

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

Volume 1172

**Longevity, Regeneration, and
Optimal Health**

**Integrating Eastern and Western
Perspectives**

Edited by

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*Published by Blackwell Publishing on behalf of the New York Academy of Sciences
Boston, Massachusetts
2009*

The *Annals of the New York Academy of Sciences* (ISSN: 0077-8923 [print]; ISSN: 1749-6632 [online]) is published 32 times a year on behalf of the New York Academy of Sciences by Wiley Subscription Services, Inc., a Wiley Company, 111 River Street, Hoboken, NJ 07030-5774.

MAILING: The *Annals* is mailed standard rate. POSTMASTER: Send all address changes to *ANNALS OF THE NEW YORK ACADEMY OF SCIENCES*, Journal Customer Services, John Wiley & Sons Inc., 350 Main Street, Malden, MA 02148-5020.

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Information for Subscribers: The *Annals* is published in 32 issues per year. Subscription prices for 2009 are:

Print & Online: US\$4862 (US), US\$5296 (Rest of World), €3432 (Europe), £2702 (UK). Prices are exclusive of tax. Australian GST, Canadian GST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to www3.interscience.wiley.com/aboutus/journal_ordering_and_payment.html#Tax. The price includes online access to the current and all online back files to January 1, 1997, where available. For other pricing options, including access information and terms and conditions, please visit www.interscience.wiley.com/journal-info.

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Printed in the USA.

The *Annals* is available to subscribers online at Wiley InterScience and the New York Academy of Sciences' Web site. Visit www.interscience.wiley.com to search the articles and register for table of contents e-mail alerts.

ISSN: 0077-8923 (print); 1749-6632 (online)

ISBN-10: 1-57331-677-6; ISBN-13: 978-1-57331-677-4

A catalogue record for this title is available from the British Library.

The Cross-Cultural Evidence on “Extreme Behaviors”

What Can It Tell Us?

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Many kinds of body/mind practices are capable of producing remarkable behaviors and altered body states. A typology of such behaviors and states, defined as observable and intentional “extreme” alterations to the body, is presented. Epistemological and methodological issues are discussed: limitations of observational data, and role of meaning, intentionality, and consciousness. Rapprochement between Western medicine and Indo-Tibetan medicine requires rethinking biomedicine’s radical grounding in physicality and reliance on “evidence-based medicine,” and guarding against an ethnocentric Western intellectual hegemony motivating medical science and clinical practice to colonize and subvert non-Western traditions like Indo-Tibetan Buddhist medicine.

Key words: mind/body disciplines; cross-cultural body-altering practices; consciousness; pain behavior

Introduction

The authors writing in this special issue address the possibility of a revolution occurring in Western medical science, in particular in the areas that study longevity, regeneration, and maintenance of optimal health. The September 2006 conference’s goal was to find ways that Indo-Tibetan medicine and Western medicine could talk to each other, and promising areas of convergence were discovered. Most of the scientists participating in the conference provided hypothesis-generating data from laboratory research suggesting that Indo-Tibetan medicine’s meditative and exercise practices may enhance the innate potential within all humans to achieve longevity and optimal health. As a medical anthropologist specializing in chronic pain, my evidence is indirect, and takes the form of cross-cultural data on what I’m

calling “extreme behaviors,” defined as observable and intentional “extreme” alterations to the body.

Many kinds of body/mind disciplines are capable of producing remarkable “extreme behaviors”: examples include religious rituals requiring mortification of the body that cause less injury than would be expected, martial arts, and even athletic training that leads to new world records. The cross-cultural record reveals abundant evidence of widespread practices that challenge what we consider to be the limits to “normal” human anatomy, physiology, and behavioral potential. What follows is a typology of “extreme behaviors” accompanied by examples chosen for their ability to illustrate certain epistemological and methodological issues that complicate interpretation of this kind of data. Delving into these issues helps us understand some of the barriers separating biomedicine (here used interchangeably with “Western medicine”) and vastly different medical traditions like Indo-Tibetan Buddhist medicine. Meaning and intentionality

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(and consciousness) play extremely important roles in producing "extreme behaviors," yet several foundational assumptions of biomedicine that restrict data-gathering techniques to observation limit our ability to comprehensively analyze and interpret these behaviors.

