



Sonic Publics

Introduction and Audio Transcript

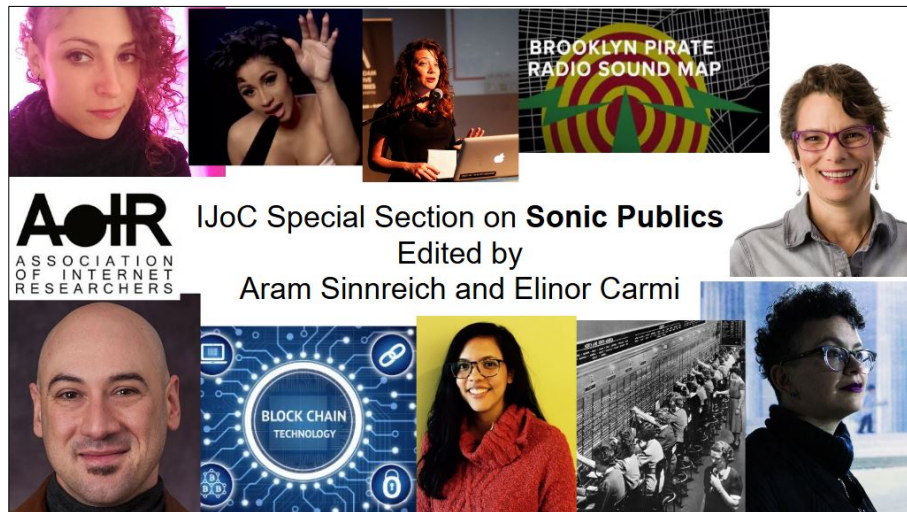
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Below is a full transcript of the audio introduction to our Special Section on Sonic Publics. In lieu of a traditional written introduction, we opted to interview the authors who contributed pieces to this section, and to present those interviews in a format that, in its audibility, reflects the common theme of the publications themselves. The audio quality varies from interview to interview due to logistics, circumstances, and the affordances of sound technology, so we hope this written transcript will augment the recording, as well as make it more broadly accessible and searchable.

Keywords: sound, Internet, public, media, audio

Link to the audio interview: <https://archive.org/details/IJOC-SP>



IJoC Special Section on **Sonic Publics**
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Elinor Carmi = EC

Larisa Kingston Mann = LM

Aram Sinnreich = AS

Welcome to Sonic Publics

AS: Hi, I'm Aram Sinnreich. I'm a professor of communication studies at American University in Washington.

EC: Hi, I'm Elinor Carmi, a post doc research associate at Liverpool University.

AS: And welcome to the introduction to our *International Journal of Communication* [IJOC] Special Section on Sonic Publics.

EC: Yes. So this was part of a successful panel that we had at AOIR [Association of Internet Researchers] 2017, which had the same title, and we decided it was so good that we should actually turn it into a Special Section. And I think that especially for us people who work on the intersection of the music industry but also sound and media and law, it was quite important for us to explore these notions and bring it also to Internet studies. Because these aspects are sometimes a bit neglected.

AS: Yeah, well that's an understatement! You know, I've been doing sound studies work for a couple of decades now, and it's always been a little ghetto, and it's nice to see it getting a little more sunshine than it has in the past. But it's still pretty hard to explain to our fellow communication scholars and Internet researchers why sound is worthy of continued study, and why there are so many dimensions to it. I think we hit on something interesting and possibly important when we organized these very different articles under the heading of sonic publics. Because sound is so frequently—when people do deign to study it—it's often studied as an industry or a commodity, you know, "the music industry." It is studied as a kind of add-on to other media. You know, it's the "audio" in audiovisual work; it's studied as a kind of point of contestation, where people, you know I'm thinking about a book like *Sonic Warfare* (Goodman, Massumi, & Manning, 2012) where people use music as a way to stake out geographic and political space. It's talked about as a kind of empty vessel for subcultures to express their style. And it *is* all those things, but it's also something even more important I think, which is that it is constituent of a public. Sound is one of the primary ways in which large groups of people decide that they share a common destiny and have a common culture and need to coordinate in order to produce the kind of society that they all want to live in, together. And that dimension of sound, I think, is drastically underappreciated and underinvestigated.

EC: Yes, I agree, and I think that especially when we are talking about publics that are assembled and reassembled on the Internet, I think it's quite important to show how that affects the intersections and negotiations, socializations, and also interactions between the online environment and the offline environment. And I think that the articles that we present in this Special Section, each focuses and amplifies different aspects of that, and I think opens up what we hope will bring to more engagement with Internet studies and sound studies.

AS: So what we're going to do with this introduction is, we're going to have brief interviews with the authors of all four of the articles in the Special Section of *IJoC*, including you and me; we are going to interview each other. But first, we are going to interview Larisa Mann, who did this really interesting work on pirate radio, and she'll talk us through some audio from the pirate radio spectrum in Brooklyn. And also Nancy Baym, who is one of the three coauthors of this work that's talking about blockchain technology and the kind of hype that's surrounded its introduction into music industrial processes.

EC: Yes, and then we are going to talk about Aram Sinnreich's article, who is doing a major work conceptualizing and providing a new theoretical foundation of these five epochal moments where music, law, and copyright intersect and how they relate to one another. And we are going to finish with an interview with me about my article where I talk about "the hidden listeners," these media workers who are at the back end, and I show a longer lineage between Bell telephone switchboard operators and contemporary social media content moderators.

AS: So thank you for listening. We are really excited to bring these interviews and these articles to *IJOc* and to the reading and listening audience. And we are looking forward to continuing the conversation about sonic publics and what it means to negotiate these complex social processes through sound and music.

EC: Exactly. So stay tuned and we hope that you enjoy listening to us.

Larisa Kingston Mann

AS: So we are very happy to have Larisa Kingston Mann, a Temple University professor and a contributor to the sonic publics forum in the *International Journal of Communication*, and Larisa you've brought in a very interesting piece of audio. Do you want to talk us through it before we listen to it?

LM: Sure, so this is not audio that I recorded, but it is audio that was recorded by a really fantastic independent scholar whose name is David Goren, something called the Brooklyn pirate radio sound map. And I have worked with him a bit in doing this article because he is a sort of self-taught but foremost expert in pirate radio in Brooklyn. And it's a selection of stations that you would hear, probably sometime between 2016 and now, so over the past couple of years, of the kinds of audio that are broadcast in Brooklyn and are still broadcast in Brooklyn; I can attest to that. I did not

have a high enough quality radio receiver to get really good audio to record and so David was kind enough to share it with me, and it reflects something of the cultural diversity of the airwaves, which is, does not map exactly onto who is in Brooklyn, because not everybody uses pirate radio, but it is a really interesting mix of sounds, and also the sounds themselves reflect some of the mixing that happens culturally within Brooklyn, so it's not quite like "here is this group, and here's that group." You can tell that they listen to each other, which is also kind of fascinating.

