhist doctrine throughout its history. Some of these struggles issue simply from a discrepancy of system: is illness to be understood as bad karma, or more physicalistically, an imbalance in the humours of the body? Although the *Four Tantras* sometimes allows syncretically for both kinds of explanation, they are usually offered in different places. For example, are the three humors and their imbalances the physical product of the seminal substances and influences of one's parents, or are they produced by the three "poisons" of ignorance, greed, and anger, the principal causes of all suffering according to Buddhism?[31] Or again: Is a child born a female because of bad karma, or is it a result of physiological factors like the parents' pulse rhythms, or the relative dominance of their seminal substances, or even the day of the mother's menstrual cycle on which conception occurred?[32] Although these very different kinds of etiology coexist in one text, and one tradition, they do so sometimes in an uneasy mix. For our purposes here, a truly weighty implication emerged in those moments that the physical world started to be perceived as having a reality of its own—a reality that can best be apprehended via sensory experience, as when Dar-mo resorted to the body itself to determine the number of its bones. We begin to recognize in some quarters of the emerging medical academy (and remember, its learning was housed in a monastic community) both the suspicion, and then an unease with that suspicion, that the "word of the Buddha" itself could be subject to correction.

When Systems Collide: The Channels of the Body

Empirical evidence in its most overtly physicalistic sense posed on several occasions an estimable challenge to Buddhist revelation. How this challenge was mounted, and then fielded, is illustrated well by the debate around the anatomy of the channels. The *Four Tantras* describes four kinds of channels that transmit substances and energies through the body: 1) initial "growth channels," which give rise to the fetus's body; 2) "channels of being," matrices of channels at the brain, heart, navel, and genitals responsible for perception, memory, and reproduction; 3) "connecting channels," which consist in two main "soul channels," one white and one black, that control the nervous and the cardiovascular systems, along with the smaller channels branching out from them; and 4) "life channels" through which a life force moves around the body. There was considerable debate in the commentaries

about what these categories actually refer to, and exactly where in the body they are. But the discussion took a new turn entirely when, in the fifteenth century, a medical writer casually remarked that the life channels follow along the path of *lalana* and *rasana.*[33]

This writer was referring to the tantric conception of the "central channel," a straight tube that runs between the crown of the head and the genitals, and two others, *lalana* and *rasana,* that run along its sides; the three are well known in Indic and Tibetan Buddhist tantras as the basis for yogic cultivation. In the centuries that followed there developed a sustained effort to locate this tantric system within the medical system of channels in the *Four Tantras.* Towards the end of the fifteenth century Byang-pa bKra-shis-dpal-bzang found the tantric channels not only in the life channels, which in any case had always been viewed as derivative of tantric system, but also in the more properly medical growth channels, and especially now in the connecting channels.[34] Byang-pa called the medical white soul channel, often understood to be the spinal column, the "outer" *lalana*, while he labeled the black soul channel, which is something like the vena cava, the "outer" *rasana*. This seems to be the first time a medical writer equated the nervous and cardiovascular systems with the two side tantric channels, but we already see a device to make it palatable—a distinction between an outer version and an inner one, which presumably would be the actual yogic channels described in the tantras. This device mirrors a larger tendency to distinguish the average human body—in this case, the medical body—from the body of the meditator or indeed a Buddha. And it serves to avoid a very large problem: the central channel, *lalana*, and *rasana* are simply not visible in the average body in the way they are described in the tantras. Clearly, people had been looking inside corpses to find them, and the discrepancy had already been noted several centuries before by Buddhist writers.[35] What is new now is the increasing attention to the problem on the part of the medical commu nity. And yet it has not really been solved: in Byang-pa's solution, the real, or correct—the inner—*lalana* and *rasana* are still invisible, although by sleight of hand it may look like they have been accounted for in the empirical.

In the spate of increasingly detailed *Four Tantras* commentaries written from the fifteenth century onward, different writers try different schemes. The brilliant sKyem-pa is more interested in locating the most important tantric channel, the central one, than the two on its sides. He finds it in the channel matrices around the brain and the genitals, but he also, controversially, locates it in the spinal column itself.[36] This would seem promising, since like the central channel, the spinal column is a single straight channel running from the top of the torso to the bottom. It took the master commentator Zur-mkhar-ba Blo-gros-rgyal-po (b. 1509) to disqualify this attractive solution—largely because it fails to respect the signal characteristics of the central channel on its own tantric terms.[37] The deft solution he proposes instead is emblematic of where medicine was headed by the latter part of the sixteenth century.

Like other participants in this fray, Zur-mkhar-ba lets the embryonic growth channels be the tantric channels.[38] In a way, this is a safe solution; those initial channels disappear once the child's body is fully formed, so, although he does not say this, there is no chance to disprove their existence later by investigation. But apparently, finding the tantric channels in the first weeks of life did not satisfy the quest to locate them in the adult body. So Zur-mkhar-ba also has recourse to the earlier suggestion that lined up the two side tantric channels with the white soul channel (the spinal column) and the black soul channel (the vena cava) in the adult body. However, a close reading of his language reveals that he doesn't actually equate them. At one point, he says that *rasana* "gives rise" to the black soul channel,[39] but this seems to have only the general sense that, as he says elsewhere, all of the wind channels in the body are the central channel, all of the blood channels in the body are *rasana*, and all of the liquid channels are *lalana*.[40] As for the central channel itself, he does seem to display his agreement with a variety of tantric passages that describe it, but he does so in the context of the growth channels. The upshot is that he actually locates the central channel only in the general channel (*srog-rtsa*) that grows in the embryo's body;[41] he rejects the views of those who argue that the central channel "always exists," i.e., in the adult body.[42] He certainly never pinpoints any of the tantric channels the way he does the medical channels, whose location with respect to the spine, for example, he can specify by digit.

