



MIND & LIFE

Mind & Life Podcast Transcript Tawni Tidwell – Between Life and Death

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Opening Quote – Tawni Tidwell (00:00:04): I've seen my role really as cultural translator, as being a bridge between worlds, a bridge between ways of knowing, helping people to come back home to their bodies and to their communities, to their environments, and having time to reconnect to those things and people and places that make us whole. This is a medical system that's incredibly complex, and yet it's really simple. It's about just these processes that we all know. but I think in our world, we've gotten disconnected from those. And just bringing that synergy back together, and giving people permission to do that has been a big part of the journey.

Intro – Wendy Hasenkamp (00:00:45): Welcome to Mind & Life. I'm Wendy Hasenkamp. My guest today is biocultural anthropologist Tawni Tidwell. Tawni is a scientist at the Center for Healthy Minds at the University of Wisconsin–Madison, and she's also a Tibetan medical doctor. Her interests lie at the intersection of minds, bodies, and cultures, and she's been studying ways of both living—and dying—with greater awareness and well-being. Along those lines she's been leading a fascinating project through the Center for Healthy Minds where she's studying a phenomenon in the Tibetan community known as tukdam. Tawni explains a lot more about this in the episode, but I'll just say briefly here that this is when advanced meditators are reportedly able to extend the process of dying much, much longer than we normally think is possible in the West. This raises all kinds of deep questions around the nature of consciousness, the nature of life, the limits of science, subtle energy or subtle body, and perhaps points to some of the far edges of what might be possible through contemplative practice.

(00:01:58) We get into all of this in today's conversation, and a lot more too. We talk about different cultural approaches to body and health, understanding individual differences around which kinds of practices and medicine might be best for someone, and the effectiveness of Tibetan medicine in treating COVID.

(00:02:18) Tawni and I were actually scheduled to have this conversation in the spring of 2020, but then COVID and many other things happened, so I'm glad we were finally able to connect, and I'm really happy to be able to share her amazing work and incredibly holistic perspective with you. You can check the show notes for more on her research, and there's also a link to a recent documentary about the Tukdam Project, if you want to dive deeper into that. Alright, I really think you'll enjoy this one. I'm so happy to share with you Tawni Tidwell.

Wendy Hasenkamp (00:02:52): It is such a pleasure to welcome Tawni Tidwell to the show. Tawni, it's great to see you. Thanks a lot for being here.

Tawni Tidwell (00:02:59): Thanks so much, Wendy. It's such a pleasure to be here. It's really an honor.

Wendy Hasenkamp (00:03:03): I love to start with some background from the guests. So I would love to hear how you got interested in biocultural anthropology (and maybe you could even share what exactly that is for listeners), and your path into Tibetan medicine and all of the amazing things that you do.

Tawni Tidwell (00:03:23): Oh, thank you. Yeah, I think best way to start with that is, I was really interested in being an aerospace medical doctor. I was interested in extreme conditions of the body, weightlessness, high altitude. Growing up in Colorado, my family has Native American heritage. I don't look like it, but on both my paternal grandfathers' side, Cherokee, and then on my maternal grandfather's side, Oglala Lakota. And my grandpa, my mom's dad, grew up on the Assiniboine Reservation in Wolf Point Montana. And so I think for me, always trying to understand how we understand our bodies, the landscapes, health, wellness, and how we read that on the land.

(00:04:09) And I think knowing that we had lived off the land in ways that are so different than the way that we live today, and I think I always have been interested in that. My paternal grandfather, we would be hunting for arrowheads growing up and he would talk about riding horses and the settlers coming in. These were not actually true stories, but some mythology for my young mind to just imagine this other way of living. And I think that that really struck a chord with me, also because we lived in Korea when I was really young, from age two to five. My dad was in the military there, and I think coming back to the US and people asking me, "Where are you from?" And I was like, "Korea." And they kept looking at me like this confused young little girl. And I think seeing through a different culture's eyes about how we know what we know and that our cultures inform that.

(00:05:04) And so I think that when I was an undergrad at Stanford, pre-med, wanting to do medicine, I always assumed that I also wanted to study for a while, say, in China, some Chinese medicine as well, and to look at how we can question our understandings of how the body functions, and stress and different ways. And so as I was going through freshman year, sophomore year, I started learning about the Tibetan community in India. I had met the Dalai Lama in high school. And there was a program in Dharamsala and I had just decided to go. This was Emory's first batch, the first Tibetan Studies program. And so Stanford let you just not register for the next quarter. So I "stopped out" and joined this program.

(00:05:55) And in that semester program, we could also have research. And so I wanted to understand what this medical system was, Tibetan medicine. And so started learning about this amazing culture on the rooftop of the world and how this medical system probably has something to tell us about the body, about how we've lived in totally extreme environments, and yogis doing crazy things with their bodies, manipulating their metabolism and being able to go into freezing conditions and bring up heat.

(00:06:28) And so something struck really closely with me in that. I went back, I was a physics major and pre-med, and I just thought, wow, this is something that I really want to understand more, and understand more of my own heritage. And I think that was what led me then to continue going back to Tibet. I went three times again as an undergrad—I was like commuting to Asia. And at the very end of Stanford, decided that physics was not what I wanted to study. I wanted to study ecology. I wanted to study earth systems and our health, how we understand our body's health through the environment, because that felt like so much of what I was understanding from the Tibetan medical perspective, but also from a lot of our native heritage.

(00:07:16) And [I] graduated, went and lived in the woods and did a lot of wilderness survival with some wilderness and nature awareness schools, learning these skills. And that was the time when my grandpa was passing. So there was also a way that it was reconnecting with him (he had gone back to the reservation), and learning these skills that he was really close to, but our greater family didn't really understand, didn't really appreciate.