AS: Awesome, can't wait to hear it.

[2 minutes of audio]

AS: Wow, that was really cool. So many thoughts and questions. So, first of all, I would love it if you would explain a bit more: I introduced you as a professor, but you are also in the music world. Do you want to talk a little bit about how you bring that perspective into your interpretations of these kinds of pirate radio practices?

LM: So, alongside studying various kinds of cultural and subcultural music practices, I've also been a DJ, mostly in nightlife, for about 22 years now, and played on radio and pirate radio on occasion in different places. And so that definitely gives me a window into some of the ways that people have engaged with music and technology, and ways that people listen and how sound affects people in groups, and then as a DJ I get to, not quite test, but at least check in that my ideas and theories are actually reflective of something. Because if I don't understand how sound works in the body, and with people's memories and feelings, then the dance floor doesn't happen. So engaging with audiences through music is part of my research practice, but I would hesitate to say I am researching the people; like, we are doing something together, I am not researching them. But if I get it wrong, then I take that information back to my scholarly practice as well and so the connection between listening or dancing, engaging with audio and music, is something that I think about a lot in different kinds of creative and professional contexts.

EC: Fantastic. So we, I mean, the whole purpose of this Special Section came out of a panel, and I think this came out of this sort of need that Aram and I felt, to flesh out a bit more of sonic considerations when it comes to Internet research. So maybe you can tell us a bit more about what do you feel are the benefits but also the challenges of examining cultures through sonic considerations?

LM: For me one of the benefits is, and I was thinking about this yesterday because I went to a really interesting panel about sound, is that one of the continuing . . . in my opinion, sort of weaknesses of some medium studies is the focus on the medium without the people, in that I'm not that kind of determinist, I guess. And so, whatever medium it is, I think if you are just looking at the objects and you don't pay attention to how those objects are engaged with or created by people, you're going to miss really important things, especially political things about power. So the cool thing about sound is that it absolutely doesn't exist in a meaningful sense without people because, you know, tree falling in the forest type of thing. It has to be heard.

AS: So if a DJ plays on pirate radio and then no one tunes in, do they really have a show?

LM: It is an existential feeling; I mean, it is one of the challenges of radio, in general, is that you never really know who's listening unless you've put some kind of interactive mechanism, but it's not like everyone is using this. So I think one of the advantages of thinking about sound in a digital context is that sound is the thing that leaves the technology and touches somebody—their eardrums—and so immediately you have to start accounting for what that means, for what's happening with your analysis of the digital realm. So I like that aspect of it, that you can't bound it in the same way that you can with text, which also obviously we engage with visually and, and we think about it or whatever, but you can kind of trick yourself into just talking about text on the screen or an image on a screen as if it lives in that place. And sound can't; it's an emotion as well as a form of touch. So you can't, you can't do that. So I like that aspect of it. Some of the challenges are that that aspect of the experience is also the ephemeral aspect of the experience. So you can have a recording, but again, it's not sound until it's played, and playing it is a moment that has a beginning and a middle and an end. And so if you're not there for that, what are you really studying? So that, I think, is one of the exciting challenges. I think for me that difficulty is actually a useful signal because there's a terrible dynamic in some kinds of research. It's maybe because I started out a long time ago in the field of economics: If you have data that is easy to find, that's the stuff you study. And I think in the big data realm you get this quite a lot. Like oh, look, we collected all this stuff, therefore we should study it.

AS: Which is every first-year grad student that I teach.

LM: Yeah, and I mean it is inspiring and I understand the excitement, but I also think that is a really dangerous way to think about both what information you're gathering and where it came from and what your relationship is to it. And as someone who is clearly more ethnographically minded, the thing I like about ethnographic engagements is you have to, to some tiny extent, account for yourself with the people that you are interacting with, and you don't get to just sort of scoop up stuff. There is still a power dynamic; you don't have to talk to people if you're sitting in a room, but people are looking at you, you know, people are interacting with you, you are present in some way, so there is a little more chance that you will have to consider your relationship to the data or to the interactions.

AS: So how were you present for the pirate radio community in Brooklyn? What kind of a footprint did you leave as you were researching them?

LM: It was, I mean, this is the thing that I would most like to continue, because that also, I should say is the most expensive part of research, is the time you physically spend in a place and especially for adjunct faculty or junior scholars, you may not have the time to, you know, go live somewhere for six months. And in this case, this was put together partly from having lived in Brooklyn in a neighborhood called Kensington for several years and having seen and heard radio and people engaging with music in public and semipublic spaces for a long time. And then I walked around with the receiver, kind of a low-quality receiver in the neighborhoods, and sort of mapped out what I could hear in different places, and I talked to some people, but part of the problem is the people who are broadcasting are not automatically going to make their presence known because it's not legal. And

- also, the nature of it being immigrant radio meant that there were many languages that I don't speak. And so I did chat informally with people listening to radio because I was interested in listening more than broadcasting. As much as broadcasting. But it was often in very transient places as well, so that's one thing I would like to extend more, would be the talking to people. I definitely was observed, and observed people, but a lot of it was looking at what structures the physical spaces that people encounter audio in, and thinking and talking to people who are in those spaces about their . . . why they're in those spaces. That ended up being more of a conversation.
- EC: I think we will definitely want to listen to more of that research once you continue that. That sounds great. Were there things that surprised you in your ethnographic work? Things that you didn't expect to find and did find or the other way around?
- LM: Some things that surprised me, were just, there was one thing that I only mentioned in passing because there wasn't room, but there are some technologies that I was not aware of that people use to engage with radio, the main one being call-to-listen technology, which is people using non-smartphones to call a phone number and using their mobile minutes to listen to radio broadcasting. Which is just a very . . . I still think it's fascinating and an interesting innovation but not in a linear direction, which is something that was one of my focuses in the article.
- AS: It's such an interesting return to media history, you know. It's something that I love to use to blow undergraduate minds, is the fact that recorded sound, when Edison developed it, was really imagined . . .
- EC: As a radio. And these shows, they had scheduled shows, and I think in Czechoslovakia or Hungary they actually did that, they had the telephone as a sort of radio.
- AS: Exactly. Right, so the telephone system was envisioned as a broadcasting system, and in the U.S. the use case was to pipe opera into the drawing rooms of wealthy homes. Whereas the radio system was envisioned as a peer-to-peer communication medium, and until basically the invention of federal regulation, that really was its primary use. And then recorded sound had very little to do with music when Edison invented it. It was kind of viewed as a way for businessmen—*men*—to do dictation, or for people to learn elocution. You know, it was envisioned as a kind of instrument of class mobility and profit seeking, and music was way down on Edison's list of use cases for it. So now we've had this century in between where it's been very clear to us that radio is for broadcasting, telephone is for communication, recording is for making money off of music, pop music especially. And now that the technology is kind of in play again, people are rearticulating the technologies with different uses again, and telephone has returned to being a broadcast medium after an interval of over 100 years.
- LM: Yeah, I think that kind of cycle is fascinating, and definitely one of my favorite things. I also in the course of my research, reading other scholarly work, I do have to shout out—the author's last name is Lopez (2017)—there's a really fantastic article about a Hmong community I think in the West Coast who use teleconferencing as radio. So they have thousands of people calling a conference call, and it works like radio, and again these are the things that were just so amazing, that show how people are

