

SPSP Newsletter

A note from the editor

by BARTON MOFFATT

Folks, the big news out of SPSP is that we are moving to an even year biannual conference schedule. The society thought that this schedule would conflict less with other big conferences that SPSPers attend. So the plan is to meet this summer (2016) at Rowan University outside of Philadelphia, PA and then again in 2018 and 2020. I want to thank all of the people who contributed to this newsletter. I also wanted to express the entire Society's gratitude to the outgoing newsletter team for setting a high bar and especially to the outgoing editor, Leah McClimans, for her excellent leadership and to Jordan Bartol for his invaluable technical work. Great work, everyone!

SPSP at Rowan University

by MATT LUND

Rowan University is proud to announce that it will be hosting the 6th International Conference of the Society for Philosophy of Science in Practice (SPSP). The conference will run from June 17-19, 2016. SPSP has moved its conferences from odd-numbered to even-numbered years in order to minimize overlap with other conferences and meetings. Rowan University is a selective, public comprehensive research university centered in Glassboro, New Jersey, 20 minutes southeast of Philadelphia, Pennsylvania. Rowan has been expanding and transforming itself into a center for STEM education. In the past five years, Rowan has acquired both an allopathic and an osteopathic medical school. Rowan has also recently acquired the Rowan Fossil Quarry, one of the world's premier fossil sites containing remains from the mass-extinction event at the end of the Cretaceous period.



Rowan University places Philosophy of Science at the center of its curriculum for aspiring scientists and health pro-

fessionals. All undergraduate majors in Physics, Biological Sciences, Chemistry, Biochemistry, and Environmental Studies are required to take a junior level Philosophy of Science course. This unique integration of Philosophy of Science into the curriculum for science students has produced an uncommonly rich learning environment with a great deal of cross-fertilization between philosophy and the sciences. Rowan science graduates are uncommonly qualified to explore philosophy of science within their own professional scientific practice. Due to this unusual disciplinary symbiosis, the Rowan community is very actively involved in advancing the place of Philosophy of Science within science education generally.

The original capital of the United States, Philadelphia has remained a center for culture, history and tourism. The Philadelphia region is home to prestigious institutions dedicated to the History and Philosophy of Science, such as the University of Pennsylvania, Temple University, Villanova University, University of Delaware, Drexel University, Saint Joseph's University, Swarthmore College, the Philadelphia Area Center for the History of Science, and the Chemical Heritage Foundation.

The town of Glassboro is situated midway between New York City and Washington D.C., a feature that led to its selection as the site of the historic 1967 Summit between President Lyndon B. Johnson and Soviet Premier Alexei Kosygin. Rowan's convenient location continues to make it a destination for conferences and events, and the SPSP Conference will be the first to take place in Rowan's Enterprise Building – one the campus's newest and nicest spaces.

Please join us at Rowan University for SPSP 2016!

Empirical methodology in SPSP

by SOPHIE VAN BAALEN & MARIA SERBAN

Qualitative and quantitative research methods from the social sciences have recently become more popular among philosophers of science who aim to understand the dynamics of the scientific practice, as well as its social and political implications. Yet junior scholars without training in empirical methods often find it challenging to conduct such studies, and there have been too few workshops or courses addressing the challenges they face. Our workshop is specifically targeted to an audience of young researchers who are interested in extending or improving the use of empirical methods in philosophy of science. The workshop fosters an interdisciplinary discussion on the uses of empirical methodologies for philosophy of science and science education.

For this purpose we have invited experienced researchers to present a range of approaches, so that participants get a feel for what the differences between different methodologies are (e.g. ethnographic studies, interviews, quantitative and qualitative analysis of research papers, phenomenological interviewing and text analysis, etc.), what different empirical methods are good for,

and how to use them. In addition, there will be space for participants to present and discuss their own research, as well as a panel discussion on the role of empirical methods in philosophy. We aim at an interactive workshop that will engage many of the members of the Society for Philosophy of Science in Practice (SPSP) community but will also reach out to other interested parties.

The workshop will take place on the 15th of June 2016, a day before the start of the SPSP-conference. If you think about joining us, you will find more information on this website.



Interacting with scientists: How to get started?

by SARA GREEN

Philosophy of Science in Practice (PSP) is a call for more attention to how science is actually practiced, and interactions with scientists are often crucial aspects of this type of philosophical analysis. But as many of us have experienced, getting started is not always easy. Scientists are often busy or have other interests than philosophers. The questions raised in PSP often require different methodologies than traditional conceptual analysis. While the pre-SPSP workshop in Glassboro will investigate the latter topic, the following interviews tell the stories of some of the scholars who have made interactions and collaborations with practicing scientists essential to their work.



Nancy Nersessian (*Research Associate at Harvard University*) is one of the few philosophers of science who have taken the difficult step to draw on empirical methods to understand scientific practice. In her plenary talk at the SPSP2015 in Aarhus, Nancy presented some insights from a big collaborative project for which she has served as Research Director at Georgia Institute of Technology for the past 14 years. The project *Cognition and Learning in Interdisciplinary Cultures* draws on a variety of ethnographic methods to investigate how models are developed in biomedical engineering and integrative systems biology. In this interview we wish to follow up on a question to Nancy from the audience at SPSP2015, on how to get started doing this kind of work and about the main prospects and challenges.

S: *In your view, what can PSP gain from the use of ethnographic methods?*

N: Ethnographic investigations afford long-term examination of complex problem-solving practices as situated in rich social-cultural-material environments. Because of this, ethnographic investigations provide the potential for an integrated account of scientific practices aimed at bridging the perceived rational – social or cognitive – cultural divides. Sustained engagement with researchers enables philosophers to develop a deeper understanding and fine-grained analyses of the exploratory, incremental, nonlinear nature of problem-solving practices and epistemic principles guiding them. Insights gained from such analyses can provide the basis for assessing and applying normative philosophical positions to scientific practice. These *in-situ* studies of scientific practices and engagement with scientists also provide an informed basis for PSP researchers to contribute to science policy-making and to science education.

