HermanFINAL

Tue, May 16, 2023 7:52PM • 48:00

SUMMARY KEYWORDS

emotions, people, study, vr, research, participant, scenario, cognitions, virtual reality, crime, decision making, researchers, decision, work, anger, feel, limitations, questions, bar, theory

SPEAKERS

Jenn Tostlebe, Jose Sanchez, Shaina Herman

Jenn Tostlebe 00:14
Hi everyone. Welcome back to The Criminology Academy podcast where we are criminally academic. My name is Jenn Tostlebe

Jose Sanchez 00:21
And my name is Jose Sanchez

Jenn Tostlebe 00:23
and today we have Dr. Shaina Herman on the podcast to talk with us about the use of virtual reality or VR and criminological research.

Jose Sanchez 00:32
Shaina recently defended her dissertation at the University at Albany SUNY. She has been working as a postdoc/researcher at the Max Planck Institute for crime, security and law in Freiburg, Germany since 2020. Her research broadly focuses on crime decision making more specifically on morality and criminal choice, emotions and decision making and the use of novel methodologies for testing criminological theory.

Jenn Tostlebe 00:57
It's great to have you on the podcast. Shaina, thank you so much for joining us.

Shaina Herman 01:01
Well, thank you so much for having me. I'm so excited to be here with you guys today.

Jose Sanchez 01:05
And just a brief overview of today's episode. So this one's gonna be a little different than what we normally do, and what we think is a pretty cool way. So the first thing we're going to talk about is we're going to talk about decision making virtual reality. And then we're gonna move into actually talking

about virtual reality in criminological research. And so with that being said, Jen, why don't you go ahead and get us started?

Jenn Tostlebe 01:29
Thanks, Jose. Alright, so we want to kind of set up the episode with a discussion on decision making. And so in a paper that Jose and I are co authors on, we kind of discuss rational choice based theories, or decision making in this very emotionally charged or high context situation, which is also something that you tap into with your work at Max Planck Institute. And so can you first explain to us what rational choice theories are and what their central arguments are?

Shaina Herman 02:03
Of course, so I would say at the simplest level, rational choice theory and decision making theories are rooted in the classical perspective. And they emphasize that people are self interested, and they're seeking to maximize utility and their decision making. So what this would mean is that people weighed the costs and risks of offending behavior against the benefits and rewards of that behavior. So in perceptual deterrence work, or rational choice work, most often, the risk or reward would be the certainty of arrests, right. So perceived sanction certainty, and that is most typically a weighed against monetary rewards or incentives from crime. Of course, over the years, this perspective has been expanded to include extra legal and psychic costs and rewards to crime such as friend approval, embarrassment, thrill, excitement, moral considerations, etc. But basically, the general gist is if the cost of a transgression exceed the benefits, you have deterrence and no crime. But if the benefits were to exceed the costs, the outcome would be crime. And I think it's important to highlight because it definitely serves as the foundational theory and framework of the work that I'll be talking about today.

Jose Sanchez 03:19
And so another big part of the research is that it focuses on the emotional aspect of decision making. And some people, even some scholars will argue that emotions or making emotional decisions is antithetical to being rational. Is this the case? Or what role do emotions play when making decisions?

Shaina Herman 03:40
It's great that you bring that up. And I think that an issue in the study of emotions and decision making, and maybe even particularly in criminology, we're very quick to think that emotions distort rationality, or even lead to irrationality, when in reality, understanding the way emotions interact with an informed cognitions is part of understanding rationality, and decision making processes more broadly, I would say, there is, I think, Jennifer Lerner, she has a really influential piece in the annual review of psychology, on emotions and decision making. And if I remember correctly, actually, she begins her paper with a quote, that's always sort of resonated with me. And it's by Herbert Simon, and he makes the quote when he's talking about or like introducing the concept of bounded rationality, and sort of how we need to emphasize or we need to expand sort of our normative models to emphasize like cognitive and situational constraints, and what he says, and I'm probably not going to get this exactly right. But in order to have a complete theory of human rationality, we have to understand what role emotions play in it. And to me this really further like sort of underscores the point that I'm making that emotions and cognition shouldn't necessarily be seen as entirely separate things, but we need to be focused on how they're interrelated. And how that interrelatedness sort of translates into our decisions informs decision

making processes. Some of this work highlights the fact that, yes, emotions can influence cognitions. But cognitions can also influence emotions, right? Again, it's all about looking at this as one model. And we can do that in predictable ways. So it's not necessarily an irrational thing. I'm trying to think so this was further underscored, there was a recent paper in I believe nature, and it was a bunch of behavioral scientists coming together, talking about the rise of affective-ism, essentially. So the rise of the study of affect. And the main takeaway from this was that in the past 40 years more so in the past 10 years, though, there's just been a huge emphasis on studying the interrelatedness of affect and cognitions. And how these processes work together to inform decision making and predict behavior. And again, their conclusion was sort of that this has had tremendous sort of benefits for theory and understanding decision making generally, this is the way we should be looking at these things sort of in tandem and together.

