Digital Social Connections: 
Interpersonal Relationships Through Technology

ALEXANDER SPRADLIN: OK. Good evening, everybody. My name's Dr. Spradlin. I'm a Clinical Assistant Professor in the Psych Department here on the Pullman campus at WSU. I teach, regularly, the courses on motivation, on self-control, on personality, and psych of gender.

And I've been at WSU for a long time now-- over eight years. I got my master's and PhD here before becoming faculty. And part of that time spent a few years teaching through the Global Campus, so I've done some online teaching as well. I just started my research lab this semester.

My lab generally focuses on stress and anxiety and people's coping strategies, how they deal with their stress. And that mostly builds upon my dissertation research on cannabis. A lot of people use cannabis to cope with negative affect, to relax themselves to deal with stress. And I switched to that area because of a lot of funding, so thank you to the state of Washington for buying a lot of pot.

But my original foray into research was on the intersection between technology and interpersonal relationships-- so, like, social psychology and online technology in particular. That's what got me into research in the first place. I was in psychology originally, planning to go the clinical psych route, work with veterans with PTSD. But I really liked the research I got involved in as an undergraduate, and I managed to keep that up, and I still do some research on technology today.

So the title of my talk today is "Digital social connections," and I want to review a little bit of my research in this area, again, on people's relationships through technology. There is, in general, a lot of negative stigma surrounding people's technology use. I don't want to stereotype any groups, but it tends to come from older adults who fear that the technology that kids, young adults, adolescents are using-- that that technology's going to rob them of some of the richness and the skills of face-to-face communication.

And as we'll see here in a little bit-- not to talk too far ahead of myself, but that's not necessarily the case. That lack of development or going backwards in terms of social skills-- that doesn't necessarily happen. I do want to get started on my talk now.

Again, my talk's called "Digital social connections." And what I'd like to cover, again, is what led me into research and some of the studies that I've published to-date on the topic of interpersonal connections through technology. What we're doing right now-- so it's a really apropos topic for this kind of setting, and I'll come back to that a bit later in the presentation.

But what I wanted to start off with is a couple examples of how technology connects us. I remember, personally, coming to graduate school up here from Southern California. And it's really through texting, it's through social media, it's through a variety of different technological
tools that I've been able to keep in contact with a lot of my family members, a lot of my close friends.

I think that's one advantage of technology, one thing that it provides us with. I'm sure there were people who freaked out when we first started sending letters to each other. I'm sure there were people who freaked out when the telephone was invented, and people started making voice calls. People thinking, oh, this is going to ruin how we interact with each other. And I don't think that's the case.

In fact, I think technology actually enhances our relationships with each other. I think it enhances our lives and our knowledge in general as well. This first thing here-- I do have permission to show this from this student.

She is currently a graduate student in-- she was in psychology. I think she's in the business department now. But here she is. She is reading a book with her nephew, using-- I believe she was on FaceTime. I think this is a screen capture from FaceTime, showing she and her nephew keeping up. And again, something that wouldn't be afforded without the technology that we have today.

And you can see, as well, not just the communication between this student, Micah, and her nephew, but other people commenting on this conversation. It becomes more than just that dyadic, two-person connection. There are other people providing some feedback as well.

Outside of the realm of social media-- this is a screenshot from the video game World of Warcraft. And there's a lot going on in this picture, but there's, like, 60 people here riding their dragons, getting ready to attack a city. And again, something where people can interact with each other, both in team-building ways, but also in destructive, attacking other people kinds of ways. But something, again, that technology allows where if you are, I don't know, a place like Pullman, you might not even be able to pull 60 people together to interact at a function. So something, again, that I think the technology affords us.

So where I got started in researching technology and psychology was on the topic of empathy. I got into psychology research through one of my undergraduate courses-- a social psych course. And in that course I did a research study on what motivates people to help other people. And one of the major internal processes that provides us motivation to help others is our empathy.

And so when I moved into this laboratory-- that George Marsh Applied Cognition Lab-- the GMAC lab-- as an undergrad, their focus was on technology, and I wanted to marry those concepts together with my interest in social behavior and the lab's focus on technology. So my first study I wanted to look at empathy, and the expression of empathy on the internet.

