Mind & Life Podcast Transcript
Molly Crockett – Changing the World is a Group Project

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Opening Quote – Molly Crockett (00:00:04): *Keeping science separate from other ways of knowing is such a tragedy, it's such a mistake. Knowing is a group project. Changing the world is a group project. Our ability to understand the world is so tied to community. No individual can know everything. We are limited as individuals, but we can transcend those limits when we work together. We have to think about all of these aspirations in a collective way, and that really pushes against a lot of the narratives that we've been fed throughout our lives.*

Intro – Wendy Hasenkamp (00:00:45): Welcome to Mind & Life. I'm Wendy Hasenkamp. My guest today is psychologist and cognitive scientist Molly Crockett. Molly is an associate professor of psychology at Princeton University, and a leader in studying moral cognition and cultural evolution. As you'll hear, their work integrates an impressively wide range of perspectives, including psychology and neuroscience, but also economics, philosophy, and data science to explore big questions about ethics, knowledge, and power in the digital age. And we get into a bunch of those questions on this show.

(00:01:26) I spoke with Molly back in September and our conversation covered even more around than I expected. We talk about their fascinating work to understand moral outrage on social media, as well as ethical issues around the use of AI, and its implications for how we understand ourselves. There's lots more in here, too, including Dalai Lama chat bots and the Burning Man Festival... but throughout, we keep coming back to the importance of narrative in shaping how we think about ourselves, others, and the world. This is a topic I've been increasingly drawn to in recent years. I think it's actually one of the most important issues we're facing as a society, and as a planet. What stories are we telling about the human mind, about our interconnection with each other and the world, and our capacity for change?

(00:02:18) Stepping back, one of the deep lessons I take from Molly's work is the importance of taking seriously multiple ways of knowing. This also draws links for me to our last episode with Jim Coan, and his work around social connection and the critical importance of community. As always, check the show notes for lots more on Molly's work, including her presentation to the Dalai Lama that she talks about in this episode. Settle in for this one. I think you're going to get a lot out of it. It's a real pleasure to share with you Molly Crockett.

Wendy Hasenkamp (00:02:54): Well, I'm super happy to be joined today by Molly Crockett. Molly, welcome to show, and thanks so much for joining us.

Molly Crockett (00:03:01): My pleasure. It's a delight.

Wendy Hasenkamp (00:03:04): I often like to start with just a little bit of background on the guest and understanding how they got into the work that they're doing. So I'm really curious for you, it seems like you started out in more traditional neuroscience and decision-making, so just wondering how you got interested in that. And then also it seems like your space has really broadened and evolved over time to include much bigger picture concepts like power structures, and how we gain knowledge and all that. So I'm just wondering about the evolution of your own interests there.

Molly Crockett (00:03:35): Thank you for that question. I have always been interested in people and minds and social interactions. And as a highly ambitious young person, I gravitated towards what seemed to me like the most prestigious and powerful path available to me, which at the time was neuroscience. (Probably if I were starting my PhD today with that mindset, it would be in AI, which we'll probably come back to at some point in this conversation.) And I was incredibly fortunate to be able to train in social neuroscience at the very birth of the field with one of the leaders of the field, and I learned a ton and it was really exciting.

(00:04:16) And at the same time, the longer I persisted within neuroscience, and more broadly quantitative approaches to knowing humans, the more dissatisfied I felt with the limitations of those approaches. And as probably many of the listeners on this show will appreciate, there are just some ways of knowing our experiences, ourselves, and other people, that can't be reduced to a number in a spreadsheet, or a picture of a brain. And so as my career has progressed, I've found myself broadening out towards lots of different ways of knowing, coming from the humanities, coming from outside of academia, including my own practice as a meditation teacher and practitioner that has developed over 15 years.

(00:05:08) So I'm really just grateful and excited to be doing work in psychology and philosophy at this time—being able to participate in multiple communities of knowledge that bring to the table so many different and diverse strengths of understanding that we're going to need to figure out what it is that we are all doing with each other.

Wendy Hasenkamp (00:05:32): Yeah. It'll be so great to dig into the way that you weave in all these perspectives in the many different areas that you study. I thought maybe we could start with thinking about narrative. I've heard you talk a lot about the central importance of narrative, and the stories that we tell about ourselves and our world. Could you share your perspective on dominant narratives that we have had, maybe historically or currently, and some of the ways that you think those might be wrong?

Molly Crockett (00:06:00): Sure. I mean, I've been thinking about narratives for many years now. In recent years I've been working with a brilliant postdoc, Judy Kim, who has a background in linguistics and cognitive science, and we've been exploring ways that we can think about what narratives are from a cognitive science perspective. Broadly, we're thinking about the ways in which narratives can transmit ideas that we have about the world, and one idea that is very prevalent—or a set of ideas, maybe is a better way to characterize it—is how we think about human nature. Do we think about it as something that's fixed, something that is sort of in our genes, something that is inherited over the course of evolution? Or do we think of it as something more constructed, more fluid, something that we have control over? And then beyond that dichotomy, there's the question of what is human nature? Is it good? Is it evil? Fundamentally selfish, fundamentally altruistic?

