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Environmental Justice, 'Collapse' and the Question of Evidence: what can the arts contribute? A Dialogue.

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ABSTRACT

In this article an artistic researcher and a natural scientist engage in a dialogue about the topics of environmental Justice, 'collapse' and evidence and their inter-linkages. They explore the different resonances that are possible between the work and thinking of ecologists and artists and discuss questions such as: How can we turn environmental issues into social issues and how can the concept of justice or rather injustice help? Does the idea of framing environmental problem as a justice issue work at the grand scale of planetary problems such as climate change or the global-scale degradation of soils, biodiversity and ecosystems that might eventually lead to a collapse of our society in its present form and of the functioning of the planetary ecosystem? What roles do different forms of evidence play for uncovering issues of justice and collapse but also for helping people to deal with them?

KEY WORDS: Artists who care, Environmental Collapse and Denial, Environmental Evidence, Environmental Justice and Injustice, Transdisciplinary Collaboration

Christoph Kueffer (CK): It is increasingly recognized that collaborations and exchanges of ideas between scientists and artists can be very productive in many ways and help us to address some of our most intractable environmental problems (Curtis et al., 2012; Hall et al., 2015). Fourteen years ago you founded the Swiss Artists-in-Labs program (1) and also a PhD program based on art and science (2). Plus, you are an artist working at the interfaces of art and the environmental sciences and more recently neuroscience (Scott and Stoeckli, 2012). A few years ago we started to collaborate on a number of teaching and artists-in-science intervention projects that addressed the question of 're-designing nature' in the Anthropocene. Our leading question was: How do ecologists and artists think about and represent the changing relationship between humans and nature, and what are the options for humans to shape nature and save threatened biodiversity and ecosystems? As a result, we wrote a book chapter together in the form of a dialogue that aimed to explore the different resonances that are possible between the work and thinking of ecologists and artists (Kueffer and Scott, 2015). I think that this dialogue format worked very well and so when I recently attended the international conference at Franklin University Switzerland in Lugano with the title "Environmental Justice, 'Collapse' and the Question of Evidence," I felt that another conversation with you on these topics might be very fruitful.

This conference brought three key questions about environmental debates together and explored their inter-linkages. First, how can we turn environmental issues into social issues and how can the concept of justice or rather injustice help? Second, does the idea of framing environmental problem as a justice issue work at the grand scale of planetary problems such as climate change or the global-scale degradation of soils, biodiversity and ecosystems that might eventually lead to a collapse of our society in its present form and of the functioning of the planetary ecosystem? Third, what roles do different forms of evidence play for uncovering issues of justice and collapse but also for helping people to deal with them? And here we were not only interested in evidences from the natural sciences but also other forms of evidences and their representations in the humanities, arts, literature, film or even comics. I would like to engage with you in a dialogue on these three overarching questions and then also the inter-linkages between them. I am interested in whether artists, or you as an individual artist, find these concepts interesting and relevant, how artists address them, and where you see alternative perspectives on these topics that artists or contemporary work of artists could contribute.

Let me start with my first question: Is environmental justice, the idea that environmental degradation unequally affects people – and especially the poor, vulnerable and less educated – something that artists address in their work? How do they approach this question? And how do they understand justice? I am asking this third question because at the conference we had to deal with many different perspectives on what justice and environmental justice actually are. For instance, the affected people might perceive an 'injustice' differently than an outsider.

Jill Scott (JS): Artists do address the issue of environmental justice in various ways but not all artists do. The ones that do, think that the roles of artists in society need to be rethought. Justice is a matter of who is in the position to judge whom, and the designers always want to add that only when the public is happy with the results can things proceed in a positive direction. Some eco-designers are engaged in education programs that work with disadvantaged communities, citizen science groups and they certainly believe in environmental justice (3). Another big development can be found among eco-artists who conduct public art experiments. In the USA there are many such on-going projects, mostly spurred on by the fact that these artists are sceptical of their own government policies on the environment (4).

