

**VIEW to the U transcribed
Season 1, Episode #9
Professor Mohan Matthen**

[VTTU Theme music]

Mohan Matthen (MM): So, I think that, in a number of fields, I've brought a scientific perspective, or at least, a scientific influence to bear on how we look at perception, image perception, and how it is that images can give you reasons for believing sentences.

So, I might believe that there's a football field outside your window, which there is. How is it that a particular image gets translated into football fields? Right? I mean, I see green, I see grass, and so on, and so forth, but how does that get translated into a belief about a football field?

[Theme music]

Carla DeMarco (CD): Ways of Seeing, with Professor Mohan Matthen, from the Department of Philosophy. Mohan will talk about his research on the philosophy of perception.

But, we also cover a range of topics, as it relates to his work, including the "wow" factor in the movies, a Game of Thrones reference, of course, because he is an avid fan, a bit of virtual reality, how teaching and learning has evolved over time, and we even talk about the colour of *that* dress.

On this edition of *VIEW to the U* podcast, Mohan discusses his research in perception, and the scientific perspective he brings to his particular branch of philosophy, and also his more recent work in pleasure learning and cultural learning in relation to aesthetic pleasure.

Hello, and welcome to *VIEW to the U*: An eye on UTM research. I'm Carla DeMarco at U of T Mississauga. *VIEW to the U* is a monthly podcast that will feature UTM faculty members from a range of disciplines, who will illuminate some of the inner workings of the science labs, and enlighten the social sciences and humanities hubs at UTM.

[Theme music fades out]

CD: Mohan Matthen is a Professor in the Department of Philosophy at the University of Toronto Mississauga, where he is also currently serving a second term as a Tier 1 Canada Research Chair in Philosophy, Perception, and Communication. He officially joined UTM's Department of Philosophy in 2006, and prior to that, was a faculty member at Calgary, McGill, Alberta, and UBC.

CD: I understand that, in your research, you are primarily focused on the philosophy of perception. Your Canada research chair designation is in Philosophy of Perception, and you recently edited the *Oxford Handbook of the Philosophy of Perception*.

And so I just wondered if you can provide an overview of your particular program of research, teasing out a bit of what exactly "philosophy of perception" means, and maybe provide some examples of this work, and one or two projects that you're currently working on.

MM: Okay. So, philosophy of perception is very closely connected to the psychological science of perception. But, it's different. And the main way that it's different is that we ask two questions that, typically ... Or, maybe three that, typically, psychologists don't ask. So, one of those questions, the psychological work relevant to this, but one of the questions is, "What do we perceive?"

What do we perceive? The answer to that might seem very obvious. But, it's not, because, let's just take vision, to start with. What do we see? I think an obvious answer, which people took a long time to come to, but nevertheless, it's obvious, is that we see material objects. I see people, I see buildings, I see tools that I hold in my hand, and so on, and so forth.

Now, the question that is troublesome about that, is that any three-dimensional object has a facing side, and a hidden side. And, obviously, you don't see the hidden sides. So, in what sense do you see an object if you don't see part of it? That's a question which has a lot of challenge to it, questions in what sense do you talk about seeing *amodally*? And what they mean by seeing amodally is that, when I look at a round thing, let's say a ball, I can see that it has a hidden side, which is spherically connected to the front side, but I don't actually see that, because that hidden side doesn't have an effect on the eye. So, the eye somehow, or the brain somehow provides you with an awareness of a three dimensional object, even though you don't actually see all of it; people talk about that as *amodal*.

But, hold on for a minute, and let's think about another sense modality. Let's think about hearing. So, what do we hear? And here, the answer is not at all obvious. We do, in a sense, hear people, but it seems as if what we hear actually is their voices. Similarly, we hear music, but actually what we hear is not music, but notes; the music is a connected sequence of notes.

So, how do we hear melodies, let's say, or harmonies? How do we hear voices? Interestingly enough, these questions are not parallel, because music is attended to by one part of the brain, which needs different kinds of processing routines than voices, which are attended to by a different part of the brain.