Jenn Tostlebe 06:12
Yeah, makes sense to me. Because they may wish to take some notes for our paper.

Jose Sanchez 06:17
We should definitely should. But yeah, I mean, that's sort of the argument that we make in our paper where it's not that emotions make you irrational, emotions actually kind of give you guidance as to what your decision is going to be right. So like, if you're feeling fear, that is going to kind of give you a rank order, what are we going to what your options are, and kind of help you rank order what your decisions are going to be right. So like if something scares you say you have like the options of fight or flight, right, for example, well, then that fear is going to help you make that decision. So it's not that you're irrational. It's just a piece of information that's helping that decision.

Shaina Herman 06:53
Yeah, exactly. It's sort of like a perceptual lens, if you will.

Jenn Tostlebe 06:57
Okay, so now that we've discussed some of these basics, right of choice theories, we want to ask you more about the research done to test these theories within criminology. And I know you've started to mention some of these aspects. But first, can you give us a quick overview on what we've learned empirically about decision making? Yeah, I know that's broad.

Shaina Herman 07:19
So, I guess I would say, in perceptual deterrence and rational choice research, we know so consistently, it's such a robust finding that the primary correlate of offending behavior is sanctions certainty perception, so much so that sanctions certainty perceptions have become an outcome. It's no longer do you sanction certainty perceptions related to crime? It's well, what informs biases, maintains updates sanction, certainly perceptions. And of course, this has sparked like, a massive agenda of research, some of which is focused on like longitudinal processes or developmental processes or prior experience. But more recently, the emphasis has been on situational or contextual didn't determinants or inputs, right? So these could be objective things like police presence security cameras, is it light outside, how many miles you have to drive if you're drinking and driving, or other things, such as your friends sitting there telling you like, there's no way you're gonna get arrested for this, it's fine. But the

important thing is the emphasis on the immediate situation. And I think that emphasis has really allowed a spot for emotions to sort of pop back up and decision making research, because emotions themselves stem from the situation. We know crime, when you're committing a crime, it's a very emotional experience. So again, emphasizing the situation. So I think that the work that has been done largely focuses on cognitive processes underlying perceptual development, but things like emotional, visceral, and physiological sources are definitely also at play. And it's sort of like opens the door to start looking at that stuff more.

Jose Sanchez 09:00
Okay, so I think we have a solid foundation to start moving into, like the meat and potatoes of this topic, which, like, I'm really looking forward to, and that's using virtual reality, or VR, and research. And, you know, we usually for these episodes, people send us like an article they've written, we've been sent, like book chapters, and tire monographs have been sent, like a series of three or four papers that people want to talk about. But so, you know, congratulations, Shaina, you've hit us with a TCA first, and which we're actually going to discuss a protocol of how the study is being set up. So first, can you give us an overview of some of the ways that emotions and decision making have been studied before and sort of what their limitations have them?

Shaina Herman 09:48
Yeah. So I think that maybe not everyone would agree with me, but I think largely what we know about emotions and decision making comes from fields outside of criminology. So I'm thinking like neuroscience, psychology, behavioral, econ. And all of these fields have varying frameworks and theories for situating emotions in decision making some examples would be like appraisal theory, dual system models, low end scenes, like risk gets feelings. But I think in criminology, we're really lacking a sort of cohesive framework or theory to guide us here. And I think that it's largely attributable to methodological and ethical limitations. And what I mean by that is, and we struggled with this a lot in criminology, you can't really just tell somebody, like go commit a crime and then halfway through, like, come up to them and be like, how are you feeling right now? Like, what is the percent chance [INAUDIBLE] within this given moment? Like, it's a huge limitation that we face, and it's unfortunate, but I think when getting at emotions, it's so important that if we want to study emotions, and cognitions, it needs to be a real time emotion, it needs to be somebody's angry right now. How do they evaluate risk? How do they evaluate moral considerations? And we haven't really been able to get it that of course, in other fields, you have different outcomes, you don't have crime. So it's not always as challenging. Perhaps that's why we're not quite there. But that is not to say that there hasn't been work done on emotions and crime. Of course, there's been a lot of amazing work done, in my view, thinking about this work, I would probably categorize it in two or three different ways. I would say one way people have done it is with qualitative interviews, like an example would be like Charbonneau and Jacobs work. And I think this work really is just showing the importance of emotions, like in one of their papers, they're looking at things offenders do to mitigate fear or nerves prior to the crime. And they are looking at this because they learned through this research that these events are so highly emotional, these criminal transgressions, like emotions are running high. And I think if anything, these qualitative studies sort of demonstrate for us the importance of emotions for crime decisions. Some of the limitations with this, I would say is that they're retroactive. You're asking people after the fact how they felt. Another limitation I would say is that they're involving extreme crimes like car theft, for example,

