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Queering Biologist/Amphibian Encounters

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This talk is an experiment in multispecies storytelling. The setting of this story is the Anthropocene, a new geological time period whereby no ecosystem remains unaltered by human activity. As a result, species are disappearing at unprecedented rates. In fact, the scientific community agrees that we are in the middle of a mass extinction event, which paleontologists define as the loss of three fourths or more of extant species in a geologically short time interval (Barnosky, 2011). This magnitude of biodiversity loss has only occurred 5 times in the past 54 million years of earth's history (Barnosky, 2011). The sixth mass extinction—the contemporary loss of biodiversity—is the first Anthropogenic extinction, meaning that it is the only mass extinction event to be caused by a single species—*Homo sapiens* (Barnosky, 2011; Kolbert, 2014). If current trends continue, half or more of all of earth's biodiversity could be lost within decades (*Call of Life*, 2011).

The actors in this story are an unruly assemblage of human and nonhuman beings. In accordance with the emergent turn in academic thought deemed “multispecies ethnography,” I will track the agency, subjectivity and lives of amphibians, fungi, genes, pesticides, landscapes, laboratory equipment, and other diverse non-human beings as they mingle, shape, and entwine with humans. I ask: What multispecies assemblages are at play in scientific research on amphibian declines? What non-human agencies and subjectivities are involved in these assemblages? And what kinds of interspecies relationships form, and whom do they benefit? [This onto-epistemological orientation is the result of my desire to decenter and destabilize the human in academic writing, and create discursive space for non-human agency, creativity and disruptions. Today, I invite

you to radically re-think our anthropocentric categories of analysis, and think towards the interdependence and flourishing of all earthly beings.

### *Methods*

In unraveling the multispecies assemblages at play in amphibian declines research, I employed interdisciplinary research methods. I began my research with ethnographic methods—conducting interviews with amphibian biologists and doing participant observation in a local laboratory doing research on amphibian declines. My cultural methods involve analysis of various cultural texts such as documentaries, books, YouTube clips, newspaper articles, etc. My historical methods involve analysis of relevant historical documents, and archival work in the UC Berkeley Museum of Vertebrate Zoology.

### *Results*

Our story begins in the early 1980s when scientists first began to notice that amphibian populations were in decline. It wasn't until 1989 at the First World Congress of Herpetology in Canterbury that the scientific community suspected that amphibian declines might be a global, rather than localized, phenomenon. This conference instigated a series of workshops, research groups, publications and other organizing efforts whose goals were to determine the nature and severity of amphibian declines, and mitigate them with conservation efforts if possible.

The research following this conference found that this is a time of unprecedented peril for amphibians. More than one third of the 6,300 amphibian species are threatened

with extinction, and if all of these species go extinct, the rates of extinction would be 25 to 45 thousand times the background extinction rate for amphibians. The causes of these amphibian declines include habitat destruction, climate change, pollution, pesticides, invasive species, and over-harvesting.

Research in the late 1990s determined that an aquatic fungal pathogen that is nicknamed “Chytrid fungus” or simply “Chytrid” is increasingly the cause of amphibian declines, and can be linked to almost every case study. It was later determined that Chytrid is responsible for the largest disease-caused loss in biodiversity in recorded history (Skerratt et al., 2007).

Today, scientists are still struggling to understand the intricacies of Chytrid’s role in amphibian declines. In the course of conducting my ethnography of this contemporary research, I was continually struck by how passionate, thoughtful and politically engaged the scientists were. One of the ways in which this manifested was in the kinds of relationships that form between amphibian biologists and animals they study.

The first place where I encountered this in my research was in the PBS film “Frogs: The Thin Green Line.” Amphibian biologist, Dr. Knapp, tells the camera:

It is really hard to see. An animal that you have tagged, recaptured several times, watched them for hours sometimes. And then you find that same animal dead in a pool.

And later, he continues:

It is incredibly sad to wander through a habitat and see where a frog once lived. I have stood in streams that were silent and I’ve listened all over the world to places where frogs have vanished and the ghosts are there you know. I feel the ghosts of these creatures. We just can’t let that happen.

