

## **Some (Initial) Connections between Citizen Science and Social Epistemology**

Todd Suomela, University of Tennessee

The default question for those in the midst of a dissertation is simple: what are you studying? But the answer is rarely simple. By design the process of writing a dissertation is a combination of complication and simplifying. I'm currently in the middle of interviews with scientists, project managers, and journalists involved in writing about citizen science projects. The goal is to understand how they explain and frame the concept of citizen science to themselves and to the public.

Citizen science is a recent name for a phenomenon that is both new and old. Non-professional scientists have contributed to scientific advancement for many years through projects such as the Audubon Society's Christmas bird count and the National Weather Services cooperative observers. Both of these programs have been underway for more than 100 years. Contemporary citizen science takes the idea of using volunteers to help scientists and moves it into the internet age. The development of the internet over the past 25 years has opened up new opportunities for scientists to recruit volunteers and new avenues for collecting data. Consumer technologies, such as GPS and smart phones, are in the middle of making scientific sensors available to more people than ever before.

But changes in technology are not the only reason why citizen science has become increasingly popular. There are social and institutional factors contributing to the growth of citizen science. STS in particular has contributed to the social recognition that expert scientific knowledge needs to be combined with the experiences of local populations, especially when they are affected by risky technologies. (Irwin 1995). At an institutional level the demand for scientists to reach out to the public has led to changes in funding requirements, such as the broader impacts merit review by the National Science Foundation (Silvertown 2005). Recent questions about the reproduction of scientific results are contributing to calls for the publishing of data along with the traditional scientific journal article (Ionadis 2005). *DataONE* is an NSF funded project that is creating the infrastructure for ecological and environmental scientists to easily find data from other scientists.

My long-term goal over the next few years is to explore how amateur/non-professional volunteers contribute to the advancement of scientific knowledge. I want to trace the changes in technology, society, and institutions that has led to the growth of citizen science over the past two decades. I see numerous connections with what has already been discussed here in this social epistemology forum. Is citizen science a type of group knowledge? (Eric Kerr, this blog) What mediates the communication between science and members of the public interested in working with a citizen science project? (Joan Leach, this blog) How does our understanding of epistemology relate to critical theory? (Stephen Norrie, this blog)

I don't yet have any answers for these questions but I look forward to learning more from others about the potential connections between social epistemology and citizen science. At the least my adventures here help to complicate my ideas about citizen science and its relation to philosophy. And for that I'm already thankful for my time as part of the Social

Epistemology Review and Reply Collective.

**Contact details: [tsuomela@utk.edu](mailto:tsuomela@utk.edu)**

### **References**

- Ioannidis, John P. A. “Why Most Published Research Findings Are False.” *PLoS Med* 2, no 8 (2005): e124. doi:10.1371/journal.pmed.0020124
- Irwin, Alan. *Citizen Science a Study of People, Expertise, and Sustainable Development*. London: Routledge, 1995.
- Silvertown, Jonathan. “A New Dawn for Citizen Science.” *Trends in Ecology and Evolution* 24, no. 9 (2009): 467-471. doi:10.1016/j.tree.2009.03.017