

## Critical Histories: A Round Table on Historiography of Science

Edward Jones-Imhotep

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## **Critical Histories: A Round Table on Historiography of Science**

In October 2003, as part of its biennial conference held in Kingston, the Canadian Science and Technology Historical Association mounted a special session dedicated to historiography. Entitled, "Critical Histories: A Round Table on Historiography of Science," the session was designed to illustrate how recent developments, both within science studies and beyond its borders, are raising new questions and problematics passed over in previous literature on Canada, productively recasting age-old disciplinary questions along new lines. The papers in this issue of *Scientia Canadensis* emerge from that session.

"Laboratory Cultures," the first paper in this issue, urges us to re-examine the presumptions of our craft. There is metaphysics in our histories: crucial presumptions about the relationships between knowledge and nation, nature and artifice, technology and culture. Taking those presumptions for granted too often deprives us of the opportunity to speak to deeper and less self-indulgent issues well beyond the field of Canadian science and technology. Drawing on recent literature on visual representation, scientific practice, and the social and cultural functions of laboratories in gaining both cognitive and technological control over the world outside their walls, the paper sets out to illustrate an alternate historiography by example, demonstrating how a slight shift in the way we constitute a well-known historical object—in this case, the Alouette satellite—can lead us to a radically different history of that technology. Trading the obvious outer technology of the satellite to focus instead on the graphic records it was meant to produce—ionograms—the paper launches deep into the practical and material cultures of the laboratories that conceived and constructed the satellite, seeing them as sites of astonishing cold-war debates over the relations between knowledge and nation, nature and artifice, humans and machines. That exploration, the paper argues, gives us insight not only into the history of Canadian science and technology, but into the broader realms of Canadian history and of science studies writ large. In doing so, it takes up what we might call the canonical question of our discipline: what is Canadian about Canadian science and technology? It does so not by using that question to guide a search for essences, but by making the question itself the subject of historical investigation, reinvigorating it through a series of emergent

questions: How did laboratories help refashion the post-war nation and its identities? How did scientific images engage, subvert, or transform understandings of the nation? How can we see the idea of the nation take shape in the workings of a laboratory?

Whereas the first essay draws its resources from the broader field of science and technology studies, the second sets its sights wider still, toward the interstices and rich methodological interconnections of three fields—historical geography, environmental history and history of science. In “A View from the Bush: Space, Environment and the Historiography of Science,” Matthew Evenden explains how historical geographers and environmental historians have often looked to the historiography of science for concepts and techniques that place their subjects under new scrutiny. Evenden’s essay crucially rounds out our vision of that productive relationship by looking not only at how historiographies of science have influenced new interdisciplinary discussions of geography and the environment, but also at how work in these fields has contributed to the historiography of science itself. Through investigations of language, metaphor, and practice, historical geographers have brought the sensibilities of cultural geography to bear on history of science, interrogating the shifting and mutable boundaries between laboratory and field, between nature and culture, investigating how notions of place come to inhere in objects, and generally seeing the history of science as a crucial resource, a meta-discipline through which to systematically examine and interrogate the practices, concepts and dispositions that have historically constituted the discipline of geography. Environmental historians, for their part, have approached the history of science with rather different concerns, seeking to understand the place of science in both re-imagining and transforming the natural world. Exploding the image of science as a neutral, disembodied discourse of reason, these studies instead have viewed science as a transformative force on both society and the environment, legitimating gendered discourses and land conquests and mechanization, as well as rationalizing programs of resource management and underwriting imperialist ambitions of westward expansion. Along these lines, Evenden sees four approaches shaping recent scholarship: a spatial approach emerging primarily within geography and emphasizing problems of space, place, location and circulation; a disciplinary approach focused on the histories of environmental disciplines, and their immersion in shifting political, institutional and environmental contexts; a “science-and-change” approach, which treats the natural world as both social text and shifting terrain, contoured by social and environmental forces; and finally an eco-spatial approach sensitive to both the environmental contexts and effects

of knowledge, and the spatiality of knowledge creation. Cutting across traditional disciplinary divisions to illuminate their subjects in diverse ways, all these approaches have created connections that Evenden believes should be fostered and extended.

Stéphane Castonguay's paper, the third in the collection, beautifully weaves together themes in the previous two papers while teasing novel and crucial observations from them. "Sortir l'histoire des sciences et des techniques de leur contexte national : limites et défis du comparatisme," seeks to revisit the canonical question—what is Canadian about Canadian science and technology?—but finds its inspiration in environmental history rather than history of science and technology proper. Traditional attempts to answer the canonical question have often taken a comparative approach. Those investigations, Castonguay suggests, have actually done little in detailing Canadian distinctiveness. Using the American case as a benchmark, or as a way of framing the terms of the investigation, these studies have often threatened to lose sight not only of what is distinctive about Canadian science and technology but of Canadian history itself. Those shortcomings stem from three more fundamental flaws of the comparative approach: their tendency to merely confirm the generalizations and conclusions of previous comparative studies; their propensity to deploy terms that are incommensurable across their subjects; and their desire to privilege coherences and essences within and between their objects of study, particularly by taking the "nation" as their natural and unproblematic unit of analysis. As Castonguay argues, however, these are weaknesses in practice rather than in principle. The force of the essay lies in suggesting that a comparative approach can suggest new research questions respectful of Canadian history and historiography, but at the same time interrogate, rather than assume, the idea of the nation. Drawing on the work of environmental historians, Castonguay argues two critical roles for comparative studies: firstly as a means of interrogating the category of the nation by investigating the modalities through which national identities are constructed and the "nation" naturalized; and secondly as a way of situating the nation in a multiplicity of scales—from the regional to the international—within which it takes its shape and meaning.

So few papers could never claim to be either exhaustive or representative of all the fascinating research done in the field. But by bringing them together here, we hope to encourage further discussions, longer debates, and even deeper investigations into the critical histories of our discipline. It is both the least and the best we can do.

Edward Jones-Imhotep