Critique, technology, and innovation: An interview with Darryl Cressman

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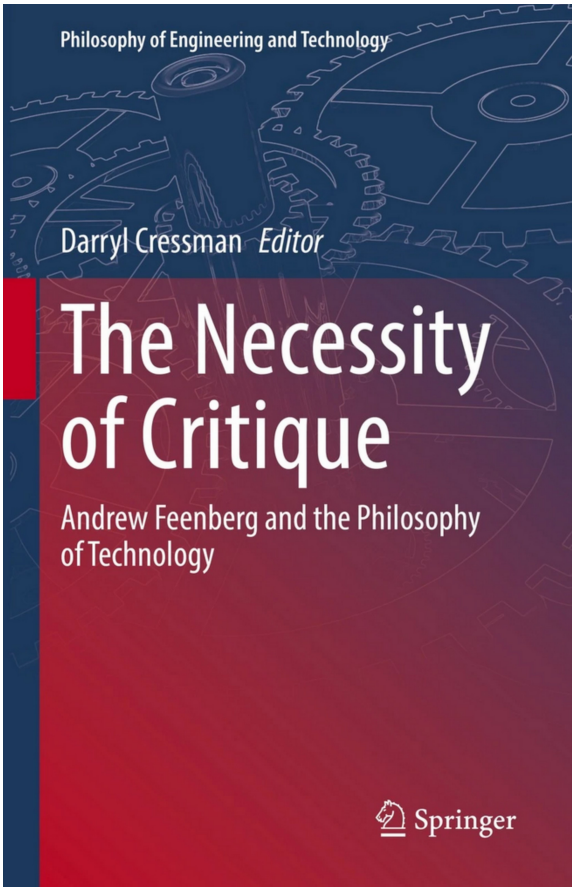
Transcript

Lisann Penttilä
lisann.penttila@kuleuven.be
Darryl Cressman
darryl.cressman@maastrichtuniversity.nl



ABSTRACT

Philosopher of technology, Darryl Cressman, is an assistant professor at Maastricht University. Cressman's work engages with a wide variety of disciplines and approaches, including Science and Technology Studies (STS), media theory, the history and philosophy of science, innovation studies, and critical theory. He is the editor of *The Necessity of Critique: Andrew Feenberg & the Philosophy of Technology* (2022), a collection which brings together diverse perspectives from various authors to focus on Feenberg's critique of technology. In this interview, Cressman provides insights into his philosophical roots, approach, and methodology.

Keywords: philosophy of technology; critique; innovation; Andrew Feenberg; Herbert Marcuse.

LISANN PENTTILÄ:
Your work, as a philosopher of technology, engages with a variety of disciplines and approaches. Could you tell us a little bit about your background and how you became interested in the philosophy of technology and the combination of approaches that you apply in your work?

DARRYL CRESSMAN:

I came to the philosophy of technology during my undergraduate studies where I read a lot of media theory. Coming from Canada, we would read Marshall McLuhan and Harold Innis and people like that. I was always fascinated by the way those writers emphasized how technology is intertwined with thought, ideas, and knowledge, and that these things are always together —you cannot abstract one from the other.

I began reading a little bit of philosophy of science near the end of my undergraduate degree, especially Thomas Kuhn. Kuhn's work really emphasized to me how you can think about science in a different way. I had never come across historical reflections on science, and looking at concepts like "paradigms" and "revolutions" was a real eye-opener for me.

From there, I went on to my master's degree. At that time, it was the early 2000s, STS was becoming well known across different disciplines, so my supervisor gave me a couple of books, like *The Social Construction of Technological Systems* (1987), by Pinch, Bijker, and Hughes. Through that, I became very interested in actor-network theory. I was not necessarily convinced by some of their claims, but I thought it was a fascinating way to think about the relationship between humans and technology. That was really my introduction to the philosophy of technology (through actor network theory) and from there, I got more interested in combining these ideas about technology with critical theory.

During my master's degree I came across Andrew Feenberg's work as well. I was writing about the methodological dimensions of both actor-network theory and critical theory. Then, after my master's degree, I went to study with Feenberg, and that involved reading and discussing a lot of philosophy of technology over the course of a PhD.

LISANN PENTTILÄ:
You've worked with and known Andrew Feenberg for quite some time now and you are also the editor of *The Necessity of Critique: Andrew Feenberg and the Philosophy of Technology*, which came out in 2022 as a commemoration collection. What surprised you most about the contributions you received? And what do you think it says about the research landscape today?

DARRYL CRESSMAN:
What really surprised me was the range of different disciplines in which the contributors were working. It was not just the philosophy of technology—although we certainly had people like that, such as Hans Radder, Alberto Romele, Frederica Buongiorno, and myself—but we also had people working in industrial design, STS, media theory, theoretical philosophy, and traditional critical theory. We also had two contributors from the Czech Republic who are Hegelian Marxists, contributing an essay on the history of 1960s Czech thought and philosophy of technology.