S: *How did you start using ethnographic methods in your research?*

N: I have always taken the position that philosophical accounts of science must be rooted in a understanding of the actual epistemic practices of scientists. From the start of my research I have attempted fine-grained analyses of historical data pertinent to the philosophical problems I was addressing. With a few notable exceptions historical records are sparse – the Faraday’s records are rare. In using historical data you are at the mercy of what has been “left behind.” Many a time I wished for that draft or sketch or notebook entry that would help substantiate my interpretation.

Social studies of science have long established ethnography as providing an opportunity to collect and analyze data targeted to one’s research questions. Cognitive scientists in the areas of distributed and embodied cognition had begun adapting it to investigate cognitive processes largely in structured task environments. I felt it could also be adapted to collect data in the largely ill defined environments of the research lab and directed towards philosophical questions. In addition philosophers can avail themselves of a range of qualitative methods of data analysis, such as systematic coding and thematic analysis to augment the usual case study method. Of course, no matter how systematically you attempt to collect ethnographic data, you can’t do it exhaustively and you still can run into the problem of realizing after the fact that you should have attended to collecting what you now need. But, by and large, you have sufficient data to do a finer grain of analysis. So I was primed by wanting to take my research in this direction when a opportunity to do so arose.

As Director of the Program in Cognitive Science at GA Tech I was invited present ideas about what cognitive science might have to offer to the development of a new department in the emerging research area of biomedical engineering. I focused largely on how we could help

them create a state-of-the-art, cognitively informed educational program by bringing research in cognitive science to bear on learning how to be a biomedical engineer. But, given my focus on practice, I also argued that we needed first to understand the nature of the practices in the field, and that required ethnographic studies of their research labs, which are largely populated by graduate student ‘researcher-learners.’ Together with Wendy Newstetter, a linguistic anthropologist, I applied for a large NSF grant that would support several graduate, undergraduate, and postdoctoral researchers in taking a “translational approach” to science education: studying cognitive and learning practices *in-situ* and using insights from these studies to inform the design of the science curriculum. I also saw this as a golden opportunity to further research on the philosophical questions I was asking about reasoning and representation, conceptual innovation, transfer and change, models and simulations, methodological innovation, creativity, and interdisciplinarity in science.

S: *How would you describe the work of the scientists you have studied and the results of your analysis?*

N: I’ve been studying four pioneering research labs in the bioengineering sciences: tissue engineering, neural engineering, and two in systems biology, one purely computational and one that also conducts experiments in the service of modeling. These fields conduct basic biological research in the context of applications. The research problems and thus the nature of the work in each lab is quite different. What they have in common is that all are bringing methods and concepts from engineering disciplines (electrical, mechanical, systems, etc.) to bear on examining biological phenomena through physical or computational simulation modeling. We’ve published and presented results in many forums including in philosophy of science, cognitive science, theoretical psychology, learning sciences, and engineering education. The philosophical issues we’ve addressed are largely those listed above. (Papers can be found on my web page and that of our Cognition and Learning in Interdisciplinary Contexts research group.)

S: *How have scientists responded to your work with them?*

N: The response to our work has been overwhelmingly positive. They especially enjoy the extended interviews we conduct. Interviewing comes to be like a form of therapy for the scientist – it requires them to articulate the problems they are wrestling with at the time and more conceptually than for other scientists. They tell us that talking with us becomes a really useful part of their practice – and lab directors say it makes their researchers more reflective. Often when run into a researcher we haven’t interviewed for a while, they tell us they miss it and ask when we will do it again. When we conclude our research in a lab, they tell us they will miss being interviewed.

The lab directors and broader faculty also see our col-

laborations with them on translating our insights about these practices into novel classroom learning experiences as contributing significantly to their award-winning educational program and high departmental ranking. Significantly, they have gone to conferences and given presentations at other BME departments where they have discussed with others in the community how valuable their interactions with us have been.

S: *Do you have any advice to philosophers who wish to start using empirical methods?*

N: I have two interrelated kinds of recommendations, one concerning data collection and analysis and the other concerning engagement with the scientists you want to study.

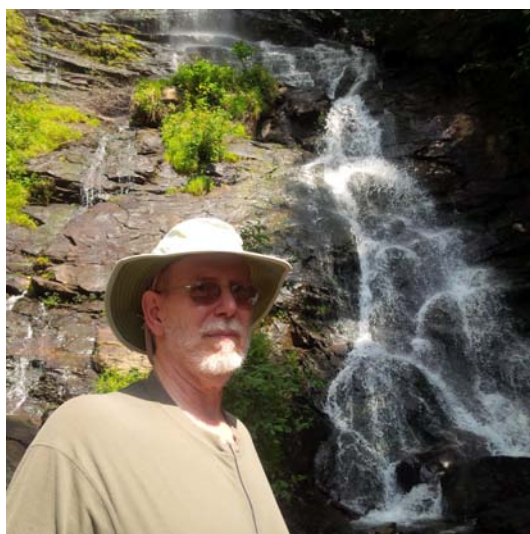
It's important not to be a dilettante. The plausibility of your claims rests on the rigor ("trustworthiness") of the data collection and analysis. Although the methods used need to be adapted to the philosophical objectives and for the nature of the field being studied, there is a long history of ethnographic and qualitative methods development, critique, and refinement in psychology and anthropology that philosopher-ethnographers need to be aware of. For instance, substantial attention has been given to the development of practices and checks to insure that data collection and analyses are aware of and free from potential sample or subjective biases as possible. Be sure to collect from multiple sources of data. But also be aware that data can quickly blossom out of control, so keep refining the scope of your research questions. On the other hand, although the study needs to be focused on your research questions be open to following emergent, unanticipated, and serendipitous events.

