Temporalidades
REVISTA DE HISTÓRIA

Interview with Dr. D. Graham Burnett

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Revista Temporalidades: The scholars of the History of Science in Brazil have enjoyed a productive dialogue with American authors. Anglo-Saxon historiography has become a methodological and theoretical reference point for our own researches in the History of Science; an example is the appropriation of concepts such as the paradigm of Thomas Kuhn. Could you tell us if Kuhn and such other researchers as Martin Rudwick, Stephen Jay Gould, and Charles Percy Snow - remain significant influences on the production of History of Science in the United States? Who would be the new references in this field? Could you please also comment on those scholars whose work has particularly influenced your own?

Professor Burnett: Kuhn's work remains significant, and is still required reading for everyone in the field. Each of the other authors you mention can still be read productively: I think quite a few people who find their way to technical scholarship in the history of science first encounter the idea of historicizing science in one or another of Gould's essays; anyone working in the history of geology must still reckon with The Great Devonian Controversy, though I don't believe that Rudwick's general analytic for scientific change has been taken up by many scholars working on other instances of "dispute resolution" in the sciences; at this point C. P. Snow's "Two Cultures" thesis is better thought of as itself a part of the cultural history of the sciences in the 20th century, and the close study of the ramifications of his statement/diagnosis sheds much light on the place of science and technology in the Cold War, a period shot through with anxieties about decolonization, technocracy, and global economic development (I took up these issues in some detail in "A View from the Bridge: The Two Cultures Debate, Its Legacy, and the History of Science"[1], which examines the reverberations of the Snow-Leavis conflict in the "third world"). What are the newer works that really matter now? Shapin and Schaffer's Leviathan and the Air Pump is at this point, I think, every bit as foundational as Kuhn. My own work has been informed by readings of Michel Foucault, Bruno Latour, James Secord, Robert Richards, Lorraine Daston, Peter Galison, and—formatively, in my case—Greg Dening.

[1] D. Graham Burnett, *Daedalus* Vol. 128, No. 2, (Spring, 1999), pp. 193-218

Revista Temporalidades: In your book A Trial by Jury (2001), you narrate your experience as a jury foreman in a murder trial in Manhattan. From this experience, is it possible to affirm that the conduct of a trial is similar to the process of historical narrative construction, since both deal with only partially recoverable facts, and with ideas, memories, clues, timeframes, values… ? Do you consider that your training in History helped you in the case? How did your experiences in the trial provoke reflections on your activity as a historian?

Professor Burnett: I was enormously affected by my jury service in that difficult case. The fundamental problem—How shall we come to agree as to what obtains? Or, in what way can we achieve working consensus about facts, about what is true and what has happened?—is placed in the sharpest possible relief in the context of a criminal trial. Epistemology takes on an urgency in that setting, an urgency it lacks in even in the most intense seminar discussion. Historians of science have been aware for some time of the inosculation of juridical and scientific practices, and have understood the forum of the court as a significant historical referent in the emergence of the modern sciences of nature. I frequently felt, as I sat in the jury-box during that trial, that the most difficult question in our field—How, in specific times and places, do certain individuals and groups come to speak about the really-real…and be believed?—was being dramatized before me. I was sufficiently moved, intellectually and personally, by the experience, that I went on to edit a special Forum in Isis on "Science and the Law," and to publish a book, Trying Leviathan, that centers on a trial.

Revista Temporalidades: The relationship of the natural world and the social world was discussed in your book Trying Leviathan (2007). One of the possible conclusions of the reader is that the classifications of nature depend on the social position of the classifier, who creates taxonomy according to his language and experience with nature. In this way, the whales were classified as fish before they were considered mammals. Beyond the science, the classification of the natural world was also disputed by different taxonomies derived from religious and vernacular traditions, and was influenced by the political and economic dynamics of society. In this regard, can we say that scientific knowledge is a subjective narrative of the scientist among other possible narratives? And that the authority of this scientific knowledge will depend on the historical condition of science in the face of other forms of knowledge of nature?

