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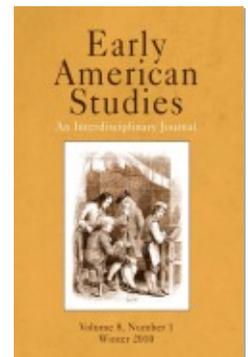
Between Script and Specie: Cadwallader Colden's Printing  
Method and the Production of Permanent, Correct Knowledge

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# Between Script and Specie

## Cadwallader Colden's Printing Method and the Production of Permanent, Correct Knowledge

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**ABSTRACT** Around 1740 the New York statesman and scholar Cadwallader Colden designed a new method to print long-lasting, accurate books. This essay analyzes Colden's invention and his more general effort at reforming the book trade in the historical context of eighteenth-century concerns about paper currency and the construction of false value. By also examining why Colden's plan failed to convince trans-Atlantic publishers such as Benjamin Franklin and William Strahan, this article stresses the contingent and contested nature of print in the mid-eighteenth century.

In his award-winning 1998 study, *The Nature of the Book*, Adrian Johns challenged historians to rethink print as an early modern social construction rather than the automatic outcome of Gutenberg's fifteenth-century invention. Johns positioned himself against Elizabeth Eisenstein, who in 1979 had put the printing press at the center of history by polemically reinterpreting the Renaissance, Reformation, and Scientific Revolution as consequences of the turn from script to print. As Johns saw it, Eisenstein's sweeping argument rested on a false assumption that, unlike script, print preserved knowledge in a stable, reliable fashion. Johns countered that any such "fixity" was a contingent and local quality. In *The Nature of the Book* he detailed how authors,

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publishers, booksellers, and readers had labored to make printed information trustworthy in seventeenth- and eighteenth-century London.<sup>1</sup>

Building on Johns's insights, this article aims to extend our understanding of the social construction of print by examining how attitudes toward books were formed in relation to specie as well as script in the eighteenth-century British Atlantic.<sup>2</sup> A trans-Atlantic perspective is necessary when we consider that governmental printing of paper money was pioneered in America. Reacting to a lack of specie and the costs of imperial warfare, colonial officials issued printed currency before their European counterparts. In 1685 Quebec authorities allowed stamped playing cards to be used as legal tender. Five years later, in a move that sparked a sixty-year-long public discussion about printed currency, the Massachusetts General Court emitted paper bills to meet the costs of a failed military expedition against French Canada. Massachusetts was, as one historian has put it, "the first society in the Western world to wrestle with the complexities of paper money."<sup>3</sup> As printed currency emissions occurred in other British colonies during the eighteenth century, public debate over paper money coursed through North America.

Although a considerable body of scholarship now exists on the cultural effects of paper currency in early modern Britain, historians have yet to seriously confront how the anxieties that resulted from the rise of paper money altered seventeenth- and eighteenth-century perceptions of print.<sup>4</sup> To open

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1. Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago: University of Chicago Press, 1998); Elizabeth L. Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early-Modern Europe* (1979; rept., Cambridge: Cambridge University Press, 1980). See also Anthony Grafton, Elizabeth L. Eisenstein, and Adrian Johns, "Forum: How Revolutionary was the Print Revolution?" *American Historical Review* 107, 1 (2002): 84–128.

2. Though my focus in this essay is on the social construction of print, I also accept that the printing press opened up a range of cultural and commercial possibilities that could not be easily achieved through scribal publication. For similar arguments, see Harold Love, "Fixity versus Flexibility in 'A Song on Tom of Danby' and Dryden's *Absalom and Achitophel*," in Sabrina Alcorn Baron, Eric N. Lindquist, and Eleanor F. Shevlin, eds., *Agent of Change: Print Culture Studies after Elizabeth L. Eisenstein* (Amherst: University of Massachusetts Press, 2007), 140–55, and Richard B. Sher, *The Enlightenment and the Book: Scottish Authors and Their Publishers in Eighteenth-Century Britain, Ireland, and America* (Chicago: University of Chicago Press, 2006), 6.

3. Elizabeth E. Dunn, "'Grasping at the Shadow': The Massachusetts Currency Debate, 1690–1751," *New England Quarterly* 71, 1 (1998): 54.

4. A useful starting point for the literature on the effects of paper currency in early modern Britain is J. G. A. Pocock's analysis of England's 1690s financial revolution as a "momentous intellectual event." Writing in the 1970s and 1980s, Pocock

up this issue, the first section of this essay focuses on a printing method invented around 1740 by Cadwallader Colden, a surveyor general, provincial councilman, and eventual lieutenant governor of colonial New York. Colden's printing technique required the imprinting of metal plates through a process of stamping (*en creuse*). Colden argued that these marked copper plates, which he thought could be easily stored until they were needed to print the pages of a book, allowed for the sorts of short, gradual print runs that were simply not cost effective for most printing houses of his day. He urged publishers to produce a small number of slow-selling, accurate tomes rather than a myriad of cheap, poor-quality books. Colden claimed that the best books retained a value as real and fixed as any precious metal. His printing scheme therefore overcame a conceptual opposition of metal and print that was crucial to contemporary discussions of paper money.