(00:07:42) And in that experience, realized that what I wanted to do was to help people learn about their relationship to their bodies, to the earth, and to community. And what did that look like? So in my mind, the medicine part of that looked like studying Tibetan medicine. But I wanted the science. I was such a nerd. I loved the science. And so I thought, well, I want to pursue training in graduate work that allows me to understand these aspects of culture, of biology, of how culture gets under the skin, how our minds change our bodies, how our ways of living, ways of knowing, literally change the way we experience well-being. And so I started applying to all these different PhD programs. I thought, oh, interdisciplinarian science! Little did I know that doesn't actually exist. *[laughter]*

(00:08:31) So I was in India. I was studying with my teacher Amchi Khenrab Gyamtso, who was the vice principal of Men-Tsee-Khang College, and just starting to learn a little bit about Tibetan medicine, thinking about maybe eventually taking the entrance exam. I was working with the Tibetan Studies program at Emory. So I was at that time a teaching fellow with Geshema Kelsang Wangmo. And lo and behold, there was Professor Carol Worthman in our kitchen, and she said, "Why didn't you apply to anthropology?" I was like, "No, no, I'm not interested in humanities, cultural ways... I'm interested in biology." *[laughter]* And she's this phenomenal neuroendocrinologist doing groundbreaking work. She was like, "I think you don't understand what anthropology really could be."

(00:09:14) And so she started telling me about biocultural anthropology, and the strengths of understanding the cultural intersections with the biological intersections and how we can really see that ways of living, different populations, different cultures, our relationships with the environments, our communities, our intellectual history, shape the way that we experience life and well-being. And I was hooked. So that was it. And so I applied to their program, and so I was kind of doing an MD/PhD—Tibetan style—through Emory. So that's how I came to it.

Wendy Hasenkamp (00:09:50): Amazing. I love how this frame just weaves together so many perspectives into one lens. So I'm really excited to talk to you about your work. I thought maybe it might be helpful for the audience just to go through a little bit of the perspective of Tibetan medicine on minds and bodies, and like you said, the perspectives of well-being and health, because some of them are quite different from what people in Western systems might be familiar with. So I don't know if there's a simple way to introduce that, but I would love to hear more about that.

Tawni Tidwell (00:10:25): So Tibetan Medicine is one of the four great Asian scholastic medical systems, with Ayurveda, Chinese medicine, and Unani. So it was co-developed, similar to Ayurveda in India, in the great Buddhist monastic institutions. And this is when the śramaṇas, a lot of these yogis that were in especially eastern India, were looking at aspects of the body. This is when the Vedic system was really dominant, as well. And they were kind of pushing against these purification rites of the Vedic period, and were really interested in different empirical ways to understand the body, how Buddhism helped us to understand the role of the mind and the body. And so a lot of that early work and a lot of the treatises that were developed and what we see in the Buddhist canon, as well, informed what became Ayurveda, and then also then came into Tibet.

(00:11:16) And then as it came into Tibet in the seventh to eighth century, you had, I mean, this was just medicine. It wasn't like these different traditions coming from different areas. So you had medicine coming in from Persia, from Greece, from China, from all over, texts being translated. And that's what became Tibetan medicine, is understanding the phenomenal breadth of the different kinds of medicines—from plant medicine to mineral medicines, the geologies, the soil, different fauna, bringing that all into this huge pharmacopeia, to different techniques, from cupping, to needling, to massage therapy, medicinal bath, looking at lifestyle and diet, different environments, and how our different individual constitutions require different diets, different kinds of lifestyles.

(00:12:03) And so what Tibet medicine has become is this comprehensive system where diet, lifestyle, medicine, and these external therapies are the way that we approach health—and then our relationship to community, social relationships, and environments. So in a really simple context, when someone comes in, a lot of it's understanding, say if they have cancer, what are the conditions that they've been experiencing over the years that might have led to that condition? Are there certain stresses and inflammations in the body, or is it more of their lineage that's been giving them a more vulnerability to that certain condition? Or exposures, toxic exposures. And looking at that whole picture and then bringing in therapies that bring in diet, lifestyle, medicine, and maybe some external therapies to help their healing journey.

Wendy Hasenkamp (00:12:55): Yeah, I love how holistic that perspective is, looking at all those different influences. You mentioned a little bit about constitutions and the different constitutions that people have. I wonder if you could expand on that just a little bit because I feel like that's a piece that doesn't really exist in Western medicine, that many of these, as you said, the great traditional systems, really rely on. Could you share a little bit about constitutions?

Tawni Tidwell (00:13:22): Yeah. I think actually what's so exciting to me is that so much that has developed in our Western science is moving towards that personalized medicine model, and it's actually moving towards understanding what Tibetan medicine describes as constitutions. So it's looking at that developmental context when we're in the womb and how we get imprinted with certain kinds of proclivities, that we have certain kinds of genetic, so genotypic and phenotypic, the way that our bodies are programmed to express themselves physically, but also emotionally, the patterns that we have. And that the first thousand days also, even after birth, our environments, the social relationships, our families—imprint us and set up these initial conditions that then have massive implications into the way that our health is expressed throughout our life course, in the way that we respond to stresses, the way that we respond in different social interactions.

(00:14:22) And so from the Tibetan medical perspective, that has physical vulnerabilities, but also different emotional patterns that we express. And so some people might have a tendency to be more irritable than others or more content and satisfied with their lives, or might have just a lot of yearning that constantly drives certain kinds of behaviors, a lot of seeking behaviors. And so those are all what Tibetan medicine understands as this constitution that then means that they need certain kinds of foods, certain kinds of social relationships. Some people need more social interactions, some people need less. And so all of those come into how a Tibetan physician then advises what's appropriate for that individual as well.

Wendy Hasenkamp (00:15:07): There's another piece that I'd love to hear your perspective on, which is related to consciousness, and sometimes described as a subtle body or the subtle mind, which is I think a very different concept from Western systems. So maybe you could frame that a little bit and then I'm sure we'll talk a lot more about that in some of the projects that you've been getting into.

Tawni Tidwell (00:15:28): Yeah, absolutely. So the way Tibetan medicine (and this intersects with a Buddhist perspective on the mind), looks at the subtle body is that we have our physical substrate, which has both subtle and coarse aspects of it. So I like to give the analogy that the coarse body, which is our cells and tissues and all the different pathways in the body set up for our mass or coarse physical function, and the subtle is like the neuroendocrine system. It's like the subtle interconnections across all the different physical systems of the body. Our stress response, our inclinations, all these things, some of our more subtle aspects of mind come from that subtle body.