Even more than with historical analysis, apprenticeship is an important dimension of learning ethnographic

practice. If possible, find someone who can offer guidance and with whom you can discuss your challenges and findings. A major contributor to the fruitfulness of our research was having others engaged in ethnography and qualitative research challenging, debating, scrutinizing, and evaluating our methods and robustness of interpretations and analyses in our weekly research group meetings.

With respect to starting an ethnographic study, the most important thing is to invest time in building rapport with the participants. This can be done in many ways. We usually begin by engaging them in informal conversation about what they are doing, how they got to the lab, etc. (of course not intruding during their research). We will cover these in interviews, but at first we just talk to draw them out without the recorder and write some notes afterwards. If you're hanging around close to lunch time, they often eat lunch together and you might get invited to join. Some of our student researchers went with them on outings such as bike rides. The main point is to find opportunities early for informal engagement so they become comfortable with you. These engagements also provide opportunities for you to begin explaining your research and correcting those caricatures they often have of philosophers. In carrying out the study commit to a long-term and frequent engagement.

It's also helpful to have something to offer them. A major thing PSP researchers have to offer is helping to address the "broader impacts" part of grant proposals. We had the potential for improving education to offer them, but we also helped in other ways such as giving feedback on presentations and feeding cell cultures. Once they become comfortable with being interviewed they invariably come to feel that it is a huge benefit to them.



William (Bill) Bechtel (*Professor of Philosophy at UC San Diego*) has studied research practices in biology long before the SPSP was formed. Bill's research group, known as the WORGODS (WORKing Group On Diagrams in Science), has recently engaged in a detailed analysis of the use of diagrams in science. For this purpose, the group has drawn on interactions with scientists in the *Center for Circadian Biology* where Bill is also a faculty member. We have interviewed Bill to learn more about what can be gained from closer attention to the visual processing of information in research projects and from showing up to the scientists' lab meetings.

S: *How would you describe the relation between philosophy of science and science in your work?*

B: My primary goal has been to understand the reasoning practices of scientists, first by determining the problems they are confronting and then identifying the strategies they pursue in addressing them. In my early work I analyzed historical research in biochemistry and cell biology; in this work I attempted to reconstruct from published sources and, when possible, archival materials and interviews with the researchers, the approaches of different investigators and the results of their pursuits. More recently I have turned to contemporary science, in which the outcomes are not yet known but where I have greater access to scientists as they engage in reasoning. Both in my engagement with historical and contemporary science, my strategy has been to let the science guide the construction of philosophical analyses and what I have found, to my delight, is that the scientific cases generally confound my expectations and reveal aspects of science I had never anticipated.

S: *How did you get the idea to focus to diagrams as vehicles for scientific reasoning?*

B: My initial interest stemmed from my research on the discovery of biological mechanisms—to present the mechanisms scientists proposed to an historical or philosophical audience it was often better to diagram them than describe them in text. I quickly learned how challenging it is to construct a diagram that communicates as intended. Then, discussions of published papers in journal clubs and lab meetings made it apparent that scientists focus primarily on the figures and only turned to text as needed to understand the figures. This is the reverse of my own predilections as a philosopher and I realized I needed to understand better how scientists construct and use diagrams in their reasoning.

S: *What type of research do the scientists you interact with do, and what would you describe as the main output of your current project?*

B: The researchers investigate molecular mechanisms underlying circadian rhythms in a broad range of organisms (cyanobacteria, fungi, and mice). Before I centered on diagrams, I was interested in how the researchers pro-

posed mechanisms to explain oscillatory behavior, coped with the challenges of working on multiple levels (intra-cellular, intercellular, and organism-environment interactions), and related results acquired from investigating very different organisms. When I turned to diagrams, I became fascinated by how clever biologists are in developing new techniques for revealing patterns in data and putting information together into mechanism diagrams. As I found in my own attempts to make diagrams, I found that scientists often put significant effort into revising diagrams; for them, revising diagrams is also a way to formulate new ideas about the systems they study.

S: *You are now a faculty member of the Center for Circadian Biology and follow their lab meetings and learning practices. How did you establish the connection to the Center?*

B: One day I contacted Michael Gorman, a circadian researcher at UCSD, to discuss his work and he recruited me to support the proposal to found the Center. They needed to demonstrate wide interdisciplinary participation and I paid my lifetime dues by bringing in the Division of Arts and Humanities. Since then I have been the beneficiary. Michael introduced me to Clockwatchers, a journal club, where I have observed graduate students, postdocs, and faculty jointly discussing and criticizing published work (and tried my hand at leading discussions). Once the Center was established, it provided many additional opportunities to engage the scientists, including workshops and lab meetings.

S: *Do you have some advice to philosophers of science who wish to get in contact with scientists?*

B: Begin by engaging scientists on their terms. Learn the vocabulary and the techniques they employ. Go to their talks and read their papers so as to learn what they have done and are trying to do. If scientists realize they can talk to you as they talk among themselves, they are more likely to open up. One of the first signs that my graduate students and I were accepted was when they introduced us to visitors from elsewhere as philosophers and added “we don’t know what they do, but they know our field.”

