

1. Hey everyone – just want to say thanks to the organizers of this session and the participants in it for thoughtful contributions and all the folks behind the scenes. And also want to send out hugs to everyone in a time of pandemic.

My talk on Queering Predictive Geomorphology is intended to step back from prediction in geomorphology and its use as a problem-solving technique and critique the dynamical connection between predicting and the context in which it occurs, using concepts from complex systems science and queer theory.

My motivation is specifically to look at the oft-assumed neutrality of prediction with respect to its long term or patterns of impacts on landscapes and the local, often marginalized communities that depend on them.

As scholars such as Sofiya Noble and Ruha Benjamin have argued, technology and algorithms are not neutral, they promote racism and anti-Blackness, because of the racist and anti-Black societal context in which algorithms have been developed and are applied.

In the same way, Prediction in Geomorphology is not a neutral tool, it is biased by the capitalist, colonialist, extractivist context in which it motivated, funded and applied. In my talk, I address theoretical aspects of the impacts of this context on landscapes and communities.

2. Prediction reduces uncertainties about the future effects of environmental variations or extractivist/remediation projects. Dynamically, uncertainty acts to increase dissipation, and decreased uncertainty increases efficiency. Dissipation has two principal dynamical roles. First, it acts to stabilize systems, and second it acts to determine the temporal gap between different levels of description of a system, the temporal gap between the time scale of sluggish patterns and their faster reacting constituents. This weakens self-organization and strengthens the influence of context, of dynamical slaving, effectively linearizing cross time scale interactions that were nonlinear prior to prediction. The dynamical impacts of prediction on landscapes then are:

--Increasing instability

--linearization of the coupled landscape.

How to test this argument? Good question! – It is hard because it involves nonlinear connections between levels of description, and so tracing causality, which is the basis of most testing in science, is hard and suspect. For this same reason, the usual ways of measuring nonlinearity don't work. And even harder is to measure dissipation involving social dynamics, which is dependent on purpose, intention and goals, as Peter Haff has discussed in their work on the Technosphere. The best possibilities involve contrasting relational, Indigenous cultures and landscapes with capitalist, colonialist landscapes, but much work remains to be done to go beyond qualitative assessments I have presented here.

3. Uncertainty has a societally beneficial effect, that is not being accounted for in the current practice of predictive geomorphology. So what to do about this?

Some of you might be content enough with these dynamics I have outlined. No offense, but I don't care much about you. Some of you might be thinking or working on reforming how the context in which geomorphology is practiced. To you I wish the best of luck, although I am not optimistic. The rest of you might be looking for an alternative way to practice geomorphology.

I don't pretend to have any good answers, but based on the analysis I summarized today, one possibility is to use prediction and understanding in geomorphology in support of resistance, in what I am calling subversive geomorphology. Dynamically, resistance is stepping outside a system, stepping outside the context and it has two forms, material and discursive. Material support might involve modeling, diversion of resources in solidarity with struggles against extraction projects. Or it might involve destabilizing discourses that prop up the context, such as the discourse that pitches prediction as neutral, by including the dynamics of the context in analyses or even models.