Professor Burnett: To say that the authority of scientific knowledge will depend on the historical condition of the science in the face of other forms of knowledge of nature (and I would say this, which seems to me uncontroversial), is not to say that "scientific knowledge is a subjective narrative of the scientist." For starters, it is by no means obvious that scientific knowledge has any obligatory narrative structure. Scientific knowledge can be used in narrative situations, but the knowledge itself frequently takes other forms. It is also a matter of some intricacy to define clearly and meaningfully what is here meant by "subjective." In Objectivity, Daston and Galison have done some fundamental work to show the historical specificity of the subjective/objective dyad, and I am persuaded by their argument there—we do well to understand subjectivity to be a very particular kind of post-Kantian anxiety (where knowledge production is concerned). Now there is always that looming question (which I take you to be signaling here), the big one, the question about the ultimate status of scientific knowledge. This question can be posed many different ways, in many different "registers." It has, of course, an onto-theological form of considerable antiquity and some real grandeur. Translated into journalese, the whole matter not infrequently looks like an excuse for mere name-calling. What to say about all this, briefly? We live in our minds, and we live in our bodies. No philosophy—bookish or practical—can ignore or elide this duplicity of our experience. It can be fantasized away, temporarily, and the feeling of having succeeded in doing so is often exhilarating. Nevertheless, definitively abandoning/transcending the problem amounts, in my view, to irreversible madness and/or death. There is much to be said for both of these options, but let us put them aside for present purposes. Remaining with the doubleness for a moment, then (the articulation of which can be historicized, but the reality of which I take—polemically, I realize—to be trans-historical), we confront the fact that any significant reckoning with human existence requires some account of how the highly divergent experiences of mind and body can be made to cohere. There are many such accounts. Every human on earth, every group of humans on earth, holds—to greater or lesser degrees of explicitness—a theory on this matter. Each that I have encountered basically pleases me—one feels the work being done; one rejoices at the feeling of a kinship that subtends such tremendous diversity. I take "science" to be one of these programs of fundamental coordination across the deep dualism that is human existence. "Science" has been many things over the last two thousand years, of course. But I believe that it is best understood, in gross, as an ongoing collective project to realize and act upon a robust theory of the relationship of mind to body—of thought to stuff, of reason to what the scholastics called "extension." If this is true, it would be surprising to discover that scientific ideas are

"just in our heads." It isn't absolutely impossible that this should prove the case, but the only way—it seems to me—that we could come to have any real feeling for this discovery in a general and responsible way, would be if we were doing so from the perspective of some other (at least equally) well-wrought and elaborated program for relating mind to matter. I think it is an open question whether such a platform, such a "subject position," is currently available to a thinking person with broad access to learning.

Revista Temporalidades: Your first book, Masters of All They Surveyed: Exploration, Geography, and a British El Dorado (2000), makes several important contributions to the understanding of the European imagination's conception of America. Could you talk a bit about how travel narratives as literature helped to disseminate knowledge about the explored regions, and the impact that such knowledge had on the European view of the Americas?

Professor Burnett: Masters of All They Surveyed does indeed center on the question of how a place can be "made"/"conveyed" through a set of interlocking textual practices. Writing in general, and travel narratives in particular, are key here, but so too, of course, are images — both the traditions of landscape representation that I examine in some detail in that book, and the very powerful and specific form of technoscientific imagery that we call a map. My preoccupations as I embarked on the research for my dissertation were substantially post-colonial. I had been enormously affected by my training with the Subaltern Studies scholar Gyan Prakash. Between my readings with Gyan in Foucault and his south-Asian Marxist interlocutors (on the one hand), and formative periods of time traveling in India and Africa (on the other), I had come to be obsessed by a basic question: how was it that Europeans and their Creolized descendants had come to claim territorial sovereignty over something like seventy-five percent of the surface of the earth by the early twentieth century. This is the problem from which Edward Said departs in his Culture and Imperialism (1994) and it is the problem that motivated Masters of All They Surveyed. In a basic sort of way, those territorial claims were grounded in cartographic representations. It was my hope that I might, by examining the process by which a "terra incognita" came to be represented on imperial maps as bounded and reified possessions, *both* make a small contribution to understanding the actual process of hegemonic dispossession that bequeathed to the late twentieth century a host of geopolitical problems and social injustices *and*, in some small way, establish a critical position from which to unsettle some of the legacies of the era of high imperialism. I must admit that I would later come to have grave doubts about this kind of work. More intimate