And so I want to define those terms for us pretty quickly. Empathy's got a few different components, and there are some different ways to measure it. But in general it's about a feeling of closeness or connectedness with other people, and it is theorized that empathy is one
of the major reasons why we cooperate, and why we help other people. It allows us to build connections with other people.

And it includes an affective, or an emotional component. This is where you share feelings with somebody else. So if you see somebody who is in distress, your affective empathy might let you share in that distress. It's sometimes called perspective-taking, but it's about taking-- or, it's a part of perspective-taking.

So there's the affective component, which has to do with sharing your feelings. The other component is considering the perspective of others-- putting yourself in their shoes. And usually these two components go together to have an empathetic experience.

In fact, being able to put yourself in that person's shoes is, we think, part of the reason why you're able to also experience their emotions. I think that makes sense pretty conceptually. But the key point is empathy has a couple of different components. And in this first study I'm going to talk to you about, we looked at those components differently to see if they're there differently affected by time spent online.

As I mentioned, a lot of people fear technology. You can find APA magazine articles on this. You can find articles on this in Newsweek. You can see it on the news, including the 24-hour news channels. And you can also find evidence of this in some publications by some big-name researchers.

And this was one of the things-- and you might find, if you're interested in research, that this might come true for you. But there are some researchers out there and they've suggested that spending a lot of time using digital media-- like on Facebook, emailing, reading websites-- that is potentially detrimental, or harmful to our ability to experience empathy.

And the first time I read about this, I read this in a book by a UCLA neuroscientist. He's cited here-- Gary Small. And he wrote about a future where countries start bombing each other because they're at the United Nations and somebody misinterprets a non-verbal gesture because everybody's been online all the time, and that leads to war between nations. And I remember my eyes rolled so deep back into my head I think they went all the way around when I read that. But that can be really motivating for research.

In fact, if you get more familiar with research, you'll find a lot of researchers disagree with other publications, and that motivates them to get started in research. And you can even find certain people who clearly are going back and forth from publication to publication trying to discredit each other's ideas. And a lot of times the reality is there's some truth to both sides' perspective.

And so I don't necessarily believe that using a lot of technology is always going to be harmful or it's always going to be beneficial, but I don't foresee a future where wars start, people bomb each other because they've used too much online communication and they don't know how to
interact with each other. So that was the idea that got me started, was this bullet point right here.

In my experience, especially as an introverted person, I've always found that technology has allowed me to connect with people more easily than I can face-to-face. I remember when I went off to undergraduate school at UC Santa Barbara and I actually made some friends-- that was back when Facebook was only for college students-- actually made some of my first friends there online in the summer before moving up into the dorms through the use of Facebook, and it was something that enhanced my interactions with other people, rather than taking away.

Again, this idea that digital media's detrimental-- it's posited on this statement that using technology replaces face-to-face time. And that had not been researched before I started doing my own research. And I don't know that it necessarily replaces face-to-face time. We're going to see whether my research agrees with what I just said or not here in a second. But there's another example of a conversation where I saw empathy. And this was one of the first pieces I used in putting together my original study.

This is another one of my colleagues. When I was an undergraduate, she wrote about her mom having cancer surgery, and she got a lot of comfort. She got a lot of what looks like empathy to me from friends and family members, people telling her how much they cared, that they were sending good wishes, all of that stuff.

I'm not saying that people don't say heinous things to each other online. They most certainly do. But part of being behind the screen, I think, can go the other direction-- a helpful direction-- as well.

So the research I want to talk to you about here tonight-- two large-scale surveys. I administered one as an undergraduate in 2011, and another one in 2015 here at WSU, and then I published both of those surveys and the results of those surveys in 2015 and 2019, respectively. So I want to go with the first one first. I think that makes sense.

The article is titled "Virtual Empathy," and I worked on that project with two of my undergraduate mentors, Dr. Carrier and Dr. Rosen, and one of my good friends who's a professor, now, too, John Bunce-- Dr. Bunce. He's down at Cal State University, East Bay. And again, this first study we looked at a lot of different things, but our overall interest was in tackling some of the issues that I brought up before.