These artists do not fit the old-fashioned idea of the painter in the garage or studio working in isolation from society, un-networked and separate from other collaborators or influences. Thank goodness these times are passing! Instead we have new groups of artists who have either risen out of conceptual art practice in the 70s and feel responsible to raise public awareness, or younger ones who want to encourage stewardship and even provoke controversy. Others are aware of the controversies in sociology and anthropology about re-constructing methodologies and new processes of working in such groups. However, in the arts, one cannot easily generalize about the outcomes of their engagements, because of the wide range of approaches to sharing information with the public. For example, a documentary filmmaker might be total dedicated to raising education for all, while a sculptor may simply wish to provoke reflection through satire, a dancer might want people to have an ambiguous interpretation leaving the public to "think about it" and a designer might want to make something practical for the public like smart home technologies to monitor climate change data.

There is a growing community of artists who are interested in raising awareness in the public realm, and using poetic and visual metaphors to provoke thoughts about "environmental justice". These interventions often use the methods from citizen science processes by taking people outside to conduct their own fieldwork and learn about their own local environmental problems. One example of this is an active group of women artists who call themselves "The Weads" (5). Other artists like Eugenio Tiselli—together with the agroecologist Angelika Hilbeck at ETH Zurich—are using mobile technology to work with farmers in Africa to empower them with the means to swap and compare information about nature (6). These directions create new roles for artists and also provide access to environmental education for less educated people.

Some projects also aim to shift perception by encouraging people not "what to think" but "how to think" by providing thought-provoking cultural experiences. For example, it is well known that interactive environments by artists increase the learning curve of the general public (7). This requires artists to move beyond the elitist boundaries of the "me" generation and the postmodern dilemma, into a role where art can become a larger part of "life" and a realization that our environmental problems cannot be solved by single disciplinary perspectives. So, in the arts, we believe that new forms of communication hold the keys to the issue of environmental justice and that this will cause more dynamic changes in the very construction of knowledge. These dynamics should favour a bottom-up approach. I really believe that art can become a viable interpretative catalyst for scientific debate about such issues.

CK: I like your activist view of the role of the arts in environmental problem solving. I agree that the sciences need corrective of their approach that is often merely focused on diagnosis of problems rather than development of solutions and that is often very detached from the people that suffer or those that should act. I also appreciate your call to the arts and I assume that the humanities move beyond a self-referential discourse that does not take positions and "does not want to get their hands dirty"; you called it postmodern. There is a responsibility of the humanities and arts to get engaged, take a lead, rather than waiting for others to propose ideas and then deconstruct them.

Critical but constructive views of the arts and humanities are certainly needed in the debates about how we approach global-scale environmental issues; discourses that are nowadays often led under the heading of "the Anthropocene." This leads me to the second question of the conference that focused on such a grand-scale perspective, the question of collapse. In our previous dialogue about

"re-designing nature" (Kueffer and Scott, 2015) we also touched upon the global and grand scale of our environmental problems, and you said that "we [artists] are a little naïve about ecological collapse; the scale is too big to think about it clearly." Can you say a little bit more why it is so difficult to capture (global) collapse in artistic work? Do you see any ways through which artists are beginning to help us develop new images, metaphors, narratives or other forms of representations for engaging with the threat of global-scale environmental and thus societal challenges? I am asking this because at the conference we realized that we have a paucity of ways at hand for conversations about these imminent threats and how to deal with them as an individual, society, or culture. We talked about oppression of African-Americans in the United States, war experiences and traumas, migration and the reasons why people migrate or often decide not to migrate, local environmental disasters such as hurricanes (e.g. Hurricane Katrina in New Orleans), or shipwrecks (e.g. of the Titanic) but none of these situations appears to represent the situation we are in at the moment well.

JS: Here it might be interesting to talk about documentary filmmakers who are often very explicit about their interest to inform and eventually change our behaviour. They think that scare-tactics about environmental "collapse" are not working and they may never propel the public into action. I once criticised *An Inconvenient Truth*, the film with Al Gore, for the same reason (Scott, 2010). But documentary film is a very appealing format to think about in terms of raising awareness, education and eventually changing our behaviour. We only have to remember the impact of a film like *Food Inc.* by Robert Kenner. In most cases these filmmakers have the advantage of the film space—a dark room full of the undivided attention of the audience for an hour and a half. Filmmakers continue to collect stories that carry the most emotional weight for other communities to identify with.

