

## *Chapter One - Introduction*

On or about the sixteenth of November 1752, in the small city of Annapolis, Jonas Green, the printer and editor of the *Maryland Gazette*, put the finishing touches on issue number 393. Almost immediately, postal riders travelling improving but still poor and often treacherous roads carried the newspapers inland. Captains of pocket schooners sailing hazardous coastal waters and risking the weather and the pirates of the open seas carried the periodical North, South and East. Together, they managed to distribute copies of the paper throughout the colonies and even to Europe.

In America, colonists, eager for news from afar, celebrated the arrival of the post. One diary of the time tells of how citizens alighted the post rider upon their shoulders and paraded him around the town upon his arrival.<sup>1</sup> Those who could afford their own subscription, or shared with another, took their copies home. Those who could not afford a newspaper might read the paper nailed to the post office wall or in a tavern or coffee shop. Even those who could not read still heard the news, for people often gathered in churches, coffeehouses, meeting houses and town squares to listen to people read the post aloud.

Inside the *Maryland Gazette* and other colonial newspapers, readers and listeners could rely on a steady literary diet of wars, crime, punishment, weather, earthquakes, philosophical and moral essays, and government decrees. In addition to this information, a tendency to describe the world in the terms of natural philosophy and natural history also infused the articles. Occasionally, the articles might even appear to invite the public into the world of the creation of natural knowledge. In November of 1752, when the reader got to the second page, first column of issue number 393 of the *Maryland Gazette*, he or she would hear the details of how, using a slightly modified kite, one could prove that lightning and electricity were one in the same.

Few will deny the integral nature of science and technology in early 21<sup>st</sup> century American society and culture and their importance in not only the creation of wealth but the perpetuation of

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<sup>1</sup> See Kielbowicz, 1989.

American democracy. Many of the recognizable origins of this integration lie some 300 years before in America's colonial period. And just as today's media play a role in the dissemination of information and the creation of a public image of science, so too did the nascent colonial newspaper of the eighteenth century. This study examines the character of colonial American newspaper science to understand how and to what extent the newspaper contributed to the movement of information between those engaged in science and the public. This study aims at informing the discussions as to how the colonial American newspaper played a role in the knowledge processes of the Enlightenment by promoting an empirical view of the world and helped create contemporary science, science communication and a society that to varying degrees accepts the practices of science.

In the eighteenth-century, the colonial American newspaper became the textual locus through which the negotiations of what would and would not constitute acceptable public explanations of numerous subjects, including natural phenomena, were played out. Along with the public lecture, the newspaper became a primary device where actors and artifacts made legitimizing natural claims to a larger audience and enlisted allies in both scientific and broader disputes. In this way the American colonies paralleled Britain which had seen an increase in the public witnessing of an empirical natural philosophy and an appeal to economic and social gain for that philosophy since the late seventeenth century. In order to enroll a broader constituency, natural philosophers used the newspaper to argue for the value of rational and empirical exploration and its products in everyday affairs, matters of state, and, even, entertainment. However, despite the negotiation through the pages of the general periodical, and despite the lack of strong differentiation between “virtuosi” and “lay” philosophers, the newspaper seldom became a “trading zone” for the theory and practice of science between those doing science.<sup>2</sup> With some notable exceptions, the public infrequently becomes privy to vanguard scientific theory and scientific disputes or enjoys direct participation through the newspaper. The *Transactions of the Royal Society*, the learned journals of the continent and private correspondence and conversation provided most of that kind of access and communication.

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<sup>2</sup> Galison, 1997. Galison originates the term "trading zone" as a virtual location for the exchange of scientific information.

This dissertation explores the mid-eighteenth century colonial American general periodical to characterize the public role of enlightenment science in articles and advertisements pertaining to matters of health, invention and the natural world. It focuses on the mid-Atlantic region, utilizing all the issues of the *Pennsylvania Gazette*, *Maryland Gazette*, *Virginia Gazette*, and *American Weekly Mercury* between the years 1728 to 1765. While a fair amount of historical work has focused separately on the colonial American press and American science, much work directed at science in the press, or the rise of a public science, addresses other locations or other time periods. None has focused specifically on characterizing the literary approaches to a colonial American newspaper reading public with regard to the whole of science. This dissertation aims to begin to fill that gap.