(00:16:09) And so *lung* is the winds in the body, from the Tibetan medical system. They also have coarse functions, from swallowing and walking and moving. But then the subtle parts is really the functions of the mind. It animates everything. It's everything that gets signaled in the body. And so those subtle, subtle signals is the subtle body, and the mind is considered intimately connected to that subtle system, such that coarse mental functions, which are our thoughts and our emotional reactions, when on a subtle level it's just these slight impulses. So tendencies, ways of seeing and viewing the world that actually have phenomenally gross manifestations, but that actually derive from this really subtle orientation and subtle patterning of the body. And so that would be that subtle body.

Wendy Hasenkamp (00:17:03): Oh, that's interesting. Yeah, you mentioned how you think about the subtle body as these more nuanced, complex interactions, like neuroendocrine and things like that. Is there also another level that's like a—I've heard it described like a purely energy body—that we don't really have as a construct in Western medicine? Or do you view it actually as there are these parallels to physical systems that we understand in Western medicine?

Tawni Tidwell (00:17:33): Yeah. It's such a great question, and this is getting into the massive research project that we have at the Center. So I think that's the question, is what are the instruments that we have and what are the assumptions that we have on the Western side about the mind? And I think that's what we've really come to grapple with, is that we don't really have a good understanding of what is the mind or what is consciousness from the Western perspective. And so what are we looking for?

(00:17:59) And so I think that this question of, from the Tibetan Buddhist or Tibetan medical perspective, what comes from one lifetime to another, what is that subtle mind? From the Western perspective we don't recognize that necessarily, especially in the science world. And so what is that body? We would say that is pure energy. There's an aspect of lucidity, an aspect of clarity that also has the capacity to have imprints from our life and to affect other aspects of our new manifestations. And so we could see that as a pure energy, that we wouldn't necessarily understand from the Western perspective for sure.

Wendy Hasenkamp (00:18:40): And that's linking into, maybe it's also worth just explaining a little bit about the perspective of multiple lives, like a consciousness continuing through multiple different lives.

Tawni Tidwell (00:18:52): Absolutely. And that our current lifetime might synergize some of those imprints, or some of those might remain dormant and then emerge later in future lives too. And so we're kind of experiencing the cumulative effect of countless lifetimes and might not know where those impulses are coming from. You know, two kids that grow up in the same home can be so dramatically different. And so from the Tibetan medical perspective, it's like, yeah, there's a lot of lifetimes imprinting those experiences and ways of being.

Wendy Hasenkamp (00:19:22): So the idea in that system, in the Tibetan system, is that there's some level of consciousness that continues through multiple lifetimes as kind of the same... there are the same imprints or patterns that get translated. I mean, sometimes this is called reincarnation, or there's so many different terms for it. I don't know the best way to describe it. But there's something the same that is transmitted over many, many lifetimes. You could probably explain that better, but just to lay that groundwork.

Tawni Tidwell (00:19:53): No, yeah. So it's described as the, it's called the alaya-vijnana, which is the storehouse consciousness. So it's these seeds, it's these very, very subtle seeds that are what is transmitted from one lifetime to the other. So those seeds get planted in each lifetime that we experience, and some of them can ripen at different times and come to full fruition. Others might actually be cleared or cleansed, so to speak.

(00:20:19) And so we experience that flux in this very, very foundational consciousness. And so our experience in this lifetime is acting on all those seeds from all the previous lifetimes, and then we'll also embed new seeds in the next lifetime. Or if we're really remarkable practitioners, might actually bring to fruition a realized state where those karmic seeds are purified.

Wendy Hasenkamp (00:20:43): So then the cycle stops, is that [right]?

Tawni Tidwell (00:20:46): Yeah.

Wendy Hasenkamp (00:20:47): I want to get to the Tukdam Project that you've been working on, but first I just want to ask one side question, thinking about these multiple lifetimes. I'm wondering what you think about current work around epigenetics and thinking about intergenerational transmission of things like trauma or experiences that we're learning about from the biological perspective. I always feel like that has really interesting implications when you think of these Buddhist perspectives on multiple lives.

Tawni Tidwell (00:21:17): Absolutely. I think this is where I was also alluding to in the constitution conversation that we were just having about how aspects of the microbiome and psychoneuroimmunology and then epigenetics help us to understand that we all have these individual signatures of our mind and body. But also these signatures come from previous lifetimes that we inherit, right? The epigenetic aspect. And so I think it's such a remarkable way that we are understanding that from the Western science perspective— that we could be experiencing things from our grandparents, our great-grandparents, that can be trauma, can be ways of stress response. I mean, the Dutch famine study also, just the way our metabolism works can come from the experience of our grandparents. That's remarkable. And that we have the opportunity to change that, too. We can heal those. We can actually change the way that we then transmit that to our offspring and to our next generations.

Wendy Hasenkamp (00:22:18): Which opens up the idea of intergenerational transmissions of positive frames possibly, too.

Tawni Tidwell (00:22:25): Yeah. Bringing healing, bringing different ways of being. I think in our day and age when we're seeing so much angst, and how we can set up as a global community a different way of being for our next generation. And I think sometimes people feel really distraught at this time, but it's also important, I think, for us to realize we have so much power in what things look like generations from now.

[\(00:22:49\)](#) – musical interlude –

Wendy Hasenkamp [\(00:23:25\)](#): Well, let's jump into this study that you are currently leading. So I will let you describe the whole framework. It's called the Tukdam Project. So maybe we could start with what is the phenomenon or experience of tukdam and how you go about studying that?

Tawni Tidwell [\(00:23:41\)](#): Yeah, wonderful, thank you. So this started in 1995. It was a conversation with His Holiness the Dalai Lama and Richie Davidson in a Mind & Life Dialogue. And it was His Holiness talking about his tutor, Ling Rinpoche, and that his tutor had gone into this state of tukdam, which is when the heart and lungs stop functioning, presumably also the brain no longer has gross activities, and is clinically dead basically, from the Western perspective. And yet shows no signs of decomposition, the skin remains elastic. Often these individuals are in a full meditative posture, sometimes full lotus posture. They look radiant. Oftentimes they might be quite ill before they pass, and somehow the appearance is more radiant than just before clinical death. And they can last in this state for... and this was Ling Rinpoche, it was 13 days. And so our longest case so far has been 38 days. So it can last a long time before any sign of decomposition, any sign of smell starts happening.