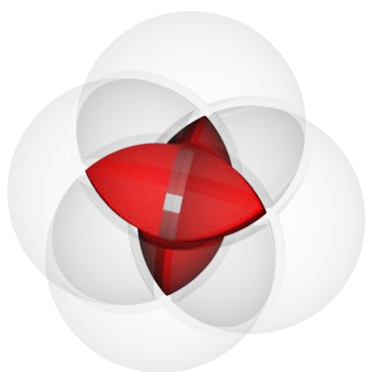
Maureen O'Malley (*Professor, IdEx Chair of Excellence, the CIRID/ALYSAI unit at the University of Bordeaux*) was trained initially in philosophy of social science before switching to philosophy of biology. She has many years of experience working with scientists. Maureen has worked in Ford Doolittle's evolutionary microbiology lab (*Dalhousie University, Halifax*), and she has published numerous research articles and review papers with practicing scientists. Several of these are published in high-ranking scientific journals and cited by scientists. Moreover, Maureen has successfully brought together philosophers and scientists at a variety of organized conference sessions and workshops in philosophical and scientific conferences. Through these interactions, Maureen has introduced new topics in philosophy of science, most notably in her recent book *Philosophy of Microbiology* (2014). We have interviewed Maureen to get her view on the directions of philosophy of science in practice and guidance to what to do – and not to do – when interacting with scientists.

S: *How have interactions with scientists influenced your own work?*

M: This is a big question. There are a few layers to any answer. First, perhaps style. I try hard to write in a way that makes sense to scientists. Unfortunately, this often makes my work seem ‘too detailed’ for philosophers, who often prefer only the most basic case studies and then as much abstraction as possible. I’m still working on that compromise. Second, of course, the focus of my research: if it’s not biology or related to biology, and especially microbiology (and within that, evolutionary and ecological microbiology), then I won’t have anything to say. I think it’s not often a good thing for philosophers to range across all kinds of science. The aim of not being superficial about the science is probably something drummed into me by scientists. Third is the idea of taking a problem-driven approach. By this I mean focusing on something that is a problem in the science, and not trying to problematize science for the sake of it. While I don’t think that the job of philosophers is to “fix” science, I do think we can make contributions to areas where there are recognized problems.

S: *How would you describe the relation between science and philosophy in your work?*

M: I see different models of how this relationship works: separate fields with occasional interactions, overlapping fields, and two fields that create between them something like a third space. While there is some truth to all of these, and indications that the first two actually happen, my experience and preference is for the third model. I think that when philosophers actively work with scientists on problems in a scientific field, this ‘third space’ gets created. The scientists can feel free to do things differently in that space, and philosophers like me can engage very closely with the science, the people, and the issues. Then we go back to our own areas hopefully enriched (although there are no guarantees, and no solutions to the problems necessarily generated – we might merely understand the problems better).



S: *What do you see as the major challenges to collaborations between scientists and philosophers?*

M: Shared interests is one issue. It can be undermined by sticking too closely to the conventions and issues of one’s own field. What is fascinating and recognized practice for philosophers can seem orotund, redundant and plain boring to scientists. One complaint about my book on philosophy of microbiology was that the ‘tedious’ case of how magnetotactic bacteria feature in philosophy of mind could have or should have been dropped. On the other hand, philosophers find a lot of science very boring: either ‘one damn thing after another’ if you outline the history of a debate (an actual comment), or ‘the whole scientific field and all its entities are extremely dull’ (paraphrase of another actual comment). That’s why I featured the ‘style’ point so prominently in the first question. For better or worse, a lot depends on how we write all of this up.

S: *How would you like to see philosophy of science in practice develop in the future?*

M: You know, I think it’s doing quite well. I think there could be more interaction of a meaningful sort, but it’s growing rapidly and getting better all the time. Lots of senior people such as Bill Bechtel and Peter Godfrey-Smith have encouraged these interactions and that has produced a whole generation of bright young philosophy graduates with both the experience and ambition to interact with science and scientists more successfully.

S: *Do you have any advice to philosophers of science who wish to get in contact with scientists?*

M: Contact – this is really important, and I don’t know how well it’s done for the most part. Students and post-docs sometimes send the most awful long-winded emails announcing everything they’d like to do and why. I think short simple contacts can be better at the beginning, and that often this is better achieved by going to scientific meetings and following up there with the key scientist(s), or by asking to sit in on lab meetings. Find someone who might facilitate an introduction – a person who knows the scientist but also knows (and can recommend) philosophers. Let people get used to you before dropping major philosophical research plans on them. And when you do, it’s worth trying to make sure these plans have some payoff for them. It’s probably not a good idea for multiple philosophers to home in on the same scientists. Not only can this be overwhelming for the scientist and her/his lab, but also it might flood the publication market with too much of the same sort of discussion (not to mention giving other philosophers the impression that there’s a tame scientist available for philosophical cultivation).

Time-scale: should philosophers take a ‘rapid strike’ approach or commit to something longer? I’m inclined to the latter. Ongoing steady involvement seems to me to be more productive and more of a good advertisement for philosophy than the quick-fix observations that are more efficient in the short term. Ditto for rushing from one hot topic to another. It can be worth showing some commitment or at least sustained interest, even if you aren’t sure where your career is taking you.

Julia Bursten (Assistant Professor at San Francisco State University) has worked closely with nanochemists in the Millstone Laboratory during her PhD project at University of Pittsburgh. Julia discussed this collaboration at the pre-SPSP workshop *Teaching Philosophy of Science to Scientists* and at the SPSP2015 conference. She also commented on the general question concerning the kind of relations between philosophy and science that we should nurture. We have asked for her viewpoint on such collaborations and her advice for how such collaborations might get started.



S: *What does the Millstone Lab work on?*

J: The main goal of the lab is to make and characterize metal nanomaterials using primarily wet-synthesis techniques—pouring beakers of stuff into other beakers of stuff, to caricature. The individual particles are between 1–100 nanometers (about 1/200th the width of a human hair).

S: *How did your collaboration with the Millstone Laboratory begin?*

J: To improve my understanding of the scientific content and practices for my dissertation on model and theory use in synthetic (chemical) sciences, I took a few science classes. One of them was taught by Jill Millstone, the PI of my eventual lab. I would stay after class and ask questions about the course content that were motivated by my dissertation research. Unlike many other scientists I'd talked to, Jill found the questions interesting and would come back days or weeks later with further thoughts. Once the class was over, I asked if I could sit in on her lab meetings, and she said yes.