seeking particular, they have particular needs for a kind of broadcast experience that isn't a phone call, and they're using different kinds of technologies to create that, but it isn't necessarily the technologies that tech designers are saying, "Oh, this is the latest and the best, and the greatest." And the reasons for not using, one of the things that I was investigating, and I feel somewhat confirmed in, is that there are affirmative reasons not to use Web radio. Not that Web radio isn't great. But that people don't . . . It's true that often people don't have bandwidth access or they don't have computers at home; there are negative reasons why people cannot afford to connect. But there are also aspects of broadcasting in the traditional sense that are not as afforded by Web radio technologies right now. Or are not even seen as strong points, and even seen as weaknesses for Web radio. So that was something that I had been thinking about before and that came out again in this research.

AS: So something that I was thinking about a lot when I was listening to your clip was when I was an undergrad studying music at Wesleyan University back in the early 1990s, I studied with this guy, Anthony Braxton, who is a multi-instrumentalist and composer and music theorist. And one of the metaphors that Braxton used to use when he would talk about music, he would say, "The radio dial is a spectrum, but when I turn on the radio, I don't hear a spectrum of music on it." And to him, that was this indicator of the dysfunction of our musical culture and industry. Was that the spectrum-like affordances of the medium were not taken advantage of by the spectrum-like needs of the culture. And then when I listened to your clip, it was a cultural spectrum. You know?

LM: Absolutely.

AS: It went from style to style, and language to language. And ethnicity to ethnicity, and I was thinking, you know, that I don't know if Anthony Braxton has listened, has just scanned and passed across the pirate radio dial, but he would be so happy to hear his ideas reflected materially in the sounds that he heard.

LM: Yeah, I mean, I was thinking when you said that. I was like, "Has he been listening to radio in New York? Because Wesleyan is not that far." And they are not all broadcasting all the time, and they have weak signals and you have to be in certain locations to get a lot of them, but I mean . . . I guess another thing that surprised me in the research, just in that it was impressive, is that not only is the legal spectrum in New York full, even if you wanted to get a license, there is just no legally open bandwidth, but there is over 100 pirates that have been tracked. Which is a lot of stations. And again some of them only do stuff on the weekends, or not all the time, but still in a digital era it is interesting that people are still trying to take up space on the radio spectrum, and that's something I'm very interested in why that is. And again not every community is doing it, but a very interesting mix of communities are on the air, and it's a pretty diverse spectrum.

EC: This is I think what I like the most about your article. This kind of playfulness and trying to stretch the boundaries when you actually have very little resources, and sort of, how do you navigate that? So I find it really fascinating that they're playing with that, and how they are creating their own affordances and their own legality and illegality. So yeah, I really liked it.

AS: Yeah, and I like the metaphor of “taking up space” too. Because there is a lot of cultural research that has been done about immigrant communities who feel like they are effaced from the mainstream city. Looking for ways to make their marks, to take up space, to claim space as their own but also to become visible. And it seems like maybe pirate radio does cultural work above and beyond sharing news and information and music.

LM: Oh yeah.

AS: But has something to do with the politics of not visibility but audibility.

LM: Yeah, and one of the things that I talk about that I’m also inspired by . . . There is a big upsurge in scholarship on Latin American radio, a lot of which is pirate radio, although plenty of it is not. And Casillas’s (2014) book came out about this a couple of years ago, which is fantastic, and talking about different Latinx communities that are already visible, but radio takes up space in a different way that does create kinds of vulnerability, but also that allows, for example, folks can be on the radio and talk about their immigration status and be anonymous in the sense that they can’t get identified, but they still are present and taking up space as people who are in the city, which I think is really great. I also was interested in the politics of . . . As a listener, if you’re playing the radio, you are actually visible as a listener to that. And that is a vulnerability. So if you are playing music that identifies you as someone connected to the community that is making that music, it can be affirmative, but also risky. And that’s for me where the sort of intimacy comes in, that you’re revealing a vulnerability. And so that’s part of it as well, that you’re taking up space on the airwaves, but once the radio broadcast reaches you and your body if, if you are responding in any way that is visible to others, you have marked yourself, and marked the space, and that’s an interesting negotiation with a lot of power dynamics in it.

Nancy Baym

AS: Nancy, thanks for taking the time to talk with us for this introduction to the *IJoC* Special Section on Sonic Publics.

NB: Yay. Thanks for putting it together.

AS: It’s very much our distinct pleasure. So to briefly introduce you, you’re a principal researcher at Microsoft Research New England.

NB: That’s right.

AS: You have a long history studying both communication systems and musical cultures and industries. Do you want to talk a little bit more about maybe your new book and how that provides an avenue into some of the stuff we’re going to be talking about with regard to this paper?

NB: Yeah, so the new book is called *Playing to the Crowd: Musicians, Audiences and the Intimate Work of Connection* (Baym, 2018), and it's about musicians' relationships with audiences, and how that's been changed by social media. At its heart is sort of an argument that the economic value of music, inasmuch as it has economic value, stems entirely from its social value. And it tries to articulate that social value and really focus on the social value of music. In terms of connecting to the article and the issue it speaks to, when I started going to (you're going to be doing some editing here, I can tell), I started attending a lot of music industry events. And one of the things that really struck me about them in the last few years was how they were turning more and more to blockchain as a solution to a lot of revenue problems in music and other kinds of problems also. So the book itself doesn't really deal with blockchain and the issues in the article but the larger context of the music industry in crisis, or *industries* in crisis, and people trying to figure out ways to protect rights, to protect credit, and to control flows, or at least if they weren't going to control flows, to control the kinds of metadata that went along with flows, and to find ways to have sustainable careers in an industry that's undergoing tremendous change, were topics that I was hearing a lot at those events. And so the book leads to the article inasmuch as it opened opportunities for exposure to those kinds of questions.