First we wanted to test the relationship between self-reported time spent in face-to-face communication, how many hours a day people reported interacting with family members, interacting with friends, interacting with coworkers, as well as the time they spent online for various activities-- emailing, playing video games, using Facebook. And we are also looking for sex-based differences as well, because at least with self-report studies, females tend to self-report higher empathy than males do.
I don't know that that's the case in reality, but the perception is there that perhaps there's some social desirability bias. But anyway, there's been a pretty consistent difference in self-reported empathy, so we looked at sex differences there as well. So first look at time spent using technology, going online, and how much time people spend face-to-face. And then we wanted to see the link between time spent online and the two components of empathy that I introduced to you-- the cognitive side, the perspective-taking side, and the affective empathy side, the emotional contagion, or the sharing of feelings side of things.

And what we found, first, was that time spent going online-- both in terms of overall online activity, but also a lot of specific mediums for technology use-- that time was actually associated with increased face-to-face communication. So right away we found the opposite of what had been hypothesized that I shared with you on the last slide, that using technology-- and in this case, specifically online technology, digital social media-- that that would replace face-to-face communication.

Actually, the more time people spent going online, the more time they spent interacting face-to-face. So kind of the opposite of what we would have predicted based on some other research. We did see time spent going online, there was an impact on empathy, but only in females, and only with cognitive empathy-- so only for that perspective-taking component. And the size of that effect is pretty tiny.

So one of the things you might find if you get started in research is you're looking for a significant effect, and that significance comes from a few sources. And one of those sources is the size of the effect itself-- so how much people's face-to-face time goes up based on how much their time spent going online goes up. But another factor that contributes to significance is how many people you had in your study to begin with.

Historically it's been a problem of not getting enough people to find significant results. Nowadays, because of mass surveys, we actually can have so many participants that an effect that looks like it's not meaningful can actually be significant. And so one of the things, hopefully, you're picking up in some of your classes is that it's not just about the p-value. It's about the size of the effect as well. And both of these effects are small, but the effect on cognitive empathy is much smaller than the effect on face-to-face communication.

The other thing we looked at, as well, is a three-way relationship here. This is called mediation. And I'm not going to go off on that topic right now, I promise you, but it's a way of incorporating additional variables. Normally, historically we look at two variables at a time in an-- experimental setting-- an independent variable and your dependent variable, or your outcome.

But a lot of times the link between two variables can change, or it can be transmitted through another factor. And so what we were trying to see is we were trying to test to see if time spent going online was related to empathy through face-to-face time. In other words, does time spent
going online lead to more face-to-face time? Which we did see. And then what happens to empathy due to that more face-to-face time?

And what we found is that for the people who are going online and it's leading to more face-to-face time, they're actually showing increases in their empathy-- affective and cognitive and females, and some cognitive empathy increases in males. No effect on affective empathy. So the idea there, again, is that even though the online time spent may be related to some empathy deficit in females, when that online time predicts increased face-to-face time-- which we also saw-- when we were accounting for all of those variables together, then we're actually seeing some increases in empathy.

And the idea might be, here, that spending more time online might give you more face-to-face interactions, helps you schedule events, helps you build relationships. And then that increased face-to-face time leads to enhanced empathy. That's the idea.

And by the way, I forgot to mention this earlier, but if you have questions about what I'm talking about-- yeah, so there's a question right there. How are you measuring empathy in a survey? As I mentioned, we're using the self-report questionnaire. We used-- I can't remember the acronym right now. I think they were called the Basic Empathy Scales.

They're pretty psychometrically sound, pretty thoroughly developed. But people do need to have a perception of themselves to rate how much they have concern for other people, how much they tend to consider other people's perspectives. Those types of items are what people were asked about. So that's how we measured empathy.

If you continue to have any questions as I'm going along, specifically about the content, feel free to raise them. If they're more discussion questions rather than clarification questions, I'd ask you save them to the end here. But that question that was just asked-- how are you measuring empathy in a survey? That's certainly one I can address as I'm going along.

So the first study we saw, we saw minimal impacts on empathy from going online. And the key thing we saw, too, is that going online does not replace your face-to-face time. In fact, we saw some evidence that perhaps going online actually increases your face-to-face time instead.

The second study we did I was interested to see if that pattern changes. So removing the empathy component, just looking at your specifically social media, Facebook use, and to see if Facebook use in particular replaces face-to-face time, and to see if that link between Facebook use and face-to-face time changed depending on people's personality traits.