[\(00:24:54\)](#) And so His Holiness turned to Richie and said, "I think you should study this, and I think you should bring the best of the best of science to do so. I think it will question fundamental understandings of consciousness and the mind—this hard philosophical question of is consciousness an epiphenomena of the brain, or are there different ways to understand the mind, and the way that we can think about living and the transition from living to dying?"

[\(00:25:21\)](#) And so from that time, it took a while to get equipment into the field. So tukdam is a state that is considered like the Olympics of enlightenment. It's the time when the coarse body functions cease, and it provides this remarkable opportunity to witness the nature of mind that we all have. We all have this opportunity when we die, but those who train lifetimes and particularly all their life to be present for this moment, have the opportunity to really see that clear light mind in that moment, and in that recognition, sustain that to reside in that state. And that is a state of realization.

[\(00:26:04\)](#) And so from the Tibetan Buddhist perspective, that clear light consciousness really resides at the heart. And so there's not an expectation that there would be many brain signals at that point, even at the brainstem level, and that we should be looking at really some residual activity at maybe a cellular level at the heart. And so the idea is how do we measure that?

[\(00:26:31\)](#) And so the team here in Wisconsin, this was the Waisman Brain Imaging Center at the time, started to pull together money from donors, from all different places, to get EEG equipment, EKG, blood oximetry, full psychophys equipment into the field, including thermography, so infrared cameras, to be able to be ready anytime a case occurs, to go to that case.

[\(00:26:58\)](#) So because this is such a sensitive state and that historically, traditionally no one would be allowed around that practitioner, that the room would be closed, not even a butter lamp would be lit, not even incense, except for the closest attendants perhaps. And so the fact that His Holiness really encouraged the community to be open to scientists coming and studying it was huge. And not everyone was open to it, but many started to become open to it. And so when a case would occur—so we had two kits, one in North India and one in South India, that were installed—and when a case occurred, the team would go, and this was a collaboration with Men-Tsee-Khang, the Tibet Medical Institute in India. And our amchis, our Tibetan physicians, would drop their caseload, or some of them were in the research department, and would go to a case to start recording.

Wendy Hasenkamp (00:27:48): How often does this phenomenon happen?

Tawni Tidwell (00:27:51): So this is something we don't quite know yet. Since the beginning of the project, it was maybe like two to three per year, but as more and more openness has occurred... for example, in 2020/2021, we had 10 cases, 11 cases, 12 cases, and many that we knew about, but were not open to being investigated. And as Dekila Chungyalpa has talked about her family in Sikkim, and especially a lot of these remarkable practitioners in that area, Karma Kagyu and Nyingma, it's so common. So they're like, "Yeah, yeah, yeah, this happens all the time."

Wendy Hasenkamp (00:28:29): Interesting!

Tawni Tidwell (00:28:30): And so we don't know. And also for different traditions, they don't remain in the state for as long, so it might be just three days and then the state is released. And that's because the recognition of the nature of mind has occurred, and it has occurred maybe many times throughout their lifetime. And the interest is not to sustain that state, but especially in the Gelug school of Tibetan Buddhism, there's more emphasis on shamatha, of the stability of the calm abiding of the mind, and these really, really elaborate visualizations of the mandala of many, many deities in the mandala.

(00:29:06) And so as the visualization is dissolving in the mind of the practitioner, that can take a long time. And so they will remain in that state of recognition for a long time. And in fact, even in the Gelug school, they would say that sometimes it's too long *[laughter]*, that there is a request made through prayers, through different recitations, to bring the practitioner out, to say, "Please release that state." Because the idea is that maybe in their next life, they might not have as sharp of faculties, that they bliss out, so to speak.

Wendy Hasenkamp (00:29:39): Interesting. So from this perspective, just within the Tibetan system, death is viewed obviously as much more of a process, like a longer process than I think we view it in the West. So that might be interesting to just talk about those differences. But when, in a situation of tukdam or anytime, at what point do they consider death to finally have occurred? What are the markers?

Tawni Tidwell (00:30:07): Yeah, great. Yeah. So when the state is released by the practitioner, then it's said that you have red and white fluids coming out of the nose and the reproductive organs.

Wendy Hasenkamp (00:30:19): What are those fluids?

Tawni Tidwell (00:30:21): Yeah, we don't know.

Wendy Hasenkamp (00:30:22): Okay.

Tawni Tidwell (00:30:22): Yeah. So this is something that we've been trying to study also as a team, to collect those fluids. It doesn't always happen. So that's another aspect of it. But from the forensic perspective, they would say that it's purge fluid, but it's quite different. It's quite red and quite white or clear-ish. So we haven't had the opportunity to investigate that yet, although it's been collected by attendants. And usually because those substances are really precious, considered the embodiment of bodhicitta or the enlightened mind, then it's not necessarily... you don't just give it to a scientist to study.

(00:30:57) So the other sign is that you see a marked drooping of the body. So before it was quite erect. Putrefaction, so the putrid odor, the decompositional smell, comes in very strongly. Usually when the state is present, people describe the odor as floral, very almost rose-like. And so this transition in the odor is really strong. And then literally skin slippage, the venal network starting to be apparent, the blue vein network starting to become more and more apparent. So you have the putrefaction of the tissues, the decomposition of the body.

(00:31:35) And so this has been really interesting because in the history of the study, we've been focusing on the neuroscience, but often we don't get to the body until three days in. Often it's not even notified until three days in. So one wouldn't expect brain activity to be occurring at that point. So we published this null-finding paper to say, lo and behold, there's no brain activity. And so we've switched to forensics, like what can we see about the body?

(00:32:02) And what's really cool about that is that Buddhist epistemology, or ways of knowing, really understands that there's specific signs. And so we can create this map from the Western side and the Buddhist side to say, what does that look like? And so the whole study has now completely changed to really [be] about forensics and the oral microbiome, trying to collect a little bit of saliva or a little swab on the skin to see what are the bacterial transitions of that, to collect the volatile organic compounds, the odors.