Zur-mkhar-ba is quite conscious of larger questions of incommensurability.[43] But when he raises the possibility that it could be inappropriate to introduce material into medicine from what is clearly another system—that of the tantras—he doesn't jump at the chance to disqualify the effort to find the tantric channels once and for all. He almost sounds like a modern historian when he argues instead that in fact it *is* appropriate to bring in tantric ideas into medical description, for the medical system has always had multiple sources, which included the Vedas and disparate Buddhist sources like the Vinaya, the *Suvarnaprabhasottama,* and the *Kalacakra.* But the signature of his complex polemics is all too evident when he maintains that while the *Four Tantras* system "roughly accords" with the tantric one, it is important to separate the terminology, for the *Four Tantras* is not talking about the same thing, i.e., the fruits of meditation. Whatever is tantric about the anatomy of the *Four Tantras* is "hidden."[44] Note that in the process Zur-

mkhar-ba has sustained his allegiance to tantric truths.

Indeed, Zur-mkhar-ba rejects as "invalid" the argument of previous writers that the tantric channels are merely matters of meditation, existing in the imagination but not present in the average body, since if they were, they would be visible in corpses.[45] Others came up with the theory that the tantric channels do exist concretely in the body but evaporate at death, just as the mind does. Zur-mkhar-ba's reason for rejecting these views is telling: If the tantric channels were only a matter of the imagination, the fruits of tantric yoga would not be obtained. The next major *Four Tantras* commentator, sDe-srid Sangs-rgyas-rgya-mtsho (b. 1653), makes a similar argument for the physicality of the tantric channels: yogis can attain immortality by holding the winds in the central channel.[46]

In arguing for the concrete efficacy of exercises involving the tantric channels, Zur-mkhar-ba and sDe-srid would probably say (if they were reading this essay) that they were taking recourse in another kind of empirical truth: the evident efficacy of tantric practice. It is significant that they are committed to this efficacy being physically based. That already says a lot about the ambitions of the period to establish tantric ideology in some sort of physical reality, and I will return to this below. Note for now that while the influential sDe-srid repeats most of Zur-mkhar-ba's solution verbatim,[47] the subtlety of the ambiguation is such that the question continues to dog the medical commentators, and we find major nineteenth- and twentieth-century writers still at pains to demonstrate that what Zur-mkhar-ba and sDe-srid established was the validity of the tantric system.[48] But that perduring ambiguity also meant that the door had been opened for dissent. Gling-sman bKra-shis (b. 1726), close student of the polymath Situ Chos-kyi-'byung-gnas at the outlying medical center at sPal-spungs, might have been far enough from the dominion of sDe-srid's lCags-po-ri to offer a more rigorously empirical account. He is willing to concede that the soul channel is sometimes called an "outer" central channel and so on; this distinction lines up with his general approach to treat the human body differently from that of a Buddha.[49] But regarding that human body, Gling-sman has little patience for anything that is not directly observable. He can declare categorically that that the tantric channels are out of court in an anatomy of the medical, i.e., "material," body; the tantric system is meant solely as a map for meditation.[50]

The Weight of Textual Authority: The Heart-Tip Debate

Gling-sman provides evidence of a remaining axis of dispute regarding the status of the physical. While we can see him as carving out a separate space for human anatomy *qua* human anatomy—and indeed, a separate space for human medical science *qua* human medical science—the world of tantric discourse, imagination, and even soteriology remained fundamental to the conceptual universe of virtually all of the Tibetan medical writers. Tantric discourse in the scriptures also carries the weight of revealed authority as such, and this spreads via analogy to buttress other textual authorities. An exemplary debate that aspires to reconcile the tantric vision of the world, contravening empirical evidence, and textual authority (in this case, that of the medical text the *Four Tantras*) comes up in another section of Zur-mkhar-ba's commentary: why do doctors perform parts of the pulse diagnosis on opposite arms of male and female patients? Zur-mkhar-ba zeroes in on a rival of his forefathers, the same Byang-pa bKra-shis-dpal-bzang already mentioned, who claimed that the reason the pulse of males and females is read using opposite arms has to do with certain gendered oppositions: between the classic tantric pair of "wisdom" and "means"; between what he claims are the opposite positions of *lalana* and *rasana* in males and females; between the hollow and solid organs; and between the Tibetan equivalents of the Chinese yin and yang.[51]

Zur-mkhar-ba's refutation richly illustrates the problems that eventuate when ideal pairs and empirical science collide. In brief, Zur-mkhar-ba ridicules Byang-pa for his mindless adherence to lining up sets of opposites—system—and limits the gender difference only to the position of something the *Four Tantras* calls the "heart-tip," which it says faces in opposite directions in male and female.[52] Byang-pa attributes this difference to the fact that the two tantric channels are on different sides of the body in males and females: since the heart-tip always faces the *rasana* channel, the heart tip will face in different directions in males and females. Zur-mkhar-ba rejects the idea that the two tantric channels are on different sides in the two sexes, saying it contradicts both the evidence of medical examination and the tantric texts themselves.[53] But his key move is to explain that "heart-tip" really refers to a hole (he doesn't specify where it is) through which the mind moves in and out of the heart. It is that which, due to gender differences, faces to the left in males and the right in females. He attributes this difference to tantric teachings, and then goes on quickly to assert that other than this one case, everything in pulse examination is the same for male and females.[54]

What is at stake here becomes clearer in Gling-sman, who ferociously labels as "a commentary of fool's talk" the idea that the tip of the heart faces in different directions in males and females.[55] He continues by averring specifically to his own medical examinations, the many autopsies of both males and females he has witnessed, and his own direct experience of holding in his hand the heart of people murdered by sword, when he ascertained that the top of the heart in fact faces slightly to

the left in *both* men and women.[56] We see now what Zur-mkhar-ba accomplished in specifying that the heart-tip is actually a hole somewhere on the heart. He protected the *Four Tantras* from saying that the top of the heart—what "tip" (*rtse*) would seem to imply—faces in different directions, a claim that is clearly contradicted by empirical evidence.

Still, note a number of things. Zur-mkhar-ba does accept the tantric system of gender difference as being "method"– or "wisdom"—influenced, which means that he accepts that women's minds leave the heart to the right towards the *rasana* channel and men's minds leave the heart to the left towards the *lalana* channel. Zur-mkhar-ba also implies in this case that the tantric channels exist empirically in the body. I think the reason he grants these points—and note how quickly he moves away from them and back to emphasizing the overarch ing similarity in pulse diagnosis for males and females—is that he needs to support the authority of the *Four Tantras,* which did institute a gender difference for pulse diagnostics and for the direction in which this heart-tip faces. But still, he reinterprets the heart-tip so that the heart does not have to face in different directions. Moreover, the mind-hole image with which he has replaced the heart-tip is elusive and nonlocatable: unavailable for empirical observation. In short Zur-mkhar-ba has managed to hold on to a thread of systematic gender difference from the tantras—and in the same stroke the authority of the medical root text—while rendering those empirically dubious claims toothless nonetheless.

