How Do Social Connections Shape Us?

Richard: Hello and welcome to Crossing Channels, I'm Richard Westcott. How do social connections shape us? That's the subject of the latest in our collaboration between the Bennett School of Public Policy at the University of Cambridge and the Institute for Advanced Study in Toulouse at the Toulouse School of Economics. As ever, we're going to draw on the interdisciplinary strengths of both institutions to explore a complex issue. How social ties form, how they affect wellbeing and what changes when our interactions move online. To explore these issues today, we have Sander van der Linden from Cambridge University. Sander, start us off. What is your research focus on?

Sander: A lot of my research focuses on the psychology of digital technologies and how we're influenced by other people, the media and digital technology.

Richard: And joining us from the Toulouse School of Economics, we have Marion Hoffman. Marion, remind us of your main research interests.

Marion: I'm broadly interested in how people form connections and how they form networks uh in the broader sense, friendships, acquaintances, and more specifically, I work on the development of statistical methods to study these questions.

Richard: Social connections shape our lives from our health and wellbeing to how we learn, work, trust and make sense of the world. But the way we connect is changing. Some relationships are of course still face to face in schools and workplaces and neighbourhoods. But what about online communities and spaces shaped by algorithms? Sander, your research looks at human judgment, decision-making, social influence, and how people interact with digital technologies. When social life increasingly happens through online

platforms, how does that change the way people interpret social cues, form opinions, respond to others, that kind of thing?

Sander: I think there's a lot of interesting psychological questions to explore. We often ask if somebody gives you a compliment in person. What does that translate to online? How many likes does it take to get the same psychological effect of, say, in-person compliments. But I think that the fact that so many people, especially young people are moving online means that we're getting most of our news from digital sources like social media, which we know is lower quality than traditional media sources. So it affects the quality of the information that we consume. People cluster offline in social networks. So people move into neighborhoods with, you know, where other people like them live, but this effect is amplified online. So people sort themselves in, in echo chambers online too, but then that's amplified by algorithms, uh, that prioritize personalized feeds based on digital footprints that people leave behind online. So we click on things that we like. All of that goes into the algorithmic mix, which then determines what content people are served. And to some extent, it is sort of amplifies divisive content often. And so to some extent that leads people to form social perceptions that may not be accurate. So if you live in a particular bubble online and you get served particular types of content, you start shaping a view of the world, a false social reality really, that is not representative of what the average Brit or the average American or the average European is thinking. So I would say that it's actually distorting social realities.

Richard: Very close to my heart this, as a journalist for 30 years at the BBC and then my children get all of their news online and trying to explain the nuances of it. This might be an obvious question. I'm assuming by online you mean large groups of people where lots of people are strangers, you know, like social media, etc. rather than a group of kids who get to know each other, gaming in a very small group or, you know, people in a very closed off group on social media. Are they different things where you know the people in a small group versus when anybody can join.

Sander: Yes, absolutely. I mean, that's a good point. It's very nuanced, isn't it? So the online world is divided into many types of spaces depending on the structure of a network and the types of algorithms that they use or maybe they don't use any algorithms. So with online gaming, for example, a lot of kids just go online and start gaming and they have the chat function on and they're interacting with strangers in Tokyo or in other parts of the world. And so you could do it with a group of friends that you know, but you can also do it with strangers. And in fact, one of the pathways to radicalization from extremist organizations is to recruit teens who play first shooter video games, for example. Right? So it's a, it's every positive use case of technology, there's a potentially dangerous sort of side effect. But it very much depends. So for example, on, on Instagram, if you want to go viral on Instagram, if you post something, not just for your friends, but you want to be an influencer, let's say you got to have a lot of followers. But on TikTok, you don't need any followers to go viral. And that's because of the differences in the way the algorithm works and the way the structure of the social network is set up. So some networks revolve around what we call closed ties, so people you know, and that have a lot of influence on you. And some networks operate through long ties, so kind of strangers that are far away from us. And there's a lot of interesting theories about virality, is that if you want content to go viral, for example, you need long ties. Otherwise you can't get out of your own social network because the content gets repetitive. Everyone's already seen it. So you need someone outside of the network

who's in a different network who can diffuse your content. So if you want to spread a message far and wide, you need a certain type of network structure. But if you just want to hang out with your friends and not be bothered by strangers, you might confine yourself to a closed group on, let's say, WhatsApp that is only for you and your friends.

