

Household Oeconomy and Chemical Inquiry

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The history of the chemical laboratory was until recently quite obscure. But a number of studies have begun to reveal the material conditions and spatial configurations of chemical practice in a variety of settings in the period 1760 to 1840. Peter Morris's recent book *The Matter Factory* examines the laboratories of Lavoisier, Faraday and Liebig in this period, while a recent volume of *Ambix* considered eighteenth-century laboratories dedicated to chemical inquiry in, among other places, a porcelain manufactory, mining academy and assaying office.¹ The focus of these studies has been purpose-built laboratories dedicated to chemical practice, and it has been suggested that chemistry could only take place in laboratories constructed for the purpose, since they needed to contain a furnace.² While historians have clearly widened the repertoire of laboratories being studied from famous research institutions to military, industrial and academic sites, this chapter proposes that many sites of chemistry were not originally *dedicated* to chemical labors, and some were not laboratories at all.

Alix Cooper and Steven Shapin have noted that a great deal of early modern experimentation took place in people's homes.³ Cooper identifies the home as a key site of scientific inquiry and the family as the central unit in domestic knowledge-making. Cooper, Shapin and others have made social relations the focus of analysis for exploring the nature of knowledge-making in the home. Cooper considers how family life shaped early modern scholarly life, while Shapin demonstrated how expectations of gentlemanly conduct in the home

1 Peter Morris, *The Matter Factory: A history of the chemical laboratory* (London: Reaktion, 2015), esp. 19–20; John Perkins, ed. *Sites of Chemistry in the Eighteenth Century*, special issue of *Ambix* 60, no. 2 (May 2013).

2 Ursula Klein, "The Laboratory Challenge: Some revisions of the standard view of early modern experimentation," *Isis* 99 (2008): 769–782, on 772–3.

3 Alix Cooper, "Homes and Households," Katharine Park and Lorraine Daston, eds., *The Cambridge History of Science*, Vol. 3: *Early Modern Science* (Cambridge: Cambridge Univ. Press, 2006), 224–237; Steven Shapin, "The House of Experiment in 17th-Century England," *Isis* 79 (1988): 373–404.

shaped experimental etiquette.⁴ This chapter also proposes that the home, among a variety of adapted spaces, continued to be an important site for chemical experimentation in the period 1760 to 1840. It shows how chemical practices were shaped by the social order of the home, and particularly ideas of *oeconomy*, a body of knowledge and practice concerning the proper management of the household (and by extension, the state or even the universe).⁵ The focus here will be on Britain, and perhaps further research will reveal if similar relations to *oeconomy* existed elsewhere. Importantly, a fundamental focus of chemistry and *oeconomy* in Britain was the management of *materials*, and it is the material aspects of chemical activity in adapted spaces such as the home on which this chapter concentrates. Domestic chemistry and *oeconomy* were equally social and material practices, and this chapter might be seen as an exploration of *sociomateriality*, a term that reminds us that these arenas were always linked together in a rich variety of ways.⁶

Like the home itself, the material culture of chemical inquiry in this period could also be adapted, and might be said to have been in a constant state of flux, what the sociologist Karin Knorr-Cetina refers to as the “incompleteness” of objects.⁷ Chemical practitioners certainly purchased or made apparatus serving some specific chemical end from an instrument-maker, but they also turned a diverse array of household goods into apparatus for their experiments. The material form and uses of a household object or instrument unfolded over time. Even dedicated instruments were not static objects, but underwent alterations and repairs. Rather than overlook this as simple expe-

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- 4 Gadi Algazi, “Scholars in Households: Refiguring the learned habitus, 1480-1550,” *Science in Context* 16 (2003): 9-42; Frances Harris, “Living in the Neighbourhood of Science: Mary Evelyn, Margaret Cavendish and the Greshamites,” Lynette Hunter and Sarah Hutton, eds., *Women, Science, and Medicine 1500-1700: Mothers and sisters of the Royal Society* (Stroud: Sutton Publishing, 1997), 198-217; Deborah E. Harkness, “Managing an Experimental Household: The Dees of Mortlake and the practice of natural philosophy,” *Isis* 88 (1997): 247-262.
 - 5 On *oeconomy*, see Lissa Roberts, ed., “Practicing *Oeconomy* in the Late Eighteenth Century,” special issue of *History and Technology* 30 (2014); Keith Tribe, “*Oeconomic History*: An essay review,” *Studies in the History and Philosophy of Science* 36 (2005): 586-597; Both Roberts and Tribe offer criticism of Margaret Schabas and Neil Di Marchi, eds., *Oeconomies in the Age of Newton*, Annual Supplement to *History of Political Economy* 35 (2003).
 - 6 For discussion of the term *sociomateriality*, see Wanda J. Orlikowski, “*Sociomaterial Practices*: Exploring technology at work,” *Organization Studies* 28 (2007): 1435-1448; It has of course long been an assumption of social studies of science and technology that the social and material are fundamentally linked.
 - 7 See Karin Knorr-Cetina, “*Objectual Practice*,” Theodore R. Schatzki, Karin Knorr-Cetina, Eike von Savigny, eds., *The Practice Turn in Contemporary Theory* (London: Routledge, 2001), 175-188, on 181-184.