(00:32:32) And so in 2020, His Holiness requested that our team work with the Russian Academy of Sciences, who are also really interested in it. So they recruited a lot of our Emory Tibet Science Initiative monastics—who had been trained at Emory in science fantastically, had gone back to their monasteries to lead science centers—and brought them to Russia to learn neuroimaging, brought them back to their monasteries. And now we have a team of over 65 field team members in all the different monasteries, both north and south, primarily Gelug still right now. And they are our field team. And a lot of our Tibetan physicians said, you know it's been a lot to leave behind our clinical duties. And actually to have the monastic team in the monasteries ready to be present at a case is ideal. And it's their elders. It's their-

Wendy Hasenkamp (00:33:24): Oh, it often happens in the monasteries.

Tawni Tidwell (00:33:27): In the monasteries, sometimes in the community as well. So it's completely changed the entire project to look at how do we understand the body? Will this tell us anything about consciousness? I don't know. But it will tell us that there's something different happening that even forensics really doesn't understand. This is an area of forensics that they're just blown away by. They've never studied, in this way, these long states.

Wendy Hasenkamp (00:33:53) I was going to ask, in the modern Western forensics perspective, all of those things that you mentioned about the putrefaction of the body and the degradation, that seems like the normal progression, what we would expect after death, but it just would happen much faster.

Tawni Tidwell (00:34:10): 48 hours.

Wendy Hasenkamp (00:34:11): Okay. Yeah. I was going to ask, what's the normal trajectory that we would consider?

Tawni Tidwell (00:34:15): Two days, yeah. So now we have over 47 cases that we've studied as a team. And so we've submitted for publication, and a lot of their questions are, what about the controls? What

do the normal death transitions look like in that community? Environmental [factors]? And so we've been documenting temperature and humidity. These are tropical regions where people go very fast, they decompose very fast.

(00:34:44) And also showing that the way that we understand the bacterial environment is that it's such a rich bacterial environment, especially in these areas, and so you would expect the activity to be much faster. These are often lung conditions that are passing. There's a high rate of tuberculosis in the community, so lung conditions, liver conditions, gut conditions, and so then the bacteria are even more active. And Tibetans often at this state are not taking antibiotics that slow the decompositional processes down. But these are all data that we have to be collecting and demonstrating, because this is the question—for no decomposition to occur for 38 days, that's the question. Well, what were they taking? Or maybe they were fasting for the last six months, and so of course their metabolism slowed down. And that's not the case.

Wendy Hasenkamp (00:35:35): This is so fascinating. So the idea, just from a simplistic perspective, is that these advanced practitioners, or people who can enter this state, are holding on to some subtle level of consciousness that is keeping their physical body from decaying on the normal trajectory. And is it assumed that they're in a conscious state? I guess we don't know, but is it assumed that they still have their consciousness like they had when they were alive?

Tawni Tidwell (00:36:07): So in many ways, their consciousness or their mind is considered greatly expanded. So their sensory consciousnesses are considered to have dissipated. So hearing, for example. But there are recitations requesting them to come out of the state. And so the idea is that their mind consciousness is "hearing" those recitations and responding to them. And so many describe that these great practitioners, you can feel their presence massively across the landscape or in the region. So something that we don't obviously investigate but is really important to the tradition is what happens in the weather—that you have clearing of skies, you have rainbows, you have these beautiful events happen, and that's this lucidity of the consciousness changing the environment.

(00:36:52) And so these are all questions of, well then, but what's happening in the body at that time? And I think that's interesting from the microbiome perspective, is that... I didn't realize that forensics actually doesn't have a good understanding of how to estimate time since death—that as a discipline, it really developed out of criminality, who did what, for the courtroom. But things like sainthood in the Catholic tradition or *sallekhana* in the Jain tradition, where you see also really interesting changes in the dying state, or how people live their lives and how that changes what they look [like] in the dying state, they haven't really looked at that.

(00:37:35) So there's now places in the US and Canada called body farms—in Tennessee, Texas, and Alabama, and then up in Montreal—where they just put bodies in all different situations, that have been donated to science, and investigate that. And it's really the microbiome that they've realized is the key to understanding time since death. So for us in the *tukdam* study, then, we have a really wonderful opportunity to say, yeah, if there's a subtle activity happening, maybe the bacteria also are getting signals that it's not time to start decomposing the body yet. And maybe that's what's keeping things alive.

(00:38:11) Or our Russian colleagues have been, they got access to really high sensitivity infrared camera, and in one case we saw the liver really active. And so it was like, oh, is there glycogenesis happening? Is there some way that there's a sustaining of the body? And from the Tibetan medical perspective, this energy, this subtle wind at the heart is incredibly energetically strong. Even though it's

subtle, it's very powerful for the body to be sustained in that way. It's considered the way that radiance or the way that the luminosity of the body is maintained. So if someone's really beautiful, they're like, "Oh, you have such a beautiful complexion." We'd say, "Yeah, that's the *dang*, that's the radiance." They have access to that subtle, subtle energy also in the living state.

Wendy Hasenkamp (00:38:55): And we know that too in the West, we just maybe don't have that same construct, but we say people are "glowing," or we recognize that. This is all so fascinating. So are there any at this point take-homes? I know you said that there's no measurable brain activity, which is not surprising. And you mentioned this one example of some liver activities still going on. Is there anything consistent yet that's been seen across these cases?

Tawni Tidwell (00:39:23): Consistency on the forensic side is what we're calling this plateau—so that there's attenuated decomposition, so relatively minimal decomposition until the state is released. And then it's super fast actually. It's been pretty startling.

Wendy Hasenkamp (00:39:37): Faster than normal?

Tawni Tidwell (00:39:39): Yeah. Or normal, but three weeks late in a way, and then quite rapid compared to what it had been before. The area around the chest is also differentially less in decomposition, which is also interesting from the Tibetan side as well, that that's considered where the subtle mind and subtle wind is still present.

(00:40:04) I think what's really interesting is that we don't have really a great understanding of what we're looking for, I think, from the Western side that would show consciousness. So if we can say, yes, attenuated decomposition, something's keeping it, maybe the bacteria are responding a certain way, what does that tell us about consciousness? We don't know. So this is what Geshe Thupten Jinpa-la had asked, he said, "Do you think we'll ever intersect from these two traditions, of what we're trying to answer as a project?" And I don't know.

(00:40:39) But I think where the project now is going is to look at developing a longitudinal healthy aging study that's really looking at, over the life course, who are these practitioners? What is their life history, in a way? And then can we really look at their brains over time? And is there a way that we can predict who's going to go into tukdam or not? And if we have good relationships with these practitioners, will there be an opportunity to observe them during the dying state?

