Transcript: In Conversation: Mark Elliot and Christina Silver – AI and Social Science

Mark Elliot: Hello. This is the fifth in NCRM's In Conversation series on AI and social science.

I am Mark Elliot, Professor of Data Science at the University of Manchester and Co-director of the National Centre for Research Methods.

I'm joined today by Christina Silver, who is a sociologist whose research focuses on the relationship between qualitative mixed methodology and technology, specifically the use of dedicated CAQDAS packages and in CAQDAS pedagogy, and who has literally written the book on software in qualitative research. Welcome, Christina.

Christina Silver: Thank you.

Mark Elliot: Okay, so starting with the question that I ask all my guests, AI is a big topic which gets variously used and abused both as a term and indeed as a technology. So, what will you mean when you're talking about AI?

Christina Silver: So, in the context of my work, which is around harnessing tools to enact the analysis of qualitative data, then terminology is really, really important, and I think in qualitative circles more generally terms are often used to mean different things in different contexts. So, I think it's really important to start off thinking about terminology. And actually, what AI means in the context of qualitative analysis has changed, I think, since ChatGPT was released in November 22, then AI has kind of become quite synonymous with generative AI and that's typically what people mean when they say AI in the context of qualitative research. But of course, we've had assistance, computer assistance, for qualitative and mixed methods analysis for many, many years,

decades, and that's included supervised and unsupervised machine learning. And that's now often referred to as traditional AI to distinguish it from generative AI. So, I really like to be as precise as possible, but sometimes I forget to, like we all do, sometimes we forget to be precise. But generally speaking, I like to differentiate between generative AI, which is the technology that comes off the capabilities of the large language models, and that's different from things like sentiment analysis, topic modelling and so on that stems out of machine learning more generally.

But I'm also very much influenced by some of the commentary that's going on at the moment around what's happening in this space and thinking a bit more broadly in terms of sociopolitical context and the environmental implications of the use of these technologies. So, the work of Emily Bender and Alex Hanna, who've recently published their book called The AI Con, so they talk about AI as a marketing term and then it doesn't really capture what the technologies actually do, so I draw on that quite heavily. Also, Karen Hao, who discusses AI as techno colonialism in her book called Empire of AI, and I think that's really important context for us as social researchers to think about as well. And then also Simon Lindren, who's got a book about critical theory of AI and he refers to AI assemblage, so thinking about the combination of the technical aspects of technology and the context that surround it.

So, I like to be as precise as possible in terms of tools, which is what I'm mainly thinking about, but I think those terminologies sit within a broader context of what's going on in the world more generally at the moment in this this kind of space and the implications of it.

Mark Elliot: Yeah, I think that's a really important distinction. So, you're thinking about AI as tools or a set of tools and being more precise about exactly what you mean when you're talking about it because otherwise it gets associated with this more science fiction view of AI as this sort of super intelligence or even just intelligence, and really they are very different things.

It's very interesting as well, just as an observer, so I've been working in AI since 1984, and as an observer of the process, the history of it, as things get more concrete, they cease to be AI. And machine learning is a perfect example. We now have a new term to describe a whole set of things which were previously called AI, and there's this kind of transition over into more core computer science or engineering or some other discipline, but actually focusing on just what the tools do I think is a complex enough topic that we shouldn't really be speculating too widely.

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Christina Silver: No. But those tools operate in a broader context as well, don't they? So, that's why I think it's really important in my work in terms of helping people become aware of what the tools can do for us as social scientists and specifically in the qualitative space is to understand that they're not just tools. So, our use of tools has consequences and we adopt tools in that sociopolitical and environmental context as well. So, I think it's disentangling those different terms and how they're appropriated and the politics and power around how terminology is used, I think that's really important as well. So, there's lots going on.

Mark Elliot: I think there's a bit of a, to radically misquote Marshall McLuhan, is the media is the message, is the tool is the research. It almost becomes part of the thing that you're talking about rather than the actual research topic itself and certainly has a big impact on the research and it's easy to forget that.

So, what's been your kind of personal engagement with AI tools?