Things become more complicated, or at least very different when you go to, let's say flavour. Flavour is not just the tongue, as people think, but a combination of the tongue, and various receptors, which are in the nose. Those get put together. And the whole story is a difficult one to assemble in a way that then allows us to answer the question, "What do we taste? What is it of which we have flavours?"

CD: And you're raising a point that ... I sort of had written down, as a follow up question, but when you talk about, too, what people see, there was this phenomenon that came up a couple years ago, with, "What colour is the dress?" And so, when you talk about what people see, what about when people are seeing something different? What someone else is perceiving is different from what other people are perceiving?

MM: Well, let's take a very simple example of that. So, when you go to a doctor's office, or ophthalmologist's office, the doctor wants to test you for colour vision. So, typically, there will be a whole bunch of dots on a certain display; those are called Ishihara plates. And there will be a certain pattern of dots, which are in a slightly difference colour; so, it might be like orange on top of a green background. There will be a whole bunch of green dots, and then there'll be orange dots. Now, interestingly, there are these plates where a person with so-called "normal" colour vision will see one number, or one numeral, let's say it's a five, whereas, they cleverly designed it so that if you have a red-green deficiency, you will see another number, let's say a seven.

Now, one could ask, "Which is the number that's actually there? Is it a seven or a five?" And I don't think there's a good answer to that, right? It's just that one person, the so-called "normal" person, sees a certain pattern of dots as connected. Another person, red-green deficient person, sees a different pattern of dots creating another number. And there's no objective fact of the matter, but both of those patterns are there: one sees one pattern, the other sees another.

It's a similar sort of thing with the famous photograph of the dress, which became such a meme on the Internet. What we have to remember is that it was the photograph that people saw differently, not the dress. Everybody thought, "What colour is the dress?" I think if you saw the dress, it would be pretty obvious what colour it was. Partly because, when you see the dress, you can move, you can move your head, you can move your eyes, and see the light playing on the dress from different directions. And when that happens, the colour of the dress resolves itself in a way that the photograph may or may not.

In vision, it's often the case that people see different things. It's not just that one person, say the so-called "normal" person, sees *more* than another person, the colour-deficient person, but that, in many cases, one person sees one thing, and another person sees another thing. That was what I was trying to illustrate with the colourblindness test, and that was also the case with the photograph of the dress. So, vision is an odd this inasmuch as it's not always a case of greater, it's a case of different.

And that's very much the case when you think of other species. If you think of a honey bee; honey bee is set up so that it can see certain patterns on flowers, so that it can collect the pollen from the flowers, and the flowers themselves evolved in such a way that they produced these patterns, so that the bee will help fertilize the flower, and pollinate other flowers by carrying around the pollen.

CD: And I guess I know about some of these things, just because I know a little bit about your work, but in going on with the vision perception, you talk sometimes about the "ventriloquist effect," or the McGurk effect. So, I was wondering if you could talk about one of those to give a further example.

MM: It's interesting that some of the senses work together. These are examples of that. So, in the way that we humans, and also other primates, operate, vision has primary responsibility for space. So, if you're going to figure out where something is, primary responsibility for that rests with vision. Touch also does some of that, but touch does it relative to your body, whereas vision does it relative to the world. So, what happens in the ventriloquist effect is that there's a moving mouth that belongs to the puppet, and there's a voice that belongs to the ventriloquist. So, the ventriloquist is clever in disguising or hiding his or her own speech movements while making the mouth of the puppet move.

So, vision tells you that something's happening at the puppet's location. Audition hears the voice coming from that general direction, but vision, having primary responsibility for these spatial location things, narrows it down to the actual puppet. That happens a lot if you actually just go to the movies, because the movies, there's something happening on the screen, and it seems as though the voice is coming from there, but of course, the voice is not coming from there. The voice is coming from speakers, which are distributed all over the movie theater.