The final two parts of this article examine the reasons Colden pursued a print culture dominated by permanent, correct knowledge, as well as for his

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noted that at the turn of the eighteenth century critics of emergent "monied interests" celebrated a classical association of virtue, leisure, rationality, and land ownership while they simultaneously derided the mobility and imaginary nature of stock and credit. See, especially, Pocock, *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republican Tradition* (Princeton: Princeton University Press, 1975), and "The Mobility of Property and the Rise of Eighteenth-Century Sociology," in his *Virtue, Commerce, and History: Essays on Political Thought and History, Chiefly in the Eighteenth Century* (Cambridge: Cambridge University Press, 1985), 103–23. Inspired by Pocock, and united under the banner of "new economic criticism," literary scholars have recently explored how the historic dematerialization of money produced a longing for real, intrinsic value that gained expression in the eighteenth-century novel. Key works of the new economic criticism include Colin Nicholson, *Writing and the Rise of Finance: Capital Satires of the Early Eighteenth Century* (Cambridge: Cambridge University Press, 1994); James Thompson, *Models of Value: Eighteenth-Century Political Economy and the Novel* (Durham, N.C.: Duke University Press, 1996); Catherine Ingrassia, *Authorship, Commerce, and Gender in Early Eighteenth-Century England: A Culture of Paper Credit* (Cambridge: Cambridge University Press, 1998); Martha Woodmansee and Mark Osteen, eds., *The New Economic Criticism: Studies at the Intersection of Literature and Economics* (New York: Routledge, 1999). On the effect of paper currency in America, see Michael Warner, *The Letters of the Republic: Publication and the Public Sphere in Eighteenth-Century America* (Cambridge: Harvard University Press, 1990), 43–49; Seán Moore, "The Culture of Paper Credit: The New Economic Criticism and the Postcolonial Eighteenth Century," *Eighteenth Century* 45, 1 (2004): 87–108; Jennifer J. Baker, *Securing the Commonwealth: Debt, Speculation, and Writing in the Making of Early America* (Baltimore: Johns Hopkins University Press, 2005); Jose R. Torre, *The Political Economy of Sentiment: Paper Credit and the Scottish Enlightenment in Early Republic Boston, 1780–1820* (London: Pickering & Chatto, 2007).

plan's failure to resonate with mid-eighteenth-century printers on both sides of the Atlantic. I will argue that Colden's conservative politics and intellectual ambitions largely motivated his printing invention. He deeply disliked the partisan newspapers that appeared in New York beginning in the 1730s, and he also wanted to achieve lasting fame as the author of a grand, philosophical system. But Colden failed to appreciate fully the business interests of printers. Benjamin Franklin and William Strahan, two partners who were working to establish a trans-Atlantic print trade in the mid-eighteenth century, gave Colden's scheme short shrift. Franklin and Strahan preferred to hold a stock of quick-selling, short-lived works rather than difficult tomes with narrow appeal. Colden's scheme was therefore ignored and dismissed in its day. Nevertheless, it serves to remind us now that crucial aspects of print, such as the fixity and trustworthiness we expect from our books, were not always the first goal of booksellers and printers.

#### COLDEN'S PRINTING METHOD AND PAPER MONEY

When Colden first conceived of his new printing method in the late 1730s, he was an established political figure in New York. His roots, however, were Scottish. Although probably born in Ireland in 1688/89, he was raised in Scotland and educated at the University of Edinburgh. He moved to Philadelphia in 1710 and then to New York in 1718. By 1721 he was New York's surveyor general and a member of the provincial council. After falling out of political favor during a 1727 reshuffle of the British colonial administration, Colden remained mostly on the political sidelines in New York between the late 1720s and the mid-1740s. Retiring to his farm in rural New York and fashioning himself as an erudite gentleman of leisure, he began work on his printing scheme. This invention was at the forefront of his mind when he was chosen to mediate a dispute between the colony of Connecticut and the Mohegan Indians in 1743.<sup>5</sup> While traveling between New York and Norwich, Connecticut, that year, Colden fortuitously met Franklin, a printer he soon labeled "the most ingenious in his way without question of any in America."<sup>6</sup> The two strangers struck up a conversation, probably

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5. Cadwallader Colden to Alice Colden, Norwich, Connecticut, July 12, 1743, *The Letters and Papers of Cadwallader Colden* (New-York Historical Society, *Collections*, 50–56, 67–68) (cited hereafter as *Colden Papers*), 8:294–95; Colden to John Bartram, n.p., n.d., *Colden Papers*, 3:25–27. For more on the negotiations with the Mohegans, see *Governor and Company of Connecticut and Mohegan Indians, by Their Guardians—Certified Copy of Book of Proceedings Before Commissioners of Review MDCCXLIII* (London, 1769).

6. Colden to William Strahan, n.p., November 1743, *Colden Papers*, 3:38.

somewhere along the Boston post road, and Colden revealed his designs for a new printing method.<sup>7</sup> Later that year he sent Franklin a written version of this plan.<sup>8</sup>

Colden had no direct experience as a printer, but he knew of other printing technologies that had been developed in the seventeenth and eighteenth centuries. At one point he commented that his scheme was inspired partly by his recollection of another “Invention of Printing.”<sup>9</sup> Colden possibly meant the technique of punching marks into softened copper that spread from Holland to England by the turn of the eighteenth century and thereafter revolutionized music publishing.<sup>10</sup> The description of rolling-press printing that appeared in Ephraim Chambers’s 1728 *Cyclopædia*, a book that listed Colden among its subscribers, was perhaps another influence.<sup>11</sup>

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7. Colden to Benjamin Franklin, [October 1743], in L. W. Labaree et al., eds., *The Papers of Benjamin Franklin* (New Haven: Yale University Press, 1959–) (cited hereafter as *Franklin Papers*), 2:385–86; Colden to Strahan, n.p., November 1743, *Colden Papers*, 3:37–39. For more on this encounter, see Carl van Doren, “The Beginnings of the American Philosophical Society,” *Proceedings of the American Philosophical Society* 87, 3 (1943): 280–81.

8. A copy of this proposal is held by the New-York Historical Society and available on microfilm (Scientific and Political Papers and Notes, Cadwallader Colden Papers, New-York Historical Society, microfilm, reel 1). It was published as “An original paper of the late Lieut. Gov. Colden, on a new method of printing, discovered by him; together with an original letter from the late Dr. Franklin, on the same subject; and some account of Stereotyping, as now practised in Europe, &c. by the Editors of the Register,” *American Medical and Philosophical Register* 1 (1810): 439–50. It was also reprinted in the *American Journal of Science and Arts* 24, 2 (1833): 319–26. All quotations in this essay from Colden’s printing method are reproduced from the 1810 *American Medical and Philosophical Register* version.