Christina Silver: Okay, so thinking about generative AI, because that's kind of the main thing that people are concerned about in the qualitative space at the moment, having been involved in the field of computer assisted qualitative analysis for almost 30 years now, I've been thinking a lot about how tools affect the way that we enact methods. And so, in terms of generative AI, my initial reaction when I started to see that there were going to be some big implications was a kind of

mix of scepticism and concern in terms of the capabilities. You know, what could these tools actually do? What could they bring to the plate in terms of methods? And also, the potential impacts that the use of those tools might have on qualitative practice. So, I was definitely sceptical at the beginning about whether they could actually do what it was being claimed that they could do and there's been quite a lot of hype around how generative AI tools can bring more depth to our understanding of data as well as doing things more quickly, and so I was sceptical around that.

But I was also concerned about the technologies in terms of what that would mean for the field of qualitative research and what that would mean for researchers and how researchers undertake their craft and what my place in that space was going to be if the technology was going to kind of take over. So, that was sort of my initial gut reactions at the beginning.

But I guess I realised really quickly that I needed to get to grips with what was actually happening fully and that also it's my responsibility, I think, as a teacher of qualitative methods and tools, and also as the kind of steward of the CAQDAS networking project to really understand what was going on. So, our remit has always been to raise awareness and build capacity and appropriate use of tools, not to push any particular tool or method, but to enable the community to understand what tools are available and to think deeply and critically reflect on when and why they may be useful or not indeed. And for me, I've been exploring and experimenting with tools for many, many years and I think that kind of remit and ethos that we've stood for at the CAQDAS networking project since 1994, I think it was when my colleagues set it up, it's even more important now to continue that endeavour of raising awareness.

So, my work is not about pushing a particular view or anything, but enabling researchers to make really informed decisions about how to handle these new capabilities. And so, that's what I've been spending a lot of time doing over the last two and a half years, which is super intense because the tools are developing, the technology is developing really rapidly. Every time I do a similar session that I did a couple of weeks ago, I've got to change my slides

because another tool has come or it's changed or you know? So, it's really rapidly evolving. I find that really fascinating because that's my area of interest, how tools affect methods and how methods can be enacted through tools, how methods and tools change and what that dialectic is between the two. And that's, you know, we're in a space or a time now, I think, when tools can do a lot more than has been the case before in qualitative work and so that brings with it a new way of having the same conversations that we've always been having.

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So, I'm not using generative AI for my own research necessarily. Sometimes I do for certain things. I still like the way I've been doing analysis in the past. I'm not fully sold on the, "Let's do everything quick". I don't necessarily think that quick is better in qualitative work. But I am experimenting with tools. I am reflecting on when they're appropriate, when they're not appropriate, and I am using generative AI for certain tasks, but definitely not for other tasks based on my opinion about what's appropriate or not.

Mark Elliot: Okay. So, have you come to a kind of definite view about making that decision about appropriate/not appropriate?

Christina Silver: I think it's really contextual. I don't think there's a one-size-fits-all answer to that. So, a bit like if you think about the methodological spectrum, I've always been a pragmatist, I've never bought into these kind of paradigm wars and quant is better than qual or vice versa. It's like, well, don't we choose the appropriate methods, both data and analytic approaches based on the research question? That's how I've always thought about social science research and methodology and I think that it's the same with these new generative AI tools.

So, I might use generative AI tools for one project, but that doesn't mean that I think it's appropriate for another project. And so, I would view the use of tools in that way. So, for some types of data, some analytic approaches, some tasks

that we have that we need to do with our data, I can see a potential role and place and summarisation is a good example. I've done some experiments when I've done some of my own qualitative coding of data and then I've summarised the coded data myself, which is a very common task in qualitative methods, and then afterwards I've had the AI do the summaries and in some cases the AI summarises it better than I did. So, you can see a place for that. But also, what do I lose by not doing the summarising myself? I lose all that accumulated knowledge that comes into my brain that I either consciously or unconsciously then use in the next stage of my analysis. And although I might save time by having generative AI do some summaries of my qualitative codes, and maybe they are written really nicely, but then what happens, you know?