We know that people with different traits use Facebook at different rates. There are a mix of findings in this area, but the most consistent findings are concerning extroversion. Extroversion is sometimes thought of as the more social of the big five personality traits.
There's neuroticism, which is how prone to negative emotions and mood swings you are. There is openness to experiences, your creativity, your curiosity, how willing you are to try new things. There's a few others-- agreeableness and conscientiousness-- but then there's extroversion.

And typically an extrovert is somebody who is really interested in other people. They're interested in exploring things in the external world. An introvert is somebody who's lower on extroversion. They're going to spend more time being quiet, in their own head, having their own thoughts, and we tend to see that in their relationships as well-- less social interaction, less social relationships.

So not surprising that the researchers pointed to extroversion as being one of the traits that's related to Facebook use. Typically what we see with extroversion-- extroverted people-- the more extroverted somebody is, the more Facebook friends they have, the more time they spend on Facebook as well.

Interestingly, on the other side of the coin, though, shyness-- which I don't know that I would say it's part of the introversion-extroversion spectrum, but introverted people tend to be higher on shyness. Shyness was also found to be related to spending more time on Facebook, too. So maybe people who are really social spend more time on Facebook. Maybe people who would have a hard time interacting with people spend time on Facebook as well.

I would argue that Social Networking Sites, SNSes, like Facebook-- they probably serve different functions for different people. People who are higher in extroversion, Facebook could provide them with social stimulation. It can allow them to interact with their large friendship networks.

People who are lower extroversion, Facebook may actually help them facilitate social interactions. Not necessarily the same level of broadness as I would expect with extroversion, but again, being behind the screen tends to disinhibit people. They tend to feel more comfortable.

You may have had that experience in your classes. I don't know if you've taken face-to-face classes versus online classes, but you might find yourself more willing to ask questions in an online setting than you might be willing to ask questions or contribute to a discussion in an offline setting.

So the two ideas here-- the first is that the rich get richer. People who are already pretty social and outwardly-oriented get to do more of that. The second perspective is that the poor get richer-- that, again, Facebook allows them to do things that they normally wouldn't be comfortable doing. And everybody, for the most part, feels a social need to belong with other people, to affiliate with other people, that Facebook use might be especially beneficial to people who have a harder time engaging in behaviors that get that need met.
So the second study here, again, is built on the first study I did. So this is a follow-up to "Virtual Empathy." It's called "#Connected." And I worked with some of the same researchers. I worked, also, with Dr. Cutler here at WSU. And in this study we wanted to test the relationship specifically between using Facebook and face-to-face time, instead of just online activities in general.

So Facebook use-- test that link to face-to-face time, and then I wanted to test the role of the big five personality traits-- that includes extroversion and the other ones I mentioned-- as moderators of the relationship between Facebook and face-to-face time. In other words, does your level of the big five traits-- does that make Facebook more related to face-to-face time? Does that flip the relationship? Are only certain traits involved?

And we didn't just look at the big five. I have the big five here, because out of the big five, that's where we got one of our significant findings. But we also looked at attachment styles-- whether people are more anxious in their relationships with people, or more avoidant in their relationships are two of the dimensions with somebody who's more secure, somewhere towards the middle in both of those. So again, personality factors and how they influence the Facebook, face-to-face time link.

Our results-- Facebook use was positively correlated with time spent in face-to-face communication. So similar to what we saw in the previous study, more time spent using Facebook was predictive of spending more time face-to-face. And again, these are all self-report, so something to keep in mind. There are limitations to that approach. But these are all self-report data, or the data for these findings came from self-reports surveys.

So Facebook use was related to more time spent face-to-face. And among the big five personality traits-- so to see if that Facebook, face-to-face link changes based on people's personality, we tested all of the big five personality traits. And the only one that was a significant moderator, or the only interaction, in other words, that we saw, was between extroversion and Facebook use.

Looking at that number, b equals negative 0.2-- that doesn't really tell us anything. So when you test for an interaction, you run some follow-up tests. And what we really found was that the relationship between Facebook use and face-to-face time was only significant for those in the bottom 54% of extroversion.

So people who are about moderate to extroversion, all the way down to really introverted individuals across that whole dimension, not the bottom half of extroversion. And this relationship actually increased in strength as extroversion decreased. So the people that saw the strongest positive link between Facebook use and face-to-face time-- they were the more introverted people. The more inwardly-oriented people were, the more their Facebook time was related to face-to-face time.
And as I mentioned, we didn't just look at the big five. We also looked at people's attachment styles. It's another element of people's personality, but it specifically has to do with their interactions with other people.