that might not sort of generalize to more minor or street crimes. A second way, I think people looked at this, and I hope I'm not omitting anything major here. But I would say is with like lab based studies, in which you're either priming or inducing some sort of emotional stimuli in the in a lab setting. So like an example here could be like Exum's 2002 paper where they had I believe, college aged males come into the lab and half of them drunk and half of them not. And then half of them, they sort of had an anger inducement task, where I believe the researcher accused them of being 30 minutes late to the session. And then the other half didn't have that. And again, the whole idea is how to look at how anger would affect cognitions like determined considerations, and then effect aggression. Similar studies are like the sexual arousal studies, there's a handful of people who've done this like Bouffard, Lowenstein, Patternoster, and where they're inducing sexual arousal by having people watch some sort of like pornography or look at magazines, and then they look at how this relates to sexual aggression. Again, these authors are hypothesizing that these things should interrelate with cognitions and determine considerations and then really to crime. Unfortunately, in a lot of this work, the findings tend to be somewhat inconsistent, they find that they are in fact changing people's emotions like they are you arousing people, they are making people angry, and they're finding that often has a direct effect on aggression or sexual aggression. But as far as the interrelated effects, either mediating or moderating with these decision making variables, there's not really evidence of that other researchers who have tried to build on this work have attributed that largely, I mean, it's attributed to a number of possibilities. But it's been attributed largely to the fact that in these studies, they're focusing on incidental emotions and by incidental emotions, I mean, that they're focusing on emotions that are totally unrelated to the criminal situation. Right. So getting somebody angry about being late, has nothing to do with what's happening in the hypothetical written vignette that respondents are reading. Incidental emotion could also be like conceived as like a mood, right? If you're in a bad mood. So that could be one reason why we're not seeing effects in these studies. So to build on this, and this gets to the third way, I think emotions have been really looked at in criminology authors have sort of just used hypothetical vignettes by themselves, but in the vignette, it includes some sort of emotional provocation or emotional stimuli. So for example, if you take the classic bar fight vignette that's always used in rational choice research. In this vignette, you're told that this aggressor is sort of provoking you like calling you a name or pushing you. So that alone could obviously induce anger. So what researchers in this realm have done is after the vignette, they just say, Well, how would you feel? How angry would you be in this situation? And then they can also ask about how likely would you be arrested? How morally wrong is this incident? And see if there's a relation? And actually, these studies find the most compelling evidence for the interrelatedness of effective processes and cognitions. But I would say they have a major limitation. And that's that respondents are answering these survey questions in a cold state. So we want to know how emotions affect risk perceptions. But you're not actually getting somebody angry, you're not actually getting somebody aroused. And then you're still asking them to make these cognitive evaluations. So Is there really an effect there? And beyond that, I think a lot of research outside of criminology really questions like our ability to even forecasts our emotions, like we're not very good necessarily predicting how we would feel based on all of this, I think this is where Virtual Reality sort of comes in, as a way to sort of build on and maybe rectify some of these limitations that I discussed.

Jose Sanchez 16:16

Yeah, it just reminds me when we talk, like, you know, we see something that happens on the news, I don't want to be different. But then you get kind of put in a situation like that. And it goes nothing like

you thought you'd handle it. Right? It's easy for us to think that we'd handle things in a certain way. But until we're actually put in that position, we just really don't know, what are the other things that end you kind of start to tell us a little bit about not being able to question people mid robbery, about how they're feeling. And some listeners, based on some of the studies that you're describing, might be wondering, how do some of these studies kind of grapple with like the ethics of trying to conduct this type of research? Because some of it up to some people might seem like it's trying to push like boundaries a little bit. Right?

Shaina Herman 17:00
Do you mean the existing research that's been done? Or for VR?

Jose Sanchez 17:04
I'd say yeah, for what's been done so far, because I think most people will consider or I don't know, like, I guess, try to imagine purposely trying to get someone to become angry and maybe start exhibiting like aggressiveness to some people, especially maybe not non researchers, that might seem a little suss.