(00:41:09) And what's been really interesting is some of our colleagues in places around the US and Canada in ICUs, Jimo Borjigin, she's at the University of Michigan, has looked at really interesting EEG signatures as people are dying—these flashes in the parietal lobe and massive gamma surges. And so she has also referenced the tukdam study, that there's so much we don't know about this, and people's experiences, and people who come out of comas and what is the signature that allows them to reawaken versus not, and what are we seeing in the brain? And so I think we might have an opportunity to look at that if we develop these relationships with these practitioners as well.

Wendy Hasenkamp (00:41:56): Yeah. This is so fascinating, at the edge of what we understand about life, and what is life, what is consciousness, when does it end or transition? These are huge philosophical questions that, as you said, Western science doesn't really have a good way of measuring consciousness at a physiological level. That's always been this big disconnect in that field. So this is really amazing that you're engaged in this project. And I assume it will be a long-term project?

Tawni Tidwell (00:42:31): Yeah. I mean, Geshe Lodoe Sangpo, Geshe Ngawang Norbu—who are our associate directors of the project and who are Emory Tibet Science Initiative, first batch, leading in Sera Jey and also Ganden Jangtse, in Bylakuppe and Mundgod—they talk about for them, this is a seven generation project. And that's what His Holiness has said. So they see also their role as training the next generation of monastics in their institutions and seeing this as maybe science will develop new ways of knowing, maybe there'll be interesting things that come from the practitioner side.

(00:43:06) But I think what's exciting also for me to see is that some people assume that there's things that are really for Western science to understand about this project. But what I've observed also in the project is that it's really inspired the new generation of Tibetan youth to take stock in their own culture and to realize, "Oh my gosh, these are the great masters, the old, old practitioners who maybe in Tibet had done three three-year retreats in their lifetime and have come into India and are teachers." And I think it helps them to have an appreciation of their own tradition and also question what they want to do with their lives. And coming back to that place of, maybe we want to focus on practice.

(00:43:53) So Geshe Ngawang said that in his science class, all the science students are now waking up super early at 3:00 or 4:00 AM—and these are young monks—that are now meditating and trying to build the skills, when especially in the Gelug institutions, a lot of it's focused on scholasticism, especially for the first many years. So that's been really exciting.

(00:44:14) – musical interlude –

Wendy Hasenkamp (00:44:14): I want to circle back, you had touched on the microbiome and the importance of that in all of these processes. And of course, we're learning so much scientifically about the importance of the microbiome in pretty much any process we look at. And I know that that's also a piece of a study that you've been doing through a Mind & Life funded project, looking at individual differences in terms of contemplative practice and response, and then weaving the microbiome in there. Could you share about that?

Tawni Tidwell (00:45:16): Absolutely. A lot of that project was inspired by some of, I think what we've seen more systemically about adverse experiences in meditation, and Willoughby Britton's work. And now I think it's being tracked much more in the contemplative science field, as mindfulness becomes more popular, as the McM mindfulness phenomenon, that people might not have access to teachers to help them to work through meditation experiences. And what's considered a positive experience or what might be challenging, but just part of the experience?

(00:45:50) And so the inspiration for that was to look at, we have these massive meditation interventions that our center runs, both in person with MBSR, but now through the app, and how can we help people understand more about their own vulnerabilities, and maybe when it might worsen a situation. So depression, bipolar. And so Tibetan medical theory has such a rich background with Buddhism that it's a medical tradition that's evolved over thousands of years to understand what could happen in terms of health implications. And so we thought that, okay, well constitutional theory, these certain kinds of effective habits of the mind, mean also that certain practices are more beneficial or more needed by certain individuals than others, and some might have a proclivity to having adverse experiences with other kinds of practices.

(00:46:44) So this project is looking at, retrospectively, three different meditation interventions—this huge MBSR study that we had funded by the NIH, and then these more app-based interventions—to recontact all those participants and to say, "We'd like you to poop in a bag for us *[laughter]*, give us a

gut microbiome sample," and to take this survey to self-assess their constitution. (This has been developed with Men-Tsee-Khang Tibet Medical Institute of helping people to have a constitutional self-assessment.) Then having them report back on their dietary, their lifestyle habits, so that we can also infer how much they know their own constitution versus how it might actually be. And then a Stressful Life Events rating scale to see how much also their previous experiences might have actually implicated certain kinds of responses to emotions, or how they experience, how they report their constitution as well.

(00:47:44) And so we've taken all this data and we're looking at then can we predict who did well in these different interventions? So it's assuming that there is a profile that stays static throughout the life course, like a constitution. And so this is something that a lot of the microbiome research has been looking at. There's certain aspects that, if someone didn't have a massive change in their diet or a massive change in terms of medical conditions of huge antibiotics, that they will have a profile that stays relatively consistent throughout their life course, with some changes.

(00:48:19) And then there's other aspects that change. So Simon Goldberg is looking at the other aspects. So how much does the microbiome change from an intervention? And so we're kind of intersecting at different aspects of this question to say, what is static and what is changeable? And can we predict then how people do with mindfulness, social connectivity, or loving-kindness meditation, and then insight meditations, to see who would, from a specific constitutional type, benefit more and who needs to be a little bit more aware of their vulnerabilities as well.

Wendy Hasenkamp (00:48:51): And what are you using to determine how well someone is doing with these practices? Is it the number of adverse experiences, or is there some other metrics of well-being shifts?

Tawni Tidwell (00:49:03): Yeah. So these are all the rating scales. The mindfulness rating scale. We have Dweck's scale. We're looking at aspects of dereification. So it's reported within each of the meditation studies, so on each of their scales, how they are showing performance by the individual participant. And so we're just taking their outcomes that they've already assessed from the study, each of their different scales, and then linking that to the different constitutions.

Wendy Hasenkamp (00:49:30): Cool. Could you just describe dereification?

Tawni Tidwell (00:49:33): Absolutely. So the degree to which we assume our reality and our experience of reality is real. And so often the way that we interpret certain kinds of experiences are as if they are actually happening in our life, but often it's our own interpretations of those experiences. So it helps people to just have some distance to start reinterpreting experience in terms of our assumptions of our reality, and our experience with it.