Richard: Yeah, it's really interesting hearing it broken down like that actually. Marion, your work uses statistical models to study social networks, social groups and everyday interactions. What can the structure of someone's social network tell us about their everyday life and wellbeing that we might miss if we only ask whether they feel lonely or socially connected?

Marion: Well, knowing how they feel connected is of course important, but doesn't tell us how connected they are. So we don't know who they rely on, whether their contacts know each other, whether these contacts are close contacts, like strong ties or uh distant contacts. And these things are important for certain questions. So the first question is about subjective experience. The other one is about the actual structure of the network. And these are related, but they're not the same. So as an example, you might have someone who does not feel lonely at all because they have one strong tie, like their partner who they rely on for everything, who has a very robust relation with them. And on the other hand, we might have someone reporting that they are lonely, although they have many ties with different people. They chat with many people online, for example, have many of these long ties uh that are in a sense fragile and maybe do not provide a group belonging effect. So it's an interesting added information to have, and it's important for researchers for specific questions. You might think about emotional wellbeing. Maybe it's important to have repeated qualitative interactions with your close contacts. But if you want to have access to information or other resources, maybe it's good to have many of these long ties. So it really depends on the questions you're after. And in general, it provides a lot of uh added insights that we can use in our research.

Richard: I do find it really interesting that loneliness isn't a numbers game. It's not how many people you know. Because the number of times you think, how can you feel lonely? You've got all these friends, you know all of these people, but obviously it goes much deeper than that. It's about the quality.

Marion: Yeah, that's very true. We have to look at the frequency of interactions and their content, how qualitative they are, and maybe whether they happen across one channel or several ones. It's also not the same if you interact with your friend only through WhatsApp or if you see them also in person, if you have activities with them, all these things matter and need to be taken into account.

Richard: So for both of you, are online relationships and face-to-face relationships completely separate, different things or is there overlap there?

Sander: You know, to some extent, know, basic human social cognition revolves around judging two dimensions often for people. One is about competence or expertise. Does this person, you know, know what they're saying? Do I any expertise, but also around warmth, do I trust this person? And from a social cognition perspective, it's often easier to make these judgments in person because we read other people's facial expressions. We aggregate lots

of social information in the moment to try to understand how somebody's feeling, whether we should approach them, whether we should trust them. So I think online, that's much more difficult to do in an anonymous setting. That's why I think there's often greater potential for misunderstanding, for incivility, for hostility people talking past each other, they're not interpreting the message in the way it was intended because the social context is missing. And sometimes, because it's completely anonymous, people feel more emboldened to do things they wouldn't do in person. You might troll somebody online because you know they're not gonna come back and ring your door and say, hey man, what's going on here? So people might actually do things online that they wouldn't do offline. So yes, I would say that the social setting is different. But then again, if you look at population level studies. So for example, around Brexit a contested sort of issue like that. Typically what you see is that the online activity kind of mirrors the offline activity. So if you look at networks of let's say, leave and remain, they heavily overlap with geographical districts offline that are heavily pro-Brexit or anti-Brexit. And so some of the times our offline lives just kind of spill over into our sort of online activity and the two mirror each other. And sometimes what starts out online, so for example, you know, people saying nasty things about other people can then turn into offline violence. And so it's kind of a reciprocal relationship. So I would say that they're different, but they also share a pretty strong correlation.