Another tactic, one that I use myself, is to translate documents about climate change into an immersive film experience that the people can interact with and make their own poetic associations with based on what is called "an immersive experience" (8). The big challenge for any artist is to find a few powerful images that are packed with meaning and that everybody talks about afterwards. We call this "impact". A good example is an immersive installation about species' extinction by Brandon Ballangée, which was actually called "Collapse" (9).

I personally think that lessons can be very effective if artists focus on more thematic and local effects of climate change on human lives instead of the whole concept of environmental collapse. One place to encourage more innovative projects on a local level comes from do-it-yourself (DIY) technology groups. For example, in 2006, Beatriz da Costa, an artist at the University of California, Irvine, strapped a small bundle of sensors onto homing pigeons. Da Costa even helped to develop the instrument package, which measured carbon monoxide and nitrogen oxides and tracked the pigeons' movements using a Global Positioning System (GPS) receiver. She then published the data from her project, on PigeonBlog, with the aim of disrupting the status quo and giving the public a role in gathering data on pollution [10]. Here the idea is to give citizens the tools to work locally. Today, students learn many technical skills in art school and they can be utilized to help the pubic to engage with the problems directly in their backyards. Designers are also working with citizens to gather data to understand the conditions of specific local environments. In other words, these media artists are fascinated by providing "sensors for the people"!

A major part of an art school training is about visual semiotics: an analysis of the ways visual images communicate or interpret a message and the associated psychologies, signs and patterns of symbolism. This includes studies on behaviour and how it changes, including collective "grass roots" actions. It is a way of bringing together aesthetic form and content within the context of everyday

reality. So, often artists and filmmakers use local stories to humanise scientific information as a strategy to present more valuable chunks of digestible knowledge. Visual metaphors can also be used as a tactic to try to encourage some local public action (11). From our perspective, it seems necessary for everyone to link up and act promptly, a mammoth task even if the politicians agree. One piece of good news is that many designers believe that we can reach a 70 percent reduction of CO_2 emissions by 2050 by creating energy saving devices, by using an approach they call "Human-Centered Design" or HCD (12). This approach aims to match what the designer anticipates with the real world by involving people who are expected to be future users of the product.

Scientists often make the mistake of thinking that the best way to change peoples' minds is to slam the public with horror stories—the collapse of the Gulf Stream, unprecedented glacial melt, desertification or mass extinction. However, this tactic often fails to work. As psychologist Stanley Cohen says: when big scale problems are presented one after another on such a huge scale then this actually causes more denial. He argues that although denial is often perceived as a normal reaction, it causes an ability to see the truth. But to act accordingly is rare, whether in individuals or in governments (Cohen, 2013). The sheer information overload of addressing all these problems at once increases this denial. Instead Cohen thinks that people actually have to be dragged out of the reality away from the idea of collapse. Only then can they take some distance in order to be able to think more clearly and effectively. In semiotics it is well known that after watching many images of disaster without any possible solutions, people deny those problems outright, seek scapegoats, or deliberately engage in wasteful behaviour like trashing the streets during a parade. In some cases, they even totally shut down and say "who cares - we are all going to die one day anyway!". Therefore, climate science literacy does not benefit from the dissemination of facts and graphs about disaster—these often cause the general public to become less pro-active. In the arts, we believe that the people need personal stories, with implications and solutions rather than only facts to become pro-active. I believe that scientific information needs the immersive drama of well thought out audio-visual scripts, and I prefer these over genres like science fiction or comic books.

Also people rarely believe something that they cannot see. Therefore, scientific visualization has potentials for artists and designers. My approach however would be to use visualizations in an immersive environment where the public can, for instance, encounter the physical elements of the atmospheric gases as fascinating animated characters. Such a scenario has potentials to create a contemplative space where the viewers can experience knowledge about future problems. Immersion can engage all forms of bodily sensory perception—a more convincing experience.