We looked at avoidant and anxious attachment styles, people who tend to keep their distance in relationships, versus people who get very nervous in their relationships. And there were no significant interactions there, so those didn't change the Facebook, face-to-face time link. Only extroversion did. And again, that pattern was the more introverted you were, or the less extroverted you were, the more your Facebook time predicted face-to-face time.

Where we go from here-- a lot of different directions. One of the things I'm doing right now with one of my undergraduate RA's is we're looking at Tinder use, which is an interesting area to do research on. As I mentioned, my research now-- I try to focus on how people deal or cope with stress, and so we're particularly interested in what kinds of behaviors people engage in through Tinder when they're feeling stressed out, and how well those behaviors work to deal with stress.

So physical comfort, someone to talk to, someone to provide positive feedback to you-- a lot of different ways that Tinder can perhaps make somebody feel better. But we're interested in assessing those different Tinder use motives, what people are trying to get out of Tinder, and to see how that works-- whether certain motives are more salient when people are stressed out, and if there are any good or bad consequences from what they do when they match with people on Tinder. We'll go with match with people.

So other areas, though-- one area of interest is virtual reality. That's particularly relevant, again, to that connectedness between individuals. Virtual reality could potentially provide us with an even closer to face-to-face experience with people. And virtual reality has come to the mainstream. There are a lot of choices out there. But most of the hardware that's available, most of the technology is used in the video gaming community, and it's mostly used in single-player video game settings-- so not interacting with other people.

There's also a lot of gadgets that allow people to interact with each other that have been developed by the sex industry. I'm not going to talk anymore about teledildonic butt plugs-- something I learned about recently. That's not my area of interest, but it does allow some level of intimacy, some level of interaction for people who are far apart. But those are the two main areas where virtual reality's really coming into the mainstream-- video gaming and sex stuff.

But there's been a lot of research in this area of virtual reality going back a long time. People have been trying to master virtual reality. It's pretty intensive to create a virtual environment this way in a lot of different ways, but the hardware required-- you basically, with the virtual reality, you have to see two images. So the computer has to create two images of the game at the same time, or whatever you're doing. But people have been trying to master virtual reality for a long time.
Virtual reality, in particular-- one of the applied areas is in psychotherapy for the treatment of phobias, where it provides somebody with an interaction with something they're afraid of, but it is a more gated interaction. Kind of the same idea as what we were just talking about with introverts and interacting online-- that there is kind of a fence or a barrier that can be put in place to give people more comfort in their interactions.

Not much done using consumer tech-- again, outside of gaming and the sex industry. And in terms of research, not much research in those areas as well. But we also see the emergence of virtual reality and technology in general more and more in medicine-- for better or for worse. I just read a news article on a family.

They were told about a terminal illness for one of their family members by a robot that came into the room, and they were not really happy with that experience of not having a doctor there, and having a robot communicate that information to them. But the technology can allow for you to see specialists, for example, that you wouldn't be able to see if you live somewhere like Pullman, where there is not a lot going on out here. And so you might be able to talk to someone with a specialty in a certain kind of cancer that you might have, or any kind of illness.

Obviously we're all using this for educational purposes. I think this counts as an educational purpose here. More and more universities are offering online programs. And how those programs work really varies from program to program, but especially an emphasis on direct and momentary interactions, rather than just emailing back and forth. But getting technology to allow the online classroom to retain its own benefits, but also add some of the strengths of face-to-face classroom where you get-- I find that I get a lot more feedback from my class.

Even if they're not talking, I can figure out how they're feeling, how much they understand something. Some of those feedback mechanisms are things, again, that are trying to be developed more and more for education. And there are other areas where technology's being implemented as well to, again, allow people who are far apart to do things that they would want to do when they're not far apart.

Here is just an image of a virtual reality. I'm not sure exactly which game this is, but again, you see here that the technology-- when you're wearing that helmet, you actually get two slightly different images-- one to each eye. And that makes it very intensive to run these kinds of games, but they can give you more and more of a feeling of actually being in the presence of whoever you're interacting with on the screen. And there may come a point where this isn't just for gamers, where you can interact with a loved one who is all the way across the country and you might feel like you're holding them while you're watching-- I don't know-- World Series baseball. That's what's going on right now. Watching something on television, watching a movie-- something of that sort.