Richard: Marion, let's talk a bit about, I guess, what we think of as echo chambers, Sandra's mentioned before, where people are surrounded by others with similar views. Looking first at offline social networks, do they spring up because people choose other people who already think like them or do they start to think like each other as they interact? So they didn't at the start, but they start to influence each other when they start talking face to face over time.

Marion: First, I would like to clarify the term eco chamber. I think mostly people mean by eco chamber online spaces where you interact with similar others who have similar opinions to yours and you tend to enforce each other's opinions because you keep repeating the same arguments to each other. So this is what we mean by eco chambers in network terms that means that we expect the network to be segregated by opinions with certain parts of the network not talking to other parts. So this is online but offline this is also a pervasive finding we often find segregation across different opinions and behaviors. And this can occur because of the two mechanisms you mentioned. So either people select people similar to them, or they get influenced by them and tend to get similar over time. It's extremely hard to study because if you look at a network and you observe similarity, well, we don't know what came first. But there are some attempts at this, mostly looking at longitudinal networks, so see how they evolve. And mostly studies tend to find a bit of both. So there's a lot of literature on looking at children and adolescents in schools. For example, in 2010, there are researchers who developed the methods that looked at networks going through time and checking whether ties come after people are similar or whether first people form ties and then become similar. And so they applied this to a context in a Scottish school to see whether kids influenced each other on drinking and smoking. Though in this study they find that both were true. The kids formed friendships with people who smoked as much as them, but they also influenced each other after becoming friends. So in general, this has been applied to many contexts. think on substance use, we often find both. But on other things like political opinions, the findings are maybe less clear and that might make sense because, well, political opinions, they are bit harder to change. For example, have a colleague who

studied um university students in a Swiss university and looked at their political opinions and checked whether there was more selection or influence. And what he found was that there seemed to be more selection. So you tend to choose people who have the same opinions than you, because maybe they confirm yours. But getting convinced by your friends to change your mind on certain things is much harder. Maybe they can help you reinforce your own opinion, getting more extreme. But changing your mind seems pretty difficult.

Richard: Yes, my assumption again would be that when you get a group of people, especially face to face, they're more likely to agree on politics than disagree, because otherwise they'd just be arguing all the time. It's one of those subjects, isn't it, that's really caustic. And I'm assuming most social networks are based around people getting on and thinking similar things when you look at the evidence.

Marion: Yes, and what you say is also important because it can also happen that people do not care so much about political things and they just do not discuss or they know that it might create issues because you're in a context where things are bit tense around certain topics and therefore you don't discuss them. Therefore they don't become really salient predictors of who gets friends with who.

Richard: Sander?

Sander: It's a fascinating subject it does happen in experiments though that if you put people together in a room on hot button issues that they polarize pretty quickly But but then that's often used as an argument that polarization and echo chambers happen offline too So social media is not not to blame and I think what's interesting to me is that maybe in this field there are people shouting like our echo chambers aren't real or like Online, it's not a big issue. It's all exaggerated and then some people say, we're all living in echo chambers. It's a fragmented landscape. Nobody's talking to each other anymore. And I think the difference between the sort of two camps is maybe also in terms of how to actually define echo chambers. In computer science, people often define echo chambers as needing two ingredients. So there's polarization measured by distance of how far you are away from somebody else in the network, but also homophily that, know, birds of a feather flock together. That's what, homophily means. But then some people apply this sort of very strict definition that there is no communication between the clusters and the network. So that there's an echo chamber because they don't communicate with each other. But putting a constraint of no communication is not real. I mean, that's just not realistic to me. mean, people always have some communication. So if you apply that definition though, you say, oh, look, the echo chamber isn't there because they're still talking to each other. So, you know, if you loosen things a bit more and say, look, there's less communication between polarizing clusters than there is within the cluster, then you all of a sudden can say, oh look, there's lots of echo chambers, right? There's also differences in self-report. So a lot of research and communication asks people to like self-report their media consumption. Then they say, look how diverse people's media diets are. But then if you look computationally on specific hot button issues, you see people operate in echo chambers. so I think sometimes these answer different questions. I also ask to say, well, yeah, if you ask somebody in Finland,

they're probably not going to be as polarized as somebody in the US, right? So it sort of depends on the context, but also the measurement. Yes, people have a broad media diet and maybe open democracy with high freedom of the press, but that doesn't mean that they can't be highly polarized on specific issues in a particular network. So I think echo chambers are very prevalent on sort of specific issues, but at the same time, it can be true that people have a more diverse media diet than you might think.