John Magnuson suggested, society is "unable to sense slow changes directly," and so we are trapped inside what he calls "an invisible present," always living in an era of the moment—a place where the facts seem to lag behind the causes (Magnuson, 1990). This syndrome seems to be caused by a lack of insight. Is this a grave fault in the human species? Perhaps art and design can help to raise awareness here about the generational contract that our adult generation does not seem to be fulfilling.

CK: Your perspective resonates nicely with my reactions to the discussions at the conference. After the conference, I wrote a blog (13) and two of my conclusions were: first, we don't need more scientific statistics but real examples of actual positive change in the surroundings of people, and second, it is family, friends and neighbours that matter. Therefore, I argued, "change will only happen when doing the right thing for the environment also means being fair to family, friends and neighbours." It is interesting that you mention the generational contract because I end the blog with

a question that I pose to grandparents playing with their grandchildren on a playground. These grandparents profited from massive environmental exploitation through the economic wonder years of almost uninterrupted economic growth that accompanied their life, while their grandchildren will face a tough life in a world without oil and little or no wilderness left. Is this an issue of environmental consequences in our society and how can it be turned into some sort of social action and change? Maybe too big a question once again, but maybe something for artists to further explore.

Let me ask you a final question: What next? What potentials are there for future collaborations between artists and scientists on the issues we discussed? I think the question of evidence, which was also covered in the conference, might be particularly productive here. What roles do different forms of evidence play to uncover issues of justice and collapse but also to help people to deal with them? You touched upon the question of evidence several times before, and in particular you emphasized that we must make sure that evidence is rooted in the local context and allows people to immerse themselves in the process of understanding and addressing environmental problems. This sounded very interesting to me because I recently wrote a book chapter where we argued about this issue in connection with ecological research on environmental problems in the Anthropocene (Kueffer, 2015, section 2.4, pp. 27-32). One emerging characteristics of a new ecological science is that the way we collect, analyze and interpret ecological data is re-negotiated. I argue that this opens space for citizens, practitioners, amateur ecologists, and naturalists to engage in new and diverse ways in the collection, analysis and interpretation of ecological data. Amongst others, because ecological data are increasingly freely available on the web, and so is software to analyze and visualize them, do-it-yourself DIY ecology becomes possible on every laptop. This seems to be an area where artists and scientists could start to work together more intensively but also concretely together. But let me hear how you think about future collaborations and new ways of representing evidence?

JS: Yes, I think that some interesting possibilities lie in artists and scientists working in an interactive DIY way with communities. However, in the arts we are also aware of the rapid financial profit that DIY companies are making from these trajectories. When thinking in this direction, the very relationship between evidence and progress should be questioned and whether this idea of progress fits into our ideas of a generational contract. When we want to communicate scientific evidence, our question is, how to make it more digestible. In other words, we think about the relationship between evidence versus experience. For instance, can common sense also be called evidence?

Projects that attempt to re-design nature so that it can give people a kind of re-experience of the wonders of nature are one of the possible trajectories in this direction. For example, when I teach young artists, I would start with a set of abstract themes like “body”, “water”, “plant” or “air” and hope that they would go and make some research to find their own inspiration. Then I would give them examples of other artists who have conducted experiments under each of these themes. These examples would become my evidence because they prove that it can be done, and secondly they claim a place for these themes in (art) history. I would expect the students’ outcomes to be very diverse, innovative, and publicly accessible. Of course, for a scientist, the leading question would be based on understanding processes in the same four themes. There would need to be discussions, before the experiments can take place. The outcomes would then aim to generate facts that support other facts.

In a true transdisciplinary collaboration, scientists might have to include our subjective methods of interpretation. They might have to try out our kind of research processes, and shadow us. So far artists have been more interested in exploring how scientists work with quantitative methods to produce new knowledge. Therefore, we have been making art workshops for scientists and science communicators (Kueffer and Scott, 2015), and also we have been placing artists into science labs for residencies and we have documented their experiences through extensive reports (Scott, 2010).