AS: And I do want to briefly talk about your coauthors on the article, Andrea Alarcon and Lana Swartz?

NB: Yeah, so Lana Swartz is a scholar whose work is about payment platforms as a mode of communication. She did her PhD at USC Annenberg, which is where you were, as well. She's got a book that's come out recently with Bill Maurer (Maurer, Swartz, & Sterling, 2017) about different forms of money that's really, really interesting. So she's got a lot of expertise in blockchain, has done a lot of going to financial tech conferences and studied the financial tech sector quite a bit as a communication scholar. Andrea Alarcon, who is now a PhD student at USC Annenberg as well, was the research assistant with me and Mary Gray and Tarleton Gillespie at the Social Media Collective at Microsoft Research New England, and she started off helping with the project and was so incredibly helpful that she became the third author.

AS: Very cool.

EC: Do you want to maybe tell us about what do you think that focusing on the music industry helps you understand the blockchain? So I feel like a lot in your work you focus on various sort of Internet-related topics, but then you sort of examine it through the music industry, and you bring really great input. So for example, I teach a lot about your article about metrics, and I feel that focusing on the music industry actually brings a different kind of perspective on metrics. So what do you feel that examining blockchain in the music industry, especially since this is a Special Section about the sonic? What do you feel that, how do you feel that it helped you reveal things about blockchain that you wouldn't otherwise?

NB: I think a lot of it has to do with the ways that music industries and music in general are always ahead of the cultural curve on anything. So, what you see happening with blockchain and music now is going to happen in other industries imminently, both successes and failures. And certainly ideas about it. And at the same time, I would say that looking at both the music industry and blockchain from the

perspective of communication technology scholarship allows you to think about the ways in which these things function as discourses, as well as fact, so you can step back a level and critique the discourse of blockchain as it's functioning in music in a way that resonates in other kinds of blockchain applications as well.

AS: So you use this notion of a convening technology.

NB: Yes.

AS: So if I understand correctly how you guys are using it in the article, what you're basically saying is that blockchain may or may not serve the functions that it's celebrated and anticipated for, which is to have a more efficient flow of metadata and revenues throughout the music industry ecology. But what it certainly is doing is bringing a lot of different stakeholders to the table to identify the challenges currently facing the music industry, and that in itself is a useful function for it to serve.

NB: That's it exactly. Different people are being brought to the table who, I've seen them say on panels, "We're on the same panel and we hate each other," so yeah, absolutely the threat or promise of blockchain, depending on where you sit, has gotten people to the table who otherwise not only don't have conversations with one another, but view one another with tremendous skepticism. So the fact that they've been brought together by this technology, I think, is a way of thinking about technologies that gets us beyond the utopian-dystopian framing that we usually use when we think about new technologies, in that it says, "You know, sometimes utopianism is really useful or dystopianism is really useful," because what it does is that, regardless of the actual technological outcomes, the threat or the promise can bring people together who would not otherwise have conversations. And the solutions that come of those conversations may not be the technology that instigated those conversations, but by bringing those people together, it's serving a really productive function.

EC: Did you see specific tensions around the fact that blockchain is supposedly a peer-to-peer decentralized technology, where as we know, and also you've written about it, Aram, I know, you've definitely written about it, that the music industry has been quite a centralized industry or definitely the people who are the owners of the music want to keep it quite centralized. What are the discussions that you've seen, or the tensions around that?

NB: Definitely there's tensions around decentralization versus control in this whole conversation. And I think that's one reason that while some people view it with great optimism, other people view it as a threat, but they both find that they need to talk to one another. Since we wrote that article, blockchainmedia.com has signed contracts with major record labels. So we're actually seeing really productive collaborations come from this decentralized hope for blockchain and the centralized demands of major industries. I think that some of the problems are really shared, so that the major music industries, even as they feel threatened by decentralization, they're also threatened by really shoddy recordkeeping and by really shoddy rights management. So the same rights holders who might want things to be more centralized also want the metadata to be accurate. And metadata is a really boring topic in a lot of ways, but it's really absolutely crucial to all of the monetary flows right

now. So, I think wherever you're standing in the music industry, you're still invested in the idea that there's accurate metadata and you know who has the rights to the music and that payments for music use happen. So even though there's that tension, there's a shared concern with making sure that people get revenue for the use of music that is intellectual property that has terms for its use.

AS: Let me push back on that a little bit. So when D.A. Wallach, who you cite in your article, first published "Bitcoin for Rockstars" back in 2014 (Wallach, 2014), I interviewed him at this event.¹ And one of my main concerns that I raised for him was this: After researching the music industry for a couple of decades, one thing has become very clear to me, which is that this is an industry in which data errors and omissions are not accidental byproducts, but are in fact organized strategies of many of the major players, as ways to either prevent or delay the payment of royalties to the rights holders who work with them, right?

NB: Mm huh, yeah.

AS: So there's a long, long, long history of major record labels cooking the books so that they don't have to pay as high a royalty to the performers as is stipulated in their contracts. And even in cases where publishers and record labels are co-owned, the two arms of the corporation kind of collude to cook their books together so that there are no discrepancies in terms of the balance sheets when artists and songwriters audit the uses of their works. So if you accept as a kind of *prima facie* that the music industry historically has thrived on developing revenue by hiding information in order to cheat its partners—I mean, let's call it what it is. How do you square that with claims that the efficiency introduced via blockchain is somehow going to be the panacea that solves all the industry's problems, or even improves relations between the disparate stakeholders and partners working across the industry?

NB: Well I guess I have two responses to that. I agree with everything you just said. I think the big difference right now is that the labels are among the people being cheated. So it's not just them doing the cheating and it's a little bit different when the revenue isn't going to them because the streaming services or YouTube or whoever is keeping it for themselves. It's one thing to be the people who use opacity so that you can keep money, it's something else to be the person against whom opacity is used so that you don't get money. So I think it's which side of the fence you are sitting on, and some of those people who have been obscuring information in order to keep assets are now finding themselves kept out of assets because of those same lacks of transparency.

AS: We are shocked! Shocked to discover that books are being cooked here!

NB: Shocked to hear that we can be the victims of our own shenanigans when others learn to use them as well!

AS: Yeah.