(00:06:57) And because we are creatures that really make meaning out of interactions with other people and are highly sensitive to the beliefs of other people who we're interacting with, our own beliefs and

our collective beliefs about human nature can become self-fulfilling prophecies. So one of my favorite papers by Dale Miller published twenty-some years ago, is called *The Norm of Self-Interest*, and it reviews collective beliefs that humans are fundamentally selfish. And of course those beliefs are very helpful if you want to justify self-interested behavior, because there's this blurriness between what we call descriptive norms, how people are, and prescriptive norms, how we think people ought to be. So if you tell a scientific story that "people are fundamentally selfish, it's in our genes," that then licenses selfish behaviors that didn't necessarily have to take place.

(00:08:00) So I'm really interested in how the stories we tell about human nature can create these kinds of self-fulfilling prophecies, and in particular, how different kinds of communities can mutually coordinate on narratives that are much more positive, that are much more optimistic and hopeful, that then create the worlds that we want to live in.

Wendy Hasenkamp (00:08:21): I've heard you also talk about, in this context, the beliefs we have about the ways that we change. So like you said, are these things inherent? Is it genetics? Kind of the whole nature-nurture debate. And then you've added in, or the way you think about it is adding in another layer of cultural evolution. Do I have that right, or is that part of the nurture part?

Molly Crockett (00:08:42): Yeah. So when we talk about cultural evolution, broadly we're talking about the ways in which knowledge builds on itself from generation to generation. And there's a lot of excitement and research around cultural evolution these days. One of my favorite scholars in this space is Cecilia Heyes, who's at Oxford, and she wrote a book called *Cognitive Gadgets*. It's about how one of the things that we transmit through culture is ways of thinking about the world. And so lately I've been thinking about how certain intuitive theories that we have about morality, about our values, about what other people are like, might be the material for cultural evolution. When one way of thinking is popular, if it gives you advantages, that way of thinking can get transmitted preferentially to the next generation, and across a group or multiple groups within a generation.

(00:09:43) So one way of thinking about how these cognitive gadgets might be advantageous is if they're simple, right? So we have limited cognitive resources, and we gravitate towards ways of understanding world that are useful fictions—that are simplifying ways of understanding our experiences and what's going on—that aren't so inaccurate that we start to make mistakes. They're just accurate enough for us to be able to get by, but they do reduce and simplify and abstract certain aspects of our experience.

(00:10:18) And so the idea that there is such a thing as human nature, and that there's one singular quantity, like are people good? Are people bad? That's an oversimplified way of thinking about what people are like. But it seems to have persisted for quite some time. It's really interesting to look at how different cultures and different religions treat ideas about human nature. So in my meditation practice, I always like to come back to the image of the gold statue buried in the mud, and that we have this fundamental good nature that gets covered up with the stuff of life, but we can always come back to that with our practice by being mindful and so on.

Wendy Hasenkamp (00:11:00): I really appreciate you bringing in the way we tend to oversimplify our understanding of ourselves and the world. It's something that's come up on the show in different ways, and sometimes I think about it as a problem with the way we understand causality, and we're often thinking we're just putting something on a single cause, because somehow that's easier for our systems to process. But of course, that's never the reality. Everything is so much more complex. So I'm wondering, do you have thoughts about, are there different kinds of stories we could tell, or norms, or

ways that we can maybe use cultural evolution to help us be more interested or embracing of the complexity that we actually find ourselves in?

Molly Crockett (00:11:47): Yes! So you've hit on another set of intuitive theories or ways of thinking about the world that have to do with how we explain cause and effect. And particularly when we're talking about people, we can explain behavior according to their disposition—that's called a dispositional attribution. So like, that person was late because they're lazy. Or that person didn't show up on time because they don't care about me. Or we can explain their behavior by making a situational attribution. We can say that person was late because they must've got stuck in traffic, or maybe something happened with their family and there was chaos at the house in the morning, and giving people the benefit of the doubt and understanding that behaviors have complex situational explanations. This is a distinction that has been around in social psychology for a really, really long time.

(00:12:41) I think it's particularly interesting to think about in the context of moral responsibility, and in particular Western ways that we tend to think about "good" and "bad" behavior (and putting good and bad in scare quotes because I want to signal that I think it's a lot more complicated than that). But in my meditation practice, one of my teachers, Sarah Shaw, told us about another way of thinking about cause and effect that comes from the *Abhidhamma*, one of the old texts in the Buddhist canon. There are ways of thinking about causality in Eastern religions that are just way more complicated than how we typically think about it in Western culture. And so I'm really interested in ways in which we could explore different kinds of storytelling that highlight the much more complicated nature of causality.

(00:13:32) And here my friend and one of my favorite writers, Rebecca Solnit, is a master of this. She's doing a lot of work in climate, and she has highlighted in many of her writings how harmful it is to portray any sort of activism as being the responsibility of a lone hero, typically male, typically someone who employs violence to get what they want to get done. And as she highlights through her work with activist communities, activism is a group effort. It is collective. There's no one cause of any single outcome. It's jointly caused, it's collectively brought about. And I think those kinds of stories are so important because if we only hear the hero stories and we think, "Well, I'm not going to be a hero," then that licenses us to not do anything.

Wendy Hasenkamp (00:14:21): Right. Yeah, I really appreciate you bringing this lens of the way that the stories that we tell justify different behaviors. I think that's such an important thing to keep in mind that I feel like is often not raised, so thank you for bringing that nuance. Well, I know you've been working a lot in the digital space lately, as this becomes a bigger and bigger part of all of our lives. I'd love to hear you describe some of your work around the experience of moral outrage, and how the digital platforms that we're all immersed in can kind of co-opt the ways that we naturally have social learning as humans, and how that plays out in digital spaces.