I'd been actively looking for collaborators for about a year before I met Jill. What made the collaboration possible was that one day, Jill decided to take me seriously. And that decision didn't come out of the blue – I'd done a lot to demonstrate my credibility, from performing well in my science classes and practicing explaining philosophy of science in ways that make it relevant to scientists, to getting an NSF grant for my dissertation. Plenty of other chemists I talked to didn't take me seriously, or they did but they didn't care about my research questions, so it was a lot about finding the right person to talk to, and not getting (too) discouraged when it took a while to find them.

S: *What do you do with the lab?*

J: I do three sorts of things with the lab. Most importantly, I go to lab meetings and listen hard. I take a

lot of notes, both about scientific content and also about how the students and Jill are framing their research problems and articulating their experimental goals. I ask a lot of questions about their research and methods. It's a really "inside-baseball" kind of philosophy of science, where the payoff is about the conceptual content in one very small part of the science. A few of those questions have made it into my publications and research presentations, or theirs, but it's more often a kind of behind-the-scenes work for all of us.

Additionally, I present to the lab about twice a year. Sometimes I talk about my research, other times, I teach them some philosophy of science. Finally, we have had a variety of targeted collaborations, either with the whole lab or with individual members. I've designed surveys of the lab's intuitions about whether their research is hypothesis-driven; I've helped students restructure the impact narratives in articles and grants; I've had undergrads take HPS courses and helped them find paper topics that are relevant to their research in the lab; Jill has come to speak at philosophy of science workshops. And together, we have been developing a Wiki for the nanosynthesis community.

S: *What do you see as the main payoffs of the collaboration for yourself and for the scientists?*

J: I like to think about three kinds of upshots or payoffs: for me, for the lab, and for all of us. For me, I've found most of my interesting research questions from working with the lab. And the lab makes me a better philosopher of science, because they are a constant check on whether I'm representing the science honestly and whether my research is relevant to scientific practice. They also make me appear to be a better philosopher of science: they boost my credibility with philosophers of science who are not experts in this particular area of science.

For the students, I'm something of an outsider in the room, so my questions can make them step back from their research and see new perspectives on what they're doing and why. They get practice explaining their research to a more generalized audience, as well as the narrative-restructuring type help I described above. They also are encouraged to think about their research in sort of unusual terms sometimes, which makes them better critical reasoners about their research. For all of us, we get collaborations like the Wiki and co-organized workshops. We get improved communication skills with generalist audiences, and new perspectives on our research. And from a more mercenary standpoint, it's a good thing for all of us to be able to point to each other as evidence of the interdisciplinary nature of their research.

S: *What types of interactions between you and the scientists have worked best?*

J: The day-to-day lab meeting interactions are the best, but (or perhaps because) they are the least formulaic. They are the interactions borne of lots of invested time and attention to the philosophy, the science, and the people who make them, and they work because we've all decided it's worth it to establish rapport with one another and take interest in each other's research. That's what any effective lab group does, and in this way, what's worked so well is that they've treated me like any other lab member.

S: *Do you have any general advice on what philosophers should do (and what not to do) to establish similar collaborations?*

J: I think these are the most important:

1. **SHORT EMAILS.** Philosophers and scientists have different norms of email communication style. Don't be put off by a difference in style. If you're trying to contact a scientist by email to set up a meeting, don't give a paragraph-long biography and another paragraph of backstory on your motivation before making the request. Keep it short and sweet. This is much easier to say than it is to do, and I still struggle with it all the time. For example, here is an email exchange I had earlier this month:

Hi Dean Bowman,

We met briefly during new faculty orientation, and I wanted to see if we could find some time to talk. I'd like to tell you a little bit about what I do as a philosopher of science and see if there are any

ways I can get involved with projects at the College of Science and Engineering.

I am available all day on Sept. 22 and after 10:30 a.m. on Sept 24. Any chance you aren't booked solid yet on those days?

Best, Julia

I thought it was relatively to-the-point. Until I got the reply: "Sounds good - how about 1PM on 9/24? kb"

What may read like a classified ad to you is probably normal communication for them.

2. **ESTABLISH CREDIBILITY.** This can be as simple as having an intelligent question to ask about their research or as complicated as obtaining a multi-year interdisciplinary grant from an internationally-recognized scientific funding agency. Aim for somewhere in between.
3. **LOSE THE JARGON.** It may feel like you're establishing credibility to dive into a 10-minute explanation of what Woodwardian interventionism is as a means to saying that it might solve your interlocutor's problem in designing a model of neural networks, but you're really just losing your audience.
4. **HAVE A PITCH, AND PRACTICE IT ON NON-EXPERTS.** Be able to describe why you want to collaborate—whether it's to answer a targeted research question, or to improve your scientific background, or somewhere in between. Find ways to make the pitch that avoid sounding like you're trying to teach scientists how to do science, and be prepared to say why you want to work with a specific lab rather than another, similar lab.
5. **GET COMFORTABLE WITH REJECTION;** or if not comfortable, at least learn to expect it. Like in the dating world where this advice is most often heard, you'll be most disappointed if your expectations are too high, and most initial interactions are not going to lead to long-term productive relationships. But like the dating world, most bad first meetings are not signs that there is something inherently flawed about you(r research). Rather, they just mean you need to find a better match between your approach and your interlocutor.