9. Colden to William Douglass, n.p. January 21, 1739/40, Scientific and Political Papers and Notes, Cadwallader Colden Papers, New-York Historical Society, microfilm, reel 2.

10. Both Franklin and Strahan compared Colden’s scheme to a method “used in Holland” (Colden to Strahan, n.p., November 1743, *Colden Papers*, 3:38). On the Dutch technique of punching softened copper, see Richard Hardie, “‘All Fairly Engraven?’ Punches in England, 1695 to 1706,” *Notes* 61, 3 (2005): 617–33.

11. Ephraim Chambers, *Cyclopædia: or, an universal dictionary of arts and sciences* . . . , 2 vols. (London, 1728) 2:878–79; for the list of subscribers, see 1:xxxix–xxxii. Colden’s handwritten copy of this section of the *Cyclopædia* can be found among his unpublished papers (“Notes Concerning a Rolling Press and Printer’s Ink,” ca. 1730, New-York Historical Society, Colden Papers, box 12). Colden later informed Strahan that his method was different in that it involved impressing “on printing metal by types en creuse” rather than “by engraving & by the rolling press” (Colden to Strahan, n.p., November 1743, *Colden Papers*, 3:38).

Intriguingly, another possible source was a method that Franklin developed in printing money in the 1730s. Lead plates cast from leaf-shaped molds were used to print one-of-a-kind designs on currency to prevent counterfeiting. In late 1743 Colden recalled to Strahan that he had seen this aspect of Franklin's work. Colden then admitted that it had "puz[z]led all the printers in this country to conceive by what method it is done."<sup>12</sup>

Inspired by earlier technical developments, Colden designed a new printing method to encourage the publication of lasting, correct books. Though the "art of printing has, without question, been of very great use in advancing learning and knowledge," Colden's proposal began, "the abuse of it, as of all other good things, has likewise produced many inconveniences." He went on to identify two particular problems. First, printers were producing too many poor-quality titles about the same subject, "most of which are nothing but unskillful and erroneous copies of good works, written only for ostentation of learning, or for sordid profit."<sup>13</sup> As a result, the "path to knowledge" had become "very intricate and tedious," and readers were "lost in the wilderness of numberless books." Second, whereas authors in general profited less than booksellers, the best authors, those who undertook the most "pains" and produced "more difficult" and "more masterly" texts, were reaping the least reward. Considered together, these two abuses had corrupted knowledge and confused the reader.

Colden presented his printing scheme as a comprehensive solution to these twin ills. His proposed use of metal plates meant "no more [printed works] need be cast off at a time than may well be supposed to sell speedily." And, by allowing copies to be printed in several smaller runs, Colden believed he was encouraging the production of the unfashionable works that underpinned Western knowledge. He added that printers avoided manufacturing slow-selling and costly books, which would normally "lie dead for some years," clogging up printing houses and bookshops as near worthless piles of paper. In pursuit of their "sordid profit," printers chose instead to churn out cheaply and inaccurately manufactured quick sellers, to the detriment of human learning. Responding to these conditions, Colden's new

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12. Colden to Strahan, n.p., November 1743, *Colden Papers*, 3:38. On Franklin's printing images of leaves on money, see Eric P. Newman, "Franklin Making Money More Plentiful," *Proceedings of the American Philosophical Society* 115, 5 (1971): 341–49.

13. Concerns about the overproduction of books date back at least as far as the mid-sixteenth century. See the articles on early modern information overload published in *Journal of the History of Ideas* 64, 1 (2003): 1–72.

method promised a great reform by making the careful production of important, standard texts economically viable.

A key feature of Colden's proposal was the way in which it tied the value of print to the supposedly fixed and inherent worth of metal. Colden claimed that his plan allowed printers to retain the "intrinsic value" of the copper plate even if a book failed to "answer." To endure, books would have to add intellectual worth to that metal. For Colden, they could do so through achieving correctness, a lasting quality that resulted from both the labor of the learned author and the craftsmanship of the printer. Inaccurate books that failed to enhance the copper plate would be reduced to plain metal, Colden wrote. Correct books, in contrast, would be preserved as plates capable of producing printed copies on demand. And if quality editions were offered at the same price as mass-produced inferior copies, Colden proclaimed, these correct books would always be selected and purchased over inferior rival editions. This argument assumed that readers would recognize the accuracy of one book over another. It also relied on the willingness of printers to storehouse knowledge as metal plates in return for the occasional book sale. Colden did not pause to consider that printers might melt down their backlist should the price of copper inflate.

Colden's proposal played on notions of "intrinsic" worth and contrasts of valueless paper and precious metal that were central to eighteenth-century currency disputes. During the Massachusetts paper money controversies, a Boston businessman, John Colman, asked in 1720, "What intrinsick value is there in Silver and Gold?" A year later, the Reverend John Wise declared gold and silver "empty Cyphers, in the Affairs of Mankind." In the opposing camp, the clergyman Thomas Paine aligned paper money with the "Popish Doctrine of Transubstantiation." Thirty years later, one "Cornelius Agrippa" rejected paper bills as "a false Weight, and a false Ballance, which are an Abomination unto the LORD."<sup>14</sup> Likewise, Colden wrote in his plan that "good books" were "like jewels" and that they would "never loose [*sic*] their intrinsic value."