I think people will be interested in that kind of technology, but we're not there yet. And so there's not a lot of research, because there's not a lot of technology. So that's where I want to leave it now.
I have some questions I thought I could ask, but I'd rather turn it over to the audience first and see if any of you have any questions, anything you'd like to discuss, any comments, anything like that before I just toss some questions at you, things that I'd like you to think about.

We looked at empathy in the first study, and we did not look at personality traits in that study. So that question is-- I don't have an answer to it. It's a good question, but I don't have an answer to it.

I think in general, people with higher extroversion tend to experience more empathy. I wouldn't quote me on that, because I have not looked that up. But that is my hunch. But we also know that empathy is a skill that you can cultivate. So even if you're more introverted, if you get more practice, you can experience more empathy.

Feel free to send other questions. Also, some thoughts on this one. Again, think about non-verbal cues, because I think there's a definite answer to this question. Think about your-- well, that is so the-- after the question, was there a correlation between extroversion and empathy online?

The point is often that extroversion is a skill you can cultivate as well-- to a degree. Now, you're not going to flip from somebody who is in the 10th percentile-- really low in extroversion-- you're not going to flip up to the 50th percentile or the 70th percentile. Those personality traits are pretty stable, and that's why we even think of them as personality traits.

You can go one direction or another. And we think, in particular, early life experiences are going to be important. But extroversion is one of the more heavily genetic traits as well. So if you have bad experiences in your interactions, that could push you more to the introverted side.

We believe extroversion tends to increase a small amount across the lifespan. I know agreeableness does, or how easygoing you are. That tends to increase as we get older. But the personality traits are pretty static.

You can shift in one direction or another, but you tend to stay around the same ballpark where if you're a pretty introverted person, you're not going to become an extrovert. If you're a pretty extroverted person, you're not going to become an introvert-- except maybe if, I don't know, if you have some major trauma, some interpersonal trauma, and that might cause a big shift. But it wouldn't need to be something really significant in your life.

This question, do you have any recommendations for students who communicate with other students strictly online? I'm a member of WSU Student Government, for instance. We hold all our meetings over Zoom and communicate through-- now all the questions come in. Hold on, one second.

So about student government, Zoom meetings, communication via email, I've noticed that it's easy to misconstrue tone and/or intent when communicating these ways. It also seems like
people don't take us as seriously, because we're strictly a global campus student government. We'll take the first part there-- any recommendations?

That gets directly to this question I'm asking here. Use emoticons. Use emojis. I think that perhaps we can be even more precise with our non-verbal cues. A lot of times they just kind of happen in face-to-face interactions. Like, I didn't choose to just look over here, but I did. But if you are communicating where you have the opportunity to edit your messages before you send them, do so, but you really want to-- I would include Smileys if you're being sarcastic, or a winky face. If you're mad use CAPPS and redness.

Again, I think those non-verbal cues-- I think they're present in a lot of the ways we communicate online, but you have to use them. So I would definitely use emoticons. The acronyms "lol--" those kinds of things-- to, again, supplement what you're actually saying with some of the non-verbal cues that are missing.

As far as not being taken seriously, I tend to agree with that. That is something-- a lot of students come talk to me about getting involved in research, and I always tell them, go to the office hours of the person you want to work with. Don't just send them an email. It's a lot easier to blow somebody off via email than it is when they reach out to you face-to-face.

So that would be-- I don't know if you can do voice calls might be one way to get around email in particular, but that is a problem that I don't necessarily know an answer to. I definitely can understand that problem. But I'm taking your conversation outside of text, making it a more immediate form of communication-- you're going to lose the ability to use those non-verbal cues as well, but any kind of more immediate communication, I think, would make that information you're trying to transmit have more weight or gravitas to it.

Another question here-- are Facebook and Tinder the only social networking platforms you've researched so far? Are there any other websites/networks you'd like to research in the future like Instagram, YouTube Live, Tumblr, et cetera? Yeah.

What is kind of frustrating about this research is by the time your stuff gets published, everybody's moved to a different platform at that time point. So we're looking at Tinder right now, and I think a lot of people are already moving on to Bumble and Hinge and a variety of other dating websites. I have not done research on those other mediums that you've mentioned, like Instagram and YouTube Live.