You mentioned the McGurk effect; that's even more interesting, because what happens there is not a locational effect, but a visual effect of looking at the mouth, and what the mouth, in the broad sense, including the tongue, and so on, and so forth, are doing. So, what happened with the McGurk effect is that a video is played of somebody saying, "Bah, bah, bah, bah," like so. And an audio tape accompanies that video, where the person says, "Gah, gah, gah, gah." You hear something, which is visually in

between those two things. So, where the "gah" comes from the back of the mouth, the "bah" comes from the lips, so you hear something that comes from somewhere in between those two things; maybe something like, "Dah, dah, dah." I can't swear that that's what you hear, but something like that.

So, there again, vision is saying to the brain, "Oh, that's coming from the front of the mouth." Audition hears something different, and vision says, "That can't be right, because that doesn't come from the front of the mouth." So, the brain makes them sort of compromise between the two, and you hear something different.

CD: So then, this is sort of then tying into you mentioned before, vision is amodal, but this would be multimodal?

MM: It's not vision that's amodal, but the brain can't amodally supply something that vision, as a modality, does not. Yes. And this is multimodal, exactly, because it has both vision, and also hearing, or the speech part of the brain, involved in that.

Speaking of that, there's another characteristic of perception, which is interesting. So, think about something that happened to you this morning, say, making coffee in the kitchen. And you have a very vivid mental image of what happened; you moved the coffee pot from one place to another, you smell the coffee, you touch the heat of the thing, so on, and so forth.

Now, what's the difference between that mental image, and the mental image that you actually had when you did that? Because when you did that, it has to have been different, because in this case, when you're recalling what happened to you, you recall something that happened, and you know that that was something that happened in the past. Whereas, when it actually happened, and you had a very similar, maybe richer, but a similar mental image, you knew that not only was it happening now, but it was happening, as it were, here; that is, relative to you.

So, that's a characteristic of perception in general, which I've talked about. Namely, it's a mental image. But, a mental image that somehow carries a suggestion of the here and the now. And that's, I think, to my mind, a very important characteristic of perception.

CD: It makes me think about memory, though, too, and how memory can colour your perception, right?

MM: Yes; memory can certainly colour your perception in the sense that you can expect to see something there, and then because you expect to see it, you see it. Or, what you expect to see somehow influences what you actually do see.

That's right. But, those are very different, even though they both involve mental imagery. There's a kind of memory that doesn't involve mental imagery. I ask you what's the capital of France, you say Paris. I hope. [Both laugh]

That doesn't mean that you have a mental image of the Eiffel Tower, or something; you may, but the actual fact that you produced was just that Paris is the capital of France, which is a sentence, not an image. And if you remember what the Arc de Triumph looked like, or where it is in Paris, or you have a mental image of that, generally speaking, that comes from a particular occasion when you had that image. Knowing that Paris is the capital of France, when you learn that is not a part of your memory.

CD: I just get a flash of the word "Paris" in my mind, when you say that.

MM: Yes.

CD: And as soon as you say "the Eiffel Tower," then I think of that, or the Champs-Élysées.

MM: Yeah, right.

CD: Some notable landmark.

MM: Right. Exactly.

CD: But, I am interested how *you* became interested in this area of research.

MM: So, I have a scientific background. And when I came into philosophy, I didn't come in explicitly wanting to use that scientific background. But, it did mean that ... By the way, I have a physics degree, not a psychology degree, so I didn't know any of this sort of stuff; perception, and so on, and so forth.

But, I did find that having a scientific background, I thought in a somewhat different way than somebody who, say, comes into it from a historical background. So, I often think along the lines of, "How would I make this distinction in the lab?" Not that I'm going to go into the lab myself, but how would one make this distinction in a lab? And it's often the case that philosophers don't think that way. Many do, but that's not the dominant methodology.

So, that was a difference in the way that I approach things. I also approach things a bit more abstractly, and a bit more structurally, I will say, mathematically, maybe you would say, than many. But, I think the dominant thing was that I had this scientific background. "How do you make that distinction?" If you're going to make a distinction, you should be able to demonstrate that distinction in a kind of a concrete way.