Right now there is still a lot of confusion between objectivity and the value of subjectivity. Integration might be difficult. Both sides are concerned about what kind of evidence should be sustained and how it should be shared with others, but perhaps we can actually work together in new ways. The ultimate, take-home message is that our society needs to undergo a wholesome metamorphosis, so I am for seriously involving people in qualitative science and trying to create true dialogues. This means that we have to generate respect for each other's disciplines. In this way, our anthropomorphisms and artistic narratives may start to line up with our ideologies.

So, to react to one of your questions about new forms of working with (quantitative) ecological evidence, yes it might be interesting to swap roles for a while and ask the scientist to present his or her findings as questions or to ask the artists to start with an hypothesis. Researchers in the art context are no longer confined to the realms of entertainment and inspiration, and besides we do share something else in common: we both have to deal with conflicts of interest in our respective professions! So come over and take a walk on the wild side and see what we are doing. Don't be surprised if you find very wild, provocative alternatives of environmental science made out of semi-living materials or visual metaphors and interactive models that attempt to stimulate new associative thought or documentary films full of personal stories or DIY energy solutions that you may not have ever seen before!

REFERENCES

Cohen, S. (2013). *States of denial: knowing about atrocities and suffering*. Nohoken, NJ: Wiley.

Curtis, D.J., Reid, N., & Ballard, G. (2012). Communicating ecology through art: what scientists think. *Ecology and Society, 17*(2), 3. http://dx.doi.org/10.5751/ES-04670-170203

Gleiniger, A., Hilbeck, A., & Scott, J. (2010). *Transdiscourse 1: mediated environments*., New York, NY: Springer.

Hall, M., Forêt, P., Kueffer, C., Pouliot, A., & Wiedmer, C. (2015). Seeing the environment through the humanities. A new window on grand societal challenges. *Gaia, 25*(2), 134-136.

Kueffer, C. (2015). Ecological Novelty: towards an interdisciplinary understanding of ecological change in the Anthropocene. In: Greschke, H.M. & Tischler, J. (Eds). *Grounding global climate change. Contributions from the social and cultural sciences* (pp. 19-37). Berlin: Springer.

Kueffer, C. & Scott, J. (2015). Re-designing nature: situating art and ecology. In: Scott, J. (Ed). *Transdiscourse 2: turbulence and reconstruction*. Berlin: de Gruyter. In press.

Magnuson, J.J. (1990). Long-term ecological research and the invisible present. *BioScience, 40*(7), 495-501.

Scott, J. (2010). *Artists-in-Labs: processes of inquiry*. Berlin: Springer.

Scott, J. & Stoeckli, E. (2012). *Neuromedia: art and neuroscience research*. Berlin: Springer.

Web Sites

(1) Swiss Artists-in-Labs Program at www.artistsinlabs.ch
(2) www.z-node.net
(3) http://www.findhorncollege.org/programmes/ecovillageeducation/designforsustainability.php
(4) http://greenmuseum.org/content/artist_content/ct_id-106__artist_id-18.html
(5) The Weads at http://weadartists.org/about-us
(6) See "The Voice of the Farmers" at http://sautiyawakulima.net/bagamoyo/about.php?l=1
(7) "Art as a way of Knowing" in 2011 at the Exploratorium in San Francisco at https://www.exploratorium.edu/knowing/
(8) Dermaland by Jill Scott, a project about UV damage on the environment at http://www.jillscott.org/homepage.html (chose 'Europe. Project 1992-2015' in the menu bar
(9) Brandon Ballangée: http://brandonballengee.com/collapse/
(10) http://www.nature.com/news/environmental-science-pollution-patrol-1.16654?WT.ec_id=NATURE-20150108
(11) See fishyfood at http://areweeatingfishyfood.com/art-is-activism-for-new-fishy-food-cars/
(12) See for instance http://www.designkit.org/human-centered-design
(13) https://www.ethz.ch/de/news-und-veranstaltungen/eth-news/news/2015/11/why-environmental-justice-matters.html

BIOGRAPHY

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