

Agricultural Information and the State in the Late 19th Century: The Annual Reports of the United States Department of Agriculture

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Abstract

Prior to the establishment of the U.S. Department of Agriculture in 1862 farmers in the U.S. had myriad ways of sharing and communicating agricultural information that was rooted in experimental practice and based on years of experience. Farmers both needed and used that information – information they created, circulated, and consumed. The introduction of information work at the Department of Agriculture not only altered the kind and amount of information farmers had access to but effectively sought to redefine who the “experts” were through the production and dissemination of the results of applied scientific research conducted by scientists at the Department or work by others filtered through the institution. The vehicle for much of this information transfer was the annual reports of the Department. My research is an historical examination of the Department of Agriculture that looks specifically at its information functions from 1862-1888. Using the annual reports to identify and examine those functions, I situate that information work within the context of the emergence of the modern state and American empire, industrializing capitalism, and the history of information.

Keywords: history, theory, and philosophy of information, political economy of information, public information policy, science and society, government information policy

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1 Introduction

Information work at the newly formed United States Department of Agriculture relied heavily on surveys, developed and conducted by the department. These were sent to as many as 30,000 correspondents at a time, seeking data such as crop yields and soil conditions. Most of the informants were directly associated with agriculture throughout the United States and its territories. Many were farmers. In turn, the departmental research disseminated to farmers across the U.S. included information on new tools, more efficient farming practices, better seeds, new plants, and statistical information about crop yields, the weather, and market prices. The information work of the Department served as the foundation for what was, essentially, a national information policy. The vehicle for much of this information transfer was the annual reports of the Department of Agriculture. The annual reports were freely available to the public via the Department and the Congress, and mailed free of charge by the United States Postal Service (Fuller, 1972; John, 1995). The annual reports were bound volumes ranging from 400 to 800 pages, with print runs that reached 400,000 by 1888. These unique, complex, and rich primary resources — government documents—are at the center of my research and are the primary source for my data.

2 Historical Context

The second half of the 19th century was a period of dramatic change in the United States. The federal government was growing and building an economic and political infrastructure that asserted a national identity. Although we often associate this period with the growth of cities, industrialization, and factory

work it is worth noting that, according to the U.S. census of 1840, more than half of the nation's population was employed in agricultural work. The census of 1840 was the first federal census to include agricultural statistics. Compiled by the United States Department of State the census for 1840, 1850, and 1860 include free and slave states as well as territories and show that the population of the United States nearly doubled between 1840 and 1860. (http://www.agcensus.usda.gov/Publications/Historical_Publications/index.asp) The growth in the number of farms in this period was also staggering: "Between 1860 and 1890 the number of farms in the United States nearly tripled. Land under the plow rose from 407 million to 828 million acres..." and was directly tied to westward expansion by the U.S. government (Postel, 2007). There were 1.5 million farms averaging 200 acres and 80 percent of exports were the products of agriculture (Rasmussen, 1990). Immigration, the growth of urban areas, industrialization, western expansion, emerging transportation and communications networks, and the Civil War each had profound impact on agricultural production. Barron, in his study of the North after the U.S. Civil War, calls the period "the second transformation." Influenced by the work of Alfred D. Chandler, Barron characterizes the period as one that witnesses the "rise of big business and the emergence of a new corporate mentality." Also at play for Barron is the emergence of a class of bureaucrats and managers – the new "middle class." Growth in consumer goods and the expansion of mass culture are critical elements, but perhaps most importantly for the purposes of this study, the period is one of significant growth of the power of the state (Barron, 1997).

Many of the challenges associated with these changes centered on the need for greater crop yields, new types of crops, and techniques to ensure soil health. Though there had been support and agitation for a federal agricultural agency for decades it was not until 1862, in the midst of the Civil War, that the Congress of the United States established the Department of Agriculture. It was the first executive agency created in a period in which the federal government begins to assert an expansive and authoritative role. Examples of that expansiveness include a communications and transportation infrastructure spanning the continent and the groundwork for public universities that reframed education with a special eye to agriculture and applied science (Solberg, 1968; Williams, 1969; Hobsbawm, 1975; John, 1995).

The Department was the first federal agency to engage in scientific research and the creation and dissemination of new knowledge on a massive scale, and it did so at a critical moment in the history of the United States between 1862 and 1888. The acquisition, production, and dissemination of information were at the heart of the work of the Department. That information and the systems developed to gather, produce, and share that information constitute the broader focus of my research.