To examine the locations within colonial American newspaper for discovering the literary place of science demands a broad focus. Only a small percentage of the colonial newspaper over the time period addresses the administration, inventions and techniques, observations and theories of natural philosophers. Therefore, this dissertation attempts to take an expansive swath of literary territory -- articles and advertisements concerning animals, biological deformities, earthquakes, health, death, disease, small pox, human pre-civilization, lightning, mechanics, plants, soil, stars/planets/meteors/comets, volcanoes, and weather, as well as essays on morals or politics -- to show enlightenment thought within the context of everyday affairs and current events.

Examining these different types of articles shows that the subjects did not always necessarily receive the same treatment by their authors. Yet, a number of approaches for eliciting public attention and support do emerge. Articles espoused scientific authority, process, utility, commercial viability, and entertainment value. They appealed to the public requirements for economic, social and physical welfare. While many of the articles exhibited more than one of these characteristics, they shall still prove useful divisions for our exploration.

The second chapter, "Science in Public," acts as a literature review. First it reviews approaches to examining American newspapers, especially for incidents of science. It then captures the mostly British precedents for examining science as private institution and public good. It shows the debates and efforts surrounding the effort to place Natural Knowledge within the public domain through periodical journals and coffeehouse presentations that preceded and paralleled

the American experience. It shows the importance of Natural Philosophy as an element in both the exchange of goods and representative democracy.

Chapter Three, “Methods for Reading Newspapers,” reviews the methodology I used to collect qualitative and some quantitative data for colonial American newspapers. For a number of reasons I choose the years between 1728 and 1765.

Chapter Four, “Science and the Press: Nascent Institutions in Colonial America,” gives the context for communicating a public science. Geography, economic concerns, political expediency -- all played a part in the establishment and evolution of the American press and its use as one organ of communication. The press initially focused most of its attention on global rather than local events and this included the work of naturalists and philosophers. Only later in the period, with the establishment of a domestic society and the work of Franklin, Rittenhouse, and others did American science really begin to come into its own. Concurrent with the rise in prominence for American science came the urbanization of American cities, increases in population, better postal routes and the growing sophistication of the American press. Even more dramatically, the mid-century saw the rise of the commercial viability of newspapers as an advertising device. This chapter establishes the character of the mid-century press and places its presentation of explorations of nature within the broader context of colonial culture and modes of communication.

In Chapter Five, “Public Witnessing,” I follow Franklin and others as they establish the portrayal of natural philosophy and the right of public access within the pages of the press. The chapter begins by showing the numerous avenues for both communicating and publishing science that existed. It leads to detailing the few calls for public participation and ends by arguing how the public space of the newspaper creates a science of representation where, despite the potential for a ‘lay’ science, an insider’s clique persists. Rather than detract from science, this state probably furthers its claims to authority.

In Chapter Six, “Public Negotiation,” I further examine the role of scientific explanation with respect to other colonial American epistemological forms such as superstition, religion and the

occult. Natural philosophy and natural history often served directly in arguments for personal, political, or economic positions in opposition to those utilizing the arguments of other institutions or traditions. The chapter begins by showing many of the negotiations that occurred within the pages of the newspapers, shows instances where scientific authority and empirical process served to counter other approaches and reveals the few incidents where the public became privy to the heated discussions at the forefront of science.

In Chapter Seven, "Public Promotion," I demonstrate how the language of many articles and advertisements placed science in the most favorable light. The mid-century saw a change in the character of the American newspaper from an official organ of state governments to that closely paralleling the journals of Addison and Steele in England: having a broader and more commercial appeal. Benjamin Franklin and Andrew Bradford of Philadelphia led the way in the commodification of information and established the style of newspaper recognized today. The portrayal of science needed to fit within the confines of a new style of journalism. It needed to retain its communitarian aspects and still allow for economic progress and personal gain. In the sections on Public Utility and Private Concern I treat this seemingly dipolar arrangement. The means of reaching an audience also included many of the techniques of the stage and in the selling of products. Articles and demonstrations used horror, humor, and amazement to capture the fancy of readers. Additionally, many events in nature often defied a quick scientific explanation yet served to entertain the public. Chapter seven shows science as public utility, sold commodity, entertainment, and metaphor for life and society.

The Conclusion, Chapter Eight, summarizes the discoveries of the dissertation to begin to answer broad and contemporarily pertinent questions. For example, how did contemporary styles of science journalism and, thus, public science, come to exist today? How did the American public, to varying degrees, accept empiricism, rationality, and the authority of science?