Molly Crockett (00:15:06): Sure. So I started thinking about social media and outrage in 2016. I was actually living in the UK at the time, and so I witnessed and lived through Brexit and then the election of Trump within a few months of each other. And I had been studying moral outrage and punishment for a long time outside of the context of digital media—just looking at what kinds of situations trigger outrage, what motivates people to punish wrongdoing, unfairness and so on. What are the brain systems that are involved? And that work showed that punishment, which will come as no surprise to anyone who has participated in it, it's very rewarding, right? It's energizing. It can be "fun" to, especially with other people, collectively shame and punish someone who has violated something that we think is really important.

(00:15:59) Where I started to get worried was I just noticed that I was spending a lot of time on social media posting about Brexit, about Trump, like an unhealthy amount of time. Spending time in a way that was not mindful, that I was losing track of time. I would open up Facebook in the morning, intending to just sort of briefly check it before sitting down to work and then hours would disappear. I was just noticing this happening, and I got really curious about what was going on. And I applied my training in neuroscience, which was around how do habits form, how do reinforcements shape the way that we behave, and in particular compulsive behavior, addictive kinds of behaviors. And so I thought, oh, this is a variable reinforcement reward schedule... *[laughter]* where I'm getting random amounts of likes, unpredictable amounts of likes for things that I post. And we know from decades of research on reward learning, that the best way to create a habit is to give people random rewards for a response.

(00:17:07) And so I started developing this idea that maybe the structure of rewards on social media would in particular reinforce expressions of outrage. Rewards can reinforce any sort of behavior, but outrage is really special because not only is it a really sort of high intensity, high arousal emotion, but it also has really important social signaling properties. So there's this beautiful work by Jill Jordan, who's at Harvard Business School, showing that when you express outrage or punish people for wrongdoing, other people trust you more, because they think, "Oh, if that person's punishing that thing, they're the kind of person who would not do that thing." And so it has this reputation enhancing property. And of course when we're on social media, it's all about reputation. It's all about building an audience, gaining a following. And the algorithms that decide what to show us on social media are selecting content that they expect will be engaging. So outrage is this really attractive kind of content for those algorithms that of course make more money the more time that we all stay online.

(00:18:17) So you put all those pieces together and you see that the information ecosystem that these tech companies build really has this effect of keeping us all glued to the screens, and doing it by making us all outraged and share our outrage together. So I developed a theory and then I was very, very fortunate to recruit a super talented postdoc to my lab, Billy Brady, who's now a professor at the Kellogg School of Business at Northwestern, and also a research technician, Killian McLoughlin, who's currently a PhD student with me at Princeton. They're data science whizzes, and we developed these tools to firstly be able to measure expressions of moral outrage using machine learning—so being able to label millions of tweets with a probability that they contain outrage or not—and then use that tool to test broad hypotheses about how people are rewarded for expressing outrage, and importantly, how people learn socially to express outrage.

(00:19:23) So one of the main sets of findings that came out of our first paper published in 2021 was that over time people come to express moral outrage through two mechanisms, one through conformity or through norm learning. So when you are in a social network where lots of other people are expressing outrage, you express more outrage too, to match your tone to the norms of the group. But also, on an individual basis, you get rewarded for expressing outrage, and the more you get rewarded for expressing outrage today, the more likely you are to post outrage tomorrow. So we can see evidence for reinforcement learning in the expression of outrage over time. And this has all sorts of knock-on effects. We're currently studying the effects of outrage on the spread of misinformation. We're interested in particular about distorted beliefs that can arise when you have these norms for expressing outrage and a medium that really decouples the expression of outrage from our direct experience.

(00:20:26) So we did these studies where we looked for people who had recently expressed outrage in a tweet, then we sent them a direct message and were like, "Hey, we noticed you just tweeted this. On a scale of 1–7, how outraged were you when you sent this?" So we get those responses from the people who wrote the tweets. Then we show those tweets to another group of people who are Twitter users,

but didn't write the tweets. And we say, "Hey, how outraged on a scale of 1–7 was this person, do you think, when they wrote the tweet?" And then we compare those numbers, and what we find is consistently people who are reading the tweets overestimate the amount of outrage that the people who wrote the tweets said they experienced at the time.

(00:21:07) And this has knock-on effects—when you're reading tweets that are getting overperceived, you think that the outgroup, people who have different political beliefs from you, are more hostile. You're more likely to post outrage-y tweets yourself. And so you get this sort of amplification polarization effect that comes from overperceiving outrage expressions from tweets. This effect is particularly pronounced in individuals who spend the most time on social media reading about politics. So if you're immersing yourself in an outrage-y environment, you develop a rational belief that there's a lot of outrage around. And so then when you get a new signal that's maybe a little ambiguous, you are using a rational belief updating process to infer, "Oh, that's probably outrage because most of what I see is outrage." Do you see what I mean?

Wendy Hasenkamp (00:22:02): Right, yeah.

Molly Crockett (00:22:02): So we're basically creating these systems that highly incentivize the expression of outrage, inflate beliefs about other people's outrage, and we shouldn't be then surprised that everyone feels outrage. But we should also question whether that reflects a ground truth, or whether that is a delusion that we need to work towards getting ourselves out of.

