SCIENCE

Teaching Ethnographic Research through a Collaborative Project

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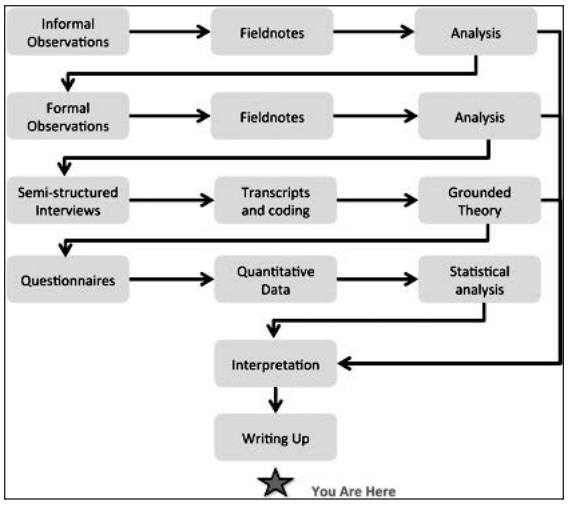
I have been using collaborative course projects in my course Research Design and Ethnographic Methods for a number of years. These collaborative projects are a great way for students to learn how to design a study, collect and analyze data, and write up and present ethnographic research. The majority of the students are graduate students from disciplines other than anthropology—design, ecology, education, linguistics, nursing, public policy, systems engineering, and veterinary sciences—with a few anthropology undergraduates. We use the Ohio State University campus as our natural laboratory and have studied a range of different topics and presented our findings to the different stakeholders. In autumn 2010 we examined student behavior in the university library and presented the results in a poster



Course Trajectory. Image courtesy Mark Moritz

to the director and staff of the OSU Libraries. In spring 2011 we examined what makes group work successful and presented the results to the director and staff of the University Center for the Advancement of Teaching (UCAT). In spring 2012 we examined how mobile technology in the classroom affects learning and presented the results to the director and staff of the Digital Union in a PowerPoint presentation. In spring 2013 we examined students' eating behaviors on campus and presented the results to staff and faculty from the Food Innovation Center (FIC) and Campus Dining Services. Here I explain how I organize these collaborative projects and outline the conceptual framework that guides this ethnographic research project, which integrates scientific and interpretive approaches in anthropology.

Course Organization

In ten weeks students learn about study design and ethnographic methods by participating in a collaborative research project in which we design a study, collect data, analyze data and write up the results in a poster or PowerPoint presentation. The primary focus of the course is on hands-on student research activities. We cover a selection of data collection and data analysis methods that are central in ethnographic research—observations, writing fieldnotes, semi-structured interviews, grounded theory, surveys, and statistical analyses.

There are two meetings per week. The first meeting of each week I lecture about the different methods using Bernard's *Research Methods in Anthropology* (2011) and Emerson et al's *Writing Ethnographic Fieldnotes* (2011), which complement each other well, one being more scientific and the other more interpretive. The second meeting is organized as a workshop in which students apply what they have learned earlier that week by designing an instrument (eg, an observation protocol) and/or analyze data that was collected in the previous week.

I use Michael Agar's Iterative, Recursive, Abductive (IRA) approach to organize the course project (An Ethnography by any other name, 2006). This means that we start the project with a simple provocative question or hypothesis—for example, mobile technology interferes with students' learning—and then have multiple rounds of data collection, analysis and interpretation in which we gradually narrow the focus of our research and refine our questions as in Agar's funnel (see figure). We start very broad, with a round of informal observations of a particular activity setting, eg, the library or classroom. Then we discuss both the process and product of the observations and collaboratively develop in class a more systematic observation protocol. After class I edit and finalize the protocol and post it as next week's homework to the course wiki. Students then individually conduct the observations and write up their fieldnotes. They post their fieldnotes to the wiki by the following meeting, when we collaboratively compare our notes in class, interpret our findings, and use them to design the next round of data collection. As we make new discoveries, we change and refine the research questions. Towards the end of the class, as we approach the narrow part of the funnel, we focus in on a few specific research questions and collect data with an online survey using Google Drive and use simple statistical analysis using free 30-day demo versions of programs like InStat and StatPlus to quantitatively measure some differences between groups or correlations between variables. The emphasis here is primarily on learning how to manage survey data in Microsoft Excel so that it can be used in statistical analysis.