experience with the day-to-day realities of anti-colonial/decolonizing politics (experiences I had not yet had in my early 20s when I was doing the research and writing that led to Masters of All They Surveyed) significantly undermined much of the somewhat naive confidence/enthusiasm — for instance the jejune belief that an academic monograph on nineteenth-century geography might somehow offer a meaningful fulcrum for progressive politics — that I scent now, on every page, flipping back through my book on El Dorado. Youthful indiscretion, I feel now, those aspects of that study. Not that I disavow the work as a whole — there remains much in it that I would defend, and even a few things that I would recommend. For instance, in re-reading the text, I am reminded of one of the sublimated sources for the entire research project — J. Hillis Miller's beautiful essay on Wallace Stevens' poem "The Idea of Order at Key West" ("The Ethics of Topography" in his 1995 volume Topographies). I was writing a history of science, to be sure, and I was focused broadly on the science of geography and narrowly on the specific techniques of astronomically-oriented way-finding and surveying used by mapmakers in the 19th century. And yet, from the outset, my deepest passions for the source-material lay in language — in the cosmos-constituting power of words, which, like the clear tilting masthead lights (or are they binnacle lamps?) of the fishing boats at anchor in the final image of Stevens' great poem: "Master[…] the night and portion[…] the sea / Fixing emblazoned zones and fiery poles." It is, ultimately, in the scintillations of our stuttering, bobbing, glinting efforts at representation in all its desperate forms that we witness less the represented (whatever that may be) than the "blessed rage for order" that sings perpetually wherever human beings are found. Strange as it may seem, this is the story I most wanted to tell in Masters of All They Surveyed. I failed, of course. And yet, perusing it again, I can sense the ghostly demarcations of that ambition. Thinking back, I am very grateful to Trinity College, and to the freedom of those years in history and philosophy of science at Cambridge, because I was permitted to range very widely in my reading and given considerable latitude in the conceptualization of my research project. Had it not been for that fundamentally "undisciplined" intellectual interlude, I think I could not have made such a distinctive and ambitious mess of my first scholarly work.

Revista Temporalidades: The field of Environmental History experienced a boom in recent historiography, when historians paid more attention to the relationship between nature and history through a consideration of the environment. Did your work turn in this direction in your latest book The Sounding of the Whale (2012)?