The range of different disciplines contributing to the book was impressive. I always try to move away from the assumption that philosophy of technology is an institutionalized discipline that contains a canon of works and requires specific training. I think the philosophy of technology should be reconsidered as being interested in different ways to think about technology, because that is what it really is. You do not need special training or intellectual history to engage with it. We see this across a variety of different disciplines—industrial designers, for instance, are philosophers of technology whether they like it or not. I work with many STS scholars in Maastricht who claim not to be philosophers, but when I read their work, there is certainly more than enough philosophy in it. What I hope opens up new trajectories of research is this idea that simply thinking about technology and reflecting on how we think about and engage with it *is* the purview of the philosophy of technology. I hope that is what comes from this book as well: a more inclusive and open-minded philosophy of technology.

LISANN PENTTILÄ:
The title of the book, "The Necessity of Critique", seems to imply a responsibility. Who is the subject of this necessity to critique, or in other words, whose responsibility is it to critique? Could you elaborate on this a bit?

DARRYL CRESSMAN:

Yes, the title actually came from reading Feenberg's work. I think the starting point is, as he writes, who we are and what we will become is as much a product and a consequence of the technologies that we currently have as it is a product of politics or the law and that these technologies could be different. I think that this is the starting point for a lot of work in the philosophy of technology: asking why we have the technologies that we do. Even that question, of why we have the technologies we do, implies a kind of critique because it encourages us to think that they could be otherwise or to look at the social context through which technologies are designed and their functions are developed, and to consider the meanings that these technologies are endowed with. To this latter point, to claim that something is evidence of progress or beneficial is not inherent to the technology itself but a meaning that we collectively endow these technologies with. Asking questions like that, I think, is a form of critique.

Critique is not simply this idea of "technology is bad and we have to get rid of it." I think that is one of the misconceptions about critical theory and the critique of technology—that it is technophobic in some sense or that it is some sort of variation of Heidegger in which you equate critique with escaping technology. These sorts of romantic laments are not what critical theory is, and the critiques that we engage with are not about escaping technology or being technophobic, but more about asking difficult questions about *why* we have the technologies that we do, how they come into being, and how things could be different. I think Feenberg's work points to that as well, as the necessity of critique, simply by means of critique we are opening up more expansive thought about technology.

The subject of critique differs from person to person. When I go back to visit my family in Canada, they ask me what I do and I give simple examples to show the ways in which technology is biased. I will say, for example, that I'm left-handed and technological design is biased to favor right handed people. We have to think about these biases, but all technology is biased; nothing is ever neutral. Those conversations, I think, are important. We cannot expect somebody who has a full-time job and a family to be engaged in deep critical reflection on technology, but we can start by asking simple questions about biases, about design, about what could be. I think the immediacy of our engagements with technology reveals potentials that are otherwise diminished, and I think that is very important.

Now, in the political realm, I think it is important for people who are politically engaged to encourage the inclusion of technology in political programs, not just simply saying that we need to innovate or increase productivity, but subjecting design, function, and meaning to the same sort of debates that, let's say, the law is subjected to. We vote or we align ourselves with politics based on attitudes and beliefs about certain things, like education or law for instance, but we rarely think about technology in the same way.

I once asked my students to survey the German federal election to see what each party had to say about technology. Every party had very similar things to say about technology. I think in the realm of politics, we have a responsibility to include technology in political discussions. Which trajectories and ends should we be aiming towards? I think these are political questions, and people engaged in politics should take up those questions as well. As academics, it is our job to do the research that allows people to make more informed decisions about technology. This research helps politically engaged individuals, policymakers, and citizens to ask difficult questions. That is an important part of our job as academics.

There are different norms and standards for different people depending on their subject position, but all of these lead towards a critique. And again, this critique is not about simply stating that a technology is bad or terrible, nor is it rooted in a misconceived idea of Luddism. Rather, it is about moving beyond merely describing what technology is and pointing towards what it could be.

LISANN PENTTILÄ:

To tie into this, what are your thoughts regarding academic philosophy given its specific demands and requirements? Do you think it's possible to live up to the ideals of critique within the academic context?

DARRYL CRESSMAN:

I hope so. It depends on what you want from an academic career. In Europe, at least, a lot of academic careers are based on funding opportunities, and the political economy of a career in philosophy or social theory requires, in many instances, a collaboration with public and private partners. Developing the sense of critique within that world can be a little bit difficult. And so, yes, I think opportunities emerge, and it is about recognizing and taking those opportu-

nities when they emerge while also balancing the realities of trying to have a career and doing what is necessary to maintain your place within the university.

LISANN PENTTILÄ:

Feenberg's critical constructivist approach is inspired by a wide range of intellectual traditions, spanning from the Frankfurt School to Science and Technology Studies (STS), and many other influences in between. He has been particularly influenced by his teacher, Herbert Marcuse, although he is also quite critical of Marcuse's work. As you mentioned earlier, Feenberg was also your teacher. In what key ways are your critiques of technology alike, and in what ways would you say they differ?

DARRYL CRESSMAN:

I think in many ways we are very similar in the sense that we take technology seriously and we try to develop a philosophy of technology that is specific to the realm of technology. Feenberg has developed a philosophical approach to technology that is not just an application of traditional philosophy to technology, but is unique to the study of technology itself.