The wiki is a critical component in the course project as it facilitates collaboration inside and outside the classroom. The wiki is hosted by Wikidot.com and is private; only students and I are members and have access. Members can view, post, edit and discuss data and analyses on the wiki (eg, annotated bibliographies, fieldnotes, interview reports, transcripts, codes for grounded theory, statistical analyses). We also use the wiki in class to compare our data and discuss our analysis.

The collaborative research project is covered by an IRB protocol and students have to complete a web-based training in human subjects protection through the Collaborative Institutional Training Initiative (CITI) in the first week of class. However, because we study new topics each semester and design new instruments in each iteration of the class, we amend the existing protocol multiple times over the course of the semester. Unfortunately, the pace of the course is such that the IRB cannot review our amendments quick enough and so mid-course, we are technically no longer doing "research" but instead are doing an educational project. That means that we cannot publish the results and so when we present our course project to relevant audiences we focus on the process of the collaborative project, rather than the product.

Conceptual Frameworks and Research Design

Because methods are meaningless if they are not part of a well thought through research design, students also learn how to design a research project and write it up in a research proposal. I also use the collaborative research project to discuss the logic of research design in which theories, questions, sampling, data collection and analysis, and writing are integrated in a coherent argument. That also means that the collaborative course project requires an analytical framework to guide the research. I generally use a version of Tom Weisner's ecocultural model (*The Ecocultural Project of Human Development*, 1997), which makes a distinction between different analytical levels of (1) ecocultural context; (2) cultural models; and (3) everyday routines in activity-settings. The idea is that participants try to accomplish tasks in these everyday activity-settings and that the routines are shaped by both the ecocultural context and participants' cultural models. The ecocultural model is generally used in cross-cultural studies of child development but it is versatile and can be used to study practically any topic. More importantly, it fits well with the organization of the collaborative project in which we start with observations of the activity-settings and then conduct interviews to get at participants' cultural models, while throughout the semester we reflect on how the larger ecocultural context of the institution shapes what we study and how we as researchers study it.

Learning about Research and Teaching through Reflexivity

Reflexivity is a great tool in teaching research design and ethnographic methods because research design is all about making informed decisions to develop a logical and integrated argument for how to answer a research question or evaluate a hypothesis. Reflexivity

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capacity, all of which are factors in determining LMPs. Blending these representations of grid dynamics with computational modeling tools, they hope to predict LMPs in a way that will earn them competitive advantage over other players.

Other actors in the industry who contribute to economic theory from an engineering perspective are demand side management (DSM) researchers, who try to make demand variable by providing consumers with incentives. DSM researchers, either in academic programs or companies that specialize in energy efficiency, try to expand "consumer choice" into retail electricity by giving electricity consumers tools like smart meters which they can use to analyze and alter their consumption practices. In the hopes of understanding the conditions of consumption decisions, they often team up with social scientists and psychologists to help them analyze general aspects of human decision-making. The thriving of DSM in power systems engineering signals that the field has become a fundamentally economic one: power systems engineers in academic institutions today are increasingly concerned with improving the feedback between electricity supply and demand. Their goal is to fix demand inelasticity—the unresponsiveness of demand to prices or other supply-related factors—to which energy economists have been drawing attention as a perennial market inefficiency. Here again, it is non-economist market actors like research engineers who develop, transform and attune agendas earlier articulated by economists to the specificities of commodities and circulate these across economic and physical infrastructures, such as markets and the electric grid.

Looking Forward

What does the advent of the technological mean for economic anthropology, especially given the long history of debates over the separation between different spheres of exchange? The task at hand is to recognize that the technological has already become part of the economic. High-speed traders have developed specialized hardware and arbitrage has become a modeling problem at the hands of quantitative analysts, or "quants." If economic anthropology is to continue contributing to our understanding of markets, vernacularizations of economics in scientific, technological and infrastructural terms will need to be examined. The future of economic anthropology lies in exploring how these heralded market actors are rewriting the rules of the game in their perpetual search for the efficient market.