Shaina Herman 17:22
Yeah, that's actually a great point that you raise. And I think I'm sure that these aren't the easiest things to get through IRB, the Exum study always blows my mind with that. But I think that one thing that is huge and important here is the stimulus are not going to be like in a real situation, probably there's going to be a lot more anger inducing events. Like if somebody's actually in your face screaming at you. We're as a researcher trying to like accusing you of being 30 minutes late to a session isn't necessarily going to have some sort of crippling effect, hopefully. And same even with alcohol inducement. That's something that we're looking into doing with our research. It really is such a small level of alcohol, you're not getting these people belligerently wasted and then drunk. But I mean, that is a really good point. And even with the arousal conditions, like I could see as a participant being like, I don't know, like feeling very like violated, you get me aroused, and then asked me these questions about sexual aggression. But I do think typically, the stimuli is on the lighter side, I don't think we could ever just go and put people in some sort of crazy situation to really, really mess with them, even though it would be interesting.

Jenn Tostlebe 18:35
All right. So you've talked about all of these previous methods, the three buckets in particular, and they give us really important information. But as you noted, they're not perfect. And so as you've highlighted, your team came up with this innovative idea of using immersive technologies, thank you call it 360 degree videos, or virtual reality, which is more ethical and safe to examine how emotions play into real world transgressions. And so can you walk us through how this idea of using virtual reality came to be and how it addresses these limitations of other methods used

Shaina Herman 19:14
before? Yeah, so I think that will first say how it came to be, I would say definitely is just trying to rectify and build on these emotions, right. Like, despite the existing research, we still really don't have a good grasp on how emotions potentially interrelate with different cognitions and inform our decisions. So that really is the motivating factor. So as far as how it addresses the other limitations. So I think VR

research has applicability for crime research that I'm not going to even touch on here. But focusing specifically on what we're talking about today. I think that one thing I didn't even talk about with the lab based studies or the hypothetical vignette studies is that they are both relying on a 150 to 250 word vignette, and unfortunately, like hypothetical vignette research, all of it and mine included, using that it really omits a lot of situational detail. And it causes the survey participant then to impute their own situational details, right, and everybody's going to impute different things in a different amount of things. And that's likely a very idiosyncratic thing. When we use virtual reality or virtual scenarios, generally, you have a controlled environment, everybody is seeing the same thing. And I think that's really important. But I think it's particularly important for studying emotions. Because whenever you have a written vignette, oftentimes, the sort of details that are omitted or can't be included due the word limitations, is details that might affect your emotions. So to give you an example, if you have a scenario involving aggression, the way that the aggressor is looking at you, the proximity, they're standing to you, their physical appearance, generally, the way they're standing over you or not, right, these things are going to create different levels of fear, probably different levels of anger. And it's just not something you really can get at with a short written vignette. But Virtual Reality sort of gives us the tools to not only include these details, but potentially manipulate these details, right? So if we think that certain features of the environment could have differential effects on the way people feel in a given moment, we can experimentally manipulate these. And I think that leading to another promising important part of VR, what allows us to even think this as a possibility is what VR researchers refer to as presence. And by presence, I'm referring to basically the felt presence in the virtual scenario, like how real does this feel? And the whole argument is that of course, you have more increased presence in a virtual world than you would with any sort of written hypothetical scenario. So when in virtual reality, users brains treat the VR experience as psychologically real. And researchers find that they're actually physiologically aroused in ways that are really similar to real world situations. Like there's a lot of evidence to support this. And the idea is that the human mind can't really be in two places at once. So if you're feeling present in the virtual world that almost leads to sort of psychological absence in the real world. And it sounds kind of far fetched, I feel like until you actually experience some of these virtual reality scenarios and how real they feel when you're in them trying to think or as an example, I believe it was later in colleagues in 2006. Basically, what they did is they did like a variation of Stanley Milgram's famous obedience experiment, but they did it in VR. So it was a little bit different. But the participants had to deliver electric shocks to a virtual trainee whenever she was making errors with some sort of memory test. And basically, what they found is that oh, in the recall correctly, the trainee also was like protesting and reacted negatively to this. So just like in the Milgram experiment, and what they found, essentially is that participants responded to this, even though they knew the shocks weren't real and knew the woman wasn't real. They responded in almost the identical way that participants did in Milgram experiments, both subjectively behaviorally, and even physiologically, like their heart rate and skin conductance levels were high. So it really just is a cool example, I think of demonstrating how virtual reality scenario can sort of like stimulate the sense of presence, and my co author Jean-Louis van Gelder has a lot of research, really comparing written scenarios to the virtual world. And again, it's all about this idea of presence. I think presence in combination with the fact that you have full control over the situation, are really two of the biggest advancements of VR, and they allow us to then manipulate emotions in real time in that setting.