As he writes, and as people who study technology know, when you are doing social theory, history, sociology, and anthropology—there is a recognition that the material world plays a role. You cannot simply bracket it off as neutral and say, for instance, "I am going to study the history of ideas". Ideas are often intertwined with technologies themselves. So I think that we share that recognition that technology always matters. Also, Feenberg's background and interest in critical theory are similar to my own. I have always found Marcuse's work quite provocative. If you are a student, it is difficult to turn down *An Essay on Liberation* (1969) or *One-Dimensional Man* (1964). These books are philosophically rigorous, especially *One-Dimensional Man*. It is the work of an individual who has thought about philosophy, critical theory, and technology for decades and has inspired many working in the philosophy of technology.

Feenberg's work has, in many ways, been an inspiration for my own and provided the foundation from which I think about technology philosophically. Where we differ, I think, is in the orientation of our research. His work is good at identifying the moments that demonstrate the limitations of technocracy, or what first-generation Frankfurt School theorists would call instrumental rationality. He uses empirical research informed by his philosophy to demonstrate

the limits of the totalizing ideas of technocracy, such as the notion that technology is best left with experts and that progress is a unidirectional, universal force. His famous example of the Minitel, or his fascination with the contingency of different artifacts and the plurality of meanings that can be attributed to them, is effective in demonstrating the philosophical basis of his ideas and recognizing the inherent potential of technology.

While I find this focus on moments of contingency and resistance fascinating, what I think is necessary now is more work on how contingency is restricted. That is, looking at how possible moments of resistance are constricted by forces that have endured for a long time—whether these are political or economic forces, forces that define who can participate in shaping technology; the limitations to potential and resistance are more interesting to me than case studies of contingency and resistance. I do not mean that in a gloomy way, in a Jacques Ellul sense of *la technique*. There are moments where we can see how technology *responds* to the interests of everyday users, but there are also moments where we can see how the interests of everyday users are *bound* by certain forms, traditions, and designs that become reified and enforced by different organizations. These factors limit the margin for maneuver. I am becoming more interested in how these elements shape the margin of maneuver that we have as users and citizens to direct the trajectory of technology.

LISANN PENTTILÄ:

This brings us to questions about the target of this critique. Feenberg's critique of technology often positions itself against deterministic and neutral accounts of technology. Do you think the sociopolitical landscape has changed since he started developing this approach in the late 80s and 90s? Is this deterministic way of thinking about technology as equally present now as it was then?

DARRYL CRESSMAN:

Yes, I think it's different, that is certainly true. But that idea that technology is autonomous still exists. We may not have the same sort of optimistic faith in progress that was once shared in the immediate post-war period in the West. But, when I talk to my students, they are all fascinated with AI and convinced that change is happening. They may not be able to identify exactly what it is, but they are certain that it is happening, it is unaffected by them, and that it will impact them.

This belief in the idea that artificial intelligence, or technology more generally, can be designed and developed—and have impacts on us—reflects a form of determinism when we resign ourselves to living with technology without equipping ourselves to shape it. One consequence of this determinism is a feeling of helplessness. People may believe we are on a dystopian path, but the assumption that there is fixed path is the problem.

I always think about self-driving cars. I used to attend conferences in 2017 and 2018 where people were certain that self-driving cars would be here by 2025, and there would be no more traditional automobiles. I thought they were neglecting so much within the scope of driving and just believing in the inevitability of this technology. Granted, it is quite lucrative to project these futures, but historically, we see that this is not the case. The future is unwritten, and we do not know what will happen. Yet, imposing this idea of autonomous and inevitable development onto technology still endures today.

LISANN PENTTILÄ:

One conclusion that is commonly drawn from Feenberg's work is that public participation in technical matters is good and we just need more of it. Are there other important take-aways from Feenberg's work that you think are often overlooked and that should be highlighted more?

DARRYL CRESSMAN:

I think another way to read his work is that he presents an intellectual history of critical theories of technology. If you read his work, he is a very thorough reader. He engages with Karl Marx's critique of technology and talks about early 20th-century German philosophers such as Martin Heidegger, going up to Marcuse. But he also engages with the labor process theory of Harry Braverman, the critique of empiricism with, for example, Lucien Goldmann, and the work of Gilbert Simondon.

So you can read his work as a political philosophy of technology, but you can also read it as an intellectual history *of* the philosophy of technology. For example, many philosophers of technology refer to what is called "the empirical turn," which acts as an intellectual history of the discipline. For some philosophers, this is a problematic history because it defines almost everything prior to the 1990s as "classical," thus dismissing any insights found

within this work while valorizing empirical case studies of technology that forego questions of power and politics for fear of falling too close to a classical philosophy of technology. This unidirectional model is not only incorrect, it is a poor way to think about intellectual history. I think the intellectual history of the philosophy of technology has many different paths that are very important. Still today, we can see people like Kate Crawford, Byung-Chul Han, and Shannon Vallor engaging in philosophical studies of technology, each with a different history. I think Feenberg's work opens up a particular intellectual history that is very important because it encourages us to read people such as Georg Lukács and to think about Hannah Arendt's work on technology and her influence from Martin Heidegger and Günther Anders. It involves recovering that rich history of the philosophy of technology.

