A conversation about glitch epistemologies

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A 'glitch' is an unexpected disruption in a digital systems. Originally a technical term, it has inspired researchers to consider glitches as an entry point for critique and intervention. At the 2023 Digital Geography conference in Mainz, panelists discussed the potential and limitations of glitch as a conceptual lens.

The panelists

- Julia Verne is Professor of Cultural Geography at Johannes Gutenberg University Mainz.
- Lizzie Richardson is Junior Professor of Digital Geography at the Institute of Human Geography, Goethe University Frankfurt am Main.
- Casey Lynch is Assistant Professor and Digital, Urban and Political Geographer at the University of Twente.
- Boris Michel is Professor of Digital Geography at Martin Luther University Halle-Wittenberg.

Julia Verne: "Sometimes we may be euphoric about technologies and what they do. We are also often annoyed by technologies, especially when they do not do what we want

them to do. However, in cultural geography I think it is our job to be quite sceptical about technologies and what they do. Often, we try to examine these questions and concerns through ethnographic research, only to find that things do not always work as planned or as anticipated. We are particularly interested in these rather unintended side effects of technologies and what they tell us about how they actually play out in practice. Against this background, we find it fruitful to think and reflect on the idea of the glitch and digital disruptions in a broader sense, beyond how these terms have been used in economic geography. We would therefore like to use the ideas brought forward by Leszczynski and Elwood (2022) in their text 'Glitch epistemologies for computational cities' in 'Dialogues in Human Geography' as a starting point for our panel today.

First, Lizzie Richardson from the University of Frankfurt, who has contributed to this debate with a piece on queer urban theories, as well as a review of the book on glitch feminism (Russell 2020), will provide her insights and reflections. Next, Casey Lynch from the University of Twente will contribute to our panel by focusing on glitch epistemology and the question of artificial intelligence. Finally, we have Boris Michel from the University of Halle, who, as a professor of digital geography, offers some critique on the turn to glitches.

Given the different understandings of glitches or approaches to glitches, we would like to encourage a reflection on the notion of 'glitch' and how it might be relevant or helpful to our own work, but also on how this debate on glitches might advance our understanding of digital geography or the relationship between digital technologies and society. In preparation for this panel, we have asked the three contributors to consider the following questions: First, how to approach glitches methodologically? Second, where do they see gaps or weaknesses in the current debates on glitches? And finally, why or to what extent does it make sense to consider glitches epistemologically and what can we learn from this?"

Lizzie Richardson: "The response that I wrote picks up on the use of glitch in the article of Leszczynski and Elwood (2022) as something that comes from, as they put it, sort of a queer theory, as well as a kind of feminist approach. I think there are different ways of thinking about technological failure that obviously have nothing actually to do with those kinds of theoretical traditions. My comments address these very broad questions of if and how glitches help our understanding of digital technologies in society. And my overall position is: Cautiously, yes, they can or could do, but probably only under certain conditions or in conjunction with other questions.

Firstly, I do think that glitches, in the sense of a failure of a technology or technical system to operate are helpful insofar as they upset. As Leszczynski (2020) argues, glitches

upset any totalising analysis of digital technologies as somehow all-encompassing, as working as planned, as with clearly delimited agency and intentionality. Highlighting failures of technology to operate demonstrates the limits of such a kind of line of analysis, potentially challenging, for example, forms of technological determinism, but also indicating the possibilities for differentiated and situated experiences of the technology.

Certainly, again with Leszczynski (2020), this is part of a 'minor' theory approach, sort of feminist approach to thinking about technologies. So, by challenging any kind of totalising or homogenising critique, glitches epistemologically open up different conditions of visibility. When something does not work, it allows a different way of looking at a situation. One reason why this is important politically, is that a different way of looking at a situation or of understanding a situation then also changes the possibilities for intervention in that situation, and thus potentially changing what that situation is. However, there is a reason for caution when foregrounding or focusing on glitches. In particular, concerning the extent to which glitches can be understood as giving or offering an account of social or socio-technical structure.

What is the relationship between glitches and social structures? How do we use glitches to ask structural questions? What do glitches tell us about social structures, about the kind of sedimented forms and patterns in societies that, after all is said and done, do not really seem to change that much?

To expand on this, the first issue is that emphasising glitches risks not saying much about how society and technology work. After all, a glitch is a moment when something does not work. A glitch shows how an expected operation fails, and can thus expose what is considered to be the normal functioning, but does not necessarily provide much insight into how that operation is supported in the first place. I think a glitch can potentially do that, but not necessarily. So, for example, the failure of a delivery app to identify the correct location for a delivery worker does not necessarily tell us anything about the socio-technical processes involved in producing the correct location. In this scenario, it's probably the study of how such failures become routine, how non-performances are incorporated into the usual running of things, that can show how societal structures incorporate contingencies.

