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Biology, social science and history: interdisciplinarity in three directions

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ABSTRACT The relationship between biological and social science is a long-standing area of interest for researchers on both sides of the divide, as well as in the humanities, where historians, among others, have been fascinated by its wider social, political and cultural implications. Yet interdisciplinary work in this area has always been problematic, not least because researchers are understandably concerned about interdisciplinarity being a cover for importing ideas and methods wholesale from other fields. This article explores the lessons, both positive and negative, that can be drawn from an ongoing project focused on building links between biology, social science and history. The article argues that dialogue between different disciplines is a difficult process to get going but ultimately rewarding. However, the article also argues that interdisciplinary practice is a much more elusive goal. The key to developing such practices lies in identifying new spaces for cooperative work rather than areas that are already occupied by researchers. This article is published as part of a thematic collection on the concept of interdisciplinarity.

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“I don’t want you to answer this letter”, wrote the biologist Lancelot Hogben to the economist William Beveridge on 1 November 1937. Hogben was happy to admit he had consumed “enough whisky to attain a level of honesty, exhibitionism or candour which I rarely attain before 8 p.m.” and he knew that what he had to say probably would not look good in the cold light of day. He had recently left the London School of Economics following the collapse of “The Natural Bases of Social Science”—an interdisciplinary programme Beveridge, the LSE’s director, had created for natural and social scientists and hired Hogben to lead (Renwick, 2014). There were recriminations and accusations flying from both sides of the disciplinary spectrum. Hogben, however, was glad to be out of it and, as he told Beveridge, busy rescuing his career after “besmirch[ing] his reputation with six years of association with economists and such”.¹

Many academics will identify with Hogben’s sense of frustration, which was born of a failure to convince his colleagues in sociology and economics that their work would improve if they embraced the methods he used as an experimental biologist. People in different disciplines do things differently: they are interested in different questions, investigate them differently, and when they publish their findings they write them up in different forms and publish them in different journals. Yet as Lyne (2015) has argued in this journal, these are neither minor concerns nor abstract difficulties. On the contrary, they are problems that matter because research beyond the small-scale projects university departments can fund on their own now often require interdisciplinary working. This is especially true in the humanities and social sciences, where government support has shrunk dramatically, especially over the past decade, because policymakers believe STEM research delivers results that contribute to economic growth (Holmwood, 2014). Interdisciplinary working is here to stay for the foreseeable future. Some will continue to extol its virtues; others will bemoan its elevated status. But, like it or not, sitting round tables with colleagues from other departments and disciplines will be the price many people have to pay for research funding and career advancement.

My own research over the course of the past decade has involved increasing levels of interdisciplinary activity. A key component has been the study of projects such as the “Natural Bases of Social Science”, mainly so that we can understand more about how the current state of relations between biological and social science has come to be as it is. Equally important, however, has been the effort to connect that history with discussions that have implications for the future of that relationship. As I will explain, these activities present important and potentially ground breaking opportunities as well as risks and significant challenges, not all of which have straightforward solutions. In my ongoing experience, interdisciplinary projects of this kind generate important and interesting discussions. But they produce more questions than answers when it comes the issue of genuinely interdisciplinary practices that can be carried out by individual researchers. As frustrating as that outcome may be, it may very well be the point of cross-discipline collaboration.

Biology, social science and history

My current project—“Biology, Social Science, and History: Past, Present, and Future Interactions”, which commenced in October 2014 and is funded by the Arts and Humanities Research Council—is a development from my doctoral research and first book, *British Sociology’s Lost Biological Roots: A History of Futures Past* (Renwick, 2012), a study of the events that led to the appointment of L. T. Hobhouse, an avowedly antibiological thinker, as the