Colden knew the Massachusetts currency debates well. He learned of them through William Douglass, a Scottish physician based in Boston who was one of the most aggressive opponents of paper money in British America. In his own writings, Douglass juxtaposed the worthlessness of paper to the natural value of metal. For example, he remarked in a 1738 pamphlet, "*Silver* is a staple Merchandize, an adequate Pledge, and an uni-

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14. Dunn, "Grasping at the Shadow," 59–60, 67, 68.

versal commercial *Medium*. Our *Province Bills* have no intrinsic Value, and as a Depositum, are no better than waste Paper.”<sup>15</sup> Two years later, in preparing an important survey of paper money in British America, Douglass asked Colden for an account of New York’s currency emissions. Colden replied that he also supported the real value of specie. He blamed the New York assembly for “Issuing of such Bills of Credit” and for “Declaring them equal in Value to plate.” These acts give “but a mean Opinion of the great Security we think we have by our Constitution against Despotic power,” Colden wrote. He then condemned the “Popular part of our Constitution” for “transubstantiating paper into Gold or Silver.”<sup>16</sup>

Colden’s printing scheme did more than simply repeat the terms of paper money debates. By insisting that the printed page was best stored as copper plate, it transcended the opposition of paper and metal that was a powerful element of contemporary attacks on paper currency. Colden wanted to show that the best books were as intrinsically valuable as precious stones. But this move troubled Douglass, who was primarily concerned with exposing the imaginary value of printed money. The Boston physician admired Colden’s invention, but he also made clear to others that the printing of paper money by any method created virtual notions of worth detached from the inherent value of metal. In a direct reference to Colden’s scheme, he wrote in 1740 that “A Manufacture from Copper Plates, Paper and Ink (a late Invention of the British Colonies in *America*), is a more compendious and infinitely less chargeable Method of Currency and Medium of Trade, A Sort of *Philosophers Stone* (a Term used by the *Alchemists*) or Art by which no Country . . . can be without a sufficient Quantity of Money.”<sup>17</sup> In other words, Douglass rejected the notion that printed paper could hold fixed value on the grounds that a nation could simply print endless sums of such paper.

Supporters of printed money questioned the firm distinction between metal and paper currency that Douglass so cautiously defended. Franklin is a case in point. He wrote a popular 1729 pamphlet that helped convince the Pennsylvania Assembly to issue £30,000 in paper money.<sup>18</sup> Brushing

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15. William Douglass, *An Essay, Concerning Silver and Paper Currencies: More Especially with Regard to the British Colonies in New-England* (Boston, 1738), 7.

16. Colden, “Account of Paper Money in New York,” January 4, 1739/40, Scientific and Political Papers and Notes, Cadwallader Colden Papers, New-York Historical Society, microfilm, reel 2.

17. William Douglass, *A Discourse Concerning the Currencies of the British Plantations in America: Especially with Regard to Their Paper Money, More Particularly in Relation to the Province of Massachusetts-Bay in New England* (Boston, 1740), 59.

18. Franklin was paid to print a further £40,000 in 1731.

aside common eighteenth-century anxieties about the rising intangibility of value, this piece dismissed the “certain permanent Value” of silver and gold. It argued that the “Riches of a Country are to be valued by the Quantity of Labour its Inhabitants are able to purchase, and not by the Quantity of Silver and Gold they possess.”<sup>19</sup>

Franklin’s faith in the abilities of purchasers and consumers to determine value similarly informed his practices as a publisher. At the time he first met Colden, Franklin was working to establish a new trans-Atlantic market for print. He was open-minded and experimental in the publication and sale of printed matter. In early July 1744 he placed an order with the London-based Strahan for “such new Pamphlets as are worth Reading on any Subject (Religious Controversy excepted).”<sup>20</sup> Franklin had run off a thousand copies of Cicero’s *Cato Major*. Foreseeing a profitable Anglo-American commerce, Franklin sent three hundred to Strahan. “This kind of Commerce may be advantageous to us both,” he wrote to Strahan in late July, “since if [we] have a reasonable Sale where we live for such Things as we print, what we do over and above, and can get dispos’d of at a foreign Market, is almost so much clear Gain.”<sup>21</sup> Franklin had no firm sense of what titles would best suit his trans-Atlantic venture. “I would not have you be too nice in the Choice of Pamphlets you send me,” he wrote months later to his partner. “Let me have everything, good or bad, that makes a Noise and has a Run: for I have Friends here of Different Tastes to oblige with the Sight of them.”<sup>22</sup>

Colden would not have condoned this speculative approach. He had an entirely different hope for the publishing trade, which he wanted to see structured around the slow sale of great books. Writing also to Strahan, Colden declared that his new printing method “would not succeed for common books which generally bear but one Edition & are chiefly calculated for the present times & with a view to a speedy profit while the present

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19. Franklin, *A Modest Enquiry into the Nature and Necessity of a Paper Currency* (Philadelphia, 1729), 20. See also David Waldstreicher, “Capitalism, Slavery, and Benjamin Franklin’s American Revolution,” in Cathy Matson, ed., *The Economy of Early America: Historical Perspectives and New Directions* (University Park: Pennsylvania State University Press, 2006), 197–98; Jennifer Jordan Baker, “Benjamin Franklin’s *Autobiography* and the Credibility of Personality,” *Early American Literature* 35, 3 (2000): 282–84, 287–88.

20. Franklin to Strahan, Philadelphia, July 4, 1744, *Franklin Papers*, 2:409–412.

21. Franklin to Strahan, Philadelphia, July 31, 1744, *Franklin Papers*, 2:412.

22. Franklin to Strahan, Philadelphia, February 12, 1744/45, *Franklin Papers*, 3:13.

taste & humour lasts.” He was concerned only with the printing of works “in the Sciences and to such only which have an intrinsick value independent of the Governing humour or taste.” Colden offered as examples Euclid’s *Elements* and Sir Isaac Newton’s *Optics* and *Principia*. Lamenting that the worth of books was judged by fleeting concerns of profit and fashion, he wished for publications “the Value of which are known to few & will allwise be esteem’d & sought after by some.” Colden then suggested that his method would suit the production of trigonometric tables “which never can be out of Fashion . . . but [have] a slow Sale.” He stated that these tables were difficult to print correctly because “the Composer [of the press] cannot be assisted by the sense & a mistake on one letter or figure frequently disturbs [the whole] sense.”<sup>23</sup>

As Franklin, Strahan, and others were building a trans-Atlantic printing business, then, Colden offered an alternative and much narrower vision of what should be published. Colden’s proposal for a new printing method gave voice to widespread eighteenth-century anxieties, encouraged by paper currency debates, that print had become detached from and subversive of real, natural worth. A growing trans-Atlantic commerce in print helped fuel these concerns. Colden was also responding to local change, however. As we will see, his call for a more permanent culture of print occurred alongside the sudden rise of a partisan press in New York.