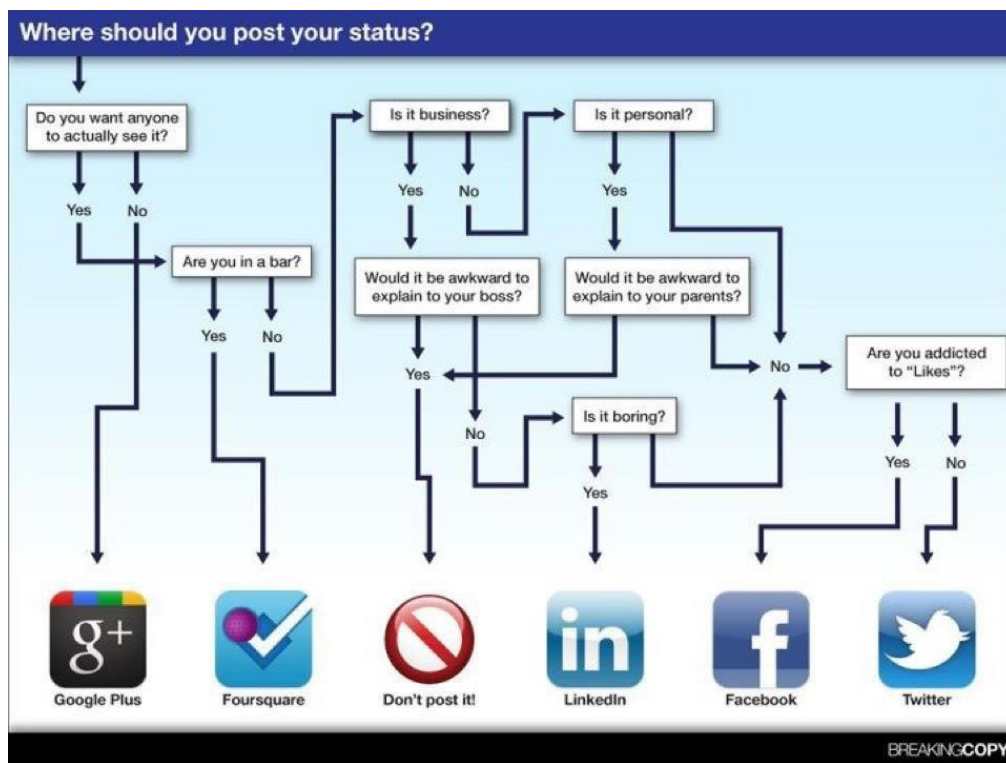
The rise of social media has changed how academics communicate, and hopefully for the better. In June 2013, the SPSP conference at the University of Toronto included a meeting to discuss the newsletter. Looking ahead to the autumn academic job market, we shared ideas on how to

disseminate information about upcoming conferences related to philosophy of science, calls for papers related to various publication opportunities, and how to help membership in their search for academic careers. While the newsletter would never be expected to repeat all of that information, it was agreed that having a Twitter for the SPSP would be helpful as a central compiler or aggregator of conference, call for papers, and job announcements. I talked a bit with Leah McClimans and Sabina Leonelli, and set up the Twitter immediately. Two and a half years later, we have nearly 700 followers and 2500 individual tweets. You can follow us if you haven't yet at SPSP Twitter

Why Twitter?

There are a wealth of flow charts describing how to decide which social media platform is for you, and which kind of post or tweet or status update fits your informa-

tion the best. One of my favorites is by Carrington Bingham



Here is a summary of the distinction: *Facebook* is for people you already know, with status updates that give snapshots of your life in current place and time. *Twitter* is for people you don't already know well but would like to get to know, and for aspirational events in your future.

In this spirit, Twitter fits the needs of the career-minded academic. Emails with information are good, but are most practical during specific sessions at a desktop

computer. When traveling and using a phone or tablet, using the *Twitter* app can be much more convenient. An additional benefit to Twitter is increased visibility for the organization vis-a-vis other organizations connected to History and Philosophy of Science and Sociology of Science. Our Twitter mutually "follows" and is "followed by" these other professional groups. This means we benefit in two ways: we expand the audience for our calls for

papers, and our members to increase their professional opportunities. Twitter also has a couple of useful short-hands:

Hashtagging (including a meaningful term preceded by # in a Tweet) enables anyone to search for that term and find all Tweets related to it. For example, #histsci is an actively used hashtag for the history of science. The hashtags we used during the conferences were #SPSP2013 and #SPSP2015, which did cause some confusion with another organization, *The Society for Personality and Social Psychology* which is @SPSPnews on Twitter. Fortunately, we have not had a conference in the same month yet. We tend to be in June, they tend to be in July.

Favoriting is a way to acknowledge that you have seen a tweet, and that you appreciate or have noted what the person is mentioning or claiming. It does not imply agreement, simply acknowledgment. Favoriting helps to maintain connection and is a good way to avoid fighting and flamewars.

Retweeting is a step beyond favoriting, since you are sharing the tweet and its information with all of your followers.

Copying and Tweeting links and conference information can take many forms. If the organization producing the original call for papers or job announcement has a linked webpage, then a simple tweet with that link will do. For longer calls and jobs that do not have one unified webpage, or that originated in a long email, I frequently use twitlonger.com so that all the information is included with a link. In some cases, a screen capture image can be used, and is simple to do with a *Snipping Tool* or *Jing* screen capture.

Twitter can be described as a useful “hub” of information, which becomes a concise and searchable set of individual pieces of information. One of my colleagues described me as a personal “hub” at my university because I serve on a variety of committees that combine faculty, staff, and administration members. I often hear about news on campus early and I can help others by connecting people with similar concerns, checking rumors, and “closing the loop” of communication when a misunderstanding takes place. Twitter allows multiple individuals and professional organizations to work together to become more effective, and more inclusive, in how we com-

municate. Twitter encourages participation in the academic world by allowing everyone a forum and an audience for their ideas. I started on Twitter as [cajames4](#) and I now have 1333 followers, many of whom are philosophy professors and graduate students around the world. For an up to date list of philosophers on Twitter with a high rate of interaction, see: [TrueSciPhi](#)

The inclusive nature of Twitter reminds me of the positive experiences I had that made me want to continue in the field. When I was a graduate student, I felt the need to join email lists discussing philosophy and philosophy of science. I was very lucky to have a dissertation director who was involved in the first International HOPOS (History of Philosophy of Science) Conference at Virginia Polytechnic Institute and State University in 1996, and he brought a group of students to the meeting. We were all encouraged to talk, question, and discuss, and to introduce ourselves to the other participants. We were included in the conference itself as well as the social gatherings, including a special meal at Joseph Pitt’s home in Blacksburg.