The Seventeenth Century, Medicine, and the Word of the Buddha

The complicated positions and rhetorical strategies of a figure like Zur-mkhar-ba become apparent only through a reading that pays close attention to nuance. In the debates just seen, and in many others, we find him at once exceedingly cautious and intently determined. This is a man caught in a struggle whose stakes are high.

There can be no question that we are looking at a knotty set of issues about authority. While we can find examples of commentators overtly correcting the *Four Tantras*' statements, these tend to be cautious and minor. More commonly, the *Four Tantras* is upheld, in a display of loyalty that is more important for what it says socially than what it actually means for the practice and theory of medicine, which was evolving. The impulse to show loyalty also has something to do with reticence to dismiss tantric anatomy, even when there was really no way to make its extravagant claims empirically plausible. A twentieth-century commentator's warning probably reflects a long-standing sentiment: "If [the channels are] explained other than this, that is, if one makes a claim that goes against the theories of the subtle meaning of the tantras that explains the natural condition of the body's channels, then a thesis that invalidates the scriptures would be established. Therefore it is best to abandon personal arrogance and follow the experts."[57]

Both display of intellectual compliance to system, and the urge to distance medicine from it, make eminent sense in the momentous period leading to the centralization of the Tibetan state in the seventeenth century. The patrons of Byang-pa, Zur-mkhar-ba, and their contemporaries—warring factions such as the Rin-pungs-pa clan lords and the Karmapa lamas, jockeying for power during the sixteenth century—made for much political insecurity. The final hegemony of the Fifth Dalai Lama's government in the Potala in the seventeenth century coincided with the aspirations of the Ch'ing dynasty in Tibet, which meant serious vulnerability for renegade monasteries and intellectuals.[58] We are only beginning to appreciate the extent of the impact of cultural contact between Tibetans and Chinese empire during this period.[59] But one undoubted effect of the consolidation of a centralized government in Tibet was a consolidation of the fortunes of the medical academy.

The combination of increased bureaucratization of the Tibetan state and the highly rationalized apparatus of Chinese empire created a climate that conferred status on public accountability and empirical testing.[60] A principal agent in creating that status was the Great Fifth himself, who actively sought out medical experts from abroad, for his own well-being but also clearly with a view of broadening the profession's repertoire of diagnostic, therapeutic, surgical, and pharmacological tools. Again, the signal is that the *Four Tantras* do not contain everything one needs to know to practice medicine successfully. The Dalai Lama's search for supplements, both foreign and indigenous, to medical knowledge in Tibet was wide-ranging. He brought an Indian physician to his court in 1675 for that physician's expertise in cataract operation, a technique that he induced Dar-mo to master, and which the latter performed successfully on the Dalai Lama himself.[61] The Dalai Lama also invited a Chinese expert in eye treatments, along with other physicians from South Asia whose reputation he had heard of, and for whom he sent emissaries to India. He put his own court physicians and other medical personalities in contact with these foreign experts, encouraging them to study the new techniques; new medical works were also translated into Tibetan. His catholic vision extended to the past as well. Old works of Tibetan medicine were sought in archives, recognized as important sources of knowledge, edited, and carved for block printing; biographies were codified of the founders of medical tradition in Tibet; several scholars attempted to codify a definitive edition of the *Four Tantras.*[62]

We also read repeatedly of the granting of lands and income to monastic medical schools. State support of medical learning reached its climax with the Dalai Lama's commission in 1694 of his key administrator sDe-srid to set up a new medical school in the wake of the deterioration of the school at 'Bras-spungs; perhaps for the first time in medical academia, the new school would admit both monk and lay students.[63] The granting of "tax monks" for assuring student enrollment, the degree of trans-Tibetan enrollment, and the standardization of medical examinations, degrees, and sites for plant collection in central Tibet all reached new specificity. sDe-srid's other great accomplishment for medicine was overseeing the production of a spectacular set of medical paintings illustrating anatomy, pharmacology, therapeutics, and other vignettes of medical theory, practice, and learning, and preserving an exquisite record of an unimaginable array of cultural practices.[64] In striking ratification of our thesis about empiricism during this period, sDe-srid records how artists such as Lho-brag-sku-skye bsTan-'dzin-nor-bu executed the anatomical drawings by looking at real corpses.[65] sDe-srid is aware of the fact that drawing from life—it is also reported that he employed artists to draw plants based on their local knowledge of particular specimens—produced new knowledge that surpassed the *Four Tantras*,[66] and whose precise images constituted "unprecedented paintings which provide direct instruction that can introduce [medical learning] as if pointing to it with the finger."[67]

Yet the revelatory visions that lay at the base of sDe-srid's agenda—seeing lCags-po-ri mountain as the heaven of the medicine Buddha, glorifying the tomb of the Great Fifth and its place in Lhasa[68]—show that we must also remain alert to other dimensions of this moment. Yes, the consolidation had much to do with power, with the demolition of rival religious groups, with a "sealing" of libraries of monasteries with opposing philosophical views to the Dalai Lamas's own school. But to reduce the Gelugpa hegemony to a power grab would be to fail to come to grips with a far more fundamental culture making. In short, in their actions with state, religion, and medicine alike, agents like the Great Fifth and sDe-srid were creating what is now loosely called the Tibetan "theocracy," a state whose very essence was founded overtly upon the entire edifice of the Tibetan Buddhist universe of imagination—tantric and otherwise.[69]

It is not too much to say that a stridently authoritative political climate also infected intellectual life in the monastery as well as the practical sciences. Ironically, this political climate fostered conservatism at the very time of the sweeping moves towards rationalization. This conservatism is not the same as censorship, however; rather, when we see prominent medical scholars of the period protecting the root text or looking for the tantric channels in the empirical body, we understand that they are simply part and parcel of the same worldview that was being built into the whole political and cultural basis of Tibet. Tantric meditation is efficacious in the real world; the words of the Buddha are true.