So, I came at perception from a scientific background, and in the last 40, 50 years, there has been quite a lot of activity in the philosophy of perception, which has been influenced in that way. I think I was one of the people who started that first, or got interested in that way of thinking first, back round middle 1980s, or something like that.

CD: Increasingly, the philosophy of perception has garnered interest outside of academia, and has featured more prominently in the media, with shows like CBC Radio's *Spark*, calling on Professor Matthen's expertise, to comment on how perception of visual effects in film, and human attention for a "seeing" has evolved over time.

MM: The interviewer on that program asked me about special effects in movies. That's a very interesting topic, because there is this partially exaggerated phenomenon that, when a particular special effect is first released in the movies, there's a huge "wow" effect.

So, allegedly, when movies first came in, people would duck if a train came their way, and so on, and so forth. It's not extremely well documented that they did that. But, anyway, that had a big "wow" effect. But, they very rapidly lost that effect. And why? Why did they rapidly lose that effect?

And I think one part of the answer ... I'm not saying it's the only part of the answer, but one part of the answer, is that we're so content-oriented when we go to the movies. So, I watched a terrific episode of *Game of Thrones* last night, and there was certainly *many* "wow" moments. And think about what it takes to make a "wow" moment on television, as opposed to in a movie theater.

But, you rapidly get sucked into the plot, and even though you're occasionally surprised by the picture that's been presented on the screen, your attention goes naturally back to what the story is, and you don't necessarily notice how that story is being presented. It has a subliminal effect on you, because you're in the stage of being wonder struck, but, in part, you're wonder stuck, that wonder struck carries over into the story that you're witnessing.

CD: You're just making me think; I know, years ago, I saw this movie, and it was all about cinematography, and it was called *Visions of Light*. But, there was the cinematographer who worked on the film *Rosemary's Baby*. And I just thought it was so interesting that he talked about going to the screening of that movie, and he did this scene with Ruth Gordon where she has a telephone call, and you see her when the phone rings. Then, she goes behind the door to take the telephone call, so you don't see her. But, he said he was sitting at the back of the theater, and he said he saw all these people move, because they wanted to see her behind the door.

MM: See her behind the door; right. Yeah.

CD: And he thought, "Mission accomplished," because he wanted to do something interesting like that. But, somehow, people sitting in the movie theater thought if they just moved, maybe they could see her.

MM: Right. So, some people have asked the question, "So, why do we find some movies frightening," for instance, "Or, sad?" You know that nothing's happening there. Why are you so sad? Nobody actually got hurt or died. What are you so frightened? Nothing's going to happen to you. You're in a movie theater. You know that. And there's something quite involuntary about the way that perception hooks into the emotions, and, you know, anticipation in the case that you are mentioning, where somebody is moving, because they want to look around the corner. They know it's a movie and you can't look around ...

CD: But, you're also making me think, and I don't know if your research touches on this, but there's, like, virtual reality, and augmented reality.

MM: Well, virtual reality is really interesting, because it has ... And augmented, as well. But, in virtual reality, you have a coordination of the difference sense modalities. Not only do you see certain things, but you feel certain things. But not only do you feel certain things, but you feel them as you see them, or feel them as you apply an effort. So, if you turn your head, you see a different part of the scene, in the way that you would if you were there, and so on. And that's a multimodal reality that's such a challenge to present.

Somebody was telling me about a therapeutic use of virtual reality, where patients are asked with their hands, their hands moving with their arms, to mimic the motion of a dolphin that they see on the screen. So, the dolphin is swimming, and jumping, and so on, and so forth. And they are supposed to move their hands as if it were the dolphin, just like children do that with airplanes.

Apparently, when the dolphin leaps, and leaves the water, they of course hear the water, but also, there's an immediate decrease of pressure on their hands, because they're not in the water anymore, they're in the air. That's the kind of thing that goes on with virtual reality.