Interacting in positive ways and creating spaces (both physical and internet-based) for positive communication has to continue as an important part of what we do. Twitter is an important venue, meeting people “where they live” on a routine basis, and emphasizes sharing information rather than trying to control or limit who receives information. The concept of philosophy as relevant and a part of daily life, philosophy as a public activity, can be fully explored through social networks like Twitter.

As Leah McClimans said in her editor’s note in the Spring 2015 issue of the Newsletter, “This society created a place for me, a sense of: these are my people; I have something to say to them. The importance of such a professional tether cannot be underestimated and I think I am not alone in finding it here in our community.” Twitter is another way to build this community in the future. It provides a way to welcome undergraduates, graduate students, researchers, professors, and professionals to follow us. Twitter gives us a means to announce and retweet as many Jobs, Calls for Papers, Conference and Publication opportunities as we can, interacting with other professional organizations.

Suggestions

Here are some of my favorite sources of information and professional connections. Perhaps you will find them use-

MAILING LISTS:

- Philos-L: Europe-based philosophy mailing list
- Philosop: US-based philosophy mailing list
- SPSP: Society for Philosophy of Science in Practice
- HPSST: History, Philosophy and Science Teaching
- HOPOS: The International Society for the History of Phi-

ful too. (As always I will tweet items that are related to SPSP interests at: [SocPhilSciPract](#))

philosophy of Science

PSA: Philosophy of Science Association

ORGANIZATIONS AND SOCIETIES ON TWITTER:

- SPSP: Society for Philosophy of Science in Practice
- Philos-L: Europe-based mailing list
- PSA: Philosophy of Science Association

CSHPS: Canadian Society for HPS
BJPS: British Journal for the Philosophy of Science
Phil Sci Archive at Pittsburgh
Rotman Institute of Philosophy: Engaging Science
APA: American Philosophy Society
APA Eastern Division

HASHTAGS:

#philsci #histsci #histSTM #digitalhumanities
#science #research #philosophy #history

FACEBOOK:

Studies in History and Philosophy of Science, Part A
The Philosophical Underclass
American Philosophy Association
Philosophy Matters
History of Women Philosophers

Society for Philosophy and Technology
Society for Social Studies of Science 4S
European Philosophy of Science Association
Philosophy of Science Association
Center for Philosophy of Science at Pittsburgh
History of Philosophy with No Gaps
American Philosophical Society

INDIVIDUALS ON TWITTER:

Sabina Leonelli
Janet D. Stemwedel
Christine A. James
Dan Hicks
Frederico Boem
Phyllis Illari
Peter Monnerjahn
Rani Lill Anjum
B. Ricardo Brown

At the Philosopher's Desk

by LAURA CUPPLES

Marcel Boumans is Associate Professor in History and Methodology of Economics, at Utrecht University.

L: *You started your academic career working in mathematics and economics. What inspired you to start working in philosophy as well? Why were you attracted to the discipline?*

M: If you mean by “working in mathematics and economics” working as a mathematician or as an economist, I never did either of them in my academic career (although after my graduation I taught mathematics for a few months at several schools and I worked for a month at an engineering bureau on risk analysis). My academic work has always been in the combined field of history and philosophy of science. I did a master in history and philosophy of mathematics and my dissertation research was in history and philosophy of economics. Today I would label my field of interest more generally as the history and philosophy of field science. Nevertheless, throughout my entire academic career I have been working at a department of economics and not of philosophy. The complicating issue is whether history and philosophy of economics can be considered as part of economics or not. If it is, then one could say that I worked indeed as an economist for most part of my career. But what makes it complicating is that it very much depends on what is considered to be “economics.” Roughly put, till the 1980s history and philosophy were considered to be part of economics, but since the 1980s, history and philosophy became to be separated from economics, a separation process which is now almost completed.

My attraction to philosophy is much older than my attraction to mathematics. In my last year at primary school (age group is 11-12 years), we had to write an essay, and

this could be done about any subject. Together with a classmate, I wrote an essay on Voltaire. My attraction to mathematics came only in the last years of my secondary school, but this turned into a deeply felt appreciation, perhaps even love, for mathematical reasoning. I was very lucky that I could combine philosophy and mathematics at the Delft University of Technology. This was mainly due to an exceptional and idiosyncratic combination of historians and philosophers that were staff members at the Department of Mathematics at that time.

L: *What are some of the challenges you've faced working across the disciplines of economics and philosophy? Is there any advice you would give to young scholars who are also interested in doing interdisciplinary, practice-oriented work?*

M: The main challenge is that of identity. Your identity can be challenged in two different ways. One is when you work with or even combine approaches that belong to different disciplines. In my case, I work with historical and philosophical approaches (sometimes combined). Particularly when you combine approaches, you naturally depart from more traditional approaches, which may harm your identity as philosopher as well as historian. The other challenge to your identity is when you work on subjects like models and measurement, as I do. These subjects can only be investigated if one is not bothered by disciplinary boundaries. Take for example measurement. In my view it is because of the comparison of measurement practices in different disciplines that one gains a better understanding of what measurement is. So, if one is interested in measurement, or other similar subjects, it

always feels like an enormous reduction of one's identity to call oneself, for example, a philosopher of economics. So, my simple advice is: do not bother about disciplinary boundaries, as a historian I know they do not last long.