So, I think that in many ways Feenberg's work engages with contemporary movements like STS and post-phenomenology, which he incorporates into his own ideas and sees the value in, while also recognizing the importance of older philosophies of technology without claiming that we have somehow surpassed or moved beyond these ideas.

LISANN PENTTILÄ:

Earlier you mentioned that when we are engaging in philosophy of technology, we are doing sociology, anthropology, social theory, etc. How important do you think it is that philosophers, or critical constructivists more specifically, remain in touch with developments in these fields?

DARRYL CRESSMAN:

Quite important. You can see this really work in the studies of environmentalism and ecology, which are very important for encouraging us to think about timescales and scope of inquiry differently. Methodological perspectives are important. If you look at something like studies of the Anthropocene, it encourages philosophers of technology to think about technology no longer at the artifactual scale—so, not just one particular technology but looking at the bigger picture. How does technology, in its entirety, have a relationship with a planetary scale of time, for example? When we talk about geological time, such as work in the Anthropocene, it encourages us to think about the historical time periods through which we think about technology as well.

Similarly, at the other end of the methodological spectrum, anthropology has been incredibly important for developing methods to look at how people engage with technology. I work with a lot of people who draw from ethnography to explore the engagements that people have with technologies. For philosophers of technology it is very important to always keep abreast of the insights of other discipline so that those perspectives can lend themselves to technology. For philosophers of technology, everything is the philosophy of technology. I think that is important to keep in mind because when sociologists study the social world, they are also explicitly or implicitly studying the ways in which humans and technologies interact. The methods, theories, and concepts developed in those disciplines are crucial.

I am writing a paper now that borrows from literary theory, for example, because I am interested in how a writer like Hans Robert Jauss engaged with literature and the history of its reception. Of course, equating literature with technology has been explored before, so we can see how literary theory can be translated to the study of technology in the same way. I may be borrowing a little too liberally from literary theory, but we will see how it works out in the end.

LISANN PENTTILÄ:

That sounds like a very interesting project. I would like to return to this concept of potential. Earlier, you spoke about how important this is in Feenberg's work. In your own work, you have stressed the importance of bringing together historical and empirical considerations to identify moments of potential—which you have already hinted at earlier. The concept of potentiality is also central in Marcuse, Feenberg, and many of the other thinkers you draw on. Why is this such an important concept to retain? Do you think it is missing in other approaches to the philosophy of technology? Is it what makes your approach, or Feenberg's approach, particularly distinctive from other approaches?

DARRYL CRESSMAN:

I would like to start with your first question about why potentiality is important. I think reading how Feenberg translates Marcuse's ideas about potentiality opens up different ways to consider technology. When we see, for example, a small bud on a tree, we know that it will eventually be something different from what it is right now. So we always have that tension between the empirical reality as we observe it and that which it contains. These two things are not distinct, right? We do not project something imaginary; the potentiality is inherent to the object itself. I think this is how Marcuse reads it.

What Feenberg does with that is argue that potentiality is not something that is added on to technology itself. We do not see the potential for it to be this or that and think it can be manipulated in this way or that way. We have to consider potentiality as something inherent to the object itself. This is difficult, I think, to understand because we are so used to thinking of technology as something that just is. Through empirical observation, we can study the functions of technology, describe what it is and how it works, but we do not see within it what it could be. I think this is where Feenberg translates Marcuse's work on potentiality to technology. Potentiality is not something that is added onto technology; it is something inherent to it. So when we study technology, it is not simply the description of the artifact itself, but also the potential of artifacts to transcend that which is given by accounting for what could be. Following Marcuse's reading of Aristotle, everything contains potential. I for instance contain the potential to be a very old person, and this will happen whether I like it or not. Empirically, you can see me and say, "Well, he is not 80 yet," but eventually, I will be 80, hopefully. That potentiality is there, and we need to translate this to technology itself.

You can contrast this with the study of ethics. Ethics is a popular topic within the philosophical study of technology, and it seems to be something that is applied to technology. Technology is seen as this almost neutral object that could be directed towards a variety of ends, and our job is to work with designers or policymakers to ensure these objects are ethically sound. Again, we are importing ethics to the object itself, which presumes an almost neutrality of technology. I think that avoids the inherent potentiality of technology. Ontologically speaking, we need to consider technology as always containing potential, not just something that is pure function, but something that contains both function and the potential to be something more. To me, that is a key aspect of a critique of technology or critical philosophy of technology—incorporating this concept of potential into the study of technology. It is really tricky and difficult to do.

LISANN PENTTILÄ:

This concept of potentiality seems intimately connected to the concept of imagination, and I have a few quotes here from both Feenberg and yourself. In *Technosystem* (2017), Feenberg writes that, "replacing the grand narratives of the past with the many local

narratives will free up the imagination to explore alternatives to both the existing society and the revolutions of the past."[1] You conclude one of your own articles, "Contingency & Potential: Reconsidering the Dialectical Philosophy of Technology", by stating that "the task at hand is to pay closer attention to the local situations where everyday users engage with the world as it is and imagine a multiplicity of potentials of what could be."[2]

The role of locality seems pretty central here, especially to the subsequent step of imagining potentials. What are the ways in which we can come to identify or know these local narratives and contexts? What kind of studies are needed?