So, I'm thinking a lot about what I lose as well as what I gain. And I think that that's not one question. That's a question that has different answers at different stages of an analytic process for different types of data, for different types of projects and all kinds of things. So, that's kind of what I endeavour to do with my awareness raising is to engender that kind of thinking around, "Okay, well, why am I even thinking about using these tools? What are they going to contribute?" rather than just saying, "Oh, this is a new way of doing, we can dispense with everything we've done before". I think we have to be a bit more nuanced and a bit more critically reflective in thinking about these tools.

Mark Elliot: So, what do you think about the oft cited calculator analogy? So, the kind of sense of school children being brought up in the sort of early 70s, calculators arrived, lots of hoo-ha about it. They'll forget how to do arithmetic, etc, etc. And it is certainly true that the general status of mental arithmetic in the UK population has declined considerably. So, there was the same debate going on because what they lose is the capacity to do that task themselves. So, that's the analogy. And nobody seems to care about that anymore, right? Nobody cares that people can't do mental arithmetic because we just simply don't expect people to do that. Do you think this is analogous to that, or do you think this is something different?

Christina Silver: I think that a lot of qualitative methods teachers are worried about that and I think that for that reason they are not talking about it with their students as much as they ought to be because they're worried that if students just use generative AI to do qualitative analysis, then they're not learning properly how to do qualitative analysis and qualitative analysis isn't pressing a button and an answer comes. It's much more. You know, we engage, we immerse with our data, all of that kind of stuff. And so, I think that that analogy, the calculator analogy, is one that I think is very prevalent in the space of qualitative methods teachers. And I think there's definitely some value to thinking about that, but I don't think the answer to that is not teaching our students about generative AI at all, because I think that's putting our heads in the sand. And it's a bit like when you think about your young, when parents think about their young children and social media, so not giving young children a phone or not allowing them access to TikTok or whatever the latest thing is, or Snapchat, whatever it is. You know that just encourages them to want it more and what we should be doing is teaching them how these things work, how the algorithm works, how they're trying to get you to scroll more and they're trying to sell. You know we should teach our children how social media works so that they can engage with it in a way that's not going to be harmful to them, which is to do with who you follow and what the explicit content is, and all of that kind of stuff. And I think that's an analogy that I think is really useful for thinking about how we teach the next generation or the current generation as well about these tools. Because if we don't enable them to have that critical reflection around the role of tools, then how can we expect them to want to learn the craft that we learnt in that same way? So, that worries me a lot.

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Lots of things worry me about this space, but that's to do with the potential misuse of the tools and who is placed to ensure that tools are not misused if it's not methods teachers? And I think we have a responsibility and it worries me that I observe lots of methods teachers kind of saying, "Oh, I haven't got time to talk about generative AI," or, "It's too difficult," or, "It's more important

to talk about methods". I think it's more important than ever to talk about tools at the moment. And so that's my strong, passionate feeling about this at the moment. It's not about promoting the tools or enabling people to use the tools as much as it is about enabling critical reflection of the role of the tools. And teachers have to do that, I think.

Mark Elliot: So, I think we've segued onto a topic I wanted to raise about how do we teach this? And you've obviously said earlier on and you'll recognise this is a fast moving area. So, it's quite difficult to know what to teach and how to teach it. So, what are your thoughts about that in the qualitative method space?

Christina Silver: So, for a long time I've thought about and written about how to teach methods and tools. So, before generative AI came into the space, we were having the same conversation and actually we've been having this same conversation since the mid-1980s when these software programmes first came about. And over that time there's been lots of teachers who haven't been teaching NVivo or whatever the tool is that most universities in the UK have got NVivo licences, and lots of method teachers haven't been teaching NVivo, let alone teaching generative AI.

For me, it's partly to do with awareness raising and you can teach methods and tools together in a variety of different ways. So, you can either teach methods first and then teach tools and then they're separate, which is typically what happens in my observation. Or you can intermingle. So, you can teach part of a method, for example, coding, qualitative coding. You can teach that manually and then you can show how that could be enacted in software and then you can have a conversation about how your engagement with data changes when you're using a highlighter pen, which is a tool also, and a piece of software. And you can do the same with generative AI.