CD: And I heard a researcher here talking about how, if you have this virtual reality, the glasses on, and it's giving you the sensation of ... Certain virtual reality sensations were making people feel nauseous. Say, if it made you feel like you were on a rollercoaster. But, again, it's just that idea that you're not actually moving at all, but what you're seeing is causing this sensation in your body, and trying to figure out why that's happening was part of her research area.

MM: There are a lot of these labs, which I've seen, they have a moving display, but they also have a platform. So, as you move on the platform, the display changes, and so on, and so forth. And one time, I had the misfortune of going on one of these things, and the person that was operating the apparatus was not there, so a researcher tried to operate the apparatus.

CD: Oh, no.

MM: And she was not very skilled at doing that. And so, I immediately fell over, because I lost my balance, even though the turntable itself was not doing anything unusual, it was just that the visual display was so disorienting that I actually fell.

CD: Wow.

MM: Or stumbled, I should say. I don't want to overdramatize what happened.

CD: Yeah. I could see where what you're talking about with the research, this sort of ties in a little bit to what some of these other researchers are looking at, as what's happening in the brain when you're seeing whatever's happening with the glasses, right?

MM: Yes. Exactly. So, I mean, there's so many effects like this. So, one of the effects is that you're ... Let's say you're in an airplane, and the airplane takes off. When it's taking off, it looks as if the front of the cabin is now higher than you. And it is higher than you. But, how do you explain that, given that your whole body has shifted, so that the front of the cabin is at the same angle, relative to your eyes, as it was before? The explanation is that it has something to do with the fact that you're tilted backwards, therefore, your body senses that you're tilted backwards, and then it makes the front of the cabin look as if it's higher than you.

But, that's a case where the tilt is able to influence what you see. And if you wanted to do that with virtual reality, it's very difficult, because unless the person's actually strapped into a seat, you have to give the sensation in a different way.

CD: And so, I know today we were talking about this; you happened to be on campus today when there's this significant occasion of the solar eclipse that's happening in just a little while this afternoon, and we're heading over to see it. I came across this idea in listening to something recently, and I know that, historically, Greek philosophers were very interested and been attracted by eclipses. And so, I think a lot of people are interested in this celestial event, maybe because they don't see it very often. But, I just wondered if you could speak a little bit further, as to why. Because I'm thinking about there's the vision aspect, but why are philosophers interested in this kind of event?

MM: Well, I think Thales predicted an eclipse, and so, people thought, "My god, that's really impressive." And it really was impressive. But, I don't think that was a philosophical interest, as such. I think things were much more interdisciplinary, except that disciplines had not been established, so they were interdisciplinary because the disciplines hadn't been disaggregated. And he, presumably, had some records of past eclipses. And I don't even know how he did it, but he predicted an eclipse. People were wonder struck that anybody could do a thing like that.

CD: So, he was almost like a seer, or something.

MM: He was a seer, yeah. He also cornered the market on olive presses because he, one year, predicted a big crop of olives, and just bought up all the olive presses, or had contracts on renting them out to himself. But, this large crop of olives, everybody had to come to him to press the olives.

CD: He's like a Renaissance man. That's amazing. Another question I had about your research was just, what do you feel is the biggest impact of your work?

MM: So, I think that in a number of fields, I brought a scientific perspective, or at least a scientific influence, to bear on how we look at perception. I've talked about something that we talked about earlier, image perception, quite a bit, and *how* it is that images can give you reasons for believing sentences. So, I might believe that there's a football field outside your window, which there is. How is it that a particular image gets translated into football fields, right? I mean, I see green, I see grass, and so on, and so forth, but how does that get translated into a belief about a football field? So, that's one area in which I've had some influence.

I've recently been working on some stuff, which I think is quite original, about how perception links onto pleasure, and how artists use perception to create pleasure, particularity aesthetic pleasure, and also about the way something, again, that we talked about a bit earlier, about the way space and time get handled by perception. So, these are themes, which take quite a lot of unpacking, and I think my work will be attended to for that.