Professor Burnett: Yes. It is perfectly fair to see The Sounding of the Whale in the context of a broader historiographic shift (in history generally, but also in history of science and science and technology studies) toward environmental questions. At the same time, it is necessary to specify that there are many different kinds of "environmental history" at this point, and there are certainly ways of construing this subfield that would place my book quite far from the center of things. The Sounding of the Whale takes up changing understandings of whales and dolphins across the long twentieth century. At the heart of the book is an effort to make sense of how these animals went from being understood as industrial commodities to being reconceived as something like soulful, musical, intelligent, pacifistic, friends of humanity — bellwethers of modern environmental irresponsibility, symbols of our ambition to renew our relationship to the natural world, and ultimately as nothing less than avatars of a dawning "age of Aquarius." In one sense, it would be possible to trace this arc via a cultural history, but while I am interested in the broad dynamics of action and meaning-making and sensibility that we call "culture," my approach to the problem in this case is fundamentally that of a historian of science. Which is to say, the book is centrally preoccupied with establishing who knew what about these animals when, and with what effects. Using the archives of the scientist and scientific institutions dedicated to research on cetaceans across the twentieth century, I work to establish how knowledge of these animals changed and how changing knowledge (and changing forms of knowledge) reverberated through larger social formations, political processes, and ultimately reshaped the collective imagination across much of the globe. Is this study an environmental history? Yes, in the sense that I believe it is possible to read The Sounding of the Whale as something like a history of changing ideas about nature over the last century — where that extensive, elaborate story is forced to pass through the narrow annulus of a single (albeit extremely important) taxon. It is possible to survey a vast panorama through a very narrow slit, but one must bring the eye very close indeed — and this metaphor was an organizing conceit in conceptualizing this project. It is also worth pointing out that the "Save the Whales" campaign was a paradigmatic episode in the rise of the modern transnational conservation movement, and in this sense, The Sounding of the Whale can be read as making a contribution not only to the history of environmental thinking in general across the last century, but also to the specific social/political history of "environmentalism." It is perhaps also worth mentioning that my book both emerged out of and has been understood to contribute back to the rise of a specifically marine/ocean-oriented environmental history. This vigorous sub-sub-discipline — exemplified perhaps best by Jeff Bolster's recent Bancroft Prize-winning The Mortal Sea — has forcefully established that the

global ocean is by no means an empty space, historically speaking. The oceans can, and must, be historicized. All that said, I do still basically believe that there are some fundamental methodological tensions between the history of science (in the form I came to understand as normative during my training in the early 1990s) and environmental history (in the leading recent works in the field with which I am familiar). Briefly stated, that tension amounts to this: historians of science aim to historicize natural knowledge, meaning that the content and form of authoritative claims about nature are always and everywhere to be subjected to a relentless and iterative (if also imaginative and sympathetic) critical scrutiny; while such scrutiny is by no means impossible in a work of environmental history (indeed it is prominent and reflexive in the best of them), it cannot be said to be the primary object of the inquiry, which generally aims to reconstruct the history of some nonhuman teachers of the world — and in doing so, such studies almost inevitably call on the sciences themselves for a considerable portion of their evidence. Generally speaking, historians of science quite self-consciously avoid making use of "best practices in current science" as a component of their analyses of past scientific explanations and/or findings. The best scientific practices of our moment, when one is thinking as a historian of science, are simply the raw material for future historians of science — they are not to be privileged in efforts to understand the past and make it meaningful for the present. There is certainly something quixotic, possibly something paradoxical, and conceivably something quite mad about this posture, but it has proven productive as a heuristic (at least) for the discipline over the last half-century as the practitioners of science's history worked to establish a shared domain untainted by presentism, amateurish hagiography, and/or uncritical Whigishness. For a thinker formed to such reflexive skepticism concerning technoscientific discourse, it is quite unsatisfactory to watch a fellow historian of the environmental persuasion make apparently unproblematic use of exactly the sorts of scientific "findings" that ought properly be subjected to critical/historical scrutiny. An example comes to mind. I recall my frustration with Jon Coleman's celebrated 2005 monograph, Vicious: Wolves and Men in America, as I found myself subjected to the author's efforts to give agency to the wolves as historical actors by means of an invocation of animal behavior studies on the semiotics of dominance relations in the canids. For someone who cut his teeth on Donna Haraway, it felt bizarre to be offered as historical evidence, the very sort of scientific research one knew perfectly well cried out for serious historical scrutiny. I don't want to make too much of this sort of thing. Gregg Mitman and others have gone to great lengths to demonstrate the coherence and consilience of strong work in the history of science and adjacent areas of environmental history. Nevertheless, I

still believe that environmental historians tend to treat as an explinans what the historian of science will approach as an explanandum. This makes for a relatively deep incommensurability between the fundamentally epistemological preoccupations of historians of science and the fundamentally less epistemological preoccupations of environmental historians.