I conclude with an appeal to be aware of and resist an ethnocentric Western intellectual hegemony that at times motivates medical science and clinical practice to colonize and subvert non-Western traditions like Indo-Tibetan Buddhist medicine. Rather, these traditions should be treated with the respect they deserve, which means making serious attempts to understand them (and understanding does not mean believing), thus ensuring that the conversation remains a truly two-way one.

A Typology of "Extreme Behaviors"

Most "extreme behaviors" involve powerful mind/body connections, and many of these traditions, but not all, involve expert practice, here glossed as "discipline," which is the subcategory of most interest to us. However, understanding other kinds of "extreme behaviors" is also helpful, by way of contrast.

To be included in the typology below, a practice must be culturally prescribed—understood and approved of by some kind of community. Idiosyncratic "extreme behaviors," engaged in for whatever reason, do not qualify. Note that this typology does not include body-altering practices performed on a child or on an unwilling person. However, one subcategory does involve an individual engaging in practices that alter the body of another, an adult who voluntarily submits to the procedures. Also note that the typology is made up of Weberian (following sociologist Max Weber) "ideal types," a heuristic that facilitates analysis through construction of a set of totally distinct types. Such types are termed "ideal" because they rarely appear in such discrete form in real life, where boundary blurring often occurs.

The first category, that of ordeals, is illustrated by the Plains Indian Sun Dance.^{1,2} Into this category fall practices intended to breach the body's integrity in some fashion, and do not involve prior disciplinary training. In the case of the Sun Dance ceremony, whose meaning is religious, young men insert leather straps through incisions in their chests or backs and then are suspended from ropes in the center of the tent where the ritual is being held. To show their ability to withstand pain, dancers should remain stoic no matter what they are experiencing. Such mortification rituals are encountered in many, many cultures and serve many purposes. In some, like flagellants in certain Catholic religious processions, it is appropriate to show pain and suffering; in others the individual betrays weakness or lack of faith if any kind of pain behavior appears.

This initial category introduces the first epistemological consideration: behaviors that we observe do not necessarily tell us about inner states like pain. Rituals of the ordeal type require experiencing pain, but, again, we cannot know what the participant is actually feeling; in some cases it is possible the participant has lost consciousness and during that time experiences no pain. Pain medicine has yet to agree on a single definition of pain. The one used here defines pain as an experience, which requires consciousness. Thus, even if nociception is present and brain activity normally indicative of pain is observed via scanning technologies, if the individual is not conscious, no pain is present. Neurologist Antonio R. Damasio, on the other hand, distinguishes pain from knowing you have pain.^{3,4} Debates about the degree to which scanning technologies are changing debates about pain, consciousness, etc., are quite lively.⁵⁻⁹ We can never be sure what an individual is experiencing, even if he or she talks about it, for reports of experiences are not the same as the experiences themselves.¹⁰⁻¹¹ Neither verbal reports nor nonverbal pain behavior provide irrefutable evidence; they are at best approximations, and at worst totally misleading.