The upshot, then, is a dual movement. The same medical colleges that are being given fiscal autonomy and experimental license are also ordered to conduct prayer ceremonies every day for the health of government officials. Nowhere do we see this twofold urge better than in a long-running debate in Tibet about which Zur-mkhar-ba quips, "whenever three or more people gather, it gets discussed."[70] The debate is none other than the very grave question of whether or not the *Four Tantras* is the "word of the Buddha." If it is, it is a sacred revelation on par with the other canonical teachings of the Buddha, a work that was translated into Tibetan from the holy language of Sanskrit. If not, it would have been composed by Tibetans in Tibetan.[71] This is a familiar issue in Tibet: demonstrating a text to be an authentic translation from an Indic original had long been the dividing line between a true Buddhist teaching and debased apocrypha. The liability of claiming Tibetan, rather than Indic, origins of a root text was overdetermined by the imputation of impudence to any individual who would claim composition of an authoritative scripture.

Evidence for Tibetan composition of the *Four Tantras* had already been noticed as early as the thirteenth century, but this opinion was not frequently defended.[72] Zur-mkhar-ba appears to have once again taken the lead in working out the argument for Tibetan authorship most explicitly. He seems to draw on arguments devised in some Buddhist sects for a quite parallel debate, also at issue by the thirteenth century, regarding the authorship of the so-called Treasure scriptures and the nature of the word of the Buddha.[73] Again, the contrast is stark: where the advocates of the Treasure scriptures always concealed their Tibetan composition and constructed elaborate conceptions of lineage to keep authorship attributed to the Buddha, the medical Zur-mkhar-ba is driven in one of his essays to finally blurt it out: "If [the *Four Tantras]* were not made to appear as if it were Buddha-word, Tibetans—wise, dumb, and middling alike—would have a hard time believing it."[74]

Zur-mkhar-ba makes the *Four Tantras* a *sastra*, a well-known genre that in Buddhism denotes highly regarded writings by realized masters, but not the work of the Buddha himself.[75] In one essay he builds three positions—on the outside the *Four Tantras* is Buddha-word, on the inside it is a *sastra* written by an Indian scholar, and secretly (this always connotes the deepest truth) it is a *sastra* written by a Tibetan. Then he shows the first two to be untenable. The text mentions tea, not typically

mentioned in Indian *sastra*s; it describes diagnostic methods using pulse and urine, not known in Indian medicine: these and other facts show the text must be a Tibetan composition. This kind of evidence, noted even prior to Zur-mkhar-ba,[76] is emblematic of the empiricist mentality and historical sense that the medical writers could muster. And once again Gling-sman, writing in eastern Tibet in the eighteenth century, illustrates this mentality even more clearly: Indian medical texts like the *Astangahrdaya* consider goat meat to be good, while the *Four Tantras* considers it to be one of the worst kinds of meat; this shows the Tibetan character of the *Four Tantras*, a work that accords with the cold climate of Tibet.[77]

What illustrates the tension surrounding such empiricism is the striking fact that sDe-srid himself accedes to so many of the same arguments about the Tibetan character of the *Four Tantras,* but still makes it Buddha-word: the medicine Buddha granted the text to the Tibetan compiler gYu-thog, who then fixed it in a few spots for the Tibetan context.[78] We cannot read this position without thinking about sDe-srid's political investment in the power of the word of the Buddha. But the risks in making the medical root text anything but the word of the Buddha are already evident a century earlier in Zur-mkhar-ba's obvious caution: how he saves his most radical statement for a separate essay;[79] how in his more widely known commentary he is oblique, avoiding overt discussion of Tibetanness and focusing rather on the status of kinds of *sastra;*[80] and how in a third work he bemoans the delicacy of the question, insisting that in the end it is undecidable and what is really important is to realize that the *Four Tantras* is highly valuable and should be respected *as if* it were Buddha-word.[81]

It is hard to say what the real dangers were in terms of concrete resources or political favor; surely the actors at the time didn't know either, even if they felt a risk. But when figures like Zur-mkhar-ba and even Gling-sman made moves to carve out a space for the critical and physicalistic emphasis of medical science, they cov ered their trail (and tails) at as many bends in the road as they could, maintaining the appearance of orthodoxy and the status of Buddhist verities all the while. sDe-srid for his part seems to have been less nervous, if more bifurcated, arguing authoritatively both for Buddhist authority and greater empirical precision and accountability without much indication of a tension. A curious footnote, however, and one that perhaps shows sDe-srid's own tension after all, is his evident distaste for his predecessor Zur-mkhar-ba. It is striking how sDe-srid at one point overtly claims to have fleshed out what was just a rough account by Zur-mkhar-ba when in fact he has copied Zur-mkhar-ba's words exactly.[82] He also takes the very odd step of attacking Zur-mkhar-ba in the course of recounting his biography—for being vain to think he knows it all and for criticizing others too much. In the etiquette of Tibetan literary culture this is unheard of. Contemporary medical scholars see it as a sign of sDe-srid's dispute with Zur-mkhar-ba's Karmapa patrons, who were anathema to the Dalai Lama's government. But sDe-srid himself makes it very clear that much of his displeasure is with Zur-mkhar-ba's unacceptable opinion about the Tibetan authorship of the *Four Tantras,* an unacceptability that he characterizes as disrespect for one's own medical forbears.[83]

The Alternate Space of Medicine

The high stakes of empiricist leanings for the learned centers of medicine in Tibet have as their background the larger debate about the value of an individual's direct experience vis-à-vis doctrinal system. We have seen how that larger issue had specific valences for medicine: personal experience was sometimes construed as more valid than system and as capable of producing innova tion. But personal experience also fleshes out system, and even owes its existence to system—as when foreign physicians, invited by the Dalai Lama, teach new tech niques that Tibetan physicians then practice. It has been instructive to compare the salience of experience in medicine with its status in scholastic Buddhist discussions, a comparison which has suggested, for one thing, that medicine seems to have had more tolerance for the innovation that direct experience sometimes fosters.