L: *How do you see economics as being situated among other sciences? Is your philosophical approach to economics more similar to philosophy of social science or more mainstream philosophy of science, and why?*

M: Economics is often called (by economists mainly) the queen of social sciences, but this is somehow misleading. Mary Morgan (2003) shows that 20th century economics can be better characterized as a tool-based science; and these tools come from the natural sciences, like physics and biology, and engineering. Because of this – in my view – apt characterization of economics as a science and because of my own background, my approach is more similar to that of philosophy of science, more specifically, philosophy of science in practice. I make this latter specification because I am mainly interested in research practices, and not so much in theories. There exists a field, called philosophy of economics, which deals with the analysis of theories, but that is not my interest. But I am not sure yet whether you can call philosophy of science in practice mainstream philosophy.

L: *One of your interests is “measurement outside the laboratory”. How is this different from laboratory measurement, and what sorts of measures are encompassed under each label for you?*

M: If you look very closely at each practice, there are actually not so many differences in the sense of the problems that have to be dealt with and in the ways that are proposed to solve them. The differences are more in scale, in degree, than in nature. The reason for making this distinction between “inside and outside the laboratory” is because of my dissatisfaction with much of the measurement literature that too easily assumes the possibility of intervention and control as basic postulates for the various measurement accounts one can find. In social science you cannot have an adequate measurement account that is based on these principles, because it would not show any comprehension of the problems these measurement practices have to deal with.

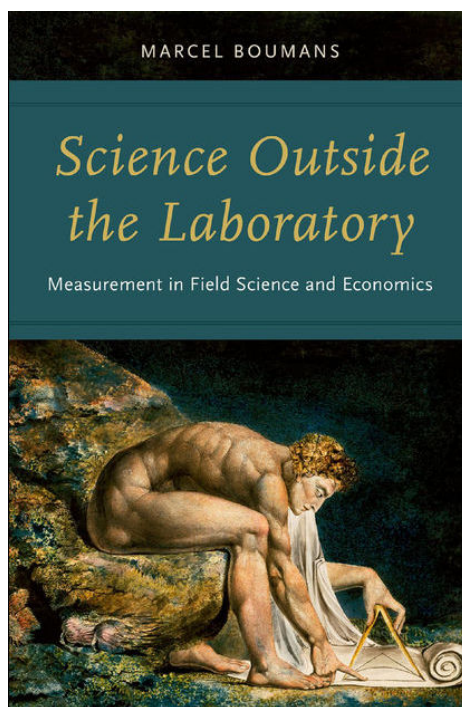
L: *You emphasize the importance of subjective expert judgment in assessing the validity of models in economics, but you also recognize a tension between subjective judgment and the objective ideals of scientific modeling. Can you say more about this?*

M: In my account I play with the different meanings that the terms objectivity and subjectivity have. On the one hand, objective knowledge is knowledge that can be tested, and on the other hand objectivity relates to stan-

dardized procedures and rules (including models). Because measurement involves uncertainty, besides these standardized rules and procedures one also needs expert judgments. Because these judgments are subjective in the sense of not standardized, does not mean it could not be objective in the sense of testable. Actually, there are strategies that have been developed to test experts. It is only that so far they only work successfully in natural science. One of the topics I am currently investigating concerns the possible strategies of testing experts in social science.

L: *What new directions is your work taking you in these days? What excites you most about your current research?*

M: In my recent book *Science Outside the Laboratory* I show the relevance of expert judgment for any science outside the laboratory, but I treat them actually as black-box models. In my current research I am trying to open this black box and so that say a bit more about how expert judgments are made. Having investigated a few practices to explore expert judgments, I saw that the senses are excellent tools to make these judgments. In economics and the other social sciences, the most important tool that has been used, is the eye. And to use this sense most optimally, graphical methods have been developed. So, my current research is very much about these methods and how they are instrumental in making expert judgments.



The Proust Questionnaire

by SAANA JUKOLA (WITH HEATHER DOUGLAS)



S: Who are your favourite heroes/heroines of fiction?

H: I love Hermione Granger, for being both so intelligent and so brave. A formidable combination.

S: What is your favourite curse word?

H: I use lots of curse words, but my favorite (which I don't use much) is from my mother: "Djävlar!"

S: What is your favourite cuddle word?

H: You talk while you cuddle?

S: What is your favourite music?

H: Mid-century jazz (Bill Evans, Dizzy Gillespie, Miles Davis, Dave Brubeck), Baroque (especially Bach's concertos and cello suites), and Hildegard von Bingen's *Canticles of Ecstasy*. More recent music—I like Ivy, Zero Seven, and Half Moon Run.

S: What profession would you like to attempt, besides your own?

H: Not really any other profession. Professions are so consuming and constraining. You have to do mostly them most of the time. I would prefer a range of things that I could do a bit of, like gardening, dog training, writing, and volunteer work. I think I just described my retirement.

S: What sound or noise do you hate?

H: Anything loud and unrelenting that I cannot get away from or do anything about, like those door alarms in airports.

S: What is your favourite food?

H: Anything fresh prepared well (usually by Ted), and that had a good life and death before I eat it.

S: Where do you write your best work?

H: The issue is less where than when—in the morning, listening to Bach.

S: What was the most critical academic feedback you ever received?

H: From my High School English teacher, who taught me that writing was thinking, and not just a way to get out what you already thought. She made it clear that writing was a tool to be used to figure out what you think to begin with.

S: What is your favourite entertainment?

H: Live performance of music, dance, and theater are fabulous and tend to stay with me for a long time.

S: If heaven exists, what would you like to hear god say to you at the pearly gates?

H: "I'm sorry."

Anxious for the SPSP2016 conference?



The Team



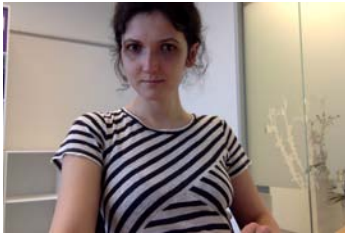
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