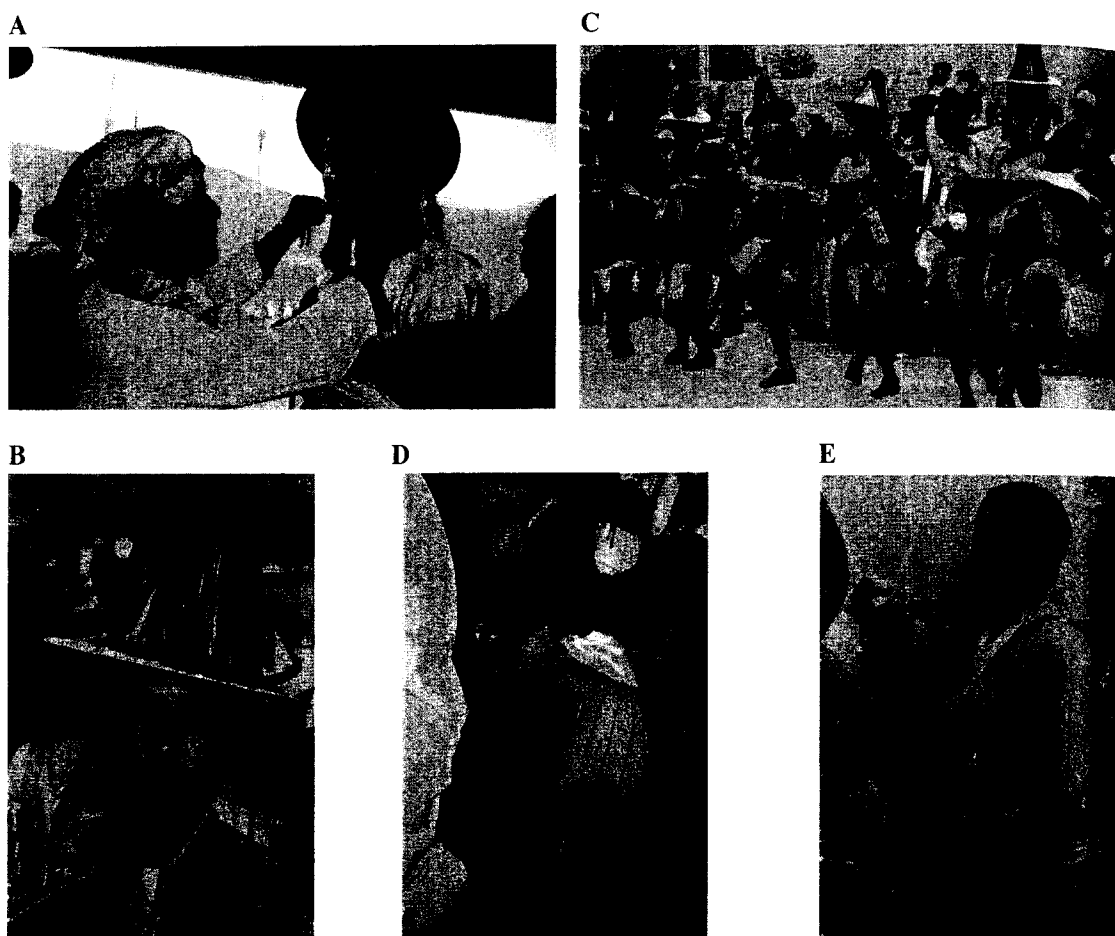


FIGURE 1. Tibetan Bon Shamanic ceremony. In this annual event, intended to promote a balance between humanity and nature, as the ceremony heightens in intensity, young men of the village appear before the shaman one by one. He pierces their cheeks, tongue, and back (**A**) with foot long spikes and, showing no pain (**B**) the young men then dance to the beat of drums (**C**). The shaman will also pierce the backs of men each with a dozen needles decorated with colored flags (**D**). As these men dance in wild abandon (**E**), the back needles eventually fall out. Note that there is no apparent bleeding from these piercings. (Barbara J. Paul, photographer.)

The second category involves “extreme behavior” that does not seem to produce pain. Five photographs of Tibetan Bon shamanic adepts illustrate this category (Fig. 1A–E). An adept’s facial expression may be quite difficult to read with respect to either the actual experience or what, if any, nonverbal messages are being sent, particularly if the observer does not know much about the practice. Figure 1B is a good case in point: this individual shows no embodied response to the breach of bodily integrity. We simply do not know if

pain is being experienced but not acknowledged, or is absent. Brain scanning technologies would provide more information, but we still would not know what the individual is actually experiencing.