Richard: Let's talk a little bit about how people do communicate online. It's very visible, with the likes and shares and comments that you've mentioned, but you lose the facial cues and those social cues. So how might the signals, the likes, etc. affect what people pay attention to and believe and treat as credible or important? So if something's got lots and lots and lots of likes, is that sort of the equivalent of a very charismatic person in a room? You know, having a fantastic strong argument about something you don't know much about and you go along with them. Is that the new way of communicating online? It's just the simple likes.

Sander: Yeah, well, it's interesting, it? So they serve a few different functions, right? So online, if you share a post, it can mean many things. It doesn't have to mean personal endorsement, right? So you just share it because you think it might be of interest to an audience, but it could be interpreted in a different way. Like if you share it, I might assume that you've vetted it and that you want me to see this content. But you could just mean that, wouldn't this be interesting if it just turned out to be true? You know, it might be a fake news story, for example, but you might think, well, if it's true, might be interesting for my audience. Right? And so you don't actually know the motivation sometimes of why people share content. Liking is a bit easier, right? If you like something, people know that you're endorsing this content. And yeah, we generally pay attention to norms. So we look at what do other people do? How many other people are doing something? And what are they telling me to do? So, you know, if a post have lots of likes that signals that it's socially desirable, right? And so we might take that into our own judgment formation. But on social media, there's some interesting experiments. If you put an eye tracker on people, for example, you people drift towards the content that's shocking, emotional, has lots of likes because, you know, from an intentional perspective that seems to serve a evolutionary purpose that, you you're drawn to the content that needs immediate attention. And then if you look at some neurological research, likes tend to activate the reward circuit in the brain. So the more likes a post has, the more popularity it has, the more people process that as a reward. So similar to getting a piece of chocolate or listening to a nice piece of music, it is processed by the brain as having a value associated with it and a positive value. And so you want to get more of that.

Richard: Is it more valuable than the words themselves, the number of likes? Does it surpass the words?

Sander: That's interesting. I don't think people have pressed that out. You know, the content versus the social evaluation of the content. That's an interesting question. Let me answer it this way. I think when you're talking about issues that have a group dimension, then the group evaluation becomes more important than the content often. So in a political scenario where lots of people in your tribe are liking something, what happens online is that people don't actually care about the veracity, whether it's AI generated or not, or so on. What they care about is that the group likes it. And so it serves a strategic social purpose now that you

want to promote the in-group and you want to derogate the out-group. That's typically how online interactions happen in the context of politics these days, that what promotes the in-group is shared, right? And what derogates the out-group is shared and that tends to coincide with lots of likes and social activity and then people care less about what the actual words are. They don't care it's not entirely true. The gist is true and the gist makes my group look good and the other group look bad. So that becomes uh sort of a social purpose. I don't think that's true for every type of content on social media but I think it becomes more true when there's a clear sort of group psychology associated with it.

Richard: Marion, rather than comparing online and offline relationships in general, how can online and offline ties supplement or complement one another for different outcomes, such as say emotional support or access to information?