Wendy Hasenkamp (00:22:26): Yeah. That helps me understand the feedforward system of how outrage breeds more outrage, breeds more outrage. And especially in a polarized environment, or even an environment where there's just small disagreements, they can quickly become hugely separated positions and everyone's just angry—which really describes a lot of the social media environment. So that's really important to keep that awareness that some of it is manufactured, or at least, as you say, it's a delusion. It's not an accurate reflection of how people really feel.

(00:23:01) Thinking back again with your lens of power structures and justification, and I was thinking about this work and thinking, "Well, who benefits from this situation?" Clearly, as you said, the platforms and the people making money from people engaging with the platforms are direct beneficiaries, but do you think there's other larger frames of like, people in politics? I've heard this idea that it behooves them to have an outraged public. What's your lens on the bigger picture of who's benefiting from this structure that's been created?

Molly Crockett (00:23:35): That's a great question. So yeah, I absolutely agree that tech companies benefit. I also think that anyone who wants control—who is already in a position of power, who is seeking power, who wants to control the populace—benefits, because anger and outrage, these are dehumanizing emotions, right? They're emotions that motivate finding who did it so we can punish them. And when you have a community who's hyper fixated on 'who did it, who's the bad guy that we can punish,' that is possible to manipulate. Again, this is not novel. This has been happening for a long time. It's the oldest play in the book to exploit social inequality and anger over not having enough for your family, finding a scapegoat to blame and fanning the flames around that.

Wendy Hasenkamp (00:24:37): Again, back to the single cause, as well.

Molly Crockett (00:24:39): Yes, exactly, and the single cause. One thing I'll just add on that though, right, is that if we consider narratives to give us ways of thinking about the world that are just structures

divorced from the actual content, the more stories we tell that have a single villain, a single victim, and a single hero, the more prepared we are for harmful narrative. So the structure carries through even as the content might change.

(00:25:08) – *musical interlude* –

Wendy Hasenkamp (00:25:38): That's so interesting. It's also making me think of... I was just reading your website about the different areas of interest of your lab, and part of what you were talking about is the role of scientists in creating narratives for society. That's something I'm really interested in, and it's been increasingly clear to me how much science has become kind of a new religion in many respects, and so what scientists say has such a power to shape the way that we're thinking. So I'm just wondering about that, too. You were just talking about the structure of narratives, and just wondering your thoughts there about the role that scientists could play in creating different narratives.

Molly Crockett (00:26:17): Absolutely. I think it's a huge responsibility that is under-appreciated by scientists. At least, I could speak for myself—I did not fully appreciate how much the way that I, as a scientist, talk about the human mind can potentially impact the way that everyone thinks about what minds are, what their potentials are. So to go back to the example of human nature, when scientists write books about 'the science of human nature,' that not only has potential to persuade the public about that particular scientist's particular view of human nature, but also reinforces the idea that there is such thing as a singular human nature in the first place. And of course also elides differences between different humans and different cultures. We have a bad habit in cognitive science of talking about 'humans' in general, when in reality the vast majority of our studies are performed on white, educated people in rich countries—what the anthropologist Joe Henrich calls WEIRD, Western, Educated, Industrialized, Rich, Democratic countries.

(00:27:26) And there's been a lot of acknowledgement and attention to this problem in cognitive science. I won't say that we as a field are not aware of this. We absolutely are, and we talk about it a lot, but there's a big gap between talking about it and doing something about it, and we continue to publish papers describing 'human behavior' when our samples are much narrower. And I do this, too. It is a norm in the field, and I complain about it. I'm also super guilty about it. It's ultimately a collective action problem because journals, especially high impact journals, have expectations around how papers are written. Students who are early in their careers and want to progress in their careers need to publish in those journals, so there's a huge cost to any individual scientist to writing their whole paper about Princeton undergraduates as opposed to 'human' cognition. But it's a big problem, and I think what I worry about is the misperceptions that that kind of language can cause amongst the broader public, and how should we be thinking about that, as a problem?

(00:28:35) Another manifestation of the responsibility that I think cognitive scientists have in how they talk about the mind has to do with this era of AI that we are now entering into, and in particular, there are a lot of discussions around whether AI products are human-like. So you will see, there've been dozens and dozens, hundreds at this point of publications sort of testing GPT or other large language models on various psychological tasks. And when a high correlation between the performance of the model and human performance is observed, there's a temptation to describe the performance of the model as human-like. But there are risks with using that kind of language because the set of things that humans can do is way, way, way bigger than the set of things that these models can do, no matter how impressive their performance is, which in many cases is impressive. But when you then describe them as human-like, you're narrowing what we take humans to be, and that could have bad consequences down the line.

(00:29:50) There's some really nice work being done by the philosopher Shannon Vallor who just published a book called *The AI Mirror* around this question, and also Sherry Turkle, who is a psychologist and anthropologist at MIT, who has long been a voice for thinking about how technologies change our relationships to one another. So I think it's important to keep exploring this space and to keep talking about, how should we talk about technology? How should we talk about the science of the mind? And can we talk about it in ways that are aware of how the language we use can collectively shape our notions of who we are, and what we can be?