The third category involves “extreme behaviors” that, rather than mortify the flesh, are feats that demonstrate remarkable control over the body. The photograph of Wim Hoff, practicing a variation of Tibetan tumo meditation, illustrates this category (Fig. 2). Adepts like Mr. Hoff show impressive mind/body discipline,



FIGURE 2. Wim Hoff, in a version of Tibetan tumo meditation, displays his ability to withstand extreme cold and, indeed, generate body heat. He is shown here standing in ice (ambient temperature was below freezing) for over one and one half hours in front of the Rubin Museum of Art in New York City. Our observations merely tell us that though the photograph reveals extreme control – withstanding freezing temperatures for, at this event, approximately an hour and a half with no clothing or insulation – Mr. Hoff’s facial expression is fairly calm, although intent. (Henry Boogert, photographer.)

but, again, we cannot ascertain an adept’s inner state. Our observations merely tell us that though the photograph reveals extreme control – withstanding freezing temperatures for, at this event, approximately an hour and a half with no clothing or insulation – but with a fairly calm, although intent, facial expression. Although it is difficult to imagine a neuroscanning technology employable in such situations, perhaps one will be available in the future; we still would not know what the person is thinking.

Also included in Category Three is “extreme behavior” detectable only by measuring a physiological function (for example, a substantial reduction in heart rate),^{12,13} if such a state is the result of discipline. Category Three illustrates best the disciplined human body’s ability to withstand injurious actions that normally produce pathological consequences, and emerge with minimal or no deleterious effects—truly mind over matter.

The fourth category is trance, something well understood in Western medicine. This type of

“extreme behavior” differs from the ordeal type in that the person is supposed to lose consciousness. Some trancing involves being possessed by another being. Again, we do not know for sure what the individual’s inner state is (the Sun Dancer may have gone into trance as well—although not a culturally prescribed one); here, also, the facial expression often tells us very little. Although in the West most people under hypnosis remain aware of their surroundings and are in control of mind and body,¹³ in some other situations the trance is deeper. What trancers feel in the way of pain seems to vary from culture to culture, as does the degree of consciousness during the trance. In quite a number of cases after the event the individual has no accessible memory of what occurred. Scopolamine, used in the early 20th century for childbirth pain, which did not relieve the pain but obliterated the memory of it, would constitute something of a Western analogue to trancers who have no memory of their experiences.

An example of trance without possession is illustrated by patients being treated in São Paulo, Brazil, by Dr. Mauricio Megalhães, a gynecologist who practices Western medicine, except every other Wednesday when he holds a free clinic and treats patients by summoning astral spirits. In order to demonstrate that it is the spirits doing the healing rather than biomedical procedures, he performs grotesque parodies of surgery, and yet patients exhibit no pain behavior. (Also remarkable are their subsequent reports of having been cured.) This clinic has been studied by an anthropologist, Sidney Greenfield, who made a documentary film of some of these sessions.¹⁴ Greenfield and a visiting anthropologist-physician team (R. T. Anderson and S. T. Anderson) conclude that patients are in trance, but at no point is this possibility mentioned by either the physician or the patients.²

There are many examples of trance or trance-like states: the beatific expression on the faces of saints being martyred in paintings may not be due to the artist's wanting to depict them as holy but something that actually happened: religious ecstasy can be so powerful that the worst torture cannot interrupt the experience of bliss. Some observers of Joan of Arc's burning at the stake reported a very calm facial expression; the same can be seen in photographs and video footage of the Vietnamese Buddhist monks who self-immolated protesting the South Vietnamese regime in the mid-1960s. Note, however, that we cannot categorically conclude that trance explains the behavior, which could also be due to stoicism.

