

Mapping EDEN Proposal

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Overview

Description

Mapping EDEN is an experiment in wedding sociological critique with a craft-tradition of Computer Science seeking artifacts and ways of making and doing that suggest fresh approaches to multiple disciplines.

Background

Merits

Background

Intellectual Heritage

Situated Knowledges

A model is worked, and it does work

Donna Haraway

Staying with the Trouble: Making Kin

in the Chthulucene p. 63

Our judgments are influenced by our experiences. This basic human quality is at the center how we understand others and how we learn, among other things. Within the social sciences, scholars have been working to demonstrate that this quality exists both within people and within processes and tools. This project is most directly inspired by the vein of work descended from critical feminism in the eighties around scientific epistemologies. Specifically Haraway (1988) introduces the term "Situated Knowledges" to talk about the power of speaking 'from' a location, which allows others to speak on the same topic from another location without needing to directly contradict the first speaker. It is a practice that strives to go beyond the flaws of scientific epistemologies and speak about a better system. Haraway was responding to work from Sandra Harding, who later returned to the topic to outline what Harding (1992) calls "Strong Objectivity." In conversation with the idea of situated knowledges, Harding critiques the traditional scientific practice of excising the background of the producers of scientific knowledge by pointing out that retaining how knowledge-finders are situated in the world adds to our understanding of their work. Out of the conversation between these two feminist thinkers has emerged a productive lineage of feminist thinkers who take the question of identifying how a 'knower' (either themselves or a third party) is situated in the world and how that situation has impacted the knowledge they produce. A modern vision of this analysis can be seen in Haraway (1997)'s *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouseTM*, which breaks down the rhetoric and framing around genetics research fetishizes the particular

element of the gene because it is useful to the industry and particular narratives. Haraway advocates a view of the gene that centers it in a wide web of biological mechanisms that interact and combine to create living creatures. Beyond individuals and rhetoric, the design and function of tools also encode a perspective and a view of the world. Some tools, like telescopes, do this in obvious ways. Others, like the tools used to analyze populations, contain intents that are less obvious. Subramaniam (2014) describes how the eugenic legacy of population level analysis makes some findings easier to see than others. How tools developed with the assumption that they would reveal differences between races are disappointingly easy to misuse, purposefully or accidentally, and create results that suggest racial difference. That much of the bias in a standpoint comes from what is hard to see or invisible with a particular tool and that this is only a flaw (for tools are meant to make select things more visible) when that tendency goes unacknowledged. That a tool contains a bias is desirable (what use is a telescope that does not magnify one area of the world?) and only becomes problematic when that bias is mistaken for the nature of the world.

Software Studies

[S]haring produces its own kind of moral and technical order”

Christopher Kelty

*Two Bits: The Cultural Significance
of Free Software p. 118*

Software is a tool that emerges out of a sea of tools. The methods of its construction, verification, distribution and maintenance are varied. This variance of practice arises at least in part from the lack of universally agreed upon standards for the goals of software or the appropriate metrics for success (Ensmenger, 2012). A diversity of practice does not create a homologous blend of cultures and practices. Instead, each software community has its own set of values and goals in addition to wider ethics that other projects and cultures share. Software Studies, broadly, attempts to connect the these hyper-local values that emerge from culture and circumstance to

the technical and deterministic qualities of a particular piece of software or a particular piece of code. Works in the field often focus on a particular software community or a set of communities with shared interests. Kelty (2008)'s work focuses on highlighting common social structures among particular software communities that both enable and emerge from the environment of open source software. There is also work that describes "code/space": places where the fixed rules of code and the fuzzy rules of social understanding combine to create hybrid spaces (Bridle, 2018; Kitchin & Dodge, 2011). Bivens (2017) represents our final influence as she compares how social qualities emerge with underlying technical qualities. Are social limitations matched by technical limitations? How do these two qualities co-create one another?

Design

This project will use sociological analysis to explore and highlight the standpoint of a piece of software. While I break down the particular qualities of the software package - its goals, blind spots and distortions, I will also be looking at its source code to compare the technical system to the external interface. What aspects seem constrained by the technical tools used to structure the system? What qualities are unrelated to the technical details?

Fieldsite

That virtual worlds are places means
they can be fieldsites;

Tom Boellstorff

*Two Bits: The Cultural Significance
of Free Software p. 107*

The EDEN software package, developed by the Sahana Foundation (a non-profit) and deployed to manage disaster response is the focus of this project. It was initially developed and deployed by an alliance of companies in the Sri Lankan Information and Communications Technology (ICT) sector in response to the Indian Ocean Earthquake & Tsunami. In 2009 development was transferred to the Sahana Foundation, an

American non-profit. The Foundation lists its mission as "Saving lives through information management solutions." They describe their software as part of a wave of change in how humanitarian responses can use ICT to improve the quality of their response. They situate themselves in the middle of other Free Open Source Software (FOSS) ICT projects such as OpenStreetMap which focus on community engagement and incorporating user data into digital platforms. EDEN has been used in response to a number of disasters in the developing world as well as ongoing supply management programs in the developed world (Sahana Foundation, n.d.).

