Successful and Unsuccessful Efforts at Interdisciplinary Philosophy:
What's the Difference?

Kevin Elliott
Department of Philosophy
University of South Carolina, Columbia
ke@sc.edu; 803-777-3735; http://people.cas.sc.edu/elliotkc/

I plan to discuss, in a fairly informal manner, two projects in which I have engaged in interdisciplinary research as a philosopher of science. One project has been significantly more successful than the other. The more successful effort was a project that I conducted largely on my own, in which I critically examined several areas of contemporary scientific research on the health effects of low-level pollution. The less successful effort consists in my ongoing involvement on an NSF NIRT (Nanotechnology Interdisciplinary Research Team) grant designed to examine public perceptions of the toxicity of nanomaterials. I will attempt to isolate some of the conditions that have made one experience more successful than the other.

Project #1

My work on low-level pollution focused especially on a phenomenon called hormesis, which involves beneficial or stimulatory effects caused by chemicals that are normally inhibitory or toxic. I attempted a somewhat detailed analysis of four major categories of value judgments associated with this research: (1) choices about what topics to examine and what questions to ask; (2) decisions about how to categorize and describe the phenomena; (3) judgments about how to interpret and evaluate evidence; and (4) choices about what public policies to formulate in response to the available research. I also highlighted the efforts of interest groups with "deep pockets" (e.g., industry and the military) to influence these judgments for their benefit. Finally, I explored three strategies for making these value judgments responsive to a wider range of societal values than those represented by the deep pockets. These strategies included (1) developing more effective alternatives to current university conflict-of-interest policies; (2) creating deliberative forums for analyzing the value judgments involved in policy-relevant research; and (3) promoting an "ethics of expertise" to guide scientists in providing information about debated topics to the public. I illustrated these strategies in the hormesis case and also in research on two other phenomena associated with environmental pollution: endocrine disruption and multiple chemical sensitivity (MCS).

This project required becoming familiar with literature from a variety of fields and publishing in scientific journals as well as a range of different philosophical journals. Within philosophy, I drew on literature from research ethics, biomedical ethics, and the

philosophy of science. I also obviously needed to familiarize myself with the scientific literature on hormesis, endocrine disruption, and MCS. The strategies that I developed drew heavily on literature from science and technology studies (STS) and from science policy. Despite this range of disciplinary sources, it appears that the project went well, both from a subjective perspective (I felt good about it) and from a more objective perspective (the results have been published in a number of places, including my 2011 book, *Is a Little Pollution Good for You? Incorporating Societal Values in Environmental Research*, from Oxford University Press).

As I contemplate the features of this research project that contributed to its success, several factors come to mind:

- I had preparation for reading much of the necessary scientific and STS literature because of my educational background (undergraduate chemistry major and Ph.D. in history and philosophy of science)
- The subdiscipline of philosophy of science looks favorably on work that is heavily informed by work in the sciences, so it is actually beneficial to spend time learning the scientific literature
- Various groups within the Philosophy of Science Association (PSA) have recently been encouraging work that has relevance to public policy or social concerns, which made it easier to publish my work and to find good opportunities to present at conferences
- My department is sympathetic toward multidisciplinary work and even includes supportive statements in its guidelines for tenure and promotion (e.g., giving credit to work published outside of philosophy journals, giving credit for obtaining external grants, giving full credit for co-authored publications when appropriate)
- I was able to make contacts with appropriate people in other disciplines who could give me advice on my research

This is not to say that there were no challenges along the way. I found it to be more difficult to get my work published in scientific journals than in philosophy journals. I think that this was partly because of different "languages" and expectations in the two fields, so I did not always do a very good job of writing up my work in ways that the scientists appreciated. Similarly, I found that there were sometimes barriers in my efforts to communicate with scientists, whether through email exchanges or through my journal articles.

Project #2

My second, less successful, example of interdisciplinary research is my Nanotechnology Interdisciplinary Research Team (NIRT) grant. The PI is a Professor of Communication, and the co-PI's include faculty from several other disciplines, including English, Toxicology, and myself from Philosophy. The grant focuses primarily on social-science oriented research. Our aim is to examine and compare the perceptions of nanotechnology risks and benefits (specifically risks associated with nanoparticle toxicity) coming from scientific experts versus from lay citizens. We are eliciting feedback from experts and lay people using a variety of approaches including: (1) a survey of toxicologists using the Delphi method; (2) videotaping informal citizen deliberations about nanotechnology risks; and (3) more formal focus groups in which citizens can discuss advances in nanotechnology.

Unfortunately, I don't think that this project has been a very successful example of interdisciplinary work, either from a subjective perspective (I and at least one other co-PI don't feel that it has gone very well) or from a more objective perspective (we've published very little that includes authorship or content coming from multiple disciplines). Some of the factors that may have made it relatively unsuccessful include the following:
- The PI left for another institution shortly after the grant was awarded, and several key investigators were already at other institutions; this makes it difficult to develop relationships and communication
- Many of the faculty involved in the grant were "thrown together" after the PI had already developed a draft of the grant proposal; thus, the faculty were included largely for the instrumental purpose of demonstrating interdisciplinarity and not because of a natural development of common interests leading up to the grant proposal
- The core of the grant is a social-science research project, and there was not a sufficiently clear plan for how faculty members outside the social sciences would contribute to the project—especially in terms of providing *intellectual* contributions
- Those involved in the grant are extremely busy, which further cuts down on opportunities for communication
- The PI has not been in conversation very regularly with the co-PI's to communicate about the grant's progress

Of course, this grant is not a complete loss. We have collected data, we have produced publications (albeit not publications that incorporate a very interdisciplinary perspective), and it may ultimately turn out to be more successful than it appears at this point. Nevertheless, it does illustrate some ways in which interdisciplinary work can go awry.

<u>Reflections</u>

Some of the conditions associated with my experiences are somewhat unique or difficult to change after-the-fact. For example, one can't easily anticipate that the PI on one's grant proposal will subsequently move to a new university and become difficult to contact. Nevertheless, I think that some of my experiences do suggest lessons for philosophers who attempt to engage in interdisciplinary work or who want to promote this sort of work. First, it is very helpful to have institutional support, especially from departments who formulate guidelines for tenure and promotion and also from scholarly societies that can provide opportunities for presenting and publishing interdisciplinary scholarship. Second, it is important to develop strategic contacts with the right kinds of people outside our discipline. When potential collaborators have the ability to communicate across disciplines and to appreciate philosophical ways of thinking, interdisciplinary work can go very well. However, when potential collaborators are not very skilled communicators to begin with and when they have little sense of what a philosopher is likely to contribute to a project, it does not bode well.

A final lesson from my experience on the NIRT grant (and from what I have heard about other interdisciplinary work by philosophers at USC) is that interdisciplinary research seems to work better when it develops "naturally" from a bottom-up process in which individuals discover ways in which their research connects with work being performed by scholars in other disciplines. For example, it worked very well for me to contact scholars who could supplement and guide my research on hormesis, endocrine disruption, and MCS. In contrast, it can be rather problematic to try to force a collaborative project just for the sake of trying to promote interdisciplinarity. When there is no clear sense of how the various disciplinary perspectives of the contributing scholars fit together or cohere, it tends to create confusion (at least that has been my experience). This confusion can be alleviated to some extent if one disciplinary perspective largely takes over the project, but that has the potential to alienate those coming from other disciplines or at least to make their contribution very limited. Perhaps this distinction between the bottom-up formation of collaborations vs. a top-down attempt to force collaborations is the most important factor explaining the varying success of my two projects.