¹ Video of the interview is available at <https://www.youtube.com/watch?v=wpgkGXCN3IY>

- NB: Yeah. So I think that's one answer. The other answer is that I don't think the blockchain is going to be a panacea for these things. People like Benji Rogers (2015), who we talked about in the article, one of the things that he talks about is that whether they want it or not, they don't really have a choice, because if you reach the stage where most music is going out with accurate metadata on the blockchain, then the labels will find themselves shut out of licensing and things like that, and they'll lose revenue because people will say, "Oh, I can license this by clicking a button; why would I go through all that work, trying to find out who the publisher is to get rights to use this thing, instead?"
- AS: Absolutely.
- NB: So that's another reason to be afraid, is that it's a threat to the business model where they're the only ones who own these things. And they're the only ones who are able to control that information.
- AS: And it's not just the labels. It's the whole ecology. I mean, at the time I interviewed him, Wallach was the kind of the chief digital imagineer for Spotify.
- NB: Yeah, artist in residence.
- AS: Yeah, and I told him you're going to put your own employer out of business, right? I mean, Spotify's principal job is to be this kind of nexus of permissions connecting consumers with content owned by a disparate range of rights holders. If that, all that stuff gets automated, you don't really need a Spotify because there are ample libraries of content available on the Internet. And if there's a backend that's managing the flow of rights and revenues associated with them, what function does Spotify have, other than just being a nice interface, which is, you know, something we shouldn't underestimate?
- NB: Yeah, I wouldn't underestimate Spotify's value as a nice interface and as a one-stop shop for accessing music, and I wouldn't underestimate their algorithms and their playlists as really important influencers. I think they're doing a lot of curational work beyond aggregation.
- AS: Sure. Yeah, I mean I think last time I read a figure, something like half of the streams on Spotify were in curated playlists, which also brings them a nice revenue stream in the form of payola.
- NB: Well yeah, but also some of it is payola and some of it is not.
- AS: "Promotion."
- NB: I mean, there are also independent artists who are finding, you know, "Hey, whoa, I got on a playlist and suddenly I'm making money for the first time," so I'm not quite as cynical as you are, I think, about all of this.
- AS: No, you're absolutely right; there are there are non-evil reasons that Spotify benefits from promoting its playlists. And actually, just today, the day that we're conducting this interview, Spotify has taken

out of beta a tool that it's providing to independent musicians to communicate with playlist curators to try to get that kind of reach. And yeah, that is a real boon for working musicians.

NB: Yeah. And I don't think we should underestimate the value of having centralized resources for accessing music. I think that if we reach a point where every artist has got their own song on the blockchain, and it's up to the user to figure out where music is and find it through a billion different sources, we're just sort of descending into a certain kind of chaos, that centralization has its challenges, but it also has its benefits, and I think most people actually want some level of cultural curation to help guide them through the incredible quantity of music that's out there.

EC: Yeah, maybe just for a final question, because we're running out of time: One of the things you say about convening technologies is that sometimes there are some people who are invited to the discussions and sometimes there are people who are not invited. So can you maybe, to wrap up the discussion, who are invited, who are not invited? And how do you see the discussion sort of evolving in the next few years, in terms of who is invited and not invited?

NB: I think the people who have been invited is a pretty broad swath of music makers of record labels of rights holders and of technologists. I think the most conspicuously absent group of people is audiences and fans, who are very rarely discussed in these discussions. I mean, it's sort of shocking, really, how rarely the word "fan" or "audience" even appears in any of these articles or panels or discussions. In terms of audience that's present, or the people the people who are present in the discussion, I think it's been a really wide swath of people from independent artists to major artists to management to labels, rights holders, technologists, and also I should add in music educators as well. I think the group that's been conspicuously absent in all of this has been fans and audiences, who are just very rarely mentioned, even as the assumption is that they're gonna love these technologies, and often, they're posited as people who are going to be really excited because they recognize that this is all the way to get music much more directly to creators. But all of this rests on assumptions about audiences, and they're pretty much never panelists in these discussions.

EC: Okay.

AS: So last question, I guess, is how do you see the role of the researcher in trying to address some of those inequities, in terms of the conversations emerging around new technologies, in terms of both validating exciting new ideas and applying the requisite level of skepticism to some of the overoptimistic or utopian dimensions in this conversation?

NB: Yeah, I think you just articulated the value of the researcher. I think that what we bring is the ability to step back and look at it from a bit of a distance, where we're not so invested in the outcome, and to be able to say, "Okay, well, here's ways in which this conversation resembles past discussions with past technologies and other historical moments. And here's ways in which it's different. And here's goals that are realistic, and here's goals that are probably a little bit high in the sky." At the same time, one of the challenges in writing this particular article was that, although I'm very, very skeptical about blockchain, I have tremendous respect for the people who are working on this, and I really

believe that they're really trying to do good work and that they've got all the best interests, and I really want them to succeed in reaching their goals. I have doubts about whether this technology is the vehicle for doing that. And it was kind of funny when we wrote the article, I bent over backward to try to not be too judgy and not be too cynical about blockchain and the way that I wrote it, because of the respect that I have for the people about whom I'm writing, and one of the reviews came back saying that I was too enamored of blockchain and that we needed more distance. Right. So maybe I went too far in the other direction and had to back off a little bit and bring some of my cynicism back in.

AS: I can't reveal who the reviewers were.

NB: I'm not asking; it doesn't matter. But I mean, it was helpful to know that it read as though I drank the Kool-Aid myself because I was trying very hard to avoid being too cynical when I really do believe that these people are doing good work the best they know how, and that they may very well create positive change, even if it doesn't look exactly like they hope it will.

AS: Well, Nancy, it's always a pleasure, and always too short.

EC: Thank you very much.

NB: My pleasure.

Aram Sinnreich

EC: So in this session, I will be interviewing Aram about his article. Hello.

AS: Hey, how's it going?

EC: Good. Very good. I'll just briefly introduce you. So Aram Sinnreich is a professor, and the head, I think now, of the Media and Communication Department at American University.

AS: Communication Studies. Yeah.

EC: And Aram has been writing for a long time about the music industry, but also about piracy and a lot of the politics around copyright and the technologies around that. And his article is very related to that, as well. So today, I'm going to ask you a bit about what—sort of, why did you write this article, which I think for both of us was very interesting to ask all of the participants; you never actually quite know why people start to write about something. This is a great opportunity to actually ask that. So I think that would probably be my first question. So what drew you to write your article?