If you're interested in Instagram in particular, Dr. Chris Barry in the Psych Department here-- he does research on narcissism and selfies. So I think they've done analysis of Instagram content and looked at the relationship with some other personality traits-- some more negative personality traits than the ones I've looked into. But I would like to do research on Instagram.
I used to be a Facebook user. I actually quit a few years ago. I found that I would wake up and be checking for notifications before I even decided to do so, and I didn't like that compulsive behavior. I moved to Instagram. I liked it a lot better.

I don't get people's political opinions. Get pictures to look at instead, and I like that better. But I think those mediums-- they emphasize different things. YouTube is going to emphasize video content, live streaming. Instagram's going to emphasize your pictures. Facebook kind of lets you let you do it all. Twitter's got limits on how much information you can share per tweet at a time.

Those are all different ways people communicate, and I'm interested in those areas, but I don't don't know much about them. I haven't done any direct research there. Got a comment.

I think tech allows us to communicate much easier, but yeah, emotion is a little harder to pick up in text, emojis, I think help, and video. Yeah, again-- every time my phone gets an update, there are new emoticons on there. You can be so specific with what kind of emotion you're trying to convey, what facial expression you're using, in essence, that I think you can really communicate exactly what you mean.

I always find written communication to be-- more clarity, and perhaps you might be picking that up. But I have more clarity in my written communication than in my verbal communication, and that's one of the things I think benefits introverts like I am through the use of technology.

Question here-- I think this is specifically research-focused. What if we can't attend office hours in person? I live on the East Coast, so that's not really an option for me. I mean, reaching out in general is a good thing to do, but my recommendation, again, when I see students is find a way to connect with that person you're trying to do research with in the moment.

Usually faculty's phone numbers are posted on the Faculty web page. Like, for our Psych Department, I believe you can find everybody's phone number, in addition to their email address. So you might try to call their office. A lot of us are in and out of our offices quite a bit throughout the day, but even just having a voice that they hear-- something more personal than the text of an email-- I think that's something that might be in your benefit.

It's something you all, as online students, have to put more work into because of the medium, because of the barrier that you're behind. But if you can find a phone number for the person you're trying to work with, that is something I would recommend using. And if you can't do that, send an email. That's fine to do. But in my experience, again, it is just easier to put an email off than it is someone swinging by your office, or your phone actually ringing.

And one of the things I recommend, too-- I'm not sure about what other departments have research programs for undergraduates. Here, face-to-face in Pullman, I often tell students who are looking for research participation to get involved in a lab, to check out sociology, to check out human development too.
Just because you really want to go into psychology doesn't mean you have to be in a psych undergraduate research lab setting. Sociologists study group interactions, group behavior. Human development studies of psychology concepts. So those are other areas that you might start trying to get involved with, as well, outside of psychology. HD is a good one, and sociology is too.

Another question-- do you find different generations prefer online communication as opposed to face-to-face? I'm not a big fan of generation research, and I say that coming from an undergraduate lab where the focus of one of my advisors was on generation differences. Age is what we would call a continuous variable. So you're not young or old. You have a number, and it's dispersed along a spectrum.

And what the generations do, in my opinion-- they're arbitrary distinctions. They do create distinctions between different age groups, but the line between those groups-- somebody's decided what that line is. And I would argue that-- I don't know the generation numbers off the top of my head, but say you are a Millennial, and we'll say you were born in 1984-- so at the start of the Millennial generation.

You're going to be lumped in with people who were born in the '90s, and you're going to be assumed to be similar to them, or treated as though you're similar to them statistically. Where, as I would believe if you were born in 1984, you're probably a lot more similar to someone born in 1983 than you are to someone born in the '90s. But because of where that arbitrary line is placed, you're lumped in with a different category.

So I'm not a big believer in the utility of breaking things down that way. The same problem comes up if we're looking at extroversion and we just put people into an introvert or an extrovert category. If, let's say, extroversion is scored on a 100-point scale, if you score a 49, that would put you on the introvert side, and that was lump you in with someone who scored, like, a 1 on introversion or on extroversion. And if you scored a 51, that would lump you in on the extrovert side-- even though you might be a lot more similar to the 49 than you would be someone in the '90s.