So, we could say that the glitch itself does not show how a socio-technical operation works, but rather it shows the processes of integrating glitches into the running of things. So, does the glitch itself reveal something, or is it the processes that incorporate the glitch into the way the system works? Is that the more important aspect? And then, related to this issue of how a technical operation works, is what could be called the performativity principle.

In Lyotard's (1985) 'Report on knowledge', as he called it, originally published in 1979, that became influential in defining the postmodern condition, he argued that scientific knowledge was now no longer primarily concerned with truth, but with technical efficacy. This highlighted the performativity of procedures that could arrange data in new ways. He argued that there was no meta-language or meta-narrative to guide knowledge, but instead 'the discourse on the roles that validate knowledge was immanent to it' (Lyotard 1985, 54).

Focusing on glitches, then, can remain very much within this same kind of technical imperative of performance. Although emphasising failed performance, glitches are part of this operational logic. The question is: does it work or not? Perhaps rather than addressing more external issues such as how the operation is understood to be legitimate or acceptable in the first place. We have to look at other aspects beyond the performance or not of the technology to understand this.

Here is a small example trying to illustrate what I mean. If we look at technologies that make it possible to work flexibly in terms of place and time, the failure of the technology to operate does not in any immediately obvious way tell us why this flexibility in work has become socially and economically acceptable or even desirable for quite different types of workers. Put another way: is finding the limits to the normative functioning of a technology the most important question or is it what this kind of shut-down indicates in terms of social analysis?

This critique or questioning of the notion or the empirical moment of the glitch shows that there are different ways of situating the glitch as a research object. Glitches can be narrative devices that can indeed open up many of these structural questions."

Casey Lynch: "I think it is important to focus on the question of glitches as epistemology. Part of my reading of that in the original article from Leszczynski and Elwood (2022) – and that is one of the things that I find generative from this idea of the glitch as an epistemological approach – is, that for them it's not necessarily always a technological failure in the normal sense. I think in some of the examples that they give of performatively ugly houses, for example, there's nothing technically that goes wrong there. This is something that I find both interesting and generative, but also a starting point for a critique that I have of the paper. It creates confusion for me on some level and raises the question: What is the glitch? I sort of lose track of it sometimes. But I think this idea that it's not necessarily about technological failure per se, but about the *perception* of a technological failure – the experience that someone has of the performance of a system or technology is somehow different from their expectations or their desires of it.

What I find generative about this is that it raises the question of our expectations of technology and our desires for certain kinds of interactions or mediations of technology. And then also the opportunity to think through that relationship between our desires and expectations and what materialises in practice – there is a gap. I think that allows us to ask interesting questions about where these expectations and desires come from, how they evolve and how they are produced. That is quite interesting. But I think it begins to fall a bit outside of the moment of the glitch itself. In my response to the paper one of the things that I point out as an appreciation of the glitch is that it can call into question different subject positions and who is perceiving something as a glitch. Who is perceiving it as out of line with their expectations or their desires and for whom is it presenting as normal?

I've used some of these considerations to think through work that I've been doing over the last few years with roboticists and social roboticists in a lab, where they are designing a robot to give tours around a museum. It is quite interesting to see the process they go through of generating, of designing and implementing a robot that is designed for a certain kind of role in a certain kind of space and thinking about how people come to experience that robot. The glitch is helpful for thinking about how these robots often fail in interesting ways. The failure, the sort of technical failure, and the sense of that failure, the way that different people perceive that failure, understand that failure, or don't even notice that failure in their interaction with the robot is quite different.

The robot will often fail, and the roboticist will be very frustrated, but the person interacting with it won't notice that it has failed to do something that it was supposed to do and will stay engaged in the interaction. At the same time, because our expectations of robots have been so shaped by science fiction, there is often a huge gap between people's expectations of the robot and the function of that robot, even when it is working the way that it is supposed to.

People expect the robot to be able to do more things. But there's also a tendency for people to buy into that interaction and really immerse themselves in it. So, this question of what is the failure versus what is the perception of that failure, and who perceives it as a failure is something that the glitch gives me a helpful way to work with. At the same time, it doesn't always explain, for instance, how this smooth interaction with the robot works, even when things don't go wrong.

For me, the glitch draws attention to this question of our expectations and our desires and the tension, the negotiation of the actual functioning of the technology with our expectations and our desires. But it does not always lead to all the questions that I encounter in my work, which I think go beyond the moment of the glitch and look at

how smooth interactions with technology are produced, maintained and negotiated in practice."

Boris Michel: "My answer is somewhat related to the question of what we mean by glitch. I somewhat struggle with the term, and in my commentary, I will focus on this struggle. I will ask some questions about why the term glitch might be productive or might be somewhat problematic. On the one hand, I also agree that it is an important perspective, that it is attractive in order to avoid a number of potential pitfalls when talking about digitalisation in society. Whether these pitfalls are as dominant in the literature as these authors claim, I think, remains to be seen. I think sometimes it is more of a straw person. On the other hand, I have some problems with the term glitch and its implications. It's a blurry term, somewhat elusive.