#### PERMANENCE, POLITICS, AND COMMERCE

Until 1733 New York had only a single newspaper, William Bradford’s government-supported *New-York Gazette*. The appearance of an opposition journal, John Peter Zenger’s *New-York Weekly Journal*, therefore transformed the nature and terms of the province’s print culture, especially as Zenger’s earliest issues argued for the freedom to criticize the sitting governor’s tyrannical leadership. Governor William Cosby responded by ordering the burning of certain “seditious” issues of the *New-York Weekly Journal*. When this strategy failed to calm the protests against his administration, Cosby initiated the arrest and unsuccessful prosecution of Zenger.

Throughout this crisis, New Yorkers debated the accuracy and worth of the information being published in the local press. Several references were made in local newspapers to Jonathan Swift’s *Tale of a Tub* (1704). Even if they had not read the work, colonials could be easily briefed on its title, which was taken from a story of how sailors aboard a ship representing the state threw a tub into the ocean to distract an ominous, giant whale (a

23. Colden to Strahan, n.p., November 1743, *Colden Papers*, 3:37–38.

possible reference to Thomas Hobbes's *Leviathan*). In a 1734 letter to Zenger, an aspiring author from Long Island wrote that he had read *A Tale of a Tub*. "I saw there," this writer stated, "the Picture of a *Vessel* at Sea tossing, and a *Whale* along Side, the People on Board in great Consternation, throwing Tubs over Board, to divert the Whale fearing he might Swallow them up." Swift's frontispiece brought to mind how writers in the two New York newspapers similarly threw out tubs to distract their readers.<sup>24</sup> Elsewhere this metaphor was used to attack a single paper, rather than the local print culture in general. A letter published in Zenger's *New-York Weekly Journal* accused Bradford of printing "what we call TUBBS; or little Arts, to avoid ent[e]ring upon what they are ashamed to own is true, and know themselves unable to defend."<sup>25</sup> Another letter printed in the *New-York Weekly Journal* expressed hope that writers in Bradford's rival *New-York Gazette* would "no longer Endeavour to Amuse with trifling Tales of a Tub without a Bottom."<sup>26</sup>

Although he remained aloof from the political crisis of the 1730s, Colden was troubled by the contentious nature of New York's print culture. From the 1730s until the end of his life, and even as he used print to defend his reputation and attack his opponents, Colden consistently complained to correspondents about the political role and slanderous nature of the press in New York. His distrust of local journals peaked in the 1760s when, as the province's lieutenant governor, he became the main target of an opposition paper, the *American Chronicle*. Its editor, Samuel Farley, asked for anonymous submissions to be dropped into the mouth of a presumably stone or metal lion that was chained to his printing office.<sup>27</sup> Farley then declared himself a defender of free speech, or the "roar" of the people. Fire, possibly arson, destroyed Farley's printing house, bringing the *American Chronicle* to an abrupt end in mid-1762. Still, Colden continued to complain of the "virulent Papers . . . publish'd in the weekly News Papers fill'd with every

24. *New-York Weekly Journal*, no. 18, March 4, 1733/4.

25. *New-York Weekly Journal*, no. 21, March 25, 1734.

26. *New-York Weekly Journal*, no. 22, April 1, 1734.

27. Farley's lion had its origins in the Venetian Republic, where from at least the seventeenth century the image of a lion's mouth was used to mark stone repositories for anonymous denunciations of the state. Joseph Addison referred to this practice in the *Guardian* (no. 98) in 1713 by stating that a lion's mouth was to be installed in Button's Coffee House, Covent Garden, London. Around 1750 the Library Company of Philadelphia painted its tin suggestion box with a lion's head and the words "Gentlemen are requested to deposite in the lion's mouth the titles of such books as they may wish to have imported."

falsehood that malice could invent.”<sup>28</sup> During and after the Stamp Act crisis of 1765, when he was the focus of violent mob protests in New York, Colden aggressively denounced the press as a passionate and irrational force that agitated the local population into destructive actions.<sup>29</sup>

Like Colden, Franklin also made statements rejecting partisan newspapers as an unseemly part of colonial print culture. He recalled in his *Autobiography* that his own journals “carefully excluded all Libelling and Personal Abuse, which is of late Years become so disgraceful to our Country.” Disregarding the argument that “a Newspaper was like a Stage Coach in which any one who would pay had a Right to a Place,” Franklin added that as a publisher he “contracted” with his “Subscribers to furnish them with what might be either useful or entertaining.”<sup>30</sup> Printers, in other words, were obligated more to their overall readership than to authors of particular interests. Franklin once again regarded the consumer as the primary assessor of value.

Such dismissals of ephemeral partisan writings reinforced the idea that permanence was a feature of the best forms of print. When Franklin admitted in his *Autobiography* that he had authored factional pieces in behalf of the Presbyterian preacher Samuel Hemphill in 1735, he added that these pamphlets, like most “controversial writings,” “were soon out of vogue.” He even questioned if a single copy remained extant. Several paragraphs later, Franklin described how the speeches of the evangelical preacher George Whitefield were widely criticized once they appeared in print. Franklin used the phrase “*litera scripta manet*” (“the written letter endures”) to neatly stress the relative permanence of the printed over the spoken word. He implied that, as printed matter outlasted oral statements, it was more widely scrutinized and less tied to a particular moment or context. Consequently, enduring works had more intellectual integrity than fleeting communications.