Wendy Hasenkamp (00:30:34): Yeah. This is a really interesting space, and I'm glad you brought up the AI part. I wanted to get into where you think the landscape is about AIs being used to kind of be human-like, better than humans, particularly in the area of compassion or empathy and the ways that bots could 'pay attention' to us, give us support. So what's your sense of that landscape now, and how can we be thinking about that?

Molly Crockett (00:31:01): Yeah. So I'm actually working on several papers about this set of questions right now, and the main questions I'm asking myself are, what do we mean when we say an AI product can empathize? Are we relying on a definition of empathy that stacks the deck in the favor of the machine? There are a lot of arguments that, for example, therapists or friends or romantic partners or any sort of person who we might seek support from is not available 24 hours a day, but the AI is available 24 hours a day. And that's just a really interesting observation. Turkle has written about how creating expectations that social support will be available 24 hours a day could have harmful spillover effects into our human relationships, which even I think the most enthusiastic advocates for AI would not want to do away with entirely, right?

(00:32:00) So we need to be thinking about how outsourcing various human skills and activities to a machine—even if the machine works really, really well—might then feed back onto our own relationships with one another. This is a conversation that I think a lot of people are having. I'm in particular interested in thinking about how the evidence that's offered for human-like performance on these various tasks might reveal just as much about the limitations of the science, as it does about the capabilities of the machines. This is a project that I'm working on with Lisa Messeri, who's an anthropologist of science and technology at Yale, and she and I have just published a paper about how artificial intelligence can create illusions of understanding in scientific research—where we think we understand the world more, but we're actually understanding it less. And that's a big risk, I think, anytime you're going to engage in wishful thinking about what it's possible to achieve with these machines, and the fantasies of superhuman performance that seemed to be really garnering a lot of attention these days.

Wendy Hasenkamp (00:33:24): You joined us this past summer at our Summer Research Institute. It was so wonderful to have you there, and you shared a great story about virtual Dalai Lama bots, which I didn't even know existed. *[laughter]* Could you share your experience with that?

Molly Crockett (00:33:37): Absolutely. So when ChatGPT was released in 2022, there was a huge rush to create applications using that technology, and a lot of those applications took the form of chat bots that adopted particular personas. So if you go to the GPT store and you search for your favorite celebrity, there's a good chance that there will be at least some instances of chat bots trained on the publicly available text from that celebrity and designed to mimic responses from that celebrity.

Wendy Hasenkamp (00:34:16): Okay. Right. That makes sense because there's so much text from people who are famous that they can create better bots.

Molly Crockett (00:34:22): Exactly. And large language models are very, very good at mimicking particular styles of speech, and you don't even have to give them that much text to prompt it to mimic that style. So I was curious, and I searched for the Dalai Lama on the ChatGPT store, and the search turned up at least a dozen different versions of Dalai Lama chat bots. Some of them were just the Dalai Lama. Some of them were like a hybrid of the Dalai Lama and Jesus and like-

Wendy Hasenkamp (00:34:53): Oh, wow. *[laughter]*

Molly Crockett (00:34:54): ... other religious figures. Yeah. There's a wide variety available. And I was curious, so I engaged with it a bit, and I asked the bot various questions at the intersection of my research and the Dharma. And the responses were incredibly reasonable. Like the chat bot talks about compassion. It's very coherent. It totally gives a response that, if you have read any of His Holiness's work or watched videos, it's like, "Oh, wow. Okay." But of course, you ideally want to be able to compare that response against the real in-the-flesh experience, and I'm incredibly fortunate to have had the life-changing and very unique experience of meeting His Holiness in person a couple of years ago at the Mind & Life Dialogues with His Holiness.

(00:35:56) So I asked the chatbot the exact same question that I had asked His Holiness in person about the role of outrage in social justice movements. Because I really come back to this again and again in my research. Outrage can be a really powerful motivating force, right? And I think especially for communities with a history of marginalization and being targeted by injustice—people of color, women, disabled people, queer people—outrage can be necessary, and it can be morally appropriate in some circumstances. But then the question is, what do you do with it? How do you engage it in a way that's sustainable? And I don't think we have all the answers to that question. I have found a lot of wisdom in Buddhist teachings around that question.

(00:36:47) So when I asked the chat bot, it basically said something like, "Well, you really need to have compassion. Anger alone is not enough to confront injustice. You need compassion, both for the people who are suffering and for the people who are perpetrating the suffering." Totally reasonable. So then I go back to the video of our exchange with His Holiness from a couple of years ago, and I was like, "Okay, I'm going to find out that what he said was way more insightful and wise." And so I watched the video and watching the video was just totally discordant with my memory of the interaction.

Wendy Hasenkamp (00:37:28): Oh, interesting.

Molly Crockett (00:37:29): My memory of the interaction was, everyone in the room got more quiet, and it was like there was a spotlight with him and me and our interaction, and our minds were coming together in this space. And I ask the question, and he's listening through his translator, Thupten Jinpa. And he responds to my question with, as I recollect it, something to do with bringing in a metaphor of, if you're a teacher and you are trying to teach a student and the student is misbehaving, you shouldn't get angry with them, you should approach them with compassion and sort of approach the mistake from a place of love.

(00:38:15) And you know, the words just totally don't do it justice. You really had to be there. And when I was there, when I was receiving that teaching from him, it reverberated through my whole body. I felt some knowledge shifting in my very bones, and I understood how outrage and compassion and wisdom

and social justice can play together—in a way that I still struggle to put into words. And when I went back and watched the video, the words cannot recapture that feeling of understanding that arose between the two of us.