AS: Well, that's a big question. So I guess I've had a lifelong fascination with how and why musical style changes. How it can mean so many different things to so many different people. You know, I have, I've frequently for decades had the fantasy of like, "Oh, if I could go back in time and get J. S. Bach

and bring him to the present, and play him the music of John Coltrane, like, would it make sense to him, you know? What would he think? What would he feel?" And I'm also, as a media scholar, somebody who's always fascinated by how laws and technologies kind of coevolve. So this relationship between music, law, and technology has been a major strain in a lot of the work that I've published over the years. My book *Mashed Up* (Sinnreich, 2010) was very much about that, my book *The Piracy Crusade* (Sinnreich, 2013) was very much about that. And in my forthcoming book, which is called *The Essential Guide to Intellectual Property* (Sinnreich, 2019), I have a whole chapter where I kind of, you know, what I'm trying to do in that book is to kind of reveal the hidden roles that intellectual property plays in human culture and society and markets. Because people tend to think of it as this weird kind of wonky, you know, this arcane subject that's just kind of sitting gathering dust in a in a dark corner somewhere. And what I want to show in this book is how central intellectual property is to so many of the cultural and economic and social processes that we encounter on a daily basis. So, in this book, I spent a chapter exploring the last 500 years of Western cultural evolution in music and in visual art. And looking at the kind of integral role that that intellectual property and mostly copyright have played in that process, really from the very beginning. And when I was done with the book, I kind of felt incomplete. Because I felt like I had done an interesting kind of historiography of music and copyright, but hadn't really theorized it adequately; it wasn't really the appropriate venue to do new theorization.

EC: So 500 years were not enough. "I needed a bit more."

AS: You know, this is to me, this is the Story with a capital S. You know, this is *it*, this is what I'm about. This is what I think is most interesting.

EC: Yeah.

AS: So, I kind of took the beginnings of the story that I had sketched out in the book, you know, in this kind of half a chapter, and I theorized it. And I thought about what am I actually saying here, right? What are the moments of change? What are the relationships between those moments? What's causal and what's merely correspondence? And I came up with this kind of theory of this cyclical five-moments model of stylistic evolution, where you have laws influencing markets, and markets influencing codes and practices, codes and practices influencing technologies, technologies influencing our kind of conception of how society works. And then those in turn influencing the laws in this kind of never-ending cycle. And I got to go through it four whole cycles. So, kind of 21 moments from law to law. And it was actually a really interesting exercise, thinking about each of those points of correspondence. These moments in history where one kind of change contributed to another kind of change. And I'm not suggesting this is like a master history. Or this is the only version of the story. And I say very clearly in the article, you know, you could rearrange the five moments in a different order than the one that I presented them in, you could choose different moments, you could choose a different time scale, you could probably even apply the same model to not just visual art, but also language or subcultural style or any other kind of field of human expression. The key here is this interpenetration between things that we think of as very separate: laws and technologies and cultural expression, and understanding that they're really flip sides of a multidimensional coin.

EC: Okay, and how would you say in terms of the influence of each of these components, because . . . one could say, "Oh, are you doing like an ANT sort of analysis?" but from what I understood from your article, it's not really about that. And you are giving a lot of sort of importance to the way that people sort of play and mix and how they interact with these kinds of laws in each period. So how would you say—because you're basically combining different kind of fields, you know law, music, media—how would you say that you're engaging with this?

AS: Well, ANT, you know, actor-network theory, is obviously a huge influence on me and on many other scholars who are interested in how media systems and social processes change in conjunction with one another. And absolutely, the way that Latour (2005) and many other adherents of that school break apart concepts like industries and technologies, and understand them to be kind of constellations of forces with multiple stakeholders, each coming with their own agenda, trying to shape a complex system in order to produce meaningful outcomes. You know, I'm absolutely drawing on that.

But it's not a strict ANT analysis. I mean, I'm much more interested in the actual details of cultural style than most people who study culture. You know, there's this, this famous quote from Stuart Hall (1988) who said something to the effect of like, "I'm only interested in popular culture to the extent that that it serves as a locus for the, you know, as a battleground between multiple social forces; otherwise, quite frankly, I couldn't give a damn." And I remember reading that for the first time, you know, 20 years ago or whatever, and being like, "Oh my god, you can't give a damn? Like, I *do* give a damn. Culture is where I live."

I have like a disgustingly intimate relationship with culture. . . . And so I can't treat it, you know, I can't claim objectivity. I can't treat it clinically; I can't pretend that I'm somehow . . . you know, I can't do Donna Haraway's (1988) "god-trick" and pretend I'm above it, and I'm just looking down at it. You know, my, my take on culture is very, very situated and it's very invested. And, you know, I'm a musician myself; I make music. I've been a member of several musical subcultures over the years. I came up in New York City and cut my teeth playing in the New York punk, reggae, jazz, and R & B scenes, and you know, my investment is very much about a . . . ultimately about a vision of human society in which I feel more organic and equal and democratic musical processes contribute to a more organic and democratic society.

EC: All right, fair enough. And is there a specific moment that maybe you can elaborate a bit more and sort of give an example? I think you wanted to talk about Cardi B, as far as I remember. But if you have any other example, or a specific moment that you specifically like, where you think they're specifically maybe more important than the others and give us an example? So we're sort of going to get what you're talking about in the article.

AS: I wouldn't say there's a moment that's more important than the others. I think it's easier for people who don't spend all their time geeking out on this stuff to relate to the more recent examples, and Cardi B is a more recent example. So I talked about "Bodak Yellow" in this article because it's this really fascinating artifact, right? So I mentioned before, I'm a New Yorker. I'm very much of that

generation where, you know, native tongue hip-hop groups like A Tribe Called Quest and De La Soul and Leaders of the New School were kind of you know *the . . .* you know, that was the moment during which I was a young person entering into the music scene, and I was very much invested in that kind of vision of New York or East Coast hip hop. And because of that, and once again, I'll admit, I have a very kind of biased notion of New York hip hop that maybe goes through like Jay Z, but doesn't go much beyond that, right? And so, and that's just me being a cranky middle-aged man. But Cardi B, who's, you know, a phenomenal performer and rhymers is somebody whose musical style sounds to my ears to be very southern. The whole trap phenomenon sounds exogenous to the New York culture that I know.

And of course New York has always been a fusion-based culture, right? Unlike someplace like you know Nashville and New Orleans where you have, I think, very hermetic music culture that maybe draws on diasporic aesthetics, but it's very much kind of like a hothouse or a pressure cooker that develops its own sound, New York as a city of immigrants has always pulled in everything it can into this kind of fusion-y sound that's from there and from everywhere at the same time. So, that being said, it's really interesting to me, "Bodak Yellow" was to my memory the first major hit to come from a New York artist that sounded to my ears like southern American musical work.