I don't think the writing style helps to make it clearer, at least to me as a non-native speaker, as it can be more obfuscating than illuminating on some points. I will illustrate this with regard to three points, or rather three questions. First, the question of the use of metaphors; second, the challenges of translation: where does a term come from, how did it end up in geography, and what happens when terms travel; and third, the empirical objects presented to make the glitch epistemology plausible for the study of platform urbanism. I have some issues with the term and these works. Therefore, I will be offering a somewhat critical take of the term glitch and glitch epistemologies.

I am always a bit sceptical when social theory uses metaphors that are closely linked to the field that they are talking about, like the use of technological metaphors when talking about society and technology. For example, turning society into a 'software stack', as Bratton (2015) does, or talking about digital urbanism and using the term 'operation system', as Marvin and Luque-Ayala (2017) do.

Such metaphors can be productive, and the cyborg for example is a very productive thing that does exactly that (Haraway 1985), but it can also be essentialising, obfuscating. I'm not against using metaphors, of course not, but it's tricky. Metaphors have politics. They structure our thinking, and I think that is important. I would like to ask what happens when we think about socio-technological constellations in terms of glitches? What do we gain from using a term that originally signifies an unintentional, unexplained break in the flows within technological systems?

I think unintentional and unexplained are important. And as Menkman (2011, 341) says, 'once the glitch is named, the momentum – the glitch – is gone'. It becomes something different, a bug, a feature, whatever. So, glitch is a very particular form of non-performance. I wonder if we are using the term too broadly for other forms of non-performance.

The second issue, translation. As Lizzie mentioned, the glitch entered geographies through a tradition of cyber-feminist practice. Leszczynski and Elwood (2022) refer primarily to Russell (2020) Glitch Feminism Manifesto. But there's also a much longer tradition of cyber-feminist political art, going back to the Internet art of the 1990s. According to Menkman (2011) in her Glitch Studies Manifesto, glitch art engages with the imperfection and noise in digital media. She develops an aesthetic paradigm rooted in failure 'to end the search for the holy grail of perfect technology' (Menkman 2011, 343). Russell refers to such glitch thinking as an emancipatory practice and as an actualisation of cyberfeminist politics: 'Within glitch feminism, glitch is celebrated as a vehicle of refusal, a strategy of nonperformance' (Russell 2020, 8). What I find problematic is turning this glitch politics into a glitch epistemology for researching platform urbanism. What happens when we move from this subversive and celebratory practice, 'an activist prayer, a call to action', as Russell (2020, 9) calls it, into a heuristic for analysing socio-technical systems (and the assumption that glitchiness is a property of those systems)? Most importantly, what do we gain by using this term compared to other terms? There are many terms in social theory for talking about things that are not working.

The third and perhaps most important issue for me is the question of the empirical or epistemic objects, those things that are mobilised in order to give the theory credibility and plausibility. Leszczynski and Elwood provide a number of vignettes. Casey, you mentioned the ugly houses. I remember from the other paper, the failure of Google's sidewalk project in Toronto, the social media campaigns against Uber. These are glitches as surprise, glitches as causality, as absence. In all of these cases, I would argue the term glitch turns something that is social into technology, and diverts our attention away from politics, conflict, labour, and so on, and towards a mere non-performance from the author's perspective. In a way, it is interesting how little technology is present in these papers.

The example of the bicycle project would work for any neoliberal project of urban transformation, I think. Uber's failure to operate in Vancouver is not an issue of tech glitches, but of labour relations and union power. The e-bike clutters and the ugly houses tell us something about classist notions of order and clean aesthetics. There is no tech. So why use a term that indicates the misbehaviour of a technological system? Does this not run the risk of depoliticising these socio-technical systems?

To conclude, I would like to point to some authors who also use the term glitch when talking about the inscribed biases and racisms in digital technology, and who emphasise that it is 'More than a Glitch', as the latest book by Broussard (2024) is titled. The focus on glitches contributes to individualisation. These experiences of failure are very different. As Safiya Umoja Noble writes in 'Algorithms of Oppression', the inequality and oppression inscribed in algorithms is 'not just a glitch in the system but [...] fundamen-

tal to the operating system of the web' (Noble 2018, 10). Ruha Benjamin argues similarly in 'Race After Technology' when she writes that what is often depicted as glitches could serve as powerful opportunities to examine the whole system. Indeed, she argues, glitches could serve as 'technological canary in the coal mine' (Benjamin 2020, 47), but she insists that 'we must be willing to dig deeper' (Benjamin 2020, 79)."

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