Wendy Hasenkamp (00:50:02): So meaning, [often] you're spinning a thought in your mind, but you're responding as if that's definitely real.

Tawni Tidwell (00:50:08): Projecting that out into the world, yep. So the ability for a person to take some distance and to understand that process of how we co-create our realities.

Wendy Hasenkamp (00:50:17): Great. Well, I know you've also been engaged, coming back to the Tibetan medical system and herbal treatments and different kinds of treatments that are used in that

system, in relation to COVID and the pandemic and how certain populations responded to that. So can you share a little bit about that study?

Tawni Tidwell (00:50:35): Absolutely. Thank you. Yeah, I think when COVID started breaking out in Wuhan, there was a lot of concern on how fast it was going to transmit across into the Tibetan Plateau, across China. This is before it really hit globally. And so I think our Tibetan communities in Tibet were really starting to take stock of their own resources. And SARS I think was a dress rehearsal for that.

(00:51:04) And so in the Tibet medical tradition, there's an understanding that we are experiencing a degenerate age, that we should expect more and more virulent infectious disease, more and more epidemics, bodies that are not as strong and are more susceptible, that we have created imbalances in our environment and co-created the conditions for challenge in this world, and that there are more aspects of greed and disconnection with the environment. And so this was expected, kind of, from the Tibetan medical community. And so there's specific formulas that have been online that they've been ready to bring out for this time period, and different ways of—I mean things like quarantining, all these things are in seventh, eighth century texts. This has been a long awaited period, I guess you could say.

(00:51:56) And so watching how COVID spread, the Tibetan Plateau was not heavily hit, but Chinese policy was that anybody who was infected should be hospitalized, go through antivirals, and go through massive steroid treatments. So we didn't actually have an opportunity to see how did Tibetan medicine do on its own. And there was real interest from the Tibetan medical community in Tibet to see that because I think they've been ready for this, and also not trusting totally what antivirals might do, or even steroid treatments.

(00:52:31) So as the pandemic unfolded, a lot of our Tibetan communities in North America were some of the heaviest hit. Jackson Heights was probably one of the... was ground zero for when COVID first hit the US. And this was a very hard time for so many communities. And I think what was interesting for me to witness is a real shock from the community side that they would go to the hospital and be turned away. There was an assumption that, "Oh, Western medicine knows how to deal with this. This is a massive global health crisis." And the answer that they got, and many of the Tibetan community are nurses in ICU wards and are healthcare workers, and so they were also surprised on the internal system side that there wasn't much to do, and they were turning people away and telling people to just go home, eat healthy.

(00:53:22) And so Tibetan medicine, in the Tibetan community in exile particularly, has primarily been used for chronic conditions, I think. Or it's become known for chronic conditions. So there wasn't as much of a, that's not where people would go primarily if they had a cold (they would use specific formulas sometimes, but...). So this was something that the community itself started contacting a lot of Tibetan doctors, and we said, "Wow, we have an opportunity to just observe these cases." So we contacted all of our Tibetan doctors across North America and said, please just, they all have agreements in their own clinics for research that they say to their patients, "Can I use your data for research?" So on a clinic-by-clinic basis, they can have deidentified data where they take all identifiers out. And so we said, "If you just send it to us, then we can analyze that data."

(00:54:13) So we started getting different funding—from the International Association for the Study of Traditional Asian Medicine, IASTAM, which is a very big supporter of Asian medical systems, the Global Health Research Fund at Stanford, Arizona Friends of Tibet, Culture, Mind, and Brain Network—just supporting this idea that this is a community that is marginalized, that doesn't necessarily get identified epidemiologically often, that they're not necessarily counted. They're part of an invisibility often,

because there's no tracking of their data. If they get turned away from being tested, they never are tested, they're never a data point in any system. And so they fall through the cracks.

(00:54:55) And so we pieced together small donations and put this study together, got IRB approval at Dartmouth and University of Minnesota and here at UW, and it was a, shall we say, "sandlot kids" version of research that we just were able to bring together all of these physicians seeing a lot of patients. And so Amchi Khenrab Gyamtso so he wasn't able to send a lot of his patient data from Toronto, but in the first several months, he saw over 300 patients. It was a massive amount.

Wendy Hasenkamp (00:55:25): How many Tibetan medical practitioners or clinics are there in North America, or wherever you were studying this from?

Tawni Tidwell (00:55:33): So there were 20 that we contacted. So there's not a lot. There's more than that practicing, but 20 is probably the ones that consistently for their main jobs see patients. Many other physicians, like many refugee communities who have medical training, are doing other jobs—driving Uber, washing dishes.

Wendy Hasenkamp (00:55:54): Right, also a medical doctor.

Tawni Tidwell (00:55:55): And then seeing patients on the side, right. So this is the reality of the Tibetan exile and Himalayan exile community too. But there were 20 physicians in Canada and the US, and then 15 of those felt like they could basically handle the extra load of also sending their cases and participating. And we put them through different research trainings in Tibetan. We had research assistants who were young, Tibetan, savvy with the research methods who were training to go into medical school on their own, or one is at UC Davis studying neurobiology, Jetsun Jungney, under Cliff Saron.

(00:56:32) And so they were kind of tutoring their elders on how to do research, which was super beautiful, super amazing to see those interactions. And some also Westerners, one, Kristen Blake, was an acupuncturist going back to medical school. She was just really interested in Tibetan medicine and wanted to support also the research. Another one, Natalie Skopicki at Emory, was wanting to learn more.

(00:56:54) And so it was just this beautiful community effort of everyone learning together, bringing our resources together at a time that was so difficult, to be able to show that Tibetan medicine, those who went under a Tibetan medicine regimen compared to those who went home and just went under self-care and public health guidelines, almost halved the time to recovery, in terms of symptom recovery. So the outpatient studies that were done at that initial stage of the Wuhan strain found that it was about 16 to 21 days of recovery. And in the Tibet medical regimen, we were able to find about an average of 11.7 days, which is a big deal at that time.

Wendy Hasenkamp (00:57:36): And so this regimen would have included, like you were saying earlier, diet and lifestyle approaches, and then also pharmacological, herbal treatments as well?