Jose Sanchez 24:17

I'm glad you brought up the presence thing, because as I was kind of reading their lives, Jenn, I don't know if you have any experience with VR. Do you have

Jenn Tostlebe 24:26
I have like a VR headset. Yeah.

Jose Sanchez 24:29
So I've only ever done it once. It's like my cousin and I needed to kill some time. So we just like walked into this arcade and like, one of the games ahead was like VR based so we started just playing that and it was kind of odd because like it I don't know, it was like a weird sensation because like I could see like everything you know, it's like first person like the environments all around me. But somehow I kind of was still aware that we're just playing a video game. So I was I was reading you know, through your protocol and listening to you how like you're getting like these geniune reactions out of people. So does like this scenario matter, right? Like if it's just like animated things like, is that different than if you sort of put someone in a more real life situation?

Shaina Herman 25:12
I think that it depends on your research questions. But I mean, yeah, I think that one of the benefits, and I'll definitely hit on this later, but when I'm like going into more detail about the project, but one of the benefits, I think, for us is that we are using 360 degree video, which uses real actors or real bar. It's very realistic whenever you're in it. And of course, at the same time, people are always going to know like, Yeah, this isn't real. But you run into that issues with all hypothetical research, and all intention research. But I think that the virtual world gives you at least a closer approximation to that. And I wish I could remember, I was trying to think about this before we talked, somebody was telling you recently about some sort of VR study, and I'm not even sure what they were doing it for. But the woman wanted to sue the researchers because she felt that her experience in the virtual reality was so real that it was like traumatic for her. It is crazy. And I think this is also a very person dependent thing. Of course, not everybody might react the same way. But that is something that we try to account for. We're always measuring presence on a bunch of different scales. We're always measuring realism. And we're always trying to look into these things.

Jenn Tostlebe 26:25
I will say with my like, headset, granted, I did it for like five hours straight, which was way too much, do not recommend. But I have like a zombie game on it. And it's like, really scary, actually, when they're coming at you because it feels real. I like fell over at one point. So I can see how like you could get lost in it and kind of forget, like, even though I'm wearing this thing on my head, like it still gets to that point of feeling real. So yeah, I like that.

Jose Sanchez 26:56
Alright, so let's do you know, you kind of touched on this. But let's get into how you actually set this up. You said you were shooting with real people and real actors. Can you start walking us through, how all of this kind of came together?

Shaina Herman 27:09

Yeah. So I think that first like, I want to lead with the caveat that not every research question is meant for VR. And VR is not meant for every research project. And definitely not saying that. But I think what sort of VR you use is going to depend very much on your research question. And as you mentioned, one option is to do and I'm no tech expert at all, so don't quote me on any of this. But one general option is to use sort of like digital simulations, things that are going to be more video game-esque and involve like avatars. And what's really cool about this stuff is because you can actually have participants interact with the environment, they can move around in the environment, they can interact with avatars in the environment. So it's just like, it opens a lot of doors. Somebody in my lab right now a colleague, they're working on a project where they have a virtual environment. And it basically has a whole bunch. It's a neighborhood and they go into prisons, and they have burglars go through it, and they're having burglars like, identify all these different things that might be important for decisions to burglar. It's just an example of another way it could be used. What we did is very different. And another option. We did the 360 degree video, which I didn't even know there was cameras that could film 360 degree, but it's pretty cool. So we hired a production crew we hired and I should have said this at the beginning when I say we I'm talking about myself, and my collaborators Timothy Barnum and Jean-Louis van Gelder. Yeah, so we hired a production crew, we hired a director, we hired professional actors, we went to a bar, we filmed this in the Netherlands. So we're based in Germany, and we used an Irish pub, because we're like, okay, everywhere has Irish pubs, these are sort of universal, we can use this in different settings. And we wrote the script, in the script of the scenarios that our VR participants witness, which I'll talk in detail about in a little bit. But writing the script may not sound like a lot, but it has to be so theoretically informed and driven. And it really took so much time, it was a lot of work. But in the end, we had a bar full of actors, I think we had over 50 extras and like eight primary actors, we got to be there on set, well happen. There was a 360 degree camera, and we filmed out these scenarios that I'll detail for you in a little bit. But the cool thing is then when participants are in the VR headset, they can look in obviously 360 degrees, like up down, left, right in the audio is also spatial. So they might hear something happening behind them, and then that causes them to turn around. And we use those audio cues to sort of direct attention in the scenarios. I'm sure I'm forgetting something about these but that is like the gist of sort of what 360 degree video does. It's very realistic. And when the participant's in the goggles, it's out as if they are sitting at the bar, kind of leaning against it. Even in our lab, we have like a fake bar setup for people to lean against. And then they can like look around and see like the bartenders in front of them and scan the environment and see all the action that's basically sort of at least what goes into sort of putting the scenario together. But yeah, it was a lot of fun, and definitely a different experience for me.