The promotion of disinterested printed information appeared neutral but, in actuality, was far from apolitical. It had much in common with the

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28. Colden to Henry Seymour Conway, Fort George, September 3, 1765, *The Letter Books of Cadwallader Colden*, 2 vols. (*Collections of the New-York Historical Society*, 1876–1877) (hereafter *Colden Letter Books*), 2:33–34.

29. See, for instance, Colden to Conway, New York, December 13, 1765, *Colden Letter Books*, 2:66–78; Minutes of Council Relative to Stamp Act, September 4–November 6, 1765, *Colden Papers*, 7:59–71; Colden to Conway, New York, February 21, 1766, *Colden Letter Books*, 2:97–98.

30. *The Autobiography of Benjamin Franklin*, 2nd ed., ed. Leonard W. Labaree, Ralph L. Ketcham, Helen C. Boatfield, and Helene H. Fineman (New Haven: Yale University Press, 2003), 165.

antiparty rhetoric that was also a common feature of the mid-eighteenth century. This “double-edged” language of antipartisanship, Michael Warner has argued, both suppressed public political discussion by invoking traditional norms of behavior and sustained it by transforming “*the ideal of a social order free from conflictual debate into an ideal of debate free of social conflict.*”<sup>31</sup> Likewise, a stable print culture both promised a free exchange of ideas and favored those in power by allowing criticisms of established authority to be defused as scurrility.

As one of the strongest supporters of Crown prerogative in the colonies, Colden had good political reasons for urging publishers to prioritize the apparently disinterested and permanent knowledge of a ruling elite. He tried to convince Franklin to print scientific works in the 1740s. When they first met, Franklin was struggling to establish an American philosophical society. In 1744 Colden cajoled his Philadelphia correspondent into printing a series of peer-reviewed papers that could be paid for by subscription. They might “in time,” Colden added, inspire Franklin’s ultimate goal, “a Society as proposed by giving men of Learning or Genius some knowledge of one another.”<sup>32</sup> In August 1745 Franklin replied that he would “proceed with the Papers [he had] and may receive.”<sup>33</sup> Three and a half months later, Franklin wrote again that he was “determin’d to publish an American Philosophical Miscellany, Monthly or Quarterly.”<sup>34</sup> Though distracted by a “long Sitting of our Assembly,” he remained committed to this plan in October 1746, when he remarked to Colden that he had enough material for five or six issues, though he lacked a “good engraver.”<sup>35</sup> After 1746 Franklin lost interest in the project, deciding instead to concentrate on his own electrical experiments.<sup>36</sup>

Alongside this scientific periodical, Franklin offered to publish Colden’s two-chapter treatise, *An Explication of the First Causes of Action in Matter; and of the Cause of Gravitation*, at his “own Expence and Risque” in late 1745. Barely concealing his commercial mindset, Franklin wrote to Colden both that he was not interested in profits and that “a Piece of that kind, as it must excite the Curiosity of all the Learned, can hardly fail of bearing its

31. Warner, *Letters of the Republic*, 46; emphasis in original.

32. Colden to Franklin, n.p., December 1744, *Colden Papers*, 3:93–94.

33. Franklin to Colden, Philadelphia, August 15, 1745, *Colden Papers*, 3:143.

34. Franklin to Colden, Philadelphia, November 28, 1745, *Colden Papers*, 3:182.

35. Franklin to Colden, Philadelphia, October 16, 1746, *Colden Papers*, 3:275–76.

36. Van Doren, “The Beginnings of the American Philosophical Society,” 288–89.

own Expence.”<sup>37</sup> This offer appears genuine, although Franklin did not end up publishing Colden’s work, as it had already been submitted to the New York printer James Parker, one of Franklin’s partners. On the whole, however, Franklin pursued a commercial strategy of printing more popular works that would not last long on a bookseller’s shelf. Given this business plan, Franklin had little reason to pursue Colden’s new printing method. After he received the New Yorker’s proposal in 1743, Franklin politely replied that he was pleased with it and would “consider it very attentively and particularly, and in a Post or two send you some Observations on every Article.”<sup>38</sup> There is no record that Franklin actually sent these comments.

Although Strahan, Franklin’s London partner, did print sizable and important intellectual works in the 1740s, he too showed little interest in Colden’s scheme. Strahan, a Scot, had set himself up as a London printer in 1738 and built an operation of several presses by the 1750s. As Richard Sher has detailed, this expansion allowed Strahan to become a leading publisher of Enlightenment books in the second half of the eighteenth century.<sup>39</sup> Strahan received Colden’s printing plan from Peter Collinson, Colden’s London agent, precisely at the moment that he was increasing his printing capabilities. Strahan quickly reported back that the technique Colden outlined had been tried before and “was found to be expensive and inconvenient in very many respects.”<sup>40</sup> Invested in extending the publishing and printing capacity of his business, Strahan saw no gain in effecting small, gradual print runs of slow-selling books. Colden subsequently replied to Strahan directly, insisting that the printer had failed to appreciate not only the financial benefits but also the cultural influence that his scheme would have on learning and knowledge. Strahan was unconvinced. “The Desire you have of promoting any useful Discovery is very laudable,” he wrote back to Colden in May 1744, “but in the present Case I own I do not think it can be of the Benefit you seem to imagine.”<sup>41</sup>

By the late 1740s, then, Colden had pitched his printing scheme to two business partners, who were embarking at that time on an uncertain trans-Atlantic publishing trade. Neither Franklin nor Strahan could be convinced of the economic benefits of manufacturing long-lasting books. The dis-

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37. Franklin to Colden, Philadelphia, November 28, 1745, *Colden Papers*, 3:180.