And the reason for that, I think, has to do with the relationship between law and technology and music, which is that, you know, after the famous sampling-based lawsuits around the turn of the 21st century, you know, mainstream hip hop that's distributed through regulated channels, like the radio and television and major Internet portals, essentially froze in place. The environment is so litigious that musicians couldn't really innovate, they couldn't really bring the aesthetic forward at all because the risk of misstepping with, you know, with these copyright precedents in place is so high that, even if the artists are game, the companies that distribute them are so risk averse they're not willing to do it. And there's this kind of cartel relationship between the major labels who are only willing to license samples in a kind of "you pat my back, I'll pat yours" kind of relationship.

And so this thing happens, starting about 15 years ago, we see the precipitous rise in these in these hip-hop mixtape networks that were really not Internet based, let alone radio or television based. They were geographically based. They were materially based. So you saw, you saw places like strip clubs and barbershops and corner stores being like the central nodes in this distribution and promotion network. I actually interviewed DJ Drama, who was the DJ behind Gangsta Grillz, which was one of the early kind of super popular hip-hop mixtapes series, back for my first book, for *Mashed Up*. And you know, even then, I told the story of how the music industry kind of had this kind of split personality with regard to him, where they would pay him \$25,000 or \$30,000 to include one of their new singles on Gangsta Grillz, and then they would raid him with like a 40-person SWAT team and drug-sniffing dogs and seize the very property that they had paid him to reproduce, right? The only contraband they found were mixtapes that he produced after being paid by the people who commissioned the raid.

So that tension has been in the mixtape world for a long time. But I think because it's been much less regulated than the mass media or even major Internet portals, there's been a lot more freedom

to innovate. So it's not an accident that the new sound, that the trap sound, came out of these underregulated networks, because where else could it come from? Right? So the fact that you have "Bodak Yellow," this kind of distinctly southern-sounding song, being *the* definitive New York jam in 2017 is evidence of the power of underregulated networks as the kind of site for cultural innovation. And the failure of our mainstream media channels as being places where artists can thrive and innovate and take risks and do all the things that are required for cultural innovation to actually happen.

So again, I'm not hating on Cardi B. I actually, I think "Bodak Yellow" is a, it's a great tune. Like, you'd have to be an idiot to argue that it didn't seize New York by the lapels. And, you know, shake it vigorously, and that the city wasn't behind it 100%. But it is still a song that is essentially southern in its aesthetic logics. And that could only happen because of the processes that I was just talking about. But you could go back, you know, 300 years, as I do in this article, and point to the same kind of dynamics happening in Europe, you know, after the rise of the publishing empires and the creation of musical copyright. So it happens over and over again. This just happens to be the recent version that I think is particularly interesting.

EC: Okay, fantastic. I think it was a really good example. Let's try, when you're publishing this, we can tweet to her and see what she thinks about this opinion.

Elinor Carmi

AS: All right, so I'm here with my coeditor, Elinor Carmi, who is a postdoc and research associate at Liverpool University in the UK. And we're going to talk about your article "The Hidden Listeners," which I think is a phenomenally interesting piece of work, and I believe it's related to the dissertation that you recently wrote for your doctorate, is that correct?

EC: Yes, you are correct. So this is basically a sort of a bit of a development from what I've written in my PhD. So this has been a work in progress for the past six or almost seven years.

AS: Congratulations, it's beautiful to see longstanding scholarly investment come to fruition.

EC: Great, thanks, it's been a bit weird because a lot of the things that I've sort of . . . a lot of the findings have been revealed throughout the time, especially in the last year with Cambridge Analytica and everything, the more concentration or sort of more focus on content moderators. So, it's great to see that more people are, you know, interested in this.

AS: So, let's just dive straight into it. The key point that you make in your in your article is, is that we can understand the workings of power through the technological stack better through an auditory metaphor than through a visual one. And we usually think about power and technology in terms of visibility. We talk about, you know, the most famous example is Foucault (1995) invoking Bentham's panopticon. But you know you could also look at John Berger's *Ways of Seeing* (2008), or Marita Sturken's *Practices of Looking* (Sturken & Cartwright, 2001). We really talk about culture

and power in terms of what the eye can see. And you have this, I think, really important insight—that not only do the ears process information very differently than the eyes, but the brain has a different set of affordances in terms of interpreting auditory information than it has with visual information. And that those affordances really in some ways match the workings of power in a technologically mediated system better than the visual metaphor does. Do you want to speak to that some?

EC: Yes. So this was basically really sort of a “grounded theory” project. It’s not like I immediately thought about that. But the more that I investigated, in my PhD I basically look at three different time periods. So it goes from a very nonmetaphorical use of sound and noise, where I look at the telephone operators and Bell Telephone, and then toward more metaphorical, but what I realized is that this whole notion of vision—and it’s quite astonishing to see, you know, even when we talk—“you see,” “I see,” and ways of thinking and conceptualizing. It’s so ingrained in us that the sort of the metaphors that we use and the way that we think is through vision. But actually the more I investigated, I saw, well, actually there’s so many different entities involved and different communication channel, which I think, especially with a platform such as Facebook, and also the Web, which are two domains that I’m investigating, there’s so many multiple, multilayered channels that vision just cannot account for all of these multiplicities of both channels, actors, users, workers. And I think that with listening and sound, it enables us to sort of cross these boundaries. So basically, sound enables us to reorder our notion of boundaries of space, but also of bodies. So this was something that I developed as I sort of gathered my data, and I realized that it’s a much better metaphor to use.

AS: So sound, just thinking out loud here, sound allows you to perceive multiple layers and to negotiate between those multiple layers of information in a way that vision really doesn’t. When you see an object, it’s opaque. You can’t see what’s behind it. But you can always hear what’s behind a sound, right? And our brains perform this amazing function called “the cocktail party effect,” where we can be in a room full of hundreds of people talking, and we can actually just pay attention to the person that we’re talking to. That doesn’t mean we don’t hear everybody else. But we have the capacity to kind of focus on that particular piece of data, and through sonic principles like reverberation and spatialization, we can also understand the relationship between each of those data points, right? I can hear that those people talking about the football game are away to my right, and those people talking politics are away to my left. And understand what their spatialized relationship to each other is, even while I’m focusing on you, talking to you at the party.

EC: Exactly. So this is what I’m talking about in terms of tuning in and out of different spaces at the same time. But another thing that I’m talking about is this constant process of listening, which I think that again, with vision, we’re usually talking about maybe one event of seeing something or a vision, and I think that what we see with platforms like Facebook is this constant listening to our behavior and constant tuning in and out of different spaces. So yeah, so I found that to be much more fruitful, and I’m writing my book now. And I’m finding myself having to correct sometimes when I write “I see,” or things like that and it’s, you know, it’s so ingrained.