Jenn Tostlebe 27:09
Yeah, for sure. It sounds cool.

Jose Sanchez 30:26
So I was reading it, like it never occurred to me that you actually had to write like a script, like I knew you wrote out like the scenario was that like, it was like writing like a TV or movie script where you're like trying to not have because like, I was watching this, like docuseries, the other day of, like, you know, like, those things are supposed to be a little more authentic or whatever. But there's still some scripting that goes on in them. And you could really tell that it was scripted, because the lines were so bad.

Jenn Tostlebe 30:54
That's probably what hopefully that's not what happened.

Shaina Herman 30:57
Well, we didn't work directly with the director. So every time we would make edits to the script, we would send it to the director, and he would write his version of what he thinks that should be the sound more authentic. But you got to keep in mind too, like, I don't speak German, and I'm in Germany. So this is being done in German. So the German translations, I like don't really know what they're saying. So I'm just like, I hope that's what we wrote. Like. There's a lot of back and forth there.

Jose Sanchez 31:23
Yeah. Because I imagine like a not so great script my kind of hinder the study a little bit.

Shaina Herman 31:28
Yeah, that's definitely was a challenge for sure.

Jenn Tostlebe 31:31
Well, now you can go and write a movie script. So you're already set for it.

Jose Sanchez 31:36
Shaina Herman criminologist and TV director, okay. Yeah. All right.

Jenn Tostlebe 31:40
So let's walk through this simulation in more detail, then we want to start broad, and you've kind of already touched on this too. But what is really the overall goal of the specific simulation and study that you're conducting?

Shaina Herman 31:55
Yeah, so I would say that the primary goal in a broad sense, is we want to use virtual reality to manipulate like experimentally manipulate real time emotions, and then examine how these emotions relate to different cognitions, whether that be risk perception, safety perceptions, moral perceptions, whole list of things, social perceptions, and then how these ultimately inform behavioral intentions. And whenever I explain the stimulus set in more detail, I'll explain the specific behaviors that we're looking at. But again, it's really just trying to sort of get at that sort of disconnect in the literature, like we don't really know how these things interact, because we can never study people in this hot state relating to the situation. And in addition to that, we're collecting data on like large scale personality inventories, physiological measures that relate to the emotions. And so really, we're just trying to, I guess, create, in time, a comprehensive understanding or model of emotions and crime decision making.

Jenn Tostlebe 32:57
So you've already touched on the setting, right? You're in this Irish Pub. But what are some of the potential scenarios someone might go through in this study, including the neutral scenario?

Shaina Herman 33:08
Okay, so I'm going to try to explain these as clearly and quickly as possible, but they're kind of a lot. I do want to say that the study protocol should be published soon. So if anyone wants more details, feel free to check it out. And also feel free to email me if you have any questions, because again, I know this a lot. So what we did is we again, I said we wanted to manipulate emotions. Basically, our first goal was creating a virtual scenario, which we call an emotional stimulus set, basically, that has a goal of either increasing anger, or arousal. So to do this, what we did is we have participants in the bar, they're standing there at the bar, looking around observing for anger, there's three possibilities. The first is a man comes up to you at the bar, he is just being totally belligerent, obnoxious, he burps in the person's face. So like you're in the goggles, and this guy literally burps in your face. He is on a phone call, like you could tell he's talking negatively about you and just sort of making eyes at you. And again, the intent here is to really sort of induce feelings of anger or annoyance, disgust, things of the like, second anger version is the exact same thing, but it involves a different guy, a different man, and I'll explain why in a little bit. And then we have a neutral condition where the POV so that's the participant would just be standing there and nothing really happens. They're just observing the bar generally, no one approaches them. Right? So that's the anger stimulus set. Then we have an arousal stimulus set. So for the arousal stimulus that we had a woman approach the bar, she's out for her birthday with her friends and they can See The friends in the background and she comes up to order a round of shots. And she as a caveat right now, we're only collecting data on 18 to 30 year old males, but she is being very flirtatious to the POV, to the participant. So it looks to the participant is that this woman is very close to him, she's wearing like a nice dress, and she's very pretty. And she's just offers to buy him a drink, and it's just sort of keeps making eye contact with him. And it's just being generally very flirtatious. So that's the first condition for arousal. The second condition is exactly the same with a different woman, which again, I will explain. And then there's the neutral condition, which is the same as the anger neutral condition. So we created these stimulus sets. And what happens is, again, this is in VR. But these were designed and written and filmed, so that they can flow seamlessly into the scenario where like the more meatier action happens. So basically, we can take any one of those five, two anger, two arousal, and neutral, any one of those five conditions and seamlessly map it on to we have two scenarios to come. Right. So that's your sort of experimental manipulation of emotions, the scenarios themselves. The first is your typical bar fight. There's basically a man who is in you hear glass break behind you. So that causes the participant to turn around. And they see this man sort of getting into it about what this other guy about who broke the glass, right? So then the man comes to the bar, and he's all angry. And he sort of accuses you, the person watching the participant, like, what are you looking at, like, you think this is funny, and he like, spills his beer, and it creates this whole episode. And at that time, we could stop the video. And then you're asking people all the questions you would want to ask them about, like sanctions or new perceptions, moral perceptions, like social perceptions, and of course, their emotions that would come first. But that's where it would lead into the survey. The second scenario, and again, you can experimentally manipulate if they had the anger condition prior to this. And this goes back to how I said, it's filmed with two different people. One version is the same guy that's in the scenario. So the same guy that was being annoying at the beginning is the same guy who comes up to you trying to fight you later. The second version is a totally unrelated guy, right. So if this guy makes you mad, that shouldn't maybe affect whether or not you want to fight that different guy later, right. So it allows us to look at different processes. And to try to keep it quick. The second version is really different. And I'm excited about it, we're looking at instead of violence or aggression being the