38. Franklin to Colden, Philadelphia, November 4, 1743, *Colden Papers*, 3:34.

39. Sher, *The Enlightenment and the Book*, esp. 294–306.

40. See Peter Collinson to Colden, London, March 2, 1742/43, *Colden Papers*, 3:11.

41. Strahan to Colden, London, May 2, 1744, *Colden Papers*, 3:58.

heartening response of Strahan and the silence of Franklin were enough to prompt Colden to put his proposal aside, although he remained interested in the business of print. In 1748 he tried to set one of his sons up as a bookseller in New York.<sup>42</sup> Colden's motives here are unclear. Possibly, he wanted to see his family benefit from the expanding commerce in print. Perhaps he saw a way to promote colonial sales of his *History of Five Indian Nations* (1747) and forthcoming *Principles of Action in Matter* (1751). Or Colden may have decided to reform the book business from within. In any case, it would be a mistake to consider Colden's desire to establish his son in the book business as a *volte-face*. All the above aims could have been achieved without Colden's abandoning the vision for print that had driven him to push his new printing method in the early 1740s. If anything, Colden was more determined than ever in the 1750s to see a print culture dominated by great intellectual works. After all, he hoped that his *Principles of Action in Matter* would be counted among them.

#### CORRECTNESS AND AUTHORIAL CONTROL

Colden's proposal for a new printing method was addressed to printers, but it reflected the interests of learned authors. Colden made his allegiances plain in 1740 when he informed Douglass that he had "heard some time ago of a new Invention of Printing which might be of great use to authors to prevent their being imposed on by Booksellers."<sup>43</sup> Colden further hinted at this agenda in his own printing plan, which proclaimed his new method for "the advantages it gives an author in making his work perfect, and in freeing it from mistakes."

Accuracy was a core feature of Colden's ideal form of print. His printing-on-demand scheme allowed for a limited and closed circulation that he hoped would both enhance the correctness of final works and safeguard the integrity of their authors. By "printing off a few copies of any sheet, and sending them among his friends," Colden wrote of his plan, a writer "may have an opportunity of correcting his mistakes, before they appear to the world." This possibility would protect authors from critics, creating a space for collaborative and genteel intellectual exchange. Like other eighteenth-century writers, Colden expressed trepidation at seeing his own work in print. When in April 1742 he sent a manuscript copy of his extended *History of Five Indian Nations* to Collinson in London, Colden included a cover letter that associated the printing of his work with "a man[']s exposing his

42. Thomas Osborne to Colden, London, June 6, 1748, *Colden Papers*, 4:64–66.

43. Colden to Douglass, n.p., January 21, 1739/40.

weakness to the publick.” He thanked Collinson in advance for “covering [his] nakedness.”<sup>44</sup>

In seeking to improve the accuracy of printed knowledge, Colden stuck with a model of small-scale scribal publication that reflected his own experience as a writer. He developed his printing scheme just as he was also circulating scientific manuscripts among friends. These pieces were initially dispatched in handwritten form, a method that soon proved tiresome and problematic. Colden was particularly concerned about the legibility of his manuscripts. On sending one of these to Collinson in 1742, he apologized for the fact that he “had no better amanuensis with me in the Country.”<sup>45</sup> On forwarding another, Colden noted in his cover letter to Collinson, “I am truly ashamed that I could not have it copied in a better hand but in the Scituation I am in I could not help it.”<sup>46</sup> Having become reliant on family members and others in rural New York to transcribe copies, Colden realized that the system of hand-copying would not do. Scribal publication was unsuited to the needs of a trans-Atlantic scientific community that was rapidly expanded and seeking to organize itself more formally in the colonies. As an author of scientific treatises, Colden turned to print because of its greater potential for accuracy.

After deciding that the production of small numbers of books was a better alternative to copying by hand, Colden tested this method in early 1745. His close friend James Alexander negotiated with Parker a price of forty shillings per sheet for one hundred copies of Colden’s paper on the health benefits of tar water.<sup>47</sup> Colden’s more substantial treatise, *Explication of the First Causes of Action in Matter*, was then printed in early 1746; Colden ordered three hundred copies, his rough assessment of the colonial scientific readership in the mid-1740s.<sup>48</sup> Colden declared that he intended to circulate

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44. Colden to Collinson, New York, April 9, 1742, *Colden Papers*, 2:250.

45. *Ibid.*, 251.

46. Colden to Collinson, n.p., May 1742, *Colden Papers*, 2:258. Colden noted in a letter to James Alexander that his son John was copying “a Paper to assist the Imagination in forming proper Conceptions of the Principles on which the Doctrine of Fluxions is founded” (Colden to Alexander, n.p., June 2, 1744, New-York Historical Society, Alexander Papers, box 4, folder 1, no. 130).

47. Alexander to Colden, New York, February 10, 1744/45, *Colden Papers*, 3:102. See also Alexander to Colden, New York, March 18, 1744/45, *Colden Papers*, 3:108.