3 Research Questions and Conceptual Framework

Broadly speaking, the purpose of this study is to see how systems of agricultural information at the Department of Agriculture drove change in the practice and economy of agriculture in the late 19th century U.S. and fed its emerging role as an imperial power (Williams, 1969). My research questions:

1. What were the systems of information developed at the Department of Agriculture between 1862 and 1888? How did those systems help facilitate the procurement, propagation, and diffusion of information by the Department of Agriculture? What were the types and ranges of that information?
2. How did the information work at the Department of Agriculture help transform the political economy of agriculture in the U.S. in second half of the 19th century as the nation continued its westward expansion and began to assert itself as an imperial power?

This study analyzes how the information work of the Department of Agriculture progressed from its instantiation as a federal agency in the midst of a civil war in 1862 to where it stood nearly 30 years later when the Department gained greater legitimacy, support, and a place in the President's cabinet. In many ways this study is built upon an anatomy of the annual reports that seeks to make explicit how they

embodied the systems of information work at the Department and how they served as vehicles for information transfer and scientific communication. The annual reports embody and articulate the work of the Department of Agriculture.

This research is fundamentally historical and draws on both primary and secondary resources. Political economy of information forms the basis for my conceptual framework with its focus on power and how information is mobilized for control that asserts authority and neutralizes/temperes resistance (Mosco & Wasko, 1988; Schiller, 2007). Its explicit concern with questions that locate and analyze structures of power and those who hold, wield, and benefit from it adds depth to my work.

I am also interested in understanding how farmers and others contributed to the production of agricultural information by the State and how they received and used that information produced by the Department of Agriculture. Was there resistance? Are there significant counter-narratives? Why do so many studies locate change in the 20th century and not the 19th? Why is change in agricultural practice seen as driven by technology and mechanization? What are we missing if we do not examine the relationship between the assertion of authority and power and the actual practice of farming?

Historical research is rooted in the archives and this study is no exception. The archival records and manuscript material for the Department of Agriculture held at the National Archives and Records Administration at College Park, Maryland and the National Agricultural Library in Beltsville, Maryland, though scattered and not very deep for the period I am studying, have been critical to my work (Pinkett, 1962). Examples of some of the surveys and correspondence about the exchange of plants and seeds provide concrete supporting evidence of claims made in the annual reports. In addition, the records at NARA and National Agricultural Library helped identify connecting threads in the agricultural press, agricultural and other professional societies, seed companies, and the archives of a selection of land-grant public universities in the United States.

I survey selected secondary literature about the history of the Department and its information work and use it to situate my work in the larger discourse about the research and educational work of the Department of Agriculture and the relationship of that work to the emergence of the modern state and American empire.

Literary scholar Oz Frankel argues that annual reports are critical expressions of state authority: "nineteenth-century government reports were packaged, disseminated, and even consumed as books and could be found in libraries or purchased in bookstores. In fact, the antebellum public sphere was cluttered with annual and special reports..."(Frankel, 2010). The annual reports of the Department of Agriculture between 1862 and 1888 serve as my most valuable primary resources for this study. Government documents like the annual reports and the reports of surveys and expeditions had multiple uses and tangled intentions. Their narratives are often layered, speaking to and serving multiple audiences. Annual reports are examples of the literature of organizations and they carry complex messages.

The annual reports of the Department of Agriculture are a critical resource for research on the information functions of the Department, the priorities of the federal government, the institutionalization of scientific research and the centralized place for agricultural research in the federal government of the United States in the 19th century. Indeed, they have served as one of the primary resources for most histories of the Department due in large part to the meager archival record (Swank, 1872; Greathouse, 1898; True, 1912; Wanlass, 1920; Weist, 1926; Gaus & Wolcott, 1940; Ross, 1946; Rossiter, 1975; Dupree, 1980; Hamilton, 1990; Rasmussen & Baker, 1992; Carpenter, 2001). In the face of such a dramatic loss of documentation, the annual reports for this period serve a unique and valuable purpose.

4 Preliminary Findings

In the second half of the 19th century agriculture was essential to the nation's security and health. The Department of Agriculture was established by the Congress to fulfill responsibility to support and promote

progress in agriculture toward those ends. Indeed, the annual reports of the department are filled with rhetoric asserting its place as the bedrock of the economy, "Agriculture furnishes the food of the nation, the raw materials of manufactures, and the cargoes of domestic and foreign commerce. It is the cause and the evidence of true civilization; for, when tillage begins barbarism ends, and the various arts commence" (USDA, 1862).