So that's one of the things I kind of talk about in some of my classes-- is dichotomizing variables-- continuous variables. It's kind of a big no, no. But the person I learned that from actually does generational research, so keep that in mind. I do think, in general, younger people have more comfort using different communication modalities.

I would imagine some people probably like email a whole lot. As they get younger, they're probably more and more into texting. And even the youngest people-- they might not even text anymore. They might do their communication through things like tweeting at people, for example.

So there are some age-related patterns, and typically the younger somebody is, the more they're going to be doing something other than, or interested in something other than face-to-
face communication or using other mediums. But I don't know if I would break it down by generations. But I understand the question. I understand what you're getting at there.

Generally, again, younger groups like to use the more modern technology for their communication. But as we saw with my research, those studies were in college student samples. And even among those college students, people who were typically 18 to 22 at the time they completed the survey-- those people still saw higher face-to-face time when they were using more technology to interact with other people.

How much do you incorporate social media in your class work? Any benefits of doing so? I wouldn't say I use social media, per se, but what I do use in my larger classes is I do online discussions. And I do those probably pretty similarly to how a lot of you all do your online discussions for your classes.

For example, in my personality class, they've got till midnight tonight to get their posts in. They're taking an online big five personality questionnaire, and they're going to report back their scores on all of the big five traits like extroversion. They're going to tell me whether their scores are different or similar to how they imagined.

They're going to tell me about some situational things that could have impacted their score as well. But I like to use the online discussions for a few reasons. I do think a lot of people are more comfortable engaging online than they are in a classroom setting.

I have students who will come into office hours and who will start crying in front of me. People are intimidated by their professors. And for those people in particular, I like to do the online discussions. People can certainly share in class, but I force them to interact with each other through those online discussions. And again, I think that barrier allows people to open up a little bit more and to share their personal connection with the material more than they might in a classroom setting.

It's also not really feasible, when I've got 186 people in a lecture hall, to have us break out into discussions and for me to hear about everybody's personality scores. So the online environment-- I don't use social media, but that online environment through Blackboard provides for a lot of communication. And I do require my students to regularly do discussion posts.

I mentioned personality. In my gender class, I have the students write about some fictional character they identified with as a child. I use Batman as my own example. But how that character, quote unquote, "matched" gender stereotypes, how they challenge gender stereotypes, what the students think they learned, what they took from that character. Those are the kinds of things I have students discuss in an online setting.

I'm going to put up my email address here-- on a slide here-- in case you have additional questions, if you want to follow up. Me being the introvert that I am, I'd prefer that you'd not
call my office. I don't like phone calls very much. But feel free, if you want to call, or if you want to email me.

Email, again, is the best route, because I get a lot of comments, questions, that kind of stuff on a day-to-day basis, so it gives me a little bit more time to be thoughtful with a response and to fit that response into my schedule. So my email address is a.spradlin@wsu.edu, and I am going to-- yeah so. There's my email address right there. And again, if you've got any follow-up questions, if you are interested in the research that I've talked about, you can find me on ResearchGate.

If you haven't used that before, that's, like, the nerdiest social network-- ResearchGate.net, I believe. But it's where researchers post their research. Researchers can ask questions and get answers from the community. It tracks things like citations and reads of your articles. And not all of my articles are on there. Some of them are not open source. In other words, the journal says I can't share them except for private use.

But if there's any research that you're interested in, you can find more info on that research on ResearchGate. You can also email me about it. And I'm also happy to-- again, if you have asked a question and I haven't answered it fully here, if you have a question you didn't want to ask in front of the group, feel free to shoot me an email. I'm happy to talk to you about it.

Thank you all for attending. I appreciate your interest in this topic. I think it's relevant to all of us societally as we-- I think the internet is pretty open. It allows us to do some good things and some really bad things, but I really like what it provides us in terms of our technology for our relationships, our communication. It's a great source of knowledge, too. You just have to evaluate that knowledge-- which you should be doing if it comes from a journal or a book or anything else anyway.

But I like the connectedness that technology provides us with. I love all my gadgets and stuff, too. So I appreciate you coming here. I think this talk is really relevant for you all who are using technology to get your education and to advance your general knowledge, probably your self-knowledge, to advance your career in a lot of ways, too. And again, feel free to email me if you have any questions about anything, or any further topics for discussion.