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number. After only the first two years of measurement, Charles Keeling demonstrated an increase of about 2/3 parts-per-million per year (Keeling, 1960 The Concentration and Isotopic Abundances of Carbon Dioxide in the Atmosphere. *Tellus* XII). That research has consistently proven one of the least controversial key elements to the overall scientific problem of establishing the anthropogenic basis of contemporary global warming.

Maintaining Fourier's speculative perspective, Roger Revelle (with Hans Seuss), who had secured Keeling's funding and to whom Keeling answered at Scripps Institution of Oceanography, argued that "human beings are now carrying out a large scale geophysical experiment [...]. Within a few centuries we are returning to the atmosphere and oceans the concentrated organic carbon stored in sedimentary rocks over hundreds of millions of years" (Revelle and Seuss, 1957, Carbon dioxide exchange between atmosphere and ocean and the question of an increase of atmospheric CO2 during the past decades. *Tellus* X). Arrhenius posed the scientific problem of climate change in terms of a hypothetical doubling of atmospheric carbon dioxide concentration; Keeling's work ensured that the rise in concentration was much more than a neat way to state a scientific problem. That anthropogenic etiology of a radically changed biosphere has since defined the unity of climate change as a human problem.

Who cannot sense the excitement in Revelle and Seuss's anticipation of the planetary stakes of the moment? "This experiment, if adequately documented, may yield a far-reaching insight into the processes determining weather and climate." When one imagines scary apocalyptic futures fraught with uncertainty but which hinge on that single variable, the atmospheric concentration of greenhouse gases, one does so through these three modalities—speculation, quantification and anthropogenesis.

Yet the ways in which pop climate discourse repeats eschatology are less relevant. The focus on imaginative speculation materialized in durable form helps explain both the ways climate models work, oriented toward future extrapolation with an inherent problematic of uncertainty, and financial speculation for emissions reductions in the form of global carbon markets. We are *neither* repeating the temporal horizon of a secular apocalyptic imagination, *nor* simply quantifying and rationalizing nature. If apocalypse closes time by announcing the end if the world, climate science and climate politics both are oriented toward open futures in which it is possible—indeed, perhaps necessary—to reimagine contemporary forms of human living at a planetary scale.

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is also critical for building a conceptual framework that guides the research project. I use Ravitch and Riggan's *Reason and Rigor* (2012) to teach students how to build an argument for why our particular topic is important to study and why ethnographic methods are the best way to study it.

On a more personal level, I try to always be up-front about my own biases and how these shape the collaborative research project. I started last year's project with my explicit assumption that students' use of smart phones, texting, twitter and Facebook in class interferes with their learning. By making my biases explicit and showing where they are coming from—I am not an avid user of mobile technology, I have no smartphone and no Facebook account—I model for students how to reflect on their points of view (POV1) and how these shape their research and may impede their getting at the point of view of their informants (POV2) (again, I am drawing on Michael Agar's concepts). In this project we found, to my surprise, that students' use of mobile technology had no significant impact on their engagement in class (which we used as a proxy for learning). Instead, we found that the way instructors use PowerPoint is often more detrimental to students' engagement in class. We also found that both students and instructors talk about the use of mobile phones in class in terms of rudeness and respect, suggesting that it's more about conflicting sociocultural values than about students learning.

The big question, of course, is whether the collaborative research projects support students' learning. The evidence from formal and informal evaluations suggests that they do. Students appreciate the integration of ethnographic theory and practice and find it a very useful course and many of them integrate ethnographic methods in their MA and PhD research projects. I too, find it useful. I have integrated into my own practice what I have learned through these collaborative research projects. For example, I am no longer concerned about students' texting in my classes. Instead, I pay more attention to how I can use PowerPoint to engage students. Teaching at a university, it does help to have some understanding of students' lives, as Rebekah Nathan made clear in *My Freshman Year* (2005). The collaborative course projects give me small, ethnographic window into the lives of my students at my university.

PowerPoint presentations and posters with findings from the collaborative research projects and the syllabus for the course can be found on my website: http://mlab.osu.edu/teaching.

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