A mysterious case similar to the Sao Paulo clinic example comes from a rural clinic in Brazil where a patient, following a surgical procedure in which the healer, João de Abadiania, jabbed a surgical scissors into his spinal column, reported having experienced excruciating pain during the procedure, but had exhibited no pain behavior at the time.² We cannot explain this anomaly; had he been in some degree of trance and could register pain only afterwards? Had he experienced excruciating pain

but been able to remain stoic in the face of such assault? Or, rather improbably, had he not, in fact, been in trance but nevertheless did not experience pain, and afterwards misrepresented the experience?

A ritual in Kataragama, Sri Lanka, illustrates possession by a supernatural being: a devotee has metal hooks inserted into his back, is raised by ropes, and swings suspended from a wooden beam. At the beginning of the ritual he goes into trance and is declared a deity incarnate for the day. In this state he confers blessings on the community. The devotee shows no sign whatsoever of suffering, and reports experiencing a state of exaltation.² Note that Western psychiatry considers this form of trance as pathological—"dissociation."

The two Brazilian examples are healing events, the opposite of the intention behind ordeals like the Plains Indian Sun Dance. This healing goal links Category Four with biomedicine. In the West, if a medical procedure will injure the body or otherwise cause pain, anesthesia is used. However, sometimes a patient will choose to withstand the pain of a dental procedure rather than be injected with an anesthetic; if a stoic attitude is successfully adopted, we come close to one interpretation of the rural Brazilian example.

Discussion

This typology of "extreme behaviors" reveals complexities that illustrate some aspects of the divide between biomedicine and radically different medical traditions like Indo-Tibetan Buddhist medicine. It is true that certain clinical observational techniques will provide more information about some of the cases; for example, we can ascertain whether someone is in trance. And scanning technologies provide additional information about the functioning brain and alterations in structure. Even so, the ensemble of cases presented above illustrates the difficulty of drawing conclusions solely based on observation, because we have no access to the meaning

of each kind of "extreme behavior," in particular the intentionality behind it. And, despite scanning technologies we still can know very little about the actual experience. We simply cannot understand these remarkable cases of intentional, culturally meaningful behavior if we are only permitted to observe, whether with the naked eye or with technologically sophisticated measuring instruments. After all, such behavior has not appeared accidentally; the reason ordeals, feats, inexplicable absence of injury, etc., occur has to do with culturally mandated intentions and action, which—no matter how curious we may be about an individual's ability to achieve amazing feats—are simply inexplicable within Western notions of proper motivation and proper behavior. Such "extreme behaviors" are even more of an enigma within biomedicine; as noted, psychiatry has labeled some of them instances of psychopathology. In the case of possession it cannot do otherwise, for a foundational assumption of biomedicine premises a single self in a single body.

Despite the vistas opened up by brain imaging technology, what is going on in the mind still must be inferred, which biomedicine, whose methodology demands observational data that can be verified, does not allow. We can discover so little because knowing what such "extreme behaviors" mean to those who engage in them is more fundamental to understanding them than many other kinds of behavior. If we want to investigate meaning and intentionality, we must analyze domains comprised of symbols, for example, language. However, such analytical methodology is incommensurable with the foundational assumptions underlying biomedical research, one of which is a radical grounding in physicality and materiality, in a Western concept of nature that excludes culture—excludes symbols, the supernatural, and the teleological. Nor can biomedicine's paradigm include experience; as Arthur Kleinman¹⁵ puts it, "Experience is fugitive, fungible, and therefore invalid." Of course, applied biomedicine—clinical practice—makes inferences and traffics in symbols all the time, the

symptom serving perhaps as the best example. And biomedical practice employs all sorts of nonscientific procedures and attitudes—the interview, empathic listening, etc.—that allow us to make headway in understanding why people would want to treat their bodies in such an abnormal manner. But we are not discussing actual clinicians, actual clinical practice, the art of medicine, etc., but the foundational assumptions of biomedicine, in particular what constitutes acceptable scientific methodologies. Biomedical philosophy urges clinicians to go beyond the experiential evidence and replace it with observed, objective data, with signs rather than symptoms. Evidence-based medicine constitutes the gold standard of therapeutic practice. As Kleinman writes, the task of biomedical practitioners is to construct disease, a biological pathology, out of the evidence at their disposal, a set of signs and symptoms and other accompanying relevant information (for example, knowledge that the flu season has begun).¹⁶ Disease here contrasts with illness, understood to be an experience—an instance, an illness episode as experienced by a specific individual who is ailing, or by others involved in his or her illness episode.

