

Plasticity & Possibility in Regenerative Biology

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Motivation

- Much has been written about extinction in the age of the Anthropocene. Extinction processes have been analyzed for what they tell us about the consequences of human actions and about nature, science, conservation, and for their power to generate action. Alongside analyses of extinction and human impacts on global ecosystem come reports on regeneration. Scientific work on regeneration, like that on extinction, has both practical and symbolic power. This project analyses both the social contexts shaping regeneration research as well as its cultural impact.

Project Description

Scientists studying developmental and regenerative biology are exploring new possibilities for the plasticity of human biology. Often drawing on research with non-human model organisms, these fields are producing knowledge about organismal development, growth, and regeneration in order to transform these processes.

This research raises a number of important anthropological questions:

- What are the lab practices through which animals are made to demonstrate regenerative capacities?
- How do scientists make comparisons and translate findings about non-human life into human biology and how does this research reconfigure our relation to non-human organisms?
- What consequences does framing biology as regenerative have for our understanding of animal biologies and the environment more broadly?
- What implications does this research have for the limitations of the human body and what it means to be human?

Context

- This research will contribute to anthropological research in three areas: multispecies ethnography, post-genomic biology, and the relationship between science, markets and capital.



How do the cultural, political, and economic contexts of regenerative biology shape how scientists imagine what life could or should be?



Project Deliverables

- This project will consist of multi-sited ethnographic fieldwork
- Key field sites
 - Training courses for scientists on stem cells and regenerative biology
 - Laboratories focused on basic and clinical science on regeneration
 - Biotech start ups
- Methodology
 - Participant observation research and ethnographic fieldwork in a variety of sites
 - Interview transcription, coding field notes, and other data analysis
- Follow-on funding strategy: use preliminary data from this fieldwork to support Wenner-Gren and NSF applications
- Publishing plan:
 - Fieldwork funded by this grant will allow me to publish 1-2 articles
 - This fieldwork and subsequent research will ultimately result in a monograph

Potential Impact

- The promise of regenerative biology has become particularly compelling in the Anthropocene, the moment in which human activities have begun reshaping geological processes. This project will provide an understanding of the key issues this field presents for both environmental conservation and human social life. As global environmental crises including rising extinction rates demonstrate the limits of biological flexibility and adaptability, regenerative biology appears to offer a technological fix and an alternative future for some.



Project mascot: the axolotl
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