Tawni Tidwell (00:57:49): Absolutely. So what they should be eating, what they should not be eating, mindsets, also how to maintain connectivity when they might not be physically able to connect with family or friends, but how to keep the mind light. Because I think fear, panic was a huge aspect at that time, too. How to maintain certain daily rhythms and routines. But the primary intervention, so to speak, were these formulas of three to 35, 40 different ingredients of botanicals and geologics, where

they would boil them as different decoctions and eat them as pills. And so it was often three to five different formulas a day for the period.

Wendy Hasenkamp (00:58:33): That's so interesting. I'm thinking in a couple different directions. One is from an anthropological lens, people being able to connect to a medical system within their own community and having that support, social support, cultural support—that also feels like a big piece, that obviously you can't piece that out from the pharmacology or the other interventions that they were receiving. And then also just wondering the bigger picture of Western understandings of Tibetan medicine. Has there been much research from a Western perspective on, for example, these herbs or the different views of constitutions, or the ways that Tibetan medicine is practiced?

Tawni Tidwell (00:59:19): Yeah. So in our article, we review just briefly all the different pharmacological evidence that's related to these pathways, especially central nervous system inflammation and lung function, just inflammatory pathways. So there's been some really amazing work now, and probably 10 years ago I would've said there's nothing, and it's just over these last 10 years that it has just surged.

(00:59:44) And what's exciting is that a lot of our Tibetan colleagues in Tibet have partnered with a lot of Chinese pharmacologists who are actually really supportive of really interesting network pharmacology, systems biology, looking at these, what we call pleiotropic signatures in the body, which means that a single formula might act on different pathways in the body differently for different individuals. And so we can't necessarily say that one formula acts the exact same way in each person and for each condition.

(01:00:13) And so they've done some beautiful work looking at how a single formula will act differently on different receptors and what's in those formulas that we can't... You know, at Emory, we had this wonderful collaboration with Raymond Schinazi, a pharmacologist known as the King of Pills. And so he has produced so many remarkable medicines, antivirals as well. But the method has been to separate all the constituent parts to look at what's active and what's toxic. And in Tibetan medicine, you can't do that because it works together as a synergy. And so now we have the opportunity to be looking at what does that synergy look like when it has 10,000 different compounds and it needs to work as a whole? And we've learned, especially from AIDS research and these cocktails, HIV cocktails, that you want to make sure that the body is not selecting for resistance, and you want to be able to be flexible and move with agility through the body's mechanisms for creating that resistance. And this is what that does.

(01:01:22) So we were able to show some of that pharmacological research that's been done previously, although we weren't testing it for our study, and then we were able to also show that a lot of the meditation research also supports this, that these do have real effects on the immune system. And that's why we published in the *Brain Behavior Immunity Integrative Journal* as a psychoneuroimmunology journal, because they're used to those conversations—to say, "We don't know which part is working, but there's a lot of parts working here together, and how do we take that apart?"

(01:01:53) But I think what was really sweet for me is that Susan Bauer-Wu, president of Mind & Life previously, she was the one at Emory that really brought together a lot of the Tibetan physicians way back in 2012, 2013, to look at cancer and to say, why don't we look at what you've achieved in terms of your clinical work and see which cases or which types of cancer are difficult to treat in Western medicine, and what's achieved complete remission? So in 2014, this is the paper that we published, which was three different kinds of cancer that are very difficult to treat by Western medical standards—gastric adenocarcinoma, so of the gut, and then red cell aplasia and chronic myeloid leukemia, so two

blood cancers—and to say that still after fully just taking Tibet medicine, seven years out, they remained in remission.

(01:02:43) And so part of why I felt like this COVID project was just so amazing is that Tibetan physicians haven't historically kept patient data, right? It's like, the patients come, they see them, they keep their little booklet, and they go. So they help them to learn how to maintain data, to keep case records, that's part of the project, too. So the fact that these physicians in their private clinics all over the country just doing their thing, seeing patients, could come together and produce this really wonderful result. I think this was the unspoken, massive success, is they realized that they have so much strength as a community to show resilience, to show what they are doing every day.

Wendy Hasenkamp (01:03:27): Yeah, that's really beautiful. I can really see how you bring that anthropological perspective and that cultural perspective into all of these different projects, and merging it with the biology. I think it's really beautiful.

Tawni Tidwell (01:03:39): Thank you. And Sienna Craig, who was one of my committee members, one of my mentors also, it was so sweet to see her work in the community in Jackson Heights in New York, taking basically COVID diaries of all the Himalayan communities and just having them throughout COVID, especially the initial part of the pandemic. Just doing verbal records of their experiences and to see how that intersected also with our project, to see what was making a difference in terms of that community cohesion, access to their culture, access to teachings online, to give them hope, to give them perspective. And so that was also such a beautiful part.

Wendy Hasenkamp (01:04:21): Yeah. Well, I wonder if, as we're coming to a close, just stepping back from your fascinating and broad body of work, just any reflections on how being embedded in this system of Tibetan medicine and in these communities with these perspectives on the body and on health, and you said even from your childhood, you bring this from a Native perspective, Indigenous perspective in America, how this has shaped you, and maybe any lessons for Western culture that we can derive from this?

Tawni Tidwell (01:04:55): Yeah. I guess I've seen my role really as cultural translator, as being a bridge between worlds, a bridge between ways of knowing. And I think that in the process has, and just working with my patients is helping people to come back home to their bodies and to their communities, to their environments, and knowing what that is and having time to reconnect to those things and people and places that make us whole. And that this is a medical system that's incredibly complex, and yet it's really simple. It's about just these processes that we all know and appreciate and understand and have an intuitive sense of that. But I think in our world, we've gotten too busy, we've gotten disconnected from those. And just bringing that synergy back together and giving people permission to do that has been a big part of the journey.

Wendy Hasenkamp (01:05:54): Wonderful. Well, Tawni, thank you so much for all of your work and for taking the time today to share this with us. It's been a real joy to chat.

Tawni Tidwell (01:06:02): Thank you so much, Wendy. It's such a pleasure to be here, and thank you so much for having me here.

Outro – Wendy Hasenkamp (01:06:11): *This episode was edited and produced by me and Phil Walker, and music on the show is from Blue Dot Sessions and Universal. Show notes and resources for this and*

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