Much of that difference is doubtless attributable to the higher investment that the Tibetan state, beginning with the Sakya period and culminating in the establishment of the government in the Potala, had in Buddhism—its ethics, its institutions, its imagery, its ritual regalia, the status of its scholastic doctrine. But once we take stock of how fundamental the entire universe—symbolic and actual—of Buddhism had become to the society that that government represented, we confront the limitations of the heuristic distinction between Buddhism and medicine. With much mutual indebtedness, both participated in the larger mix that constituted the texture of Tibetan life, especially in the very cosmopolitan context of the Tibetan capital during the centuries we are considering here. Medicine had some very special things, symbolic and otherwise, to offer to that mix, a mix that we would still do well to consider under the banner of Buddhism in this more expansive sense, even if medicine sometimes represented a dissent from Buddhist authority.

In essence medicine provided a special spin to experience, even if it shared an interest in it with mainstream Buddhist scholasticism. For both of the kinds of experience identified in this paper, the medical versions were distinctively all about the physical. The thick world of practice that informed *nyams-yig* writing, for example, had for the physician everything to do with the idiosyncrasy of the material world—the texture of daily rou-

tine; the cultivation of intimacy with the teacher; the development of "dexterity," an often-cited virtue; the trek into the mountains; familiarity with plants; and most of all, the variability and indeed unpredictability of the course of illness itself. Even more so, the force of the second, more specific sense we have identified for experience—direct contact with the empirical—was about the authority of the physical world. Here especially, the evidence that polemicists like Zur-mkhar-ba and Gling-sman could cite to decide a dispute was there to be seen by the eye: unpredictable again, it had a reality of its own, of a different order beyond the grasp of system.

The case par excellence of the recalcitrant physical fact that exceeds system is the death of the patient. I speculated above that its possibility on the horizon defined the field of medicine in fundamental ways. I would add now that this special allegiance to materiality conjoined, in the particular historical circumstances of seventeenth-century Tibet, with a recognition on the part of the Dalai Lama's government that medicine a special service in a Buddhist society. The externality of the physical world became, as it were, the rare case of a reality standing outside the system, and it therefore could serve as a checkpoint, an independent confirmation of an otherwise all-encompassing Buddhist world. I suspect that these are the stakes in the channel debate: medicine offered a vehicle by which to confirm the truth of the systems of tantric yoga, in turn a very key ingredient of the reincarnation system that founded, for example, the office of the Dalai Lama. Even if empirical evidence was not actually forthcoming to prove the physical existence of the tantric channels, the medical thinkers almost made it so. But however the debate came to be decided (and it was decided differently by each of the commentators) the important point is that the in/visibility of the channels—and the question of what could be seen, or proven through dissection—had been put on the table, forever to be reckoned with.

One of the things that the Lhasa government did was to create a special institutional space for medical learning, a place apart, to a degree not seen before. But we also see that medicine had already created a place apart for itself by virtue of its distinctive kinds of arguments and practices. Still, in the volatile case of the authorship of the *Four Tantras*, the limits and risks of such a separation can be seen, and so an argument against the Buddha's authorship could only be advanced with extreme caution and some amount of dissimulation. But it would be wrong to conceive of these medical thinkers as thoroughgoing empiricists who only had to stay out of the punishing way of the "Church." Buddhist ideology and tantric truths were as basic to the medical writers' worldviews as their interest in saving patients from death. What remains interesting is how the dynamic also went in the other direction: something like tantra could also serve to legitimize the medical. We saw this in the debate on the heart-tip, where tantra-generated gender tropes provided a level of meaning behind the physical, thereby making sense of an otherwise inexplicable assertion of the root text. In fact, tantric theorizations of subtle matter helped medical description on a number of occasions to talk about imperceptible functions in the body.[84]

If, then, we find an uneasy tension remaining between the claims of perceptibility and the claims of soteriological transformation, the tension may turn out to be mainly in our eyes. In the particular circumstance of seventeenth-century Buddhist Tibet, medicine helped provide the government with the grounds for an episteme in which the ideals and images of religion could coexist with the everyday practices of governance and power to display a coherent universe.

NOTES

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[1]Dar-mo sMan-rams-pa Blo-bzang-chos-grags (b. 1638), "Rus pa'i dum bu sum brgya drug cu'i skor bshad pa," in *Bod lugs gso rig sman rtsis ched rtsom phyogs bsdus* (Lhasa: sMan-rtsis Khang, 1996), 22–4, excerpted from his unpublished *gSer mchan rnam bkra glegs bam gan mdzod.*

[2]The degree of the revolution in European science in the early modern period is itself subject to question: see Steven Shapin, *The Scientific Revolution* (Chicago: University of Chicago Press, 1996).

[3]I took a similar approach to the issues of individualized selfhood, the writing of autobiography in Tibet, and modernity in *Apparitions of the Self: The Secret Autobiographies of a Tibetan Visionary* (Princeton: Princeton University Press, 1998).

[4]The common Tibetan terms are *myong-ba* and *nyams,* or some combination thereof. See Janet Gyatso, "Healing Burns with Fire: The Facilitations of Experience in Tibetan Buddhism," *Journal of the American Academy of Religion* 67:1 (1999): 113–47.

[5]The following is based largely on Zur-mkhar-ba Blo-gros rGyal-po (b. 1509), *sMan pa rnams kyis mi shes su mi rung ba'i shes bya spyi'i khog dbubs* (Chengdu: Si-khron Mi-rigs-dpe-skrun-khang, 2001), 287–321; and modern surveys such as dKon-mchog-rin-chen, *Bod kyi gso rig chos 'byung baidurya'i 'phreng ba* (Lanzhou: Kansu'u Mi-rigs-dpe-skrun-khang, 1992); and Khro-ru Tshe-rnam, "Bod lugs gso rig slob grva rim byung gi lo rgyus gsal ba'i gtam dngul dkar me long," in *Bod sman slob gso dang zhib 'jug* 1996.1: 1-11. See also Christopher Beckwith, "The Introduction of Greek Medicine into Tibet in the Seventh and Eighth Centuries," in *Journal of the American Oriental Society* 99:2 (1979): 297–313, and Fernand Meyer, *Gso-ba Rig-pa: Le système médical tibétain* (Paris: Centre National de la Re

cherche Scientifique, 1981).

[6]Zur-mkhar-ba, *sMan pa rnams*, 291–9.

[7][gYu-thog Yon-tan mgon-po], *bDud rtsi snying po yan lag brgyad pa gsang ba man ngag gi rgyud* (Lhasa: Bod-ljongs Mi-dmangs-dpe-skrun-khang, 1992) (hereafter cited as *Four Tantras*).