DARRYL CRESSMAN:

Yeah, that is a good question. If we start with Feenberg's ideas here, I think what he is arguing—and this stands in contrast to a lot of critical theory that preceded his work—is that much of the critical theory work on technology has a universalizing tendency, considering technology not specific to any locale. For instance, when Horkheimer and Adorno talk about instrumental rationality, they are talking about technology in its entirety, a concept of technology.

Feenberg's work, philosophically—and this is in the concluding chapter of *Technosystem*—leads to this idea of local progress. Contingency and potentiality may be universal concepts when it comes to technology, but the ways in which these are enacted are always entirely local. This is because technology is always intertwined with local and cultural histories and the specific world within which we live.

I originally come from Canada, where the climate is very cold for four or five months out of the year. This requires certain imaginations about what technology can do and how it can work, which may be different from someone living in, say, Arizona. The location within which we live, work, and where our imaginations unfold, is unique and poses a challenge to that universalizing tendency.

I always use the example of hip hop and rap music in the South Bronx in the 1970s. You had a community that was effectively pushed out of their homes through the urban planning decisions of people like Robert Moses and music programs in public schools were gutted. There was a situation in which individuals wanted to be creative musically, using the means at hand to do so. Now, I do not think that would have happened in, say, Albany, New York, or

[1] Feenberg, *Technosystem*, 204.
[2] Cressman, "Contingency & Potential", 155.

Oakville, Ontario, or someplace else. But given the mix of people and resources available, this is what happened. It may have become a global musical phenomenon, but as a technological change, it was specific to that place.

Looking at the ways in which people engage with technologies in specific places—an engagement that corresponds with those places—reveals the locality of how potential is realized. This is the work of empirical case studies. Think of the Netherlands and cycling, for example. Before living in the Netherlands, I lived in Vancouver, where everyone wanted more cycling, but it is mountainous there and hard to bicycle for everyone. The Netherlands is a flat country, almost entirely constructed by the Dutch, making it easy to cycle. They can create a cycling culture because of their geography and weather. In other places, it is more difficult for cycling to take hold. We can see here how technological potentials always respond to local situations.

LISANN PENTTILÄ:
Could you perhaps still elaborate a bit on how you understand imagination and the philosophical influences of this concept?

DARRYL CRESSMAN:
You would have to talk to my colleague Massimiliano Simons, who works a lot with Bergson on this topic as well—but I think the way in which we engage with the world through technology points towards imaginative potentials of what could be. When I say potentiality, I also mean the individual and collective engagements with technology that allow us to imagine different potentials. That is what potentiality is: it is always the imagination, but not the imagination as in thinking about completely fantastical technological solutions like science fiction, but more so simple solutions that we imagine through engaged use, not just simply reflecting or abstract theorizing but through actual engaged use we are able to imagine different potentials. I think that is where the concept of imagination comes in. It is not a formal theory of imagination.

I read a lot about sociotechnical imaginaries, and it often seems like they are drawing from policy documents or different initiatives by states and corporations. But I think every person who engages in the world uses their imagination to recognize the potentials of what could be, whether that is a simple fix or a simple solution. That imagination realizes itself through those potentialities. I

think that is where the role of imagination comes in, and that is why I argue that technologies always contain that potentiality. Through engaged use, oftentimes, we are not simply just using the technology, but there are times when we imagine what it could be as well, and that is inherent to the object itself.

LISANN PENTTILÄ:

In the introduction of *The Necessity of Critique* you state that "technology should respond to, and not direct, the interests of people whose lives are mediated through particular designs and functions."[3] Does this idea of engaged use tie in with good practices or ways to come to know the interests of people?

DARRYL CRESSMAN:

I think that is a nice way to think about it. If we look at the ways through which people engage with technologies, we learn more about those people as well. The quote you mentioned draws from the critique of technocracy—this idea that there are experts who design technologies and envision specific uses for people. However, people often have their own ideas about how technology should be used.

Think of something as simple as audio cassettes. They were not designed for people to record music and share it with friends, but that use seems so obvious to people now that, in retrospect, we wonder how it was not initially considered. Even when Edison developed recorded sound in the 19th century, he never thought the market would be for music. Yet, now this seems obvious to us. This realization came from people who had an interest in music and saw the potential of recorded sound for the purpose of recorded music.

When we begin to see how individuals and social groups engage with technologies, we learn more about the interests of those groups and what they want from technology. What is often missing is the recognition that we are not simply subjected to the decisions of corporations and the state. Instead, we engage with technology in many different ways in our lives that often go unnoticed and are almost implicit. Paying closer attention to these engagements reveals more about who we are, what we want from our technologies, and what we want from our lives as well.

[3] Cressman, *The Necessity of Critique*, 5.

LISANN PENTTILÄ:
To follow up on this, one of the more controversial parts of Marcuse's work dealt with the distinction between true and false needs – do you think this distinction is relevant and methodologically helpful today, especially considering the rise of digital mass media for instance?