48. Alexander to Colden, New York, January 30, 1745/46, *Colden Papers*, 3:194–96; Alexander to Colden, New York, February 23, 1745/46, *Colden Papers*, 3:196–99; Colden to Alexander, New York, March 7, 1745/46, *Colden Papers*, 3:200–201.

these publications only among select correspondents for their feedback. In a letter to a Virginian Scot, John Mitchell, in November 1745, he stated his wish: “to print as many copies at my own expence as I think will be sufficient to lay it before proper Judges for examination & no more copies. . . . I think this method of printing it will be less chargeable & troublesome than the writing so many copies as would be necessary to have it sufficiently & properly examined.”<sup>49</sup>

Though he was interested in sending his treatise to fellow colonials, Colden also ambitiously had one eye on Europe, hoping that it would be read and acclaimed on both sides of the Atlantic. He sent a parcel of nine copies to Collinson in London with instructions that two or three copies be sent on to the Dutch naturalist “Dr [John Frederick] Gronovius or to any other of your foreign Correspondents.”<sup>50</sup> Collinson loyally forwarded copies of Colden’s *Explication* to “people of the First Rank in Mathematical Studies.” Colden’s plan took an unexpected turn, however, when Collinson discovered that John Brindley, “the Princes Bookseller,” had run off a pirated version in London. Receiving two additional parcels of books from New York at a time when Brindley’s edition had all but exhausted demand, Collinson struggled to find new readers. He donated one book to the Royal Society and sent others abroad, to Russia, “Holland, Germany, Paris, Sweden, Scotland, Dantzick &c.” These efforts stirred enough interest for translated editions to be produced in Paris and Hamburg. But, as Collinson confessed in March 1747, he could not find recipients for one entire bundle of books.<sup>51</sup>

The overproduction of Colden’s title had a dual effect on its author. First, with his plans for a closed distribution of his scientific ideas frustrated, Colden’s found that his privately printed books were effectively rendered valueless as commercial items. Coincidentally, the pirating of this work confirmed to Colden that his ideas held considerable intellectual interest and worth. Flattered by the unlicensed distribution of his theories, Colden

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49. Colden to John Mitchell, Coldenham, N.Y., November 7, 1745, *Colden Papers*, 8:337. Colden also wrote to the Connecticut minister the Rev. Samuel Johnson in April 1746, “I print only so many copies as may submit it to the examination of the learned” (Colden to Johnson, Coldenham, N.Y., April 12, 1746, *Colden Papers*, 3:205).

50. Colden to Collinson, New York, July 8, 1746, *Colden Papers*, 3:224.

51. Collinson to Colden, London, March 27, 1746/47, *Colden Papers*, 3:368. Collinson also wrote to Franklin that demand for Colden’s book was “so great It was reprinted Here, before his Bundles Came” (Collinson to Franklin, London, April 12, 1747, *Colden Papers*, 3:372).

briefly trusted the ability of a piratical printer to determine the worth of his intellectual labor. He set about expanding his treatise into a much larger work, *The Principles of Action in Matter*. Sending this manuscript off to London, Colden asked Collinson to approach London's most renowned publisher, Robert Dodsley, to undertake its printing.<sup>52</sup> No doubt to Colden's delight, Collinson convinced Dodsley to invest in 250 copies even though the latter was "Doubtfull of the Sale of a Work that so few people are Judges off."<sup>53</sup> Colden then waited impatiently for his books to arrive. "I suppose Dodsley has other work on his hands from which he expects more profit," he wrote to Collinson in mid-1752. With a reference to Swift's satire, Colden added bitterly, "Such kind of work as mine never meets with so much incouragement as a Tale of a Tub."<sup>54</sup>

Despite some respectful reviews, Colden's work sold poorly, and, having suffered a loss, Dodsley refused to issue a second edition. Collinson searched for another publisher for Colden's revised work.<sup>55</sup> When these efforts proved fruitless, Colden blamed the demands of a commercial print culture. He also reassured himself that his manuscript remained valuable because of its correctness, a quality that the contemporary marketplace did not recognize.

In the 1760s Colden considered that his work might be better received in Scotland, his native land, than other parts of Europe. In 1763 he sent a revised version of his *Principles* to Professor Robert Whytt at the University of Edinburgh. Whytt passed it on to his academic colleague Adam Ferguson. "If Mr Ferguson should be for Publishing your papers," Whytt informed Colden, "I shall write you so much, that you may give directions what printer or Book seller to Employ." Whytt then warned Colden that "no person in our narrow country will undertake to run the risque of Printing a book of mathematical & metaphysical learning on his own Charge." There is no record of Ferguson's reply, and Colden's manuscript went unpublished. At this point Colden finally gave up. On Whytt's suggestion, he donated his revisions to the University of Edinburgh library, still believing, as Whytt had put it in his letter, "that they contain the true principles of Physics and may one day become usefull."<sup>56</sup> Despondent that "Books of

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52. Colden to Collinson, New York, June 15, 1751, Huntington Library (HM 8255).

53. Collinson to Colden, London, December 11, 1751, *Colden Papers*, 9:109.

54. Colden to Collinson, Coldenham, July 28, 1752, *Colden Papers*, 9:118.

55. Collinson to Colden, London, October 18, 1753, *Colden Papers*, 4:408–9.

56. Robert Whytt to Colden, Edinburgh, May 16, 1763, *Colden Papers*, 6:218.

meer amusement or which favour a licentious spirit are the delight of the present age,” viciously attacked in the New York press, and unable to secure publication of his last manuscript, Colden called for sweeping cultural change in 1763. “Some reformation seems absolutely necessary,” he remarked in a stirring passage to Whytt. “When such reformation shall be effected the public taste will be changed & then books which require some attention may obtain reputation & be generally read.”<sup>57</sup>

Two decades after he initially met Franklin, Colden was as committed as ever to a print culture of great, accurate works. The “reformation” he wanted in 1763 resembled the ideal outcome of his 1740s printing scheme. It had promoted the interests of learned authors by drawing on suspicions of worthless paper that were rooted in the paper currency debates of the late seventeenth and early eighteenth century. Ultimately, however, Colden’s plan could not attract the support of printers such as Franklin and Strahan, who had different priorities and concerns. As businessmen, they wanted to experiment, and they trusted consumers to determine the worth of books. Moreover, they were more comfortable in the new world of paper money and less attached to the supposedly “natural” value of specie. Above all, they saw that it was better to seize a quick profit than rely on the lasting intrinsic value of permanent, correct knowledge.

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57. Colden to Whytt, n.p., September 3, 1763, *Colden Papers*, 6:272–74.