AS: I hear you.

EC: Yeah, it's like, I was like, "Wait a second, I don't want to write that." But it's so automatic that we don't even think about that. So I find that a lot of the times when I'm talking about my work, it's really quite difficult to persuade people because it became an automatic and a natural way of thinking. And so again, I think that we're in a really interesting moment where people from different kind of senses, so there are other scholars who are trying to say that also touch and also other senses are quite important.

AS: Sure, David Parisi (2018) just published a book on the subject, which is, you know, a great analogue to your argument.

EC: Yeah, exactly. So this is exactly what I was referring to. And I think that it's really great to sort of open up our theoretical and conceptual vocabulary and ways of thinking and not to hold on to the vision so much, because I think that we're missing a lot of things on the way if we focus on that so much. So, again, it's not in order to replace all of the visual conceptualization, but it's, it's, in a way, adding to it.

AS: Right. It's to undermine the ocularcentrism of our thinking in media and communication studies.

EC: Exactly.

AS: The other kind of component of your article is that you relate this "processed listening" that you're describing, this negotiation of power through sonic metaphor, to labor relations within specifically media industries, like the old telephone system and the new social media system. Do you want to talk a little bit about what you see as being . . . I mean, are you connecting your work here explicitly to notions like immaterial and affective labor? Do you see processed listening as a specialized skill that has value in the labor market, that's being exploited? Talk to me about that dimension.

EC: Yeah, so first of all, I want to say that what I've noticed in a lot of sort of new media and Internet conferences is that a lot of people don't realize that there's a much longer history to things, and I think a lot of people (obviously not you), but a lot of other people sort of do not acknowledge the fact that there are sort of histories that are seeping into the contemporary power relations and are feeding that. So for me, it was really quite important to look at the historical effects and sort of longer lineages of that. And what I noticed is that, yeah, the telephone operators of Bell Telephone and contemporary content moderators have very similar work conditions. And I wanted to point to that because first of all, they don't get the credit that they deserve in terms of how they are actually quite key and crucial to the maintenance of these kind of media systems.

AS: And is that because it's feminized labor?

EC: Exactly. So lot of the times, especially with Bell Telephone, it was at the beginning it was supposed to be men because, of course, women couldn't be trusted. But then when they saw that, actually,

the men weren't really trusted because they were young boys. And they were really all over the place. Then they were giving it to women. Of course, they were low paid and they were branded as the telephone. So they were sort of this kind of desired object. And I have an article from 2015 which is called "Taming Noisy Women" (Carmi, 2015), which explores that more, you know, I focus more about that aspect.

AS: So, it's this double form of exploitation. Whereas on the one hand maybe the heightened capacity to exercise processed listening that women have in society is being exploited and hidden and turned into a kind of anonymous component of this media system which is taking all the credit for, essentially, the technology is taking the credit for what the human contributors are doing right?

EC: Exactly.

AS: But at the end at the same time, that capacity, which could be used toward ends that are more in the interest of the women who are actually doing the work, is being blunted in its social and cultural force. And these laborers are essentially not using their processed listening skills to do things like organize, speak out, stand up for their rights, what have you.

EC: Yeah, even though in that article, I do argue, and I do show how they actually did organize. And this is partly why Bell Telephone automated the work of the telephone operators. But the kind of work that they've done was kind of borderline, and you could call them engineers as well. But of course, they weren't called engineers and they weren't given any kind of credit for their work. And, in a way, if you think about content moderators, especially in today's extremely toxic environment, basically what they're doing is a very sensitive and quite crucial role.

I remember telling a lot of my friends who basically, most people are not even aware that they exist. And when you do talk with people about them, they're like, "Wow this is such important work. Why don't they get the same credit that the engineers get, who are of course mostly men?" But they don't. And not only that, they don't get hired directly by Facebook and these kind of companies. They are hired through these kind of third-party companies and are usually hired in Asia. They are usually women and they're usually working in really horrible conditions. And so you see this kind of both, especially with Facebook, it's also racial but also gender discrimination, and of course both with the Bell case and with Facebook, they pay these workers really low wages, even though the kind of work that they're doing is extremely crucial.

So I wanted to point to that. And I think another point for me that was very important was the fact that how our instantaneous real-time experience is so mediated and we are not aware of that. I think that today, more and more people hopefully are aware. However, if you talk to a lot of people, you know, everyday people, most of them are not aware that a lot of things are being censored, monitored, filtered, and things like that. And what I really wanted to show and sort of point [out] is how our experiences are extremely mediated, shaped, and managed. And this is quite important because if we don't know that, we can't really demand to know what's happening in the back end. I want to know, for example, if my friend's nipples are being censored because she's breastfeeding

her kids. Okay. So that's one of the things that I want to know about. But I want to know about a lot of other things. And the way that Facebook has been concealing these processes is quite important because then we can't really organize and unionize in a way that we can demand, you know, more transparency and more showing what's happening in the back end.

AS: So how can—and this is the final question since we're running short on time—but, what's the desired outcome here? I mean, you talk about unionizing and organizing, and obviously that's always great. But how specifically can the affective laborers who comprise part of the social media system in this invisible way use their processed listening skill set to exercise more power, both within their labor relations and in society overall?

EC: I think it's a tough question because I think that at the moment they don't have a lot of leverage, unfortunately. I think that we see more workers trying to unionize. But I think that some of the demands should actually come from the users themselves. And I see it on several levels. Because what I see is that actually, we need to think about these platforms in different ways, and perhaps also design them in a different way. So another article that I have is about cookies (Carmi, 2017). And a lot of these things is, the way that the back end is quite concealed from us. So a lot of the things that are happening, we actually don't see.

AS: But do we hear them?

EC: What?

AS: You said we don't see them. But do we hear them?

EC: We don't hear them as well, and we don't even understand that they're happening. And this is, for me, one of the most important things to think about. First of all, in terms of design but also in terms of workers' rights and to understand. So it's like a two-step process in the way that I see it. First of all, design these platforms in a way that enables us to hear everything that is happening and to empower us to make demands and to fight more. And also to fight for the people that are helping these platforms be more, I don't know, it depends how you see it, but sort of to help these places be a better, maybe, communities for us to communicate with each other.

AS: That's an optimistic ending for our conversation. I appreciate that.

EC: Yeah, I think it's important to keep optimistic these days.

AS: Yeah, no kidding. Well, I really appreciate you taking the time to talk about your article, and I can't wait to read your book when it comes out. Thank you so much.

EC: Cool. Thank you very much.

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