

Algorithms as a becoming: an interview with Taina Bucher

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Questions, many instigating questions. It seems that it is by using question marks that Taina Bucher looks at the 'empirical world' and try to understand it. By interrogating algorithms and the different knowledges associated to them, in this interview the scholar invites us to look deeply into these contemporary sociotechnical objects. Journalism, the importance of coding (or not) and the genealogy of the concept 'black box' are some of the topics approached by Taina Bucher in dialogue with key authors such as Ross Ashby, Alfred N. Whitehead and Annemarie Mol. Through this pleasant conversation held in the city of Tartu, Estonia, during the 2017 AoIR Conference, we are invited to assume a 'becoming' way of researching the algorithms as well as the practices and politics entangled with them.

Taina Bucher is an associate professor at the Centre for Communication and Computing, University of Copenhagen, Denmark, and author of *IF... THEN: Algorithmic power and politics*, released in May 2018 by Oxford University Press. Her PhD dissertation (*Programmed Sociality: A Software Studies Perspective on Social Networking Sites*) was awarded with the Association of Internet Researchers annual dissertation award in 2013. Taina Bucher's research focuses on social media, and the power of algorithms in everyday life, at the intersection of software studies, STS and new media theory. For more information, visit <http://tainabucher.com/>

Interviewers: The main goal of the research you presented here at AoIR is the formulation of an epistemological sense of algorithms. How are you facing the theoretical challenges of this research project?

Bucher: There is a question that I've been really interested in: "what does it mean to know something that's 'invisible', by definition distributed, that is not 'one thing'?" I also have always been interested in the question: "How do you know something that you don't have access to or that you don't see?". What do you need to know in order to know a little better?. During

my PhD, I encountered a lot of debate about whether or not you would need to code, to be able to program yourself in order to say something about a technology. I think it's not the most fruitful discussion in the long run, and I don't think that you necessarily need to know how to program in order to be able to say something about it. I think it definitely helps if you know how to code, but it's not the only way to know about computational objects such as algorithms. I also encountered a sort of intellectual hierarchy between people who know and people who don't know how to code. I don't really like those claims about who gets to know more, or more authoritatively. For me, it was very useful to learn to program, but it doesn't mean that because of that I necessarily know how Facebook works. If you really want to make that argument, we also need to know how the hardware works. We would pretty much actually need to know about data structures, and databases, and tons of other things. My interests are in epistemological questions: "what does it mean to know? What might be the things that we're missing out on in our attempts to know specific things? Where are the limits of knowledge? Where are the boundaries?" In one chapter of my book (*IF... THEN: Algorithmic power and politics*, Oxford University Press, 2018), I tried to unpack the figure of the 'black box'. Because whenever you go into discussions around algorithms or similar knowledge claims, people would say: "oh, the algorithms are a 'black box'; therefore we can not know them, or therefore, knowledge is difficult". Of course it is, but for me again the interest is in trying to unpack it. What does it really mean to say "it's a black box"?

Interviewers: Are you doing a kind of genealogy of the black box concept, maybe "unblackboxing the black box"? Which would be the key scholars that have previously discussed it?

Bucher: This concept comes from Cybernetics, from early Computer Science. People had to make black boxes out of technology because otherwise the enemies

during World War 2 would be able to decode their systems. So, crucial technology was actually black boxed in order to not lose the war. Like much other computer technology, the term has a military genealogy... In Computer Science, it's a necessity making complexity more manageable. But, then, it becomes a metaphor for everything, everything is a black box... now, it just a synonym for everything that's unknown, everything that can be or should be hidden, like trade secrets. For me it was really helpful reading Peter Galison's article "The ontology of the enemy: Norbert Wiener and the cybernetic vision"¹. And, in terms of cybernetics, W. Ross Ashby writes directly about the black box²... And then, of course, Bruno Latour writes about black box and black boxing as a concept. For Latour, everything is a kind of black box because everything hides its own making, its networked ontology³. He uses an old heideggerian insight about 'if technology breaks down, then you see how it works.' For him, that's when the black box concept is useful. Alexander Galloway has also written about the history and epistemology of the black box in a very helpful way. So, Galison, Ashby, Latour and Galloway would be a good start to think about the genealogy of the concept.

Interviewers: How are you articulating scholars like Annemarie Mol and Alfred N. Whitehead to study the algorithms?

Bucher: What's usefulness to me is, again, tied to the notion of a black box. Because if you look at something from a relational perspective there is no box and it's never just black. So, it becomes a little bit difficult or impossible to operate with a claim that 'algorithms are black boxes.' With Whitehead⁴,

1 Article available at www.jstor.org/stable/1343893. Accessed mar. 9, 2018.

2 For example, see the chapter 6 of his book "An Introduction to cybernetics," first published in 1956.

3 Among others, see Latour's book "Science in Action", first published in 1987 by the Harvard University Press.

4 Alfred North Whitehead (1861-1947) was a british mathematician, logician and philosopher best known for his work in mathematical logic and the philosophy of science.