[8]See Christopher Cullen, "*Yi'an*: The Origins of a Genre of Chinese Medical Literature," in *Innovation in Chinese Medicine*, ed. Elizabeth Hsu (Cambridge: Cambridge University Press, 2001), 297–323.

[9]See Claus Vogel, ed., *Vagbhata's Astangahrdayasamhita, the First Five Chapters of its Tibetan Version* (Wiesbaden: F. Steiner, 1965); Vagbhata, *Vagbhata's Astangahrdayasamhita,* ed. Rahul Peter Das and Ronald Eric Emmerick (Groningen: Forsten, 1998); and R. E. Emmerick, "Sources of the *Four Tantras*," *Zeitschrift der Deutschen Morgenländischen Gesellschaft* (Wiesbaden) 3:2 (1977): 1135–42.

[10]The Tibetan labels are *lhan-thabs, sman-sbyor, 'khrungs-dpe,* and *lag-len*.

[11]Zur-mkhar-ba, *sMan pa rnams*, and sDe-srid Sangs-rgyas-rgya-mtsho, *dPal ldan gso ba rig pa'i khog 'bugs legs bshad baidurya'i me long drang srong dgyes pa'i dga' ston* (Lanzhou: Kansu'u Mi-rigs-dpe-skrun-khang, 1982) (hereafter cited as *Khog 'bugs*). There are earlier examples from at least the fourteenth century, yet to be studied by modern scholars.

[12]Sometimes a work self-identifies as a *nyams-yig,* e.g., Kong-sprul Yon-tan-rgya-mtsho (1813–99), *'Tsho byed las dang po la nye bar mkhor ba'i zin tig gces par btus pa bdud rtsi'i thigs pa*, in *gSo rig skor gyi rgyun mkho gal che ba bdam sgrigs,* ed. Yon-tan-rgya-mtsho et al. (Beijing: Mi-rigs-dpe-skrun-khang, 1988), 2.

[13]E.g., sDe-dge-bla-sman Chos-grags-rgya-mtsho (eighteenth century) *Nad sman sprod pa'i nyams yig,* in *gSo rig skor gyi rgyun mkho gal che ba bdam sgrigs*, ed. Yon-tan-rgya-mtsho et al. (Beijing: Mi-rigs-dpe-skrun-khang, 1988), 417–18.

[14]See sDe-srid Sangs-rgyas-rgya-mtsho, *Techniques of Lamaist Medical Practice, Being the Text of Man ngag yon tan rgyud kyi lhan thabs zug rngu'i tsha gdung sel ba 'i katpu ra dus min 'chi zhags gcod pa'i ral gri* (Leh: S. W. Tashigangpa, 1970), 566 and 568–9.

[15]Gong-sman dKon-mchog-phan-dar (1511–77), *Nyams yig rgya rtsa: The Smallest Collection of Gong-sman Dkon-mchog-phan-dar's Medical Instructions to the Students* (Leh: Lharje Tashi Yangphel Tashigang, 1969). Cf. the sources listed by sDe-srid, *Techniques*, 566–9.

[16]sDe-srid, *Techniques*, 566–7.

[17]sDe-dge-bla-sman, *Nad sman*, 401.

[18]Kong-sprul, *'Tsho byed*, 1–3.

[19]Zur-mkhar-ba Blo-gros-rgyal-po already notes that the *Four Tantra*'s *bShad brgyud* is rarely read: *rGyud bzhi'i 'grel pa mes po'i zhal lung* (Beijing: Krung-go'i Bod-kyi-shes-rig-dpe-skrun-khang, 1989), vol. 1, 95 (hereafter cited as *Mes po'i*). Cf. sDe-srid, *Techniques*, 566. Certainly by the twentieth century, physicians almost always use recent *nyams-yigs* as their actual handbooks, usually Kong-sprul, *'Tsho byed*, or one of those by mKhyen-rab-nor-bu (1883–1962).

[20]Kong-sprul, *'Tsho byed*, 32–3; 'Ju Mi-pham, *bDud rtsi snying po'i rgyud kyi 'grel pa drang srong zhal lung las dum bu bzhi pa phyi ma rgyud kyi rtsa mdo chu mdo'i tika,* in *gSo rig skor gyi rgyun mkho gal che ba bdam sgrigs,* ed. Yon-tan-rgya-mtsho et al. (Beijing: Mi-rigs-dpe-skrun-khang, 1988), 260–2.

[21]See dKon-mchog-rin-chen, *Bod kyi gso rig*, 187 and 188.

[22]Kurtis R. Schaeffer, "Textual Scholarship, Medical Tradition, and Mahayana Buddhist Ideals in Tibet," *Journal of Indian Philosophy* 31 (2003): 621–41. Cf. sDe-srid, *Techniques*, 569, emphasizing his own recourse to authoritative works (*lung*) and reasoning (*rigs*), even after arguing that experience is most essential.

[23]I.e., *lung* (Skt. *agama*); *rigs* (Skt. *yukti*); and *myong-ba* (Skt. not standard). See, e.g., Zur-mkhar-ba, *Mes po'i*, 3; sDe-srid, *Techniques,* 569.5.

[24](*rTag*)-*dpyad* (Skt.*vicara*) is sometimes a synonym for *myong-ba*: Byams-pa-'phrin-las [quoting sDe-srid], "sDe srid sangs rgyas rgya mtsho'i 'khrungs rabs dang mdzad rjes dad brgya'i padma rnam par bzhad pa'i phreng ba," in *Byams pa 'phrin las kyi gsung rtsom phyogs bsgrigs* (Beijing: Krung-go'i Bod-kyi-shes-rig-dpe-skrun-khang, 1997), 415.

[25]E.g., sDe-srid, *Techniques*, 566, railing against "nyams-len byed-mi mi-'dug" (those who are not people who practice), even while also insisting on the need for learning. Cf. sMin-gling Ngag-dbang-sangs-rgyas-dpal-bzang's criticism of Dar-mo and others who are "attached to the words of the Great Tantra (*Four Tantras*) but fail to do practice; leaving behind clinical examination, they murder patients." Quoted by Byams-pa-'phrin-las, *Gangs ljongs gso rig bstan pa'i nyin byed rim byon gyi rnam thar phyogs bsgrigs* (Beijing: Mi-rigs-dpe-skrun-khang, 2000), 318.