Here is a paradox: an investigation of "extreme behaviors" promises an abundance of valuable information about mind-over-matter topics. But the key to understanding "extreme behaviors"—what in fact brings them into being (not in the sense of proximate causes, but more distal ones)—is not amenable to medical science methodologies, because what produces them depends on what they mean to the person—the whole person—exhibiting them. We have here very abnormal body states which got that way not from pathological microbes, toxins, unhealthy behavior, etc., but due to an intentionality that holds great promise, if we can unlock the secrets relating to belief, will, and mental discipline that allow a body to engage in what are normally injurious practices and come away with little or no injury. I would argue that the same is true with respect to various sought-after techniques of Tibetan

Buddhist medicine, such as achieving high-level brain activation via high-frequency gamma waves and brain synchrony, or coordination.¹⁷

We have returned to the question of how to translate the discourses and practices of the Indo-Tibetan Buddhist medical tradition (or any other similarly radically different tradition) to those of biomedicine. At present, no successful translation is possible. Successful rapprochement between Western medicine and Indo-Tibetan medicine will require a radical revision of some of biomedical theory and methodology.

However, in fact many of the changes that would be required are already taking place. The alternative (integrative, complementary) medical knowledge discussed at the conference is part of a significant revolution in Western medicine in some respects already well along. A remarkable number of clinicians incorporate various technologies and philosophies of these alternative medicinal traditions into their practice, and a remarkable number of complementary medicine programs have been established in health-delivery institutions, in part because a truly remarkable number of Americans have sought out complementary practitioners.

These are some of the limits to biomedicine as a science, which obviously affect how it is practiced. Serious body/mind perspectives subvert the biomedical paradigm, in that while we can see and measure brain function, we cannot see the mind, we cannot see experience. What neurologist John Loeser says about pain applies to all experience: "Pain is not a thing; it is a concept that we impose upon a set of observations of ourselves and others. It . . . cannot be measured directly."¹⁸

Conclusions

The potential for fruitful exchange between the two knowledge systems being discussed in this special journal issue is impressive. However, we also need to keep in mind the differences, at times vast, that separate them. One difference is that Buddhism is a religion. Whatever

the Indo-Tibetan Buddhist monks are thinking and feeling when they engage in the practices we are interested in, these thoughts and feelings cannot be incorporated into the secular Western scientific paradigm. These knowledge systems describe and interpret a cosmos far different from the one Western science grounds itself on. We need to respect these differences, and a good way to do this is to deeply understand them—always keeping in mind that understanding something is not the same thing as believing it.

Western knowledge, including science and medicine, is hegemonic, and at times assumes a rather imperialistic stance. Of course, all medical systems establish truth claims that, to a greater or lesser degree, can be seen as ethnocentric, but biomedicine's exclusion of other systems is much more extensive (and is easily defended, for these exacting requirements are generally considered to have led to biomedicine's extremely impressive achievements). At present, mind/body medicine's acceptance by Western society depends on such rigorously acquired evidence; we shall see how the future unfolds in this area.

Erin Olivo's essay¹⁹ speaks about "a common language embraced by both traditions" that will "thereby truly achieve the 'globalization of medicine,'" a wonderful goal. But we must guard against what unfortunately all too often happens when an alternative healing system is appropriated by biomedical practice: the baby is thrown out with the bath water.

Conflicts of Interest

The author declares no conflicts of interest.

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