(00:38:56) And I think that that's really important. I think that it shows how words alone are not enough to transmit a teaching. They can be a cue, they can be a guide, absolutely. But there is something that is irreplaceable about humans being physically together and transmitting understanding through our bodies, through our embodied presences, and that's just something that—because chat bots don't have bodies, or even if they're put into a robot body, they don't have a human body that's mortal and vulnerable and constantly shifting—I just don't think that they can do that kind of teaching.

(00:39:41) And so I really worry about what gets lost when you replace human teachers with chat bots, which is something that is literally happening right now. In the UK, there is a high school classroom where the teachers have been replaced by an AI program. It's being really hyped because it's individually tailored by this indefatigable, always available teacher for every student. And there's a lot of excitement and rhetoric about what potentialities AI products can offer for education. And I can see the appeal. I can see the appeal of offering a technical solution to a widespread, really gnarly problem—which is that we don't invest enough in education. But rather than trying to solve the hard problem... Which maybe even isn't even that hard. Just pay teachers more, and then there will be more teachers. (I'm being glib.) But seriously, there are ways that we can approach educational inequality in our country and around the world that don't rely on outsourcing human labor to machines.

(00:40:56) And there are just a lot of really important lessons from the past. I've been reading this book called *The Charisma Machine* by Morgan Ames; the subtitle is *The Life, Death, and Legacy of One Laptop per Child*. This was an educational program with a vision of delivering laptops to every child in the world, and the hope and the vision was that by delivering this technology, the children would teach themselves how to program and lift themselves out of poverty. And spoiler alert, it didn't succeed, because it turns out that to support education, you really need community investment and you need a ton of infrastructure around to support learning and education.

(00:41:46) What the creators of the One Laptop Per Child project failed to appreciate was that they had all taught themselves to program as kids, and thought it would be easy for other kids to do that, too, but largely neglected to see how much social support they had around them, how much infrastructure they had around them. And this is something that we see happening over and over again. People who are fortunate to be born into positions of power and privilege cannot see how much that played in getting them to their levels of success today. And so we're seeing the same narratives emerge with AI in education, that is so beautifully documented in *The Charisma Machine*, and... I don't understand why we keep having this conversation. I guess I do understand it—it's money. That's reason for much of this stuff.

Wendy Hasenkamp (00:42:43): Yeah. This is so interesting, the juxtaposition you're raising of... just the importance of embodiment in human interaction, and really the centrality of that, or what is lost when you take that out. Because obviously something is still transmitted, but something is definitely lost. I'm wondering if there's any research on that in the digital space.

Molly Crockett (00:43:07): Yes, there absolutely is. Some of my favorite work on this comes from Juliana Schroeder at Berkeley, and she has looked at how empathy and understanding get degraded when you move from an in-person interaction to voice interaction, to video interaction, to text interaction. And as

you might expect, the fewer channels of communication that are available, the more information gets lost along the way.

(00:43:35) – *musical interlude* –

Wendy Hasenkamp (00:44:05): Maybe somewhere we can go from there, speaking of embodiment in-person... I know you've also done some work on transformative experiences, particularly in mass gatherings. Can you share a little bit about that? I know you've done some work at Burning Man, which is a... maybe you could even describe the festival in case some listeners aren't familiar.

Molly Crockett (00:44:23): Sure, yeah. So this work is inspired by, originally and now in collaboration with, the philosopher Laurie Paul, who's now at Yale. Laurie wrote a book in 2014 called *Transformative Experience*, which is just a wonderful book, but one of the contributions is that it maps out what it is to have a transformative experience in terms of its epistemology. So a transformative experience is an experience that involves two sorts of transformation. One is what Laurie calls epistemic transformation, and that is when you learn something new that you couldn't have learned without having the experience. So lots of experiences are like this, but some are more like this than others, right? Like there's a way in which you just can't imagine what it is like, before you have the experience. So really big life-changing experiences like having a kid or moving to another country with a very different culture from your own, experiencing a trauma. These are things that we just can't imagine before we have the experience. Also more mundane stuff, like she gives the example of tasting a durian fruit for the first time. It's super weird and you can't really explain what it's like to someone who hasn't had it. So when you taste a durian fruit for the first time, you undergo an epistemic transformation. You have new knowledge. You now know what it's like. You didn't know what it was like before. So that's the first component of a transformative experience.

(00:45:50) The second component is what she calls personal transformation, and that is involving a transformation to your values, your preferences, the very structure of how you find value in the world, what you prioritize. And so profound life experiences have this quality. People describe when they have a kid that everything changes. Things that they thought were not important before now seem really important, and vice versa. Not all experiences that are epistemically transformative are also personally transformative. So most people would probably not radically change their preferences when they taste durian for the first time (although maybe some people might). But the experiences that have this sort of personally transformative quality are also often epistemically transformative.