DARRYL CRESSMAN:
I had a student write a paper on false needs as well. It is always a difficult concept because you are telling people that what they believe are their own ideas are not their own ideas. Furthermore, you are critiquing not the shortcomings of society, but its benefits, which is a difficult task. Marcuse locates false needs as a product of a technological infrastructure. So, the technological infrastructure of production in the West in the 1960s presupposed that people needed to continue to purchase things for the United States —where he was living at the time—to be profitable and prosperous.

I think if you look at the 1960s, when people used to say, "what is good for General Motors is good for the United States," you begin to see that it was in the best interest of the United States and its citizens that they continued to purchase General Motors automobiles. The technological infrastructure of production meant that many people's jobs and livelihoods relied on it. If people stopped buying things, all of that crumbles.

According to Marcuse, we have very basic needs—food, shelter, clothing, and a minimum of culture. But after that, it is up to us what our needs are. Nobody knew they needed to take photos with their phone until it was possible to take photos with your phone. So, is this a need I have, or is it a need provided to me by an infrastructure of digital technologies, a complex array of corporations, labor, software, or all of these different things?

Marcuse's comments are often seen as insulting because people think, "Well, it is my need. I need to take a vacation." I live in the Netherlands, and the Dutch government owns shares of KLM, the national airline, and has a large stake in the Dutch airport, Schiphol. It is in the state's best interest that I fly from Schiphol Airport on KLM, and I have five weeks of paid vacation in the Netherlands. It all fits together. Now I am not forced to take that vacation, but I would say that I am encouraged to take it and it is in the best interest of the state that I do so.

Similarly, the desire to consume new things—new phones, new gadgets, new computers—mending and repair is not really popular. Fast fashion, in combination with photography, requires the consumption of more and more new clothing. Reflecting on these needs is important, and whether they are our own or not. I do not think that should diminish our enjoyment of these things. Instead, we should reflect on what kind of life we really want and what our true needs are. False needs are not unenjoyable; satisfying them is pleasant. I like buying and having new things, but continually participating in this has consequences that we are beginning to see now. We are always shocked when we realized that, for example, my desire to have new technologies requires planned obsolescence. It is always an interesting discussion for students when we talk about false and true needs. They recognize the truth of the claim but also have difficulty accepting that there are really true needs beyond food, shelter, and clothing.

LISANN PENTTILÄ:

I would also like to ask you a bit about the concept of innovation. We see a lot of institutional and corporate interest in innovation—which is also reflected in academic discussions, research, and funding schemes. This in turn is coupled with an, often explicit, urgency to tackle problems, whether societal or more business-oriented ones. Attached to the idea of innovation, we often find an idea of progress and specifically one rooted in neoliberal ideals. The message is clear: We need to innovate, and we need to do it fast. The focus is often on novelty even though the problems at hand—for which innovation-solutions are sought—may not be new at all. How helpful do you think this focus on innovation is?

DARRYL CRESSMAN:

I think it is philosophically interesting. I was really inspired by Benoit Godin's work on the concept of innovation. When we think about innovation as a concept that endows technologies with meaning, we begin to see how it parallels words like "progress" in the sense that it allows us to think about technologies in meaningful ways. Innovation tends to always, as you say, be seen as a positive thing. I used to joke that I want to vote for the political party that is against innovation because nobody seems to be against it; everyone is pro-innovation. But what that innovation actually consists of is often not addressed, and I think that can be problematic.

A few years ago, I did research on the concept of disruptive innovation through various policy documents, advertisements, and the ways in which people talked about it. What I realized was that corresponding with innovation, or disruptive innovation, is an idea of what technology actually is. While our attention is focused on new, emerging, and speculative technologies, we tend to eliminate any sort of historical continuities. Our focus tends to be on that which is new and emerging, not that which is old and unchanging.

Those aspects of technology that endure and persist for decades—whether that is conditions of production, the division of labor, or aspects of consumerism—are difficult to speak about in a way that is exciting and gets people's attention. Innovation is always simply there as the new and emerging, and that is why I think as a concept, we need to think about it critically because it focuses our attention on one particular aspect of technology and not the entire spectrum of technology.

LISANN PENTTILÄ:

You have written a paper on disruptive innovation in which you say that disruptive innovation is contributing to a redefinition of technology. Following the historian Leo Marx, and you have actually already indicated this earlier, you say that you understand technology as not just being limited to material artifacts but as including the context which makes those artifacts, defined as technology, meaningful. Now, the important part here is that both the material artifact and the context in which it is being interpreted are contingent. I was wondering if you could elaborate a little bit more on the importance of understanding the history of technology and perhaps specifically what it would mean to have a collective understanding of such a history?