And so maybe that takes a little bit more time, but given that awash on the internet is press this button then you can do qualitative analysis, if you don't talk about and show students what the implications are of coding in two or three different ways, then you can't have that mechanism.

So, I have a framework of questions that I would ask my students at every stage of engaging with a tool, whatever tool it is, why you're using it, what it's going to be used for, how you're using it, when you're using it, what the implications of using it are, and then thinking about what you gain and what you lose. So, that example I gave earlier of generative AI summarisation, I gain time, I gain a better quality summary maybe, but I lose all that accumulated knowledge that I can take forward.

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So, reflecting on that I think is really important. So, I think we can teach methods through the use of tools. And so, if we see generative AI, I mean I don't like, "It's just a tool," because I don't think it is just a tool, I think it's more political than that. But we look at, we've got at least three different kinds of tools now that we can think about using for qualitative coding, let's say, a highlighter pen, NVivo coding or whichever qualitative software you're using, and then generative AI, and looking at coding through those three different tools allows you to have a conversation about, "Okay, well what is actually coding and what do we do when we do coding and how does the use of the tool affect what we're doing?" And those kinds of conversations I think you can have. And I think they need to be had.

Mark Elliot: I think, I mean, I think it's a really important element of this, an appreciation of tools, which I think is what you are describing there. And there's a kind of sense of tool selection, actually, yeah, you're now a practitioner who are kind of working on some topic, and actually, you've got to go and pick the right tool for the job, which may well be a highlighter pen. I have an exercise I do with my students, this is in the quants area, I give them a data set and they have to mess around with it and so on. These are data science students. And I say to them, "You can use whatever tools you want to use," and you could use, I know you'll suggest that they could use a spreadsheet which is like don't go near a spreadsheet if you're a data science student, straight to the coding. And that's what they all do. And it's actually the most difficult way to do the task because the data set is actually quite small, paradoxically, the opposite to the normal.

You're much better off trying to do this in a spreadsheet because you can actually look at all the data which the tool doesn't, the tool they use, which is Python programming, does not really allow them to do as effectively. So, they don't understand what's happening with the data as well.

So, at the end of the class, I say, "Well, this is what would happen if you'd done this in Excel. So, think carefully about which tools you're using".

So, I think there's a kind of sense here actually one way of thinking about this is use the least advanced tools which will do the job, because almost certainly it will get you better understanding of what the data is that you're working with than something more advanced which will take that away from you, because that's kind of the point of these advanced tools to automate all of that. Or do both. I mean I'm sure you've kind of said yourself, and I might get the AI to do this, and I might do this, and actually there might be something to gain from both of those to make it even better than one of them on their own, depending on the task, obviously.

So, there's kind of lots of, I think there's a bigger discussion needs to be happening about that kind of how do I select what tool I'm going to use? We very rarely teach that, or at least not in my experience anyway, rather than how does this tool help with this task, which obviously is part of that decision, but we tend to go straight to that and we get them on the tool and then they're using it and they're learning how to use it and then that becomes like the boy with the hammer jokes, you know, everything looks like a nail and not all things are.

Okay. So, we're getting close to our allotted time and so we probably need to wind up. But I know you're also interested in social environmental implications of the use of AI and you've been touching on that in some of the points you've been making. So, perhaps you could also perhaps share wider thoughts about that and what that means for social science research.

Christina Silver: Yeah. So, my observations of the sort of reactions to these generative AI tools in the qualitative space shows that there's different groups, if you like. So, there's the early adopters and the advocates. There's the ones who are really critical and fearful and very dismissive of any use of AI. And then there's a whole bunch of people in the middle who are curious and not sure what's going on. And the qualitative social science scientists who are very sceptical tend to be so partly for methodological reasons, which we've just been talking about, you know, can it do and does it take away our agency as researchers and all of that. But also, to do with the development and consequences of large language models.