outcome, we're looking at intervention as the outcome. So what happens in this scenario is the POV sees a woman being sort of sexually harassed by a third party at the bar. And we're looking at whether and how people would intervene, they would use violence to intervene if they would stop it, how they even interpret it, and how maybe this previous relationship with this woman might change those perceptions, or arousal generally, again, it's the same as the anger one of the versions involves the same woman and one of the versions involves a totally different woman. And without going into too much detail, the scenarios are designed so that they can be stopped at three different points, depending on what your research question is. So for example, with the sexual harassment, one, we could stop it at a certain point and ask people about their intervention, intentions and cognitions. Like why or why not they would intervene. But we also could let it play out. And the guy that is doing the harassment, he sort of makes contact with the POV, the participant, and it's like, Do you have a problem? Like, are you going to do something about it? So it again, could turn into like another fighting scenario? Sorry for talking forever. But basically, we have the emotional stimuli. And then like I said, they can flow seamlessly into one of these two scenarios, allowing us to look at a bunch of different possibilities.

Jenn Tostlebe 39:06
No kidding. Seems like, however, yeah, really, you can play it out. However, you want to ask all of these different questions. That's really cool. For your survey, do the questions come up on the screen then? Or do you have to pull people out?

Shaina Herman 39:20
What we did is for like, again, this is about real time emotions. So the only questions that we include in virtual reality is the emotions question because we wanted to have the least amount of sort of cooldown period, we wanted to know like, in the questions, even phrase like, how do you feel right now, we also ask it again when they transition to the computer survey. So basically, the way it works to the survey is people come in, they fill out a computer survey, they experience one version of our scenario, there's like 45 minutes where they're completing another survey, and then they experienced the second scenario and then another survey So they're in our lab for about an hour. The only question that we ask in virtual reality is the emotions question. And we do this because it's kind of burdensome for the participants to have to answer questions in VR. So the way it's done is by eye tracking. So they read the question the goggles, and then they look at, I believe, for two seconds, they have to hold it on the answer they wish to select. So it takes a little bit longer. And the way the data is stored is very strange. But so we limit that at least for the current study that we're running only to the emotions.

Jose Sanchez 40:34
That's so cool, really fascinating way of doing research. Like damn, I want to get in on that, as the participant only right. Yeah, right. So it sounds like the study has already kicked off. And it's ongoing. And have you run into any challenges or limitations using virtual reality?

Shaina Herman 40:52
So as far as challenges and limitations, I would say, it's expensive. It's time consuming. There's a learning curve takes some creativity. But I think that the more people have started to use it, the more accessible will be like, I know, we plan to share all of our tools with other researchers. And I'm hoping