The software's homepage can be found here: <https://sahanafoundation.org/>. A demo version of it running on the Sahana Foundation can be found here: <http://demo.sahanafoundation.org/eden/>.

EDEN's source code can be found here: <https://github.com/sahana/eden>

EDEN's identity as a piece of software is enmeshed in an FOSS ecosystem. It is written in Python, an open source language and uses the Python web framework web2py as the foundation its functionality is built on. Its functionality is broken up into many different web modules, which are organized around nodes of shared functionality that allow the individual modules to communicate and avoid duplicating functionality. EDEN generally uses other FOSS tools wherever possible: both of its database options (both MySQL and PostgreSQL)

Methods

Phase One. The first phase of this project will be a wide survey of literature. Focusing on Science, Technology and Society works that analyze the standpoint and biases of other technical tools and moving into analysis of disaster The aim of this project is to put academic work in conversation with practical tools as well as put academic criticism in conversation with work to transform the same tools. This will draw on Science, Technology and Society's tradition of Making and Doing as well as traditional methods for analysis and critique. A PDF of this document can be found at

`https://github.com/aeturnum/masters_project/blob/master/
full_proposal.pdf`.

The \LaTeX source file can be found at `https://github.com/aeturnum/
masters_project/blob/master/full_proposal.tex`.

Inspiration

Research Questions

What ways of knowing and doing are assisted by the design of EDEN?

What epistemological traditions are centered in EDEN's methods for storing data? Whose needs are attended to first in this particular product?

Schedule

Quarter	Quality	Time Alloca- tion	Goal
Fall	Reading	80%	800 pages read with notes
	Writing	10%	Notes and planning documents
	Coding	10%	Notes on project structure
Winter	Reading	40%	Final selection of bibliography with additions based on notes and readings.
	Writing	30%	Outline for final paper with 20% of content finished
	Coding	30%	Rough modifications completed, but in need of polish
Fall	Reading	10%	Unexpected additions to literature and gathering specific quotes from previously completed elements.
	Writing	40%	Final paper
	Coding	40%	Full branch of EDEN project with documentation and demonstration server.

Impacts

Artifacts

The project will produce three artifacts: a paper, a piece of software and a git source-tracking repository.

The Paper. The paper will provide formal analysis of the original form of the software being considered. It will engage with social science literatures from traditions such as feminist critiques of technologies, critiques of algorithmic technologies, critiques of (often but not exclusively scientific) epistemological processes and software studies. Its discussion and conclusion will describe the particular view the software renders of the world and also argue how alterations to that piece of software might change its purpose, its views or its impact.

New EDEN. The software artifact (with the tongue-in-cheek name of New EDEN) will be a modified version of the selected software whose modifications will be driven by the suggested alterations in the paper. These two software products (modified and unmodified) can serve to contextualize the paper and bound its theoretical claims to what is pragmatically possible for a software developer.

The Git Repository. The two primary artifacts and all the other ephemera (including this proposal) involved in producing them will be archived in a git repository. Git will allow the process to be recorded and observed both in real time and in hindsight, giving the project a shape and an arc and a character outside of its final results.

The reference Git repository for this project is available at https://github.com/aeturnum/masters_project.

Goals

Glossary

MySQL MySQL is an open-source relational database management system (RDBMS).

Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. MySQL is a component of the LAMP web application software stack (and others), which is an acronym for Linux, Apache, MySQL, Perl/PHP/Python. MySQL is used by many database-driven web applications, including Drupal, Joomla, phpBB, and WordPress.. 6

OpenStreetMap An open community of volunteers that maintain data about roads, trails, cafés, railway stations, and much more, all over the world.. 6

PostgreSQL PostgreSQL is a powerful, open source object-relational database system with over 30 years of active development that has earned it a strong reputation for reliability, feature robustness, and performance.. 6

python Python is an interpreted, high-level, general-purpose programming language.. 6

web framework A heterogeneous set of software that allow a programmer to efficiently write and manage providing a service over the Internet. This could be a website or a mobile app (often it is both) or a go-between for other services. Examples include web2py and Django in Python or Phoenix in Elixir.. 6

Acronyms

FOSS Free Open Source Software. 6

ICT Information and Communications Technology. 5, 6

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