[26]Gyatso, "Healing Burns with Fire."

[27]Jonathan I. Israel, *Radical Enlightenment: Philosophy and the Making of Modernity 1650–1750* (Oxford: Oxford University Press, 2001), 252–6, 477–85, 535–40.

[28]For an early example of death as a key issue in medical ethics, see Sum-ston-pa Ye-shes-gzungs (twelfth century), "'Grel ba 'bum chung gsal sgron nor bu'i 'phreng mdzes," in *gYu thog cha lag bco brgyad* (Lanzhou: Kansu'u Mi-rigs–dpe-skrun-khang, 1999), vol. 1, especially 297 seq.

[29]Tib. *dngos-su-mthong-zhing* or *mngon-sum-du*.

[30]Cf., for example,Candrakirti's arcane analysis of the status of things that are directly perceived: Mervyn Sprung, trans., *Lucid Exposition of the Middle Way* (London : Routledge and Kegan Paul, 1979), pp. 60-63.

[31][gYu-thog], *Four Tantras*, 27 and 35.

[32][gYu-thog], *Four Tantras*, 375, 560, and 17. The last two explanations for the sex of a child are standard in Indic Ayurveda.

[33]Byang-pa rNam-rgyal-dpal-bzang (1395–1475), *bShad rgyud kyi 'grel chen bdud rtsi'i chu rgyun* (Chengdu: Si-khron Mi-rigs-dpe-skrun-khang, 2001), 90.

[34]Byang-pa bKra-shis-dpal-bzang, *dPal ldan bshad pa'i rgyud kyi 'grel pa bklag pa don tham chad grub pa* (photocopy of ms.), 63a–82a.

[35]Yan-dgon-pa rGyal-mtshan-dpal (1213–58), *rDo rje lus kyi sbas bshad,* in *The Collected Works* (*Gsun 'bum*) *of Yan-dgon-pa Rgyal-mtshan-dpal* (Thimphu: Kunsang Topgey, 1976), vol. 2, 434–5.

[36]sKyem-pa Tshe-dbang (fifteenth century), *rGyud bzhi'i rnam bshad* (Xining: mTsho-sngon Mi-rigs-dpe-skrun-khang, 2000), 129.

[37]Zur-mkhar-ba, *Mes po'i*, 133, 152, and 159.

[38]Zur-mkhar-ba, *Mes po'i*, 152 seq.

[39]Tib. *bskyed cing*. Zur-mkhar-ba, *Mes po'i*, 162. He also says that *lalana* and *rasana* are the basis (*gzhi*) of the white and black soul channels (133); or exist "in connection" (*dang 'brel-ba*) with them (165).

[40]Zur-mkhar-ba, *Mes po'i*, 155.

[41]Zur-mkhar-ba, *Mes po'i*, 133.10–12. This *srog-rtsa* is different from the black and white *srog-rtsa* specified under the heading of the "connecting channels" in the mature body. See also Zur-mkhar-ba, *Mes po'i*, 166.20–22 seq. Zur-mkhar-ba and others also consider the *Four Tantras*' fourth kind of channel, the life channel, as a place to juxtapose the tantric system of channels, but these discussions largely quote tantric sources and avoid specific medical anatomy: *Mes po'i*, 166–74. I will examine the interesting details of this debate in a longer publication.

[42]Zur-mkhar-ba, *Mes po'i*, 133.

[43]Zur-mkhar-ba, *Mes po'i* , 154.

[44]Zur-mkhar-ba, *Mes po'i* , 133 and 154.

[45]*Mi-'thad-pa*. Cf. sDe-srid Sangs-rgyas-rgya-mtsho, *gSo ba rig pa'i bstan bcos sman bla'i dgongs rgyan rgyud bzhi'i gsal byed bai dur sngon po'i ma lli ka* (Leh: D. L. Tashigang, 1981), vol. 2 [ck], 152 (hereafter cited as *Blue Beryl*). He calls this view "stupid."

[46]sDe-srid, *Blue Beryl*, vol. 2, 173–4.

[47]Compare sDe-srid, *Blue Beryl*, vol. 2, 151 seq., and Zur-mkhar-ba, *Mes po'i*, 153 seq.

[48]See, e.g., Kong-sprul Blo-gros-mtha-yas, "rNal 'byor bla na med pa'i rgyud sde rgya mtsho'i snying po bsdus pa zab mo nang di don nyung ngu'i tshig gis rnam par 'grol ba sab don snang byed," in *Zam mo nang gi don zhes bya ba'i gzhung gi rtsa 'grel,* ed. Karma Rang-byung-rdo-rje and Kong-sprul Yon-tan-rgya-mtsho (Xining: mTsho-sngon Bod-lugs-gso-rig-slob-grva-chen-mo, 1999), 57–333. This is reportedly also the position of a *Four Tantras* commentary by 'Ju Mi-pham. For a recent example by the twentieth-century scholar Tsultrim Gyaltsen, see Francis Garrett and Vincanne Adams, "The Three Channels in Tibetan Medicine," *Traditional South Asian Medicine*, forthcoming 2004.

[49]Gling-sman bKra-shis, *gSo ba rig pa'i gzhung rgyud bzhi'i dka' 'grel* (Chengdu: Si-khron Mi-rigs-dpe-skrun-khang, 1988), 44–5.

[50]Gling-sman, *gSo ba rig pa'i gzhung,* 46; "material" = *gdos bcas*.

[51]Cited in Zur-mkhar-ba, *Mes po'i*, 696–7. Cf. Byang-pa bKra-shis-dpal-bzang, *dPal ldan phyi ma brgyud kyi 'grel pa rin po che'i bang mdzod dgos 'dod 'byung ba* (incomplete photocopy of ms.), 293–9.

[52][gYu-thog], *Four Tantras*, 560: "ci phyi glo snying g.yas g.yon phyogs med kyang / snying gi rtse mo de ltar bstan pa'i phyir."

[53]Zur-mkhar-ba, *Mes po'i*, 697.

[54]Zur-mkhar-ba, *Mes po'i*, 698.