(00:46:40) So I met Laurie in 2014 right after I had just gone to Burning Man for the first time. Burning Man is an intentional community of about 80,000 people set up temporarily in the desert of Nevada, once a year in August. There are massive art structures everywhere, and it's a gift economy, so no money is exchanged when you're there. There's gifting. It was set up in the 80s, I think, so it's been many years now, to sort of offer an alternative to the real world. The default world, as we call it. And I listened to Laurie give her talk about transformative experience, and I went up to her after. I was like, "Hey, I just had one of those." *[laughter]*

(00:47:29) And it turned out she was involved in a grant that was giving out small grants to teams wanting to empirically study transformative experience. And so I built a team to set up temporary labs at Burning Man and at other secular mass gatherings around the US and the UK, to try to capture what it was like to have the experience of immersing oneself in a culture that was totally different from one's own. And not just different in a sort of like, I'm experiencing a foreign country kind of sense, but different in terms of values, and different in terms of social norms. Aside from the gift economy and the

sort of centering of generosity and care at Burning Man, it's also a very anti-normative space, especially in terms of how you dress, how you present yourself to other people. And so I think for me personally, it was the first time I had ever experienced a social world where I didn't feel like I was being judged on my appearance, and I didn't feel like I had to perform any particular way of being. And that was both epistemically and personally transformative for me.

(00:48:51) What we found in our research was that the longer people spend, the more time people are immersed in this environment, the more expansive their feelings of generosity towards other human beings become, and these are effects that last for about six months after attending the event.

Wendy Hasenkamp (00:49:10): Yeah, that's so interesting. And I remember that you'd made a nice control that this is over and above the effect of substances that might have been consumed at this event, right?

Molly Crockett (00:49:19): Yes.

Wendy Hasenkamp (00:49:21): So that's an important nuance. But I'm thinking about just the power of being in a space where, as you say, the norms are different, and agreed upon, and really central. Even I feel like on a meditation retreat, this happens. It's a very structured environment...

Molly Crockett (00:49:35): Oh, totally.

Wendy Hasenkamp (00:49:36): A very unusual, structured environment where you take precepts, you kind of make agreements when you come in. And there's just this sense that everyone is there for the benefit of everybody, and having the same intentions. It's amazing the kinds of transformation that can happen—probably over and above the actual sitting meditation practice or whatever you might be doing there—but just from being in that context.

Molly Crockett (00:50:02): Absolutely.

Wendy Hasenkamp (00:50:03): You know, I feel like I'm a different person when I'm in those settings, and so much more generous, so much more attentive to the needs of other people. So that's just fascinating.

Molly Crockett (00:50:14): Totally. And it goes back to this idea about human nature is something that we can create for ourselves, right? Like we can create conditions that bring out different elements of how we can be towards one another. And that's really at odds with a picture where it's like, "Well, back in the Stone Age, when we evolved, we have these paleolithic emotions that we now just can't have any control over, and it's really bad that modern environments clash with these paleolithic emotions." I think that's just a wrong way of thinking about all of our potential.

(00:50:50) And it's also a very pessimistic way of thinking about our potential. Quite a lot of the discourse around technology and society takes this very sort of fixed view of human nature. So you have E.O. Wilson, who I was alluding to just now, the full quote is something like, "We have paleolithic emotions, medieval institutions, and godlike technologies. And it's very dangerous..." You have folks like Tristan Harris, who has been very concerned about the harmful effects of technology on well-being and social interactions, who also sort of takes a view that's very motivated by evolutionary psychology. And it's like, "Well, there's a human nature and the human nature is being exploited by tech companies, and because human nature is something fixed that we can't change, we have to design technologies around

our nature so that it will play more nicely together." But I don't know if the data supports that view. I think there are alternative explanations that just haven't been explored, because we've also just set up our environments to bring out certain elements of our possibilities. And we could do otherwise.

Wendy Hasenkamp (00:52:07): Yeah. This is also making me think, in psychology, for so long there was this idea, back to William James and probably even before that, that personality is fixed after adolescence, right? And your brain develops and then there it is, and you're kind of stuck with whoever you are. And that view, coming back to this idea of narrative and stories, shaped so much of the research that was done. Or wasn't done, right?

Molly Crockett (00:52:33): Totally.

Wendy Hasenkamp (00:52:33): Like personality traits and all sorts of things that were measured about humans over the years and decades—nobody ever tried to shift them, because it was assumed they were fixed traits. And now we're seeing so many things...

Molly Crockett (00:52:47): Absolutely! And because there's this view that we don't change after age 25, there's almost no research on identity change in adulthood, even though the existence of transformative experiences suggests that there are profound changes that we can undergo as adults, or indeed at any point in our lives. I actually have a grant from the McDonnell Foundation with a really smart postdoc, Sally Shea, who's about to start as a professor at Simon Fraser. And together with the rest of our team, we're studying identity change as people become parents for the first time, and studying longitudinally how people see themselves over time, before and after their child arrives. And we see this as filling a big gap in the literature that does assume that, "Oh, nope, once you're an adult, you're not changing anymore." And gosh, I've changed so many times, profoundly, as an adult, it just can't be true.

Wendy Hasenkamp (00:53:50): And even the same has existed in neuroscience. It was only a couple decades ago that we realized that brains, in fact, continue to change throughout our lives. So it's just so interesting, the cycle between a narrative and then what we even explore, and then how the results of that (or lack of results of that) then continue to shape the narrative or reinforce it.

Molly Crockett (00:54:11): Totally.

Wendy Hasenkamp (00:54:13): I'm wondering your experience as a meditator, has that merged at all with your scientific research? Has that come into the lab in any way?