CD: Because you mentioned about the notion of art, because, again, art can be subjective, are you talking about, then, works of art that are universally perceived to be masterpieces?

MM: So, I don't believe in a universalism in art, and the mean reason why I don't believe in a universalism in art is because art is very different in different cultures. So, there is a question about how it is that, if *you* listen as a naïve listener, to Chinese opera, or some music from Indonesia, let's say, it strikes you as strange, and often, not as particularly pleasant. But, if members of that culture listen to the same music, they are completely entranced by it, and what's the process that makes that the case, and is there any right, or wrong, or good, or bad?

I start from the idea that you couldn't be anything right or wrong about it; it can't be that, in a highly developed culture, there are standards which are wrong; or even in any culture, because I think every culture is highly developed. So, what I've been working on quite a lot in the last year or two has been a notion of pleasure learning, and a notion of cultural learning. The notion of pleasure learning is better established in the literature, and it basically just amounts to this: suppose there are two ways of doing something, and one of them gives you more pleasure than the other. Then, you will naturally be able to do things in the way that is more pleasurable.

Now, I want to graft that very simple idea onto a notion of cultural learning, which involves pleasure, but also involves instruction, it involves sensitization. So, there's certain harmonies, for instance, which are unfamiliar to you, because you don't hear them over harmonic progressions, but maybe somebody growing up in China has heard them all their lives, and have become sensitized to those particular transitions of those particular chords.

And that's a very simple notion of sensitization, but there's also cultural themes, which are intellectual. Somebody might talk about the plight of single women in 18th century rural England, Jane Austen. Now, that might mean absolutely nothing to somebody who grows up today. They just don't feel that as a compelling dilemma, or compelling situation to be in. So, that's an intellectual thing, where you appreciate something, but you have to be brought to feel it. Even if you read a dull history book of 800 pages, about the position of women in English society in that time, you may realize what's going on, but you may not feel anything for those people, and Jane Austen makes you feel something.

So, there's a very complex phenomenon there of cultural learning, which is involved in art. I've been thinking a lot about aspects of that, the last couple of years.

CD: Do you play any musical instruments?

MM: No, I don't.

CD: Okay.

MM: My mother did.

CD: I've heard you mention music a couple times, and I just think maybe you've got a musical background, too.

[Interlude music]

CD: Coming up: UTM @ 50

Mohan reflects on the evolution of the UTM campus, but also the changes in teaching and learning he has perceived over time, as well as the developments he envisions for his field in the future.

[Interlude music fades out]

CD: And so, I am switching tacks here a little bit, just because, as I mentioned, the podcast is about UTM at 50, also this first season. So, I know you've been on campus since 2006, and I wondered if you could speak to maybe some of the changes that you've perceived over your time here on campus?

MM: Sure. So, some of the changes are just global changes that anybody would perceive at any university. Because I think that learning and teaching are very different today than they were even 10 years ago. So, 10 years ago, it wasn't standard for us to use PowerPoint presentations, and today, we use them routinely, and students demand them, students get annoyed if you don't post them very promptly, and so on, and so forth. That's a change which, of course, anybody anywhere in the technologically developed societies would notice, and they overshadow any local changes.

Certainly, UTM has the huge changes in terms of the classrooms that we teach in, and we've been fortunate to have a number of new buildings go up, and the classrooms have good equipment, and good layouts. When I first came to UTM, I taught in some really depressing circumstances.

CD: Yeah.

MM: And those rooms, and buildings don't even exist any longer. They've been torn down. And the new buildings are brighter, people are in a better mood, and that makes a huge difference, I think. I've been to many universities where that's not the case. But, nonetheless, the technology has changed so much, and the *ways* people learn have changed so much. That overshadows the local differences of building.