[55]Gling-sman, *gSo ba rig pa'i gzhung,* 477–8.

[56]Gling-sman, *gSo ba rig pa'i gzhung,* 478: "bDag gis ni pho mo mang po'i ro bshas pa mthong / Rang gis kyang gri snying blangs pas pho mo thams cad snying rtse cung zad g.yon phyogs brang ngos la bsten pa mthong."

[57]Garrett and Adams, "Three Channels," 19.

[58]For an overview of the period, see Tsipon Shakabpa, *A Political History of Tibet* (New Haven: Yale University Press, 1967); and Luciano Petech, *China and Tibet in the Early XVIIIth Century: History of the Establishment of Chinese Protectorate in Tibet* (Leiden: E. J. Brill, 1972).

[59]An admirable beginning is Françoise Pommaret, ed., *Lhasa in the Seventeenth Century: The Capital of the Dalai Lamas* (Leiden: Brill, 2003).

[60]The archival sources for this period are substantial, but our information depends for the moment largely on the secondary work of contemporary Tibetan scholars who are systematically combing the lengthy auto/biographies of the key figures in the period; examples include dKon-mchog Rin-chen, *Bod kyi gso rig,* and some of the essays in Byams-pa-'phrin-las, *Byams pa 'phrin las kyi gsung rtsom*.

[61]The physician is styled "(R)manaho." dKon-mchog-rin-chen, *Bod kyi gso rig*, 99; Byams-pa-'phrin-las, *Gangs ljongs gso rig bstan pa'i nyin byed*, 315, quoting the Fifth's autobiography, *Dukula'i gos bzang*.

[62]dKon-mchog-rin-chen, *Bod kyi gso rig*, 100–4; Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 414–17.

[63]Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 417 seq.

[64]Yuri Parfionovitch, Gyurme Dorje, and Fernand Meyer, eds., *Tibetan Medical Paintings: Illustrations to the Blue Beryl Treatise of Sangye Gyamtso* (*1653–1705*), 2 vols. (London: Serindia Publications, 1992). For a history of the set, see Byams-pa-'phrin-las, "Bod kyi g so rig rgyud bzhi'i nang don mtshon pa'i sman thang bris cha'i skor la rags tsam dpyad pa," in *Byams pa 'phrin las kyi gsung rtsom*, 370–81.

[65]Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 425–6, quoting sDe-srid's *Blue Beryl*.

[66]For example, he notes that when you look at an actual body you see that the heart tip faces left in both male and female: Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 425–6.

[67]"…dmar khrid mdzub tshugs su ngo sprod sngon med kyi bris cha..." Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 424, quoting sDe-srid's *mChod sdong 'dzam gling rgyan gcig rten gtsug lag khang dang bcas pa'i dkar chag*, f. 281.

[68]Byams-pa-'phrin-las, "sDe srid sangs rgyas rgya mtsho'i," 419, quoting sDe-srid's *Baidurya Ser po*. sDe-srid's *mChod sdong* is also a key source here: it has been studied by Kurtis Schaeffer, "Controlling Time and Space in Lhasa," paper delivered to the annual meeting of the American Academy of Religion, Toronto, November 2002.

[69]For striking images of the rituals of the Tibetan state by the mid-twentieth century, see Hugh Richardson, *Ceremonies of the Lhasa Year*, ed. Michael Aris (London: Serindia, 1993).

[70]Zur-mkhar-ba, "rGyud bzhi bka' dang bstan bcos rnam par dbye ba mun sel sgron me," in *Bod kyi sman rtsis ched r tsom phyogs bsdus,* ed. Bod Rang-skyong-ljongs sMan-rtsis-khang (Lhasa: Bod-ljongs Mi-dmangs-dpe-skrun-khang, 1986), 64.

[71]See also Samten Karmay, "The Four Tibetan Medical Treatises and their Critics," reprinted in *The Arrow and the Spindle: Studies in History, Myths, Rituals and Beliefs in Tibet* (Kathmandu: Mandala Book Point, 1998), 228–37. When Karmay first published this article in 1990, many key sources,

including those by Zur-mkhar-ba, were not accessible.

[72]Karmay, "Four Tibetan Medical Treatises," 230, n. 15. Others who argued for gYu-thog's authorship included Bo-dong Phyogs-las-rnam-rgyal (1376–1451) and sTag-tshang Shes-rab rin-chen (b. 1405).

[73]See Janet Gyatso, "The Logic of Legitimation in the Tibetan Treasure Tradition," *History of Religions* 33:1 (1993): 97–134.

[74]Zur-mkhar-ba, "rGyud bzhi bka'," 70.

[75]Cf. Zur-mkhar-ba's detailed discussion in *Mes po'i*, 4 seq.

[76]See list in Karmay, "Four Tibetan Medical Treatises," 234–7.

[77]See Gling-sman, *gSo ba rig pa'i gzhung*, 4–8.

[78]sDe-srid, *Khog 'bugs,* 274–6.

[79]See n. 70 above.

[80]*Mes po'i*, 21–2. Here he vacillates between calling *Four Tantras sastra* and a category of scriptures composed by figures other than the Buddha but which in some sense were inspired by the Buddha (*rjes-su-gnang-ba'i bka*) and which therefore still count as canonical *'*. I am saving the details of this intricate argument for a longer study.

[81]Zur-mkhar-ba, *sMan pa rnams*, 311–13.

[82]sDe-srid, *Blue Beryl*, vol. 2, 151.4; he only says "Zur," which could refer to Zur-mkhar-ba's predecessor, but I think the ambiguity is disingenuous. See n. 47 above. Other sections in *Blue Beryl* are also closely dependent upon *Mes po'i.*

[83]sDe-srid, *Khog 'bugs*, 349–55; see especially 352–3.

[84]An example would be the invocation of the invisibility of the tantric central channel as a model for the imperceptibility of certain fine channels connected to the liver: 'Bri-gung dKon-mchog-'gro-phan-dbang-po (b. 1631), "gSo ba rig pa'i gzhung lugs chenpo dpal ldan rgyud bzhi'i dka' gnad dogs sel gyi zin bris mdo," in *'Bri gung gso rig gces bsdus*, ed. 'Bri-gung Chos-grags et al. (Beijing: Mi-rigs-dpe-skrun-khang, 1999), 134–8.