UK’s first professor of sociology. For the most part, that study was a conventional piece of historical research, built on painstaking archival work, which revealed what major figures in early British sociology, including Patrick Geddes the Scottish polymath and failed candidate for the chair awarded to Hobhouse (Studholme, 2007; Scott and Bromley, 2013), understood to be at stake in those formative discussions. As a project that was carried out in a department for history and philosophy of science—a field that was founded on the idea humanities scholarship had an important role to play in scientific endeavour (Porter, 1996)—*British Sociology’s Lost Biological Roots* was primed from the start to embrace wider goals. Notably, as I explained in the introduction and conclusion to the book, there was a sense that the forgotten visions for British sociology I had recovered could become something like historical resources: things that social scientists might experiment with as alternative ways of thinking about the relationship between biological and social science in the present.

I conducted my research at what turned out to be an opportune moment. Partly inspired by the centenary of Hobhouse’s appointment at the LSE and as the first editor of *The Sociological Review*, a number of social scientists offered reflections on what they thought had happened 100 years earlier and suggested what might be learned from that history (Studholme, 2007; Scott and Husbands, 2007; Studholme *et al.*, 2007; Fuller, 2007). This encouraged me to think there was an audience for my work in sociology and led to one of the participants in those debates writing a foreword to my book, which has undoubtedly helped shape its reception beyond my specific field of historical expertise (Fuller, 2012). It also suggested there was an audience ready to participate in a wider conversation about not only the role of historical knowledge in social science but also the intersection of biological and social science.

My project is built around a number of different activities that aim to open up space for those conversations. There is a substantial piece of historical research on the origins of social mobility studies in the United Kingdom, the results of which are beginning to appear (Renwick, forthcoming), a contribution to a social science journal (Renwick, 2016), panels organised for social science events, public lectures to disseminate research findings beyond academic audiences, and a conference to be held at the University of York in April 2016. These activities have involved adapting my original plans to the realities of collaboration and a field of research that is rapidly changing, thanks in large part to the constant entrance of new participants, many of whom I have got to know in the process. What follows are what I see as the most important and valuable lessons I have learned from that process.

Opportunities and challenges

The starting point is what many people would see as a reassuring one. The foundation of my project has involved honing and deploying my skills as a historian in a traditional research context. I have been visiting archives in the United Kingdom and the United States, reading widely in the vast and often untapped primary literature, and preparing my findings for publication. Yet I have been pursuing that work knowing that, eventually, aspects will need to be put to a variety of uses, involving audiences in different disciplines, and that published work is only one of a number of aims. This has forced an agenda on my work that has felt unwelcome at times—a distraction perhaps from the narrowly focused pursuit of historical knowledge. Equally, though, having to think about those different contexts, especially the questions researchers in different fields might ask, has encouraged me to think about a broader set of issues. This may sound like wishful thinking—seeing the positive in an ultimately unwelcome

imposition—but I think such conclusions would be wrong. Sometimes we do need a spur to consider questions beyond the ones we focus on as lone scholars—the preferred research model in the humanities. But that spur is only valuable on two conditions. The first is that it leaves space for researchers to pursue enough of their own discipline-specific work; otherwise the obvious question for many will be whether the enterprise is worthwhile. The second is that, while preserving that space, there needs to be a meaningful understanding of interdisciplinary work; one rooted in the idea that participants should be able to achieve different goals together.

I have been lucky in finding audiences in sociology who are eager to engage with historical research, as was the case when I convened a panel on biosocial science, featuring contributions from Des Fitzgerald, Maurizio Meloni, Steve Fuller and David Inglis, for the meeting of the British Sociological Association in Glasgow in April 2015. Discussion was lively and overlapped with a wider set of debates about the role of historical knowledge and understanding in the social sciences. Convening the panel also gave me the opportunity to forge links with scholars like Meloni who, unbeknown to me when I first scoped out my project 3 years earlier, was working on similar issues from the perspective of philosophy of biology and the sociology of science. This connection opened up new opportunities, such as an invitation to contribute an article to *The Sociological Review's* 2016 monograph, *Biosocial Matters: Rethinking Sociology-Biology Relations in the Twenty-First Century*, which Meloni is co-editing with Simon J. Williams and Paul Martin (Meloni *et al.*, 2016; Renwick, 2016). Perhaps the most valuable part of this process has been the chance to have my work peer reviewed by social scientists. This has proven invaluable in revealing which parts of my work are most useful in a different disciplinary context, providing guidance on the kinds of questions I need to consider to relate my work to social science concerns, and understanding which of my ideas translate into a different disciplinary context. Some of those issues were apparent from a distance but most only became clear through direct engagement.