Marion: Well, yes, they can absolutely complement each other. The question often is what does the online interactions add? And this depends on the outcome. So they can help maintaining or strengthening relationships, but they can also help creating new ones. And for example, if you go online and find people who think like you and feel embedded in a network where everyone sharing your opinions is connected, that might add to your well-being through the feeling of belonging to a group to have a certain identity. You might have other effects for emotional support, as you mentioned, so being able to talk more often to close ones. There was a study on Facebook showing that targeted communication to close friends, for example, with personalized messages can increase well-being. So it can be helpful for well-being. For information, again, as I mentioned before, having a lot of diverse ties, access to different communities can also be good. That's why websites like LinkedIn are really good. Of course, interactions can also have negative impacts. So if there is passive views or social comparison happening that might lead to detrimental impacts. So they might complement each other, but it's not always positive, I would say. One other thing to note that I find quite interesting is that there is this famous limit, the Dunbar number of the number of connections our brains can sustain. And actually Dunbar and his colleagues did a study about this and showed that online uh technologies having online interactions that does not really increase the number of close relationships we can maintain. are recent studies who find that in Western countries the number of close contacts in general is not really increasing, maybe even decreasing. well, yes, online interactions can complement offline ones, but they're not necessarily always positive and then also not necessarily widely expanding our social worlds as we might imagine.

Richard: Marion, why do some social groups become mixed while others stay separate?

Marion: So I personally studied the case of socio-economic homophily, so tried to understand why especially children and adolescents interact with others from similar socio-economic backgrounds. So what we know in this case is that this can happen because people have potentially preferences for this. So maybe kids prefer talking to people who have the same kind of language, same kind of taste. Can also happen because of how schools are organized. So there might be some residential sorting, sorting into different tracks. Maybe kids go to different activities, rich kids go to ballet and poor kids play football. Parents can intervene, socioeconomic status can be related to ethnicity, and maybe there are preferences on ethnicity. So there are all these things happening. So with a colleague of mine, we worked on this topic. What he found was that in French schools, he tended to find

that there was some selection on socioeconomic status. And when we looked at adolescents in summer camps in France, where there was a diverse set of kids with different socioeconomic status, what we found is in those contexts, they did not seem to have any preference for same socioeconomic backgrounds. In short, the story is complicated because there are many things happening and it really depends on the attributes we are looking at.

Richard: Seemingly as well the structure of the organization that they're doing it in, like the way a school is set up or a summer camp is set up and perhaps the way the teachers or the guides in the summer camp are doing things.

Marion: Yes, it seems to be that there might be contextual effects that in some cases similarity is more important for forming ties. And this might be linked to a context theory so that in certain contexts, prejudices can be reduced between different groups. If they meet under a particular set of conditions, people should have equal status. There should be shared goals. There should be cooperation between people and there should be institutional support. So there are contexts like the summer camp, for example, that perfectly sustain interactions between individuals coming from different backgrounds and others that do not.

Richard: Sander, from your work on psychological resilience, what makes some people more vulnerable to harmful online influence than others?

Sander: Yes, we've developed this test called the Misinformation Susceptibility Test, the MIST, which is a psychometrically validated instrument. It's free. Anyone can take it online. It's used by YouGov and other places. So we get hundreds of thousands of data points on people who take this test. And one of the things it associates with is you know, people who are more susceptible to misinformation or manipulation tend to be people, surprisingly, somewhat people who are younger, people who are higher in what we call paranoia and distrust, people who are lower on actively open-minded thinking, which is a measure that taps into how well you're able to take another person's perspective, deal with uncertainty, keep an open mind, people who are high in black and white thinking or cognitive rigidity, which is a really important factor. So actually they do these neuropsychiatric sort of assessments. So one test called the Wisconsin card sorting task, which is basically a pattern. And then someone is asked to continue the pattern based on what they've observed. And people who have trouble pattern switching in a neutral context are also more politically extreme because the inability to be flexible cognitively correlates highly with extremism. People who spend most of their time online, who get most of their news from social media, people who feel a lack of control, lack of agency. So yeah, the general picture is people who are low in trust, high in paranoia, feel that they're out of power, don't have agency, feel marginalized, spend most of the time on the internet.

Richard: Does everybody think that it's everybody else that's gullible and not them?