DARRYL CRESSMAN:

When I tell people that I am a philosopher of technology, they always ask me about new and emerging technologies like AI or self-driving cars. We almost seem to have a historical amnesia. AI, in its current form, has been around since the late 1950s. People do not want to focus on why it failed in the early 1970s, the 1980s, and the 1990s; it is about what is happening right now. I think historical consciousness is really missing from our discussions of technology because we fail to address that question of why we have the technologies that we do. They do not just come from the mind of a lone genius sitting somewhere in California. Rather, we inherit certain tendencies, functional

capabilities, and ways of doing things from the past, which endure for a long period of time. That historical element may not be the most exciting aspect of technology. The most exciting aspect is always the speculation of how the new and emerging will transform our world, not how the new and emerging simply contribute to the endurance and continuity of existing power relationships, which is oftentimes what is happening.

We are not getting more socioeconomic equality because of new technologies. We are not getting more freedom from work or less consumerism. These things persist and endure, yet we are more focused on the new and emerging such as the fact that we can now watch movies on our watches. I may sound like a grumpy old man sometimes, but when you talk about history in relation to technology, it is hard not to sound like a cantankerous old person.

A lot of this actually comes from my work in media theory. If you look at people such as Harold Innis or Marshall McLuhan or Cornelia Vismann, they look at the endurance of things like print and writing over centuries. Think about the printing press for instance. The logic of print still endures today, and the insights that McLuhan had about 16th-century printing are still reflected in our engagements with print today. But we do not like to think about that continuity because many of us like to think we live in the most exciting time period in the history of humanity, which also corresponds with our own lifetimes. There is a bit of historical amnesia there, and I think focusing on the historical dimension of technology is important for identifying those aspects of technology where real change can occur. Addressing those historical continuities and inequalities requires more effort than simply focusing on the contingencies and moments of fluidity in the newly emerging.

LISANN PENTTILÄ:
If we want to move towards a collective understanding of the history of technology, what would be the role of education or pedagogy in this?

DARRYL CRESSMAN:
It has been a long time since I was in a public school or high school. Now, for example, I was taught science, but I was not taught the history of science or the philosophy of science. Yet, I was taught comparative religion in high school,

but I was not indoctrinated into any sort of religious education. I think the same applies to science and technology. At the elementary and high school levels, these subjects are often taught in an almost religious manner, where it is about belief—you believe in progress, technology is progress. However, studying the history of technology or the philosophy of science allows us to think of these as human products, much like art or law. Endowing people with that understanding, I think, is the first step. It is often said that we just need to change education for young people, yet this is always the answer that is rarely effective. This points to something that is important: how do we get these ideas circulating?

Despite 40 years of science and technology studies and empirical studies of technology that demonstrate flexibility and fluidity, we are still stuck with the same popular imagination around technology. Despite hundreds of thousands of words written on how dynamic, flexible, and underdetermined technology is, the popular imagination is still bounded by the same ideas it has been for decades and decades. So, although I think it is important work that is being done, it is limited to people in university classrooms. How to fix that? I do not know.

LISANN PENTTILÄ:

You also write about how disruptive technology is coupled with a rhetoric of fear, specifically the fear of falling behind. This is used in turn as an acceleration imperative. This is quite unlike the implications of the heuristics of fear developed by Hans Jonas, for instance, which emphasizes caution and responsibility. Do you think the concept of disruptive technology can point us in other, perhaps more socially relevant, directions?

DARRYL CRESSMAN:

No, not in its current iteration. I think as a concept, it has become fixed to this idea of disruptive innovation developed by the American managerial theorist Clayton Christensen, who wrote about disruptive innovation in the late 1980s and early 1990s. Christensen was a management theorist and had specific ideas about the history of technology. His work is interesting, in a way, because he uses examples like the photocopier, the dirt bike, and the transistor radio—technologies that we might not even call technologies today. Calling a photocopier a technology, or cutting-edge, may seem strange to many people now.

The popular imagination has come to associate disruptive technology or disruptive innovation with the fear of falling behind. In that paper you mentioned, I use quotes from Emmanuel Macron, who says things such as, "we are not in the middle ages, we are in the global race"[4]. But a race against what? To what goal? It seems that everyone agrees we are falling behind and need to catch up, but nobody can really specify what we are falling behind on or what we need to catch up to. It is simply useful rhetoric to encourage research and constant innovation, but the end goal is unclear. Maybe this is where the idea of disruption can be effective—by allowing us to recognize some of the metaphors we use to think about technology. Disruption, by its very nature, forces us to look at change rather than continuity. As you can tell from our discussion, this is where my own research is going: looking at how technology is not just the new and emerging, but also the old and unchanging. The more we think about technology through the lens of disruption, the more we blind ourselves to important aspects of technology by focusing on what is new and transformative.

LISANN PENTTILÄ:
What do you take your task to be, as a philosopher, in public discussions about technological development and innovation regulation?

DARRYL CRESSMAN:
Professionally, I have been in an administrative role for the last little while. I think the opportunities that have been presented to me have mostly been in the classroom, where I take the opportunity to talk to students about technology and have them talk about their own experiences. I was running an academic program as an administrator during COVID which pushed me to take technology seriously. For instance, we had to make decisions about technology in the classroom. Oftentimes, I found myself playing devil's advocate or being problematic regarding some initiatives on transforming education, especially through online education. My fear was that investing in technology for online education would make these changes permanent. Despite people telling me, "No, no, we will be back in the classroom." Once you invest a lot of money in technologies that enable online education and

[4] Cressman, "Disruptive Innovation and the Idea of Technology", 34.

expand your offerings, it becomes not just available but preferable. Recognizing how technology impacts education in an administrative role was important. The opportunities that we are presented with, we have to take. Not all of us have the opportunity to speak to a lot of people, so you cannot lament the limitations of your influence. You can only work with the opportunities that are presented to you. I always say, it is my students who will make a difference, and I hope that is true. I am more than happy to be invited to more public discussions, but for now, that is quite limited.