The ongoing process of organising an interdisciplinary conference, in collaboration with a number of other researchers, including Felicity Callard, who has written widely on interdisciplinarity, has been a valuable opportunity in similar respects (Callard *et al.*, 2015, Callard and Fitzgerald, 2015). The aims of the conference—featuring sessions focused on four problem areas: humans, “the social”, practice, and archives—are to bring together researchers from as many disciplines as possible to discuss how an exchange of ideas and methods can rejuvenate existing research programmes and help create new ones. This has enabled me to build contacts with people working on a range of issues, including digital methods, neuroscience and genetic history, which I have little hope of acquiring expertise in any time soon. This process can be immensely rewarding and an interesting process of discovery. But assembling the right mix of participants—ensuring balance between genders and scholars at different stages of their careers, for instance—can be difficult. The actual conference is still to take place, of course, but the discussions promise to be enlightening.

In this respect, one of the most important lessons I have learned is that there are significant barriers when it comes to forging a practice rather than spirit or culture of interdisciplinarity. Initiating conversations with people in different disciplines is relatively straightforward in the sense that there are plenty of researchers out there who are interested in disciplines beyond their own. Setting out a form of interdisciplinary research that can be carried out by an individual is a different matter entirely, though. The burgeoning and controversial field

of neurohistory, in which scholars deploy concepts from neuroscience to explain past human experiences and historical change, is a case in point. Neurohistorians argue that concepts including culture and society cannot be understood separately from the brain and genes, as the vast majority of historians argue it can, often implicitly in their day-to-day practices. Taking a much longer view than is typical in conventional historical scholarship, neurohistorians point to developments such as changes in agriculture and diet during the paleolithic era, which increased significantly the number of calories available for consumption and expanded the brain's capacity. Moving closer to our own era, they argue that the intellectual ferment of the European Enlightenment was embedded in a “psychotropic” culture filled with products including coffee and tobacco, which were not only evidence of global trading networks but also had the power to stimulate and alter brain states, making the new intellectual culture possible (for example see Smail, 2009; Brooke and Larsen, 2014).

Neurohistorians reject this accusation that theirs is an ultimately reductionist project. It is a brute fact that brains and genes play an important role in historical processes, they argue, yet they are just two of many components in what is ultimately a dynamic process. Indeed, they suggest that focusing on the brain can have a liberating effect by forcing people to see change as resulting from incredibly long-run developments and thereby counteracting the “presentist” trend in history departments, especially in the USA, and culture more generally, which seldom sees history as having roots beyond 1900 (Smail, 2009). Indeed, according to Hunt (2015), looking at history as a process in which natural factors construct culture and society as much as vice versa is an essential part of getting to grips with some of the greatest challenges of our times, such as the environment, which policymakers are reluctant to see in anything other than the most immediate terms.

Nevertheless, and despite the noble sounding aims, there are seemingly mundane but quite pressing questions about what neurohistory might look like in practice. How much neuroscience does a historian actually need to know to analyse the past in such terms? Is it, for example, necessary for historians to be able to produce neuroscientific research to apply its findings to historical or sociological subject matter? Or is the expectation that researchers in the humanities and social sciences will simply apply resources that are given to them fully packaged? The answers to the questions are important because they have important consequences both intellectually and institutionally. While detractors such as Roger Cooter (2014) worry that making the brain central to our understanding of human history threatens to strip history, not to mention human beings themselves, of agency and the power of critique, there are obvious knock on effects when it comes to the long-term project of producing neurohistorians, skilled in both neuroscience and historical analysis. What kind of training might aspiring neurohistorians, especially postgraduates, require? The answer to that question has huge implications for research funding.