Dr. Knapp responds to the extinction of amphibians with grief and sorrow. Here, we see the emotional pain experienced as a result of the severing of the biologist/amphibian—

researcher/researched—connection. Dr. Knapp conveys to us the loneliness of a biologist whose study organisms have gone extinct.

I saw similar emotional responses in my interviews when my respondents described the experience of encountering amphibians affected by Chytrid in nature. In the words of one of my respondents:

I am always shocked when I see a dead or sick animal in the field. It always disturbs me. How can this be? How could this happen?

Or, as another respondent comments:

I remember the first time I saw the fungus that has been killing the frogs live. I was absolutely blown out of the water...As humans we dismiss so many species as less than us or smaller than us or more fragile than us but I think when you have an encounter of any kind with the actual life form...that is kind of mind-blowing...And then you see a whole bunch of frogs belly-up in the water [as a result of this fungus]...it is very strange and disconcerting.

In the words of a third respondent:

It is incredibly sad to see amphibians dead or dying. It makes me feel powerless. Our science is not enough, you know? We need change in society. I don't feel very hopeful.

My interview data demonstrates that biologists have a range of emotional responses—shock disbelief, discontent, sadness, powerless, sorrow—to amphibian declines and extinctions. Contrary to the post-Enlightenment ideal of a detached, rational, apolitical scientist, my interviews demonstrated that biologists are passionately interested in the wellbeing of the amphibians that they study. For these biologists, these amphibians' lives are clearly lives that matter—both scientifically and ethically.

I encountered more evidence for this when doing participant observation with a local laboratory. We caught a California Slender Salamander that was very sick—likely with Chytrid fungus.. We spent a few moments wondering if the salamander was actually

dead, until she moved slightly, confirming that she was still alive. Graduate student 1 remarked, “I want to be gentle with this one because he’s not feeling too good.” We continued to take her measurements and graduate student 1 “swabbed” her belly to collect a skin sample that would later be tested for Chytrid. Graduate student 1 said things like “I’m so sorry” and “It will be okay” quietly to herself and the salamander.

The change in the tone of the group was palpable. Previous to finding this individual, all the amphibians seemed healthy, and the lab was fairly certain that Chytrid was not present at this site. After finding this animal, the mood sobered. The group fell uncharacteristically silent, and concern was readily apparent on their faces. Graduate student 1 then wondered aloud if the ethical thing to do in this situation is to “put down” the salamander so she didn’t have to suffer.

I found that these kinds of emotional investments manifested in the way biologists related to amphibians when conducting fieldwork more generally. The laboratory took steps at every stage of the research process to attend to the well being of animals in the field. In general, animals were handled as gently and for the least amount of time as possible. Addressing the research group, the lead scientist remarked, “We are doing it this way because we want to be nice to the animals.” Those who were experienced with handling amphibians closely monitored those who were less experienced to ensure that they were not harming the animals. Unless animals were being taken back to the laboratory, they were returned to the exact place in which they were found. Animals that were taken back to the laboratory were put into a container with a moist towel, and then into an ice chest to keep them cool and comfortable. The lead scientist double checked

each container, and then put a towel between the ice and the containers, remarking “I don’t know if this even makes a difference for them, but I like to do it just in case.”

Steps were also taken to ensure that we had the least amount of impact on the ecosystem we were working in. We were careful to put back the logs that we turned over to search for amphibians exactly as we found them. This ensured that the amphibian’s microhabitats—their homes—remained undisturbed. We treaded carefully, avoiding stepping on small creatures, or unnecessarily crushing plant-life. On the occasion that an animal got away from someone who was trying to catch it, we did not pursue her if doing so would require destroying or disturbing habitat—even if this meant a smaller sample size and therefore less rigorous data. We also took care to avoid spreading Chytrid from one study site to another. We used gloves when handling the animals and kept the swabbing supplies and field gear as sterile as possible.