Molly Crockett (00:54:22): Yeah. So they were separate, very separate, for a very long time. Partially because I think in science there's this kind of stigma against anything woo-woo. Like if you're doing anything spiritual, [it's] best to keep that behind closed doors because that's 'not scientific' and that's going to pollute your science, your objectivity, or whatever. I think that at an unconscious level, of course, my interest in meditation and in Buddhism came from a similar place to my interest in the kinds of humanistic and ultimately spiritually-engaged questions that are central in my research. But I kept them very separate until Mind & Life invited me to meet the Dalai Lama, and I was like, "Oh, that's a thing? I can talk about my research in this context?"

(00:55:11) And I mean, it was just a beautiful experience, one of the most life-altering, career-shifting experiences that I'll forever be grateful for. Because the process of preparing that talk... which, it was explicit that it was meant to be a talk about my research, but of course, who is going to be in the

audience is Buddhist practitioners of many different stripes. Roshi Joan Halifax—who was the chair of my session, and who I got to know really well throughout that process and remains a dear friend and mentor—really pushed me to think about how to make those ideas connect with broader questions in Mind & Life, in Dharma. And then I was also really fortunate to be able to get feedback on my talk from meditation teachers and friends in my sangha.

(00:56:08) And it was just magical, presenting the work in that setting, because it made it so clear to me how keeping science separate from other ways of knowing is such a tragedy. It's such a mistake. We have this artificial hierarchy around, "Oh, well, within the academy, math is the best, and then physics, and then chemistry. And neuroscience is better than psychology. It's more rigorous," or whatever. And then of course, all of science is better than the humanities, supposedly. And then academia is supposed to be a superior way of knowing the world than alternative, Indigenous forms of knowledge, or knowledge that comes from just life experience and practice in various ways.

(00:56:57) And that's just such a shame that we think about knowledge in that way, because it's epistemic injustice, right? So this is a framework that comes from philosophy, and I find it really helpful to think through these kinds of questions. Epistemic injustice is a way of thinking about how people are harmed as knowers, and it takes the form of credibility excess and credibility deficit.

(00:57:22) So credibility excess is when somebody gets believed more than they deserve, because of, say, their social identity is one that is prestigious, or that they're coming from a field that historically has been more respected. And this is of course, credibility that is totally disconnected from the content of whatever that person is saying, right? So in epistemology, whether something is believed, you should consider the content, and credibility excess is when controlling for content, you just get more credit if you're a man. Or if you're a white person. Or if you're a physicist. And the flip side is credibility deficit, where even if you're saying the same thing, you get taken less seriously if you're a woman than a man, or if you're Black than you're white, or if you are working outside the academy versus working within.

(00:58:17) And we should be upset about those injustices because they detract from our understanding of the world. And our ability to understand the world is so tied to community. No individual thinker can understand everything. No individual can know everything. We are limited as individuals, but we can transcend those limits when we work together. People are really good at this. From a very, very young age, kids can track who knows what. So like, that's the person to go to if you need help with food. That's the person to go to if you need help with school or whatever. We're really, really good at keeping track of who knows what in our communities, and that's how we're able to transcend the limits of our own minds. Now, people who stand to make a lot of money from AI want to replace that gorgeous, organic, communal act of knowing with the machine who supposedly can know everything. But that totally fails to recognize all of the diverse ways in which we know stuff—through our bodies, through the history of our own experiences, through our relationships with one another.

(00:59:30) And so when I look at a future that many people are excited about and machines are replacing human knowers for lots of stuff, I just get really depressed because I feel like even though folks who are excited about technology like to paint themselves as optimists and the rest of us who are asking questions as pessimists, I think it's the other way around. I think people who are raising questions about replacing humans with machines are the real optimists about what humans can do, and what we're worried about is foreclosing on the possibilities of human potential when you just try to take the easy technological fix, and try to do it with the superhuman machine.

Wendy Hasenkamp (01:00:14): Yeah. Well, Molly, this has been so great to chat. This has been really illuminating. I'm wondering, are there any kind of big picture take homes that you'd like to share as we're wrapping up? I'm thinking back to your lens on narrative and stories, and what are some other stories... I think you've been sharing them the whole conversation, but maybe stories that we can be thinking about shifting towards in the moment that we face in the world.

Molly Crockett (01:00:41): Sure. I mean, I think one story that is a zombie story that really doesn't want to die is the idea of the lone genius who will save everyone, who knows everything and who will save everyone. And knowing is a group project. Changing the world is a group project. We have to think about all of these aspirations in a collective way, and that really pushes against a lot of the narratives that we've been fed throughout our lives. But it's up to all of us ultimately to change how we think about who we are and what we can do together.

Wendy Hasenkamp (01:01:20): Oh, wonderful. Thank you so much, Molly. This is great. Thank you for all of your work in these spaces. I think it's so important to be broadening and integrating the way that you do across so many disciplines and viewpoints. So thanks for taking the time today.

Molly Crockett (01:01:33): My pleasure. Thank you so much. Great questions.

Outro – Wendy Hasenkamp (01:01:40): *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 other episodes can be found at podcast.mindandlife.org. If you enjoyed this episode, please rate and review us on Apple Podcasts, and share it with a friend. And if something in this conversation sparked insight for you, let us know. You can send an email or voice memo to podcast@mindandlife.org.*

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