Information work conducted by the Department of Agriculture focused on applied science and agricultural statistics intended to bolster a nascent market economy with a global reach through increased efficiency in agricultural production. The Department generated, organized, and disseminated information that offered farmers information on new practices, new seeds and plants, and new tools that would result in increased crop yields and improve the efficiency of farm production. The seeds and plants were information, too. Bronwyn Parry (2004) argues, "seeds became useful proxies" for plants. And, unlike botanical illustrations or descriptions, contained within them the information necessary for reproduction. Kloppenburg (2004) and Schiller (2007) follow Parry and look at plant biotechnology and the commodification of seeds and plant germ-plasm.

Statistical information from the Department of Agriculture allowed farmers and other stakeholders in the economy of agricultural production and circulation to anticipate future crop yields and demand, and manipulate prices and distribution. Theodore Porter argues that the use of the term "statistics" is associated with a "great explosion of numbers" in the early 19th century. It had a dramatic impact on the organization and expression of knowledge by the expectations it "placed on people to classify things so that they could be counted and placed in an appropriate box on some official table, and more generally its impact on the character of the information people need to possess before they feel they understand something..." (Porter, 1986). He distinguishes "political arithmetic" from statistics, which was tied to both scientific thought and philosophical theory interested in explaining natural and social phenomenon. The former, political arithmetic, was more directly used by or for the state's centralizing bureaucracy and its use of information to control. The latter, statistics, became associated with science and assertions about natural law locating truth in something outside the state. The statistical work of the Department of Agriculture grew during the same period that Porter suggests a transition from political arithmetic to statistical work concerned with variation, but not yet at the point of demonstrating causal relationships and measuring probability (Porter, 1986).

The need for reliable and "accurate" information was emphasized by commissioners of the Department of Agriculture in its annual reports throughout the late 19th century. The accuracy of that information served to rationalize agricultural production in an emerging global market economy. The Department report for 1865 provides one example of the perceived power of its statistical information, "These estimates are ... published in the reports of this department, and by the information thus made public the commerce in farm stock and their products is regulated, and the farmer's attention is timely directed to a decrease or over-production of any one of them. Heretofore an evil in our agriculture, was over-production, occasioned by a casual demand from abroad; but the tables of this department like the regulator of the steam-engine, will do much to prevent either a deficiency or its opposite." This information also served to assert and then reinforce the authority of the federal government at a critical moment in its history and its role as a source of resources and information vital to agricultural production in that growing market economy.

My study of the annual reports of the Department of Agriculture suggests that the systems of information that characterized its work were integral to the transformation of agricultural practice and knowledge in the United States. More specifically, the Department of Agriculture's information work, which took a number of forms, defined, fed, and nurtured that transformation. It was a prodigious collector, producer, and distributor of information that served complicated and complex purposes.

Further, my analysis demonstrates how the Department of Agriculture was, perhaps more than any other federal agency, a place where we can see evidence of the emergence of a modern state and the exercise of a central state authority in the United States. Throughout the second half of the long 19th century the Department of Agriculture was an arena in which the role and authority of the federal government and that of the states was contested and negotiated. In its work we can also see instantiations of an emerging infrastructure of empire, with imperial aspirations made possible in large part by the agricultural information it collected, produced, and distributed.

5 Contribution to Information Scholarship

This work critically engages and contributes to a growing body of literature in the emerging field of information history (Black, 2006; Schiller, 2007; Weller, 2007). Evidence of information work at the Department of Agriculture from 1862 to 1888 challenges assumptions about the origins of the so-called information society and the place of information in the economy (Bell, 1973; Machlup, 1962; Porat, 1977). At the same time, it contributes to our understanding of the essential importance of systems of information to the functions of the state and the infrastructure the state develops to support its information work, assert its authority, and grow its power. My work enlarges and grounds our understanding of the state as an information machine in such a way that control and surveillance are no longer sufficient categories for understanding how information and the state develop and interact.

Agricultural information work at the Department of Agriculture in the 19th century balanced economic viability and concepts of democratization and the public good. My work, by intensively examining this critical period in the development and maturation of state-sponsored information work, also helps to historically situate contemporary debates about the role of government in the development of cyber infrastructure and the value and responsibility of public funded research.

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