The data I collected through interviews supports my claim that the way in which biologists study amphibian declines is impacted by concern for amphibian well-being. In the words of one of my respondents:

The whole idea of harming an animal is distasteful to me...[in deciding how to do research] we try to minimize disturbance to the habitat and to the animals.

Reflecting on the specific details of his research protocol, another respondent said:

Sure, I care [about harming amphibians]. If you are a conservation biologist who does research, you know that everything you do affects species in some way...But how extreme is that? How much does it really matter? What is the cost/benefit ratio? What you are accomplishing with your work vs. what you are hurting with you work? I think those are the deep issues that hopefully keep you up at night.

Thus, the care, concern and compassion that these biologists feel for these animals directly translated into how they interacted with them, and what kind of

amphibian/biologist relationships form. Radically, amphibian biologists allow themselves to touch their passion for non-human nature, and their sorrow at its suffering.

### *Conclusions*

What does this story tell us about how science functions in the Anthropocene? Feminist perspectives on science, technology and the environment often conceptualize modern science in terms of a dependence on post-Enlightenment binary logics. Theorists such as Val Plumwood and Deborah Bird Rose think about this in terms of “hyperseparations” which are ways of thinking that set up two things as opposites and define them in relation to one another, with one pole being superior and dominant over the other. Examples of hyperseparations include human/nonhuman, self/other, mind/body, nature/culture, active/passive, subject/object, colonizer/colonized, and masculine/feminine etc. These binary pairs are gendered—whereby the superior and dominant pole is masculinized and the other pole is feminized. As feminists have noted, this gendered dualistic logic should be of concern because it is deeply implicated in the workings of modern power and oppression.

I conducted this research expecting to see these binary logics structuring the scientific research and associated scientific rhetoric I studied. But I found that the story was much more complicated. My data shows traffic across and disruption of these binary logics is occurring in scientific research on amphibian declines. In the course of conducting my research, I encountered countless instances of scientific practices that complicated, resisted or directly contradicted a dependence on post-Enlightenment binary pairs. In this talk, I narrated the history of amphibian decline research in such a way that



highlights the disruption of the rationality/emotion binary pair. I chose to do this because this data is fairly representative of the kind of traffic across binary pairs that I am speaking of.

Given that this story is more complicated than the classic framework allows for, what kind of conceptual tools can we employ to understand what is going here? What I am proposing is that there is a queering of the amphibian/biologist—researcher/researched—relationship. To be clear, I am not using “queer” as a catch-all term for LGBTQ folks--which I believe to be a harmful distortion of the political potential and historical genealogy of the term. Instead, I am using “queer” to loosely denote non-normative and thus politically subversive engagements with gender, sex and sexuality.

My investment in using the term “queering” to refer to the disruption of binary logics that is occurring in these biologist/amphibian relationships is threefold. First, queer has to do fundamentally with the resistance against and deliberate transgression of binary logics. As I have narrated it, amphibian/biologist relations become implicated in a perversion of gendered hyper-separations and a queering of post-Enlightenment dualistic thinking.

Second, queer is about celebrating non-normative desires, passions, emotions, intimacies and relationships. To be queer is to be deviant, unruly, illegible, perverse—to dwell in a mode of misplaced affective excess. My research demonstrates that amphibian biologists working on amphibian declines are passionately invested in the well-being of amphibians and the flourishing of non-human nature. Thus, the resulting amphibian/biologist relations involve non-normative desires, emotions and intimacy in so

far as they betray research/researched relationships informed by the post-Enlightenment scientific ideal of emotional neutrality, disinterestedness, and rational detachment.

Third, queer has a politic. It is about resisting cultural norms surrounding gender, sex and sexuality that are exclusionary, regulatory and violent, and about a utopian longing for a better world with less violent and more loving modes of relation. I believe that there is a subversive or politically useful element to this act of disruption of binary logics that is happening in these amphibian/biologist relations.

I want to think about queerness as a basis for rethinking the relationships between humans and our environment, and for rooting these relationships care, love and regard. What kinds of stories can we tell, and what might our relationships with the natural world look like if we allowed ourselves to touch our sorrow at the disappearance of our earthly kin?