So, one of the things is that I think that humanities students learn more like science students always did. People bemoan the demise of reading, and maybe one should bemoan that, but students these days are more problem oriented; that is to say it's true that they pick up a snippet, but that snippet is often a problem that they try to solve, rather than some discursive novel, or treatise, or 200 page book, which they read sequentially. But, that's always been the case in the science; I mean, science people learned from the lab, or they learned from the exercises out of the back of each chapter of their textbooks. And I think that humanities learning is becoming much more like that than it used to be.

CD: So, that it's a problem that people are coming across is driving how they learn.

MM: That's right.

CD: Okay.

MM: And I think that our style of teaching has probably changed. It used to be common that people in the humanities would just give a lecture. Some would even read a lecture, which is generally depressing.

CD: Oh, yeah. I've been in those classes.

MM: I have too, and it was *extremely* boring. And they would read a lecture that they had read last year. But, I think fewer people do that now, and part of the reason is Power Point, or Keynote, or whatever the slide presentation program is that you use. So, people teach in different sort of chunks, and more spontaneously, to a degree, more interactively.

CD: Do you find that you assign less reading in this respect, then?

MM: Yes.

CD: Yeah.

MM: I *do* assign less reading. But, I give little problem sets after every lecture; those problem sets are for students to do or not do, but I give feedback. And I would say a lot of the better students do quite a few of them, so I will get 5 or 10% of a class that, after any given lecture, trying to answer my little questions. And they're very short questions, but they require a bit of reflection.

CD: Do you find that they're also more so visual learners?

MM: That's an interesting question. Maybe. I'm not really sure about that.

CD: I guess it got raised because I am just down the hall from biomedical communications, and they often talk about how they're helping students learn by these more sort of visualizations; videos, and the concept of what's happening at a cellular level when you're talking about some of the health related things. So, I'm just wondering.

MM: I try to trace out flow charts of reasoning, at times. That's visual, and it helps people understand how to go from one step to another, and what steps are distinct from one another. So, it's visual, in a sense. But, it's not visual in the sense visualizing the workings of something. Maybe there's an analogy there, but I do think it's not just a question of *how* you learn, but what you learn. And I suspect that what you learn is changing quite fast also, to give the example that I've talked about before, you're not reading long text, which you absorb sequentially, by turning pages, from page 115, to page 116. You're flipping back and forth, you're using your search tools to look back, or look ahead. So, just what you're learning is different. But, I don't have any pessimism about how human intelligence will manifest itself.

CD: The bottom line is we're still learning.

MM: The bottom line is we're still humans.

CD: That's right. That's right. That is the bottom line.

And so, this is my last question, and we talked a little bit about this before, but there seems to be more interdisciplinarity, and so, I think your work in particular comes at this intersection of science and philosophy, which you mention. But, driving off this point, I guess I'm just sort of curious about what kinds of changes you foresee for your area of research in philosophy in the future.

MM: So, I spoke a little bit about how psychological science was important to me. But, I would suspect that, in the future, there will be a lot of computer science. But, when I say computer science, I mean not theoretical computer science, but actually getting things to work. So, building little modules that work a certain way, or little devices, or simulating things. I would suspect that that will, in the next 10, 20, 30 years, become much more important than it is today. I certainly don't have the coding skills to do any of that, and I wasn't brought up with the expectation of coding skills would be important, but some bright spark is going to show up in the next 10, or 12 months or years, who will suddenly make simulation coding, et cetera, relevant to philosophy. And I suspect that'll be the next development.

CD: Very interesting. It remains to be seen. I just wanted to thank you so much for coming in today, and talking to me about your work.

MM: No, it's been a pleasure. Yeah.
Thank you. Thank you, Carla.

[Wrap-up music]

CD: Thank you. I would like to thank everyone for listening to today's show. I would like to thank my guest, Professor Mohan Matthen, for coming in to speak about his work in the Department of Philosophy, and giving us so many great things to think about.

I would like to thank the Office of the Vice-Principal, Research for their support, for everyone who has been helping to promote the VIEW to the U podcast, and thank you to Tim Lane for his tunes and support. Thank you.

[Music fades out]