LISANN PENTTILÄ:

Now, perhaps to turn a little bit more to reflections on the future, how do you think the field of philosophy of technology will evolve over the next few years or perhaps even decades? And what topics do you think will become more prominent?

DARRYL CRESSMAN:

I hope it will become more inclusive. As I said earlier, I think sometimes, at least in some places, the philosophy of technology has become institutionalized. The Netherlands is a wonderful country for the philosophy of technology; we have so many different people working on it all over the country. But the downside of that is that it becomes a canon of acceptable research, with specific ideas of what you can do. Alongside that, people are always afraid of being labelled technological determinists or essentialists. My hope for the philosophy of technology is that we can move beyond the boundaries of institutionalization, becoming more open to methods, approaches, and concepts that may problematize one's own concepts and approaches—whether this means working with media theorists or people in other fields.

Some philosophers I know are adamant that STS is a wrong turn, but I think STS has so much to offer the philosophy of technology. Others believe that writers like Byung-Chul Han are too gloomy or pessimistic, and I think, yes, but you cannot dismiss something just because you disagree with it—his work is quite influential and insightful. Similarly, we have people who think that post-phenomenology is not political enough, but take it for what it is. I think that inclusivity and the recognition that technology is intertwined with who we are forces us to include a lot of different approaches to technology that will only help the discipline.

What I hope to see in the future of the philosophy of technology is greater inclusivity and more scope and breadth in ways to think about technology.

LISANN PENTTILÄ:
You have touched upon this a bit already, but could you tell us a bit more about the projects you are currently working on?

DARRYL CRESSMAN:
I have been developing a work on a hermeneutic of sociotechnical continuity, drawing from literary theory. I am trying to develop terms and concepts through which we can talk about the ways in which sociotechnical ideas endure, both across time and across different technologies. I have been working on that paper for a few months now as my administrative tasks are coming to a conclusion.

A colleague and I at Maastricht university are organizing a conference (October 2024) on the history of the philosophy of technology. It is a way to get people to think about the intellectual history of the discipline, to recognize how people have thought about phenomena like AI throughout history. We have also received many good submissions for what we call hidden histories of philosophy of technology, which attempt to draw out a philosophy of technology from the work of Michel Foucault or Hannah Arendt, for example.

We are expanding our audience for this conference as well. I would like to build on some of the work that Springer has done with their book series, Philosophy of Engineering and Technology, which recognizes the philosophy of technology in the non-English-speaking world, such as Japanese philosophy of technology, philosophy of technology from the Spanish-speaking world, and the Portuguese-speaking world. These are important contributions as well.

Building on that idea of inclusivity through the philosophy of technology is key because oftentimes, it can be a bit limited in its range. I do not want to sound cynical, but I think research into the ethics of AI is probably good for now. How do we expand the philosophy of technology to move beyond some of the discussions and debates that have dominated the field over the last 15-20 years? That is what I hope to contribute in the work that I do over the next couple of years.

LISANN PENTTILÄ:

It sounds like there are many exciting things on the horizon to look forward to.

DARRYL CRESSMAN:

It is like self-driving cars; we are always five years away from being five years away.

REFERENCES

Bijker, W., Hughes, T., & Pinch, T.J. (1987). *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Edited by Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch. Cambridge. MA: The MIT Press.

Cressman, D. (2020). "Contingency & Potential: Reconsidering a Dialectical Philosophy of Technology". *Techné: Research in Philosophy & Technology*. 24 (1/2), pp. 138-157. https://doi.org/10.5840/techne202027114

Cressman, D. (2019). "Disruptive Innovation and the Idea of Technology". *NOvation – Critical Studies of Innovation*. I (2019), pp. 18-40. https://doi.org/10.5380/nocsi.v0i1.91159

Cressman, D., ed. (2022). *The Necessity of Critique: Andrew Feenberg and the Philosophy of Technology*. Springer Cham. https://doi.org/10.1007/978-3-031-07877-4

Feenberg, A. (2017). *Technosystem: The Social Life of Reason*. Cambridge, MA: Harvard University Press.

Marcuse, H. (1969). *An Essay on Liberation*. Boston, MA: Beacon Press.

Marcuse, H. (1968 [1964]). *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Boston, MA: Beacon Press.

About the interviewer

Lisann Penttilä is a doctoral researcher at the Institute of Philosophy, KU Leuven (Belgium). Her research focuses on responsibility and critique in technological development and innovation processes. Her work engages with disciplines and approaches including critical and social theory, action theory, and philosophy of technology.

Lisann Penttilä
lisann.penttila@kuleuven.be

Darryl Cressman
darryl.cressman@maastrichtuniversity.nl