the more people use it, the more people will do that. And there's ways to get around these issues that I mean to you. But I do think that it's worth it. So yeah, we did kickoff, what we're doing. Like I obviously what I'm describing is like a very broad project that's going to encompass a lot of data collections, and a lot of studies, what we've done so far, and I'll try not to get into much details for sake of time, but we did sort of study one and it was focused on just the emotional stimulus sets. So we want to change the way people feel right now. And we needed to make sure we're actually doing that. So are these sort of emotional prime's or stimulus actually changing the way people feel? So study, one didn't even use the scenarios, we just randomly gave people one of the five conditions, and we looked at how that influenced the emotions that it should so emotions like disgust, annoyance, anger, excitement, arousal, nervousness, and then we also had emotions like boredom or carefree, just filler emotions. And without going into too much detail, I was ecstatic about the results of the study, because so much relies on this. And they were so lean and so strong, both within respondents from when they gave a baseline emotion to after they experienced VR to between respondents, we found the exact effects that we were hoping for both for the anger condition and for the arousal condition. The only thing that was a little wonky is and I like this just because it's funny, but I guess it's not funny, but it's a nod to VR for excitement. We asked people, of course, their baseline emotions before they go into VR, like how excited are you and people's excitement levels were already so high, we didn't see a change with VR. But the reason why they were so excited is because they were excited to be doing our VR experiment. So it's been so fun, like getting to work with participants that actually are excited to be there. I'm looking forward to your study. So yeah, that was great. Now we're collecting our first I would say large scale data collection, we're about halfway done, I'd say we'll be done in about two months. But this is the one that's incorporating the full scenarios. We're doing this on a very basic level, we want to like I said, this is only using males from ages 18 to 30. We're doing it in our lab. Some examples of things we want to do beyond this would be including women, especially with the sexual harassment and intervention study, we really want to run the bar fight stuff in a bar and give people drinks. That's something that we're working on. So I think that there's a lot to come. But that's where we're at.

Jenn Tostlebe 43:45
Exciting times. Yeah, I would be excited to do your study. So well. As a caveat not that I'm promoting here. But at ASC this year, I think we're going to try to have a booth where like researchers can come do the studies and then sort of asked for some research back so definitely come.

Jose Sanchez 44:04
Jenn and I call dibs. Okay, so given everything that we've discussed so far, what are some of the implications that you see coming out of a study like this?

Shaina Herman 44:16
Yeah, that's a fair question. And honestly, a difficult question, since I feel like there really is a lot to come in or so early on. For me, I think the biggest implication is, for theory, like I said, at the onset, I think, in criminology, I think we know emotions are so important for decisions. But we haven't really had the means or tools to fully investigate these relationships. And I truly do believe that VR sort of gives us our best chance, at least so far for this opportunity. So I really think that there could be some strong theoretical developments and implications of this research, at least I hope, as far as the work generally. I think that like I said at the beginning like VR is a really cool tool for crime research. I'm not saying it's

the best tool, and it should override other things. I think it's just another tool in the toolkit and another methodology that people should seriously consider. And I think this work can sort of maybe expand that use or expand that knowledge, or maybe even make it more accessible by sharing materials or communicating ways to do this with other researchers. So I think that's another implication that really could come out of this work, as well as the other work that we have going on in our lab. I think VR could also like I'm trying to think, like, within our lab, like I said, I mentioned that burglar projects, like that's very different than what we're doing. Another project going on within Max's lab is they call it the future you study. And it's using virtual reality to sort of have people interact with their future selves, and see how that affects behavior. So I just think sort of getting VR and the possibilities of VR out there for crime research is a really valuable implication because in other fields, they've been using it a lot longer than we have.

Jenn Tostlebe 46:02
I feel like I haven't heard of it in criminological research at all. So when Jose was like, Shannon wants to do this, like AI VR thing. I was like, what? OK, let's do it!

Shaina Herman 46:12
let's do it. Yeah, it's so different. And it's so fun to do. I mean, for me to like, I came here, like, obviously, knowing I was going to be working with it. But I didn't really even realize all the possibilities. And there's a lot. So it's an exciting route.

Jenn Tostlebe 46:25
All right. Well, those are all the questions that we have for you. Is there anything else that you want to add before we wrap up?

Shaina Herman 46:32
Um, no, not that I can think of at the moment. But thank you again, this has been awesome. It was so great to get to talk with both of you. And

Jenn Tostlebe 46:39
yeah, thank you so much for coming on. And speaking with us. If people do want to reach out, where's the best way of getting a hold of you? Or what's the best way?

Shaina Herman 46:50
Yeah, so the best way to contact me would be via my email, which you could find easily online, but it is s dot Herman at CSL dot mpg, dot d. And seriously, any inquiries? Welcome. We're really excited to sort of share this work and talk to other people that are interested in using virtual reality and other technologies for crime research.

Jose Sanchez 47:12
So thanks, again.

Jenn Tostlebe 47:15
Of course. Hey, thanks for listening.

Jose Sanchez 47:18
Don't forget to leave us a review on Apple podcasts or iTunes. Or let us know what you think of the episode by leaving us a comment on our website, thecriminologyacademy.com.

Jenn Tostlebe 47:27
You can also follow us on Twitter, Instagram and Facebook @thecrimeacademy.

Jose Sanchez 47:39
email us at thecrimacademy@gmail.com Til next time.