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So, there's lots of discussion around the fact that the big tech companies stole all of the data and is that fair use, and all of the litigation that's going on there. There's a kind of model bias inherent in the models because the data in the world and the world is bias and what that means for qualitative researchers. You know, if we're using models which are trained on bias data, then are we going to get useful results and so on? And then also kind of exploitation of humans who are involved in finetuning of the models and all of the explicit content that they had to look at and so on and the fact that they didn't get paid properly to do that really terrible work. There's the idea of model collapse, so as more and more content is created by large language models and fed back into training the models again, then it's kind of learning on its own data and what that means for the models and so on. So, there's lots of issues, environmental and social political issues around the development of the large language models. And then also every time you ask a question of a ChatGPT or one of the more bespoke tools that you might be using, then the energy and water used to run the data centres and all of those kinds of things and the sort of the systematic techno colonialism narrative that some of the people I mentioned earlier are talking about. So, there's lots of qualitative researchers and social scientists that I know who just won't use any generative AI because of these reasons.

And I think as a community of practice, we have to reflect and make individual choices related to this. So, as social scientists, does all of that align with our values as social scientists? I think we have to question that. And I think we have to make individual choices about that, like we do with recycling, right? So, if I'm out and about in town and I've forgotten my reusable coffee cup, I make an individual decision about am I going to get a takeaway coffee or am I not going to have a coffee because I know I shouldn't have a coffee because I didn't bring my takeaway cup? So, we make all of those little individual moral decisions around our impact on society and environment all the time daily as people. And I think as researchers, if we are going to use these generative AI tools for social science research, then we have to make those decisions as well. So, there are certain things I just won't do because of some of that.

So, for example, generating an AI image. So, you see thousands all over the internet, all of these AI generated images. Why would I do that? You know that's costing lots of energy to do that when there's millions of images around the place when I can use something or create something myself. So, there's lots of moral individual choices I think we are all making and I think we're probably not talking about that. It's kind of swept a little bit under the carpet because it's like, "Oh, it's new tech, we should be using the new tech," and I just, you know, for me personally, you asked me right at the beginning, Mark, about how I was using the tools. So, I feel like I have a responsibility to use the tools to understand what they do so that I can teach about them. I think that's really, really important. But for my own use, I'm very critical about do I actually really need to use this given that I know that it has a consequence when I use it? And so, my personal decisions might be different from my teaching related decisions, and that's a quandary, I think, that many social scientists have that I talk to about once you learn about these sorts of contexts and consequences, then you do start to think differently about whether and how you should be using the tools. Because at the end of the day, these new capabilities were kind of foisted on us as social science researchers. We were doing good quality analysis beforehand. I think we need to question why suddenly we think that everything we did before was no good and now we need to do something

new just because it's new. So, I think there's lots to unpack there. So, yeah, I have moral dilemmas in my mind.

So, for example, from a teaching perspective, if I've used a tool to do something in a previous workshop, rather than do it again live in the next workshop, I'll go and show what I did last time rather than do it again live so I'm not doing it again just for the sake of doing it again. Those sorts of individual questions. So, individual choices that I make about when I know that running this is going to cost something environmentally. So, I've already got it from last week, so I'll just show them what I did and talk about it rather than do it again.

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Mark Elliot: Yeah. And I think, I mean, the environmental cost side of this is something that, I mean, I think it's not, I would say not widely understood or certainly not properly. I don't think I've ever read something myself which says if you do a ChatGPT query –

Christina Silver: I'll send you some articles to read.

Mark Elliot: Ah, excellent, excellent. But so, and I think of myself as being a reasonably environmentally conscious person. So, I suspect that it's just generally not understood at all. But certainly it's a hell of a lot more than what we were previously doing with computers, which didn't have no environmental cost and so actually that, you know, if people who are making kind of sensible decisions in other areas of their lives about recycling, not travelling on planes or whatever it is, haven't kind of quite factored this in yet, and then probably that's an urgent need I would say to kind of make that more consciously present for people in the way that other elements now are.

Okay. Well, thank you very much. That was a really, really interesting conversation and hopefully our viewers will think likewise. But for now, we'll sign off. So, goodbye.

Christina Silver: Thanks a lot.

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