In this respect, I have found discussion and dialogue, rather than stumbling on any specific solutions, are the most important parts of interdisciplinary work. Building contacts with Meloni, for instance, has brought a number of important issues to my attention, such as the idea that epigenetics—the study of the relationship between genetic expression and environments—offers a new and potentially significant area for cooperation between social and biological scientists (Meloni, 2014a, b, 2016). Moving on from the idea that the human genome contains “junk DNA”, material with actual purpose, epigenetics is reconfiguring the idea of heredity by making the environment as important as

genes. On this account, things like susceptibility to particular diseases to the ageing process are not hardwired in the way some natural scientists have believed in the past but emerge thanks to processes of interaction biology and environment (FASEB, 2014). This development is crucial for social scientists, Meloni (2016) argues, because it opens up an ambiguous space; one where social scientists should be playing an active and important part because they are uniquely placed to contribute to discussions about the content and construction of environments. Indeed, and just as importantly, this space offers the potential for a radically new politics of biosocial science. With gene-environment interaction at the fore, old ideas about hard heredity are irrelevant. Imagine, for instance, what biologically informed social policy might look like if it was not about tracing the inheritance of allegedly good and bad genes, as critics fear, but instead focused on how the design of urban environments or even social structure itself triggered particular conditions? Conversely, and to relate this point back to neurohistory, what might history look like if biology was not taken to be a fixed entity but something shaped by culture? To be sure, Meloni's suggestions are open to some of the same criticisms as neurohistory when it comes to issues of research funding and institutional identity. Yet, as a forwards looking project focused on shaping the identity of an ambiguous new intellectual space, rather than remaking an individual discipline, it holds more promise.

Conclusion

In the preceding sections I have tried to outline some of the lessons I have learned from a project dedicated to exploring different ways a scholar-based in the humanities might inhabit the space at the intersection of biological and social science. The experience has been positive but not without its significant challenges. There are two issues worth highlighting as part of my concluding thoughts. The first concerns the relationship between my expectations on starting the project and the outcomes now it is reaching its end. As I have explained, there have been a number of what funding councils refer to as outputs: publications, conference presentations and talks to audiences outside academia. All of these things provide important, though far from definitive, measures of research activity. Yet they represent closure on only a small number of questions. What I have not found certain answers to are questions about forging interdisciplinary practices. To be sure, I have learned about how to open up discussion across a number of disciplinary boundaries, which should not be underestimated as a productive process in its own right. But I find myself only marginally more clear about what day-to-day interdisciplinary practice would look like at the intersection of biology, social science and history.

The second issue concerns the current asymmetric nature of interdisciplinary collaboration. Building lines of communication between the humanities and the social sciences—success in which can be measured in a variety of ways, such as response rates to conference invitations—has been hard work but involved steady progress. Direct links with the life sciences have proven much harder to forge. The reasons for the discrepancy are far from clear. It is not for want of trying, nor resistance on the part of many biologists. Those working at the intersection of the social sciences and the life sciences, including the medical sciences, especially on digital methods, have been open to active participation in discussions. But academic life is busy and shaped by a whole host of different concerns, including funding, that seem to make collaboration more pressing for those on the social side of the fence. Perhaps the conclusion to be drawn is that the way into interdisciplinary discussions involves people working at

the margins rather than the centre. It most likely there that new practices will emerge following sustained discussions among a wide group of interested parties about an agenda for a new kind of biosocial research.

Note

1 Lancelot Hogben to William Beveridge, 1 November 1937, William Beveridge Papers, Beveridge/5/19, London School of Economics.

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