I find it useful to think about an algorithm never as a thing but as a temporary snapshot of the thing in that moment. So, he would say that, whatever the thing is, it is 'becoming.' I've been thinking about why so many people are interested in Whitehead now again and I think it's because the process philosophy resonates with things that are so much in process all the time. An algorithm or machine learning system is, for definition, not a thing, it's always a becoming. For me, this notion of becoming is quite useful because it is also a methodological point that whatever we're studying is a thing in its becoming. So we're not making claims about the Facebook's algorithm or YouTube's algorithm, because whatever we're looking at is an actualization of different kinds of relations that come together right there and then to shape that reality. For me, in terms of ontology, that has been a helpful way of thinking about what algorithms are. And then, of course, it fits into epistemological questions. About Annemarie Mol, I've been quite fascinated by her book "The Body Multiple"⁵. There are tons of things to say about it... She has a very exciting way of writing, the book tries to break away from very strict academic boundaries and be engaged with the world also through writing. Because she's an anthropologist, she has this long-term embeddedness in a space where she can tell that story in a very convincing way. In terms of her thinking, it's been very useful to think about the body and specifically diseases as having different realities, multiple realities. What I'm finding inspiring is this idea of the multiple; to what extent, are we studying the same thing, the same phenomena? So, I'm also thinking about the algorithm as multiple. What is the Facebook algorithm? Is it a thing or is it just a name? Does it mean different things? It's actually technically quite distributed but it's also socially very distributed. It lives different kinds of

5 Annemarie Mol is professor of Anthropology of the Body at the University of Amsterdam and a key researcher of the ANT/STS field. Her book "The Body Multiple: Ontology in Medical Practice" was released in 2003 (Duke University Press).

lives. And we need to be quite specific about what kind of life in context we're talking about. That's where her work is being quite inspiring, but also John Law's studies, especially the book about aircraft stories⁶. It makes the same type of arguments, he tells different stories about this one object and theorizes in a very similar way as actually being like multiple objects.

Interviewers: You say that your focus is not on 'where' the agency is located but 'when'. This is related to the approach that emphasizes the performance of algorithms, right? And seems to have something to do with the necessity of finding out where or who is responsible when something wrong happens. If the algorithm's agency is distributed, maybe it is impossible to find out who did what in a relation with something...

Bucher: Definitely, and that's the reason why I find the question of the 'when' particularly important. When we talk about algorithmic accountability, transparency, discrimination, bias, etc., we are very much obsessed with finding the right source of blame, the source of the action. We still need to figure out responsibility. By asking 'when' something happens or 'when' an agency is made more or less available, it's not to free us from questions of responsibility, but to recognize that it might not always matter 'where' it is, right? Because I don't think we can necessarily get at the right source. What matter is the kind of work that's involved in making those right sources appear as such in the first place. For self-driving cars, for example, I'm not sure if we're actually solving the problem by insisting on going to the car, or the car manufacturer, or the person, or a system... It might be more constructive and actually more practical to look at 'when' someone or something is made more or less probable as source of ac-

tion. The kind of work that goes into making sources of actions available is political, so I think we can learn a lot from those practices. Who wants to put the blame on someone? For instance, see Facebook or Google: whenever something goes wrong, their discourse is very strategically constructed ... But what is at stake when Facebook or Google, in one situation, says "it's just the algorithms fault, we didn't do anything"? And sometimes it is like: "Yeah, you know, It was this... Don't blame our programmers". There's a formal strategic ignorance involved, like using non-knowledge very strategically. That's at stake, so for me it is quite interesting asking the 'when' these sources or these elements are mobilized, and 'for whom'. I find also interesting why are we bothered at certain points in time, when we are not at other times. There are things that maybe we are not talking about. We tend to talk about some of the same things. So for me it's interesting to ask 'when' it is and in 'what' form it tends to emerge. Because it only matters sometimes. I'm interested in these sometimes.

Interviewers: You have some recent works on journalism and algorithms. Nowadays, it's really challenging for the journalistic institutions to deal with all kinds of algorithmic mediations because they face the traditional journalism mediations. How do this empirical research dialogues with your broader questions?

Bucher: I was thinking about: where do algorithms matter? In what kind of contexts do they challenge existing work organizations, their way of thinking, their value systems? There's, of course, the financial sector where algorithms are hugely important, and also trading, biotech, hard sciences. But coming from the media and communications field, I was also seeing that algorithms matter in journalism and for news organizations. And so I was interested in looking at how does the technology work. What's the role of algorithms? What kind of work do algorithms do? I wanted to look at the materiality, at the users,

⁶ Reference to the sociologist John Law, a key proponent of Actor-Network Theory, and his book "Aircraft Stories: Decentering the Object in Technoscience", published in 2002 by the Duke University Press.

at work practices, and see how does it matter. It is very useful to go into very concrete contexts, at how news organizations deal with algorithms, metrics and data analytics. Readers have new demands and expectations. News organizations have had to grapple with the fact that people just use social media. They get used to more personalized information, to more real time, to more curation of information, and so forth. And, of course, there is also the advertising money for the news organizations. Media platforms like Google, Facebook and Twitter became competitors. News organizations are no longer competing against other national newspapers, their biggest competitors are now the technology companies. This new reality has been there for, at least, five years, but these types of worries and discussions are just accelerating. I found it a timely place to study the kind of impact of these new types of sociotechnical systems. Maybe in five years it's forgotten or people can't necessarily get at the heart of the controversy. But now it's happening, so it's an excellent time to go and see what are the worries. I visited some news organizations and I sat with journalists and editors, looked at their daily work. I talked with programmers about these changes and about what they think it is happening. A lot of these news organizations are also developing their own systems. So, you don't have to necessarily go to Facebook and study how code is made, but you can go to the news organizations. I'm only speaking of the Scandinavian context, and I focused a little bit more on looking at in-house development of algorithms and systems. The biggest worry is really what to do in competition, but also how to not lose your journalistic integrity. How can you be oriented towards an algorithmic logic on Facebook without losing credibility, the journalistic values? There is a balance between how does it actually work and how it is negotiated in the day-to-day practice. I found a lot of people struggling with how to be strategically oriented towards someone else's logic and being smarter using it to your own advantage, still keeping that journalistic

value. That's very interesting to me. How is it negotiated? Is it possible? What kind of compromises do news organizations make in that game? Do they lose it? Do they find new, clever and quite productive ways to deal with it?