Sander: Yes. No one thinks they're susceptible. There's a third person effect. yeah, so it's interesting because on our test, what we find is that people in the political extremes don't do so well, but they have very high confidence that they're very good at it, which is an interesting sort of lack of metacognition that, however, kids or let's say Gen Z, they don't do so well either, but they know that they don't do well. So they're calibrating correctly. But yes,

in general, there's a sense of like other people are worse at this than me, but in fact, you know, nobody is particularly good at this and some groups are more vulnerable than others.

Richard: Okay, we always like to finish by looking ahead into the future. So what is the one change you would each prioritize in public policy or education, technology design, community life, platform governance, any of those things to create safer spaces for people to meet? Marianne?

Marion: If I had to choose, I would focus on schools. I think schools are a unique context because they or before people segregate in different occupations, different neighborhoods. School happens also before opinions and lifestyle really cement. So I would say we need well-designed interventions for schools to provide opportunities for kids and adolescents from mixed backgrounds, mixed ethnicity, mixed gender to interact and to be able to form connections. There are experiments that show that this is possible. For example, in Switzerland, we collected data on university students and some of my colleagues ran an experiment where they put students at the beginning of the year in introduction groups. And the idea was they wanted to see whether if these groups were mixed in gender, this would create mixed gender relationships. This was meaningful because it was an engineering program and it seemed to work. There was another study in the US where they randomised people in dorms in the beginning of the year and also seemed to, at least to generate relationships between people from different social backgrounds. I think these things can work on even larger scales. So there is right now an experiment in Toulouse. There are students who coming from very disadvantaged neighbourhoods who are being put in other high schools in town. And as far as I can see from the first reports, it seems to work. So the grades are getting better for these kids. They're getting more ambitious about their life goals and rich kids do not seem to have flown to private schools. So there is a lot of hope for this kind of well-designed, scientifically informed interventions. And I really hope that this happens more in the future.

Richard: I love it when there's some optimism because it doesn't always happen on this podcast. Sander, are you going to be optimistic or pessimistic about the change?

Sander: I think I'm pretty optimistic too. But you know, some of our work on psychological inoculation is, you know, we try to empower people to spot manipulation before it happens by inoculating them. But social media companies had actually adapted this at a very large scale. So Google rolled this out to hundreds of millions of people through pre-bunking ads so that, you know, they would have these ads on the platform telling people they might be manipulated and then administer a weakened dose of what it looks like to empower their users. And Meta had done the same and the old Twitter used to do that, send messages to top of people's feeds during an election to be on the lookout and how to arm themselves with authoritative information. Unfortunately, they undid all of that. Misinformation is rampant again. So that sort of leads me to think that we need a slightly different approach. And so I can pick anything, which is what the question is about. I would probably prioritize keeping kids safe from uh online harms, but not through a social media ban, which I think is not very nuanced, doesn't prepare them for the future, which is technology. It's kind of a knee-jerk reaction and shifts the focus away from the business model of social media. I think everyone would benefit if we changed the business model of social media, kids included. But I think what we should do is force social media companies to have a safety by design approach.

So they need to engineer feeds that are not based on engagement, optimizing algorithms, where you can't get messages from strangers, where there's no infinite scroll, no auto scroll, build a safer, cleaner digital technology platform. And I think, yes, for kids, but actually adults could benefit from it as well. And then allow people back on the platform. So you could use a ban as a strategic lever. I Canada is considering that. Brazil is doing something like that. We're actually, we're not saying we're going to ban all this stuff indefinitely. You can't have it. We're actually going to force these social media companies to redesign their products, make it safe. And then we're going to allow people back onto these platforms. And I think that's the change that I'd to see.

Richard: Fantastic. Really interesting ideas, both of you. That's all we've got time for on this episode. Thanks to Sander van der Linden from Cambridge University and Marion Hoffman from the Toulouse School of Economics for joining us. And thank you for listening to Crossing Channels. We'd love to hear what you think. Your reviews help us to shape future episodes and make it easier for new listeners to find the show. If you enjoyed this one, why not explore some of the earlier episodes?