

Priority, politics and pedagogical science Part I: the mental steam-engine

Bruce Curtis

Department of Sociology and Anthropology, Carleton University, Ontario, Canada

ABSTRACT

The conflict between Joseph Lancaster, Andrew Bell and their respective supporters over priority in the discovery and development of monitorial schooling usually appears as a quaint historical episode in work on this pedagogy. This two-part article focuses on it directly. Part one outlines the literature on conflicts over priority in techno-scientific discovery. It examines the early history of monitorial pedagogy and shows that the initial contacts between the eventual protagonists were more or less in a spirit of experimental cooperation. Part two documents the conditions for the emergence of the dispute over priority in invention and follows its course through the periodical, pamphlet and sermon literature. The article concludes by noting that while claims to novelty and invention in pedagogy were ultimately abandoned, nonetheless, agreement on a standard model came to be accepted as the basis of pedagogical practice.

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Introduction

The conflict between Joseph Lancaster, Andrew Bell and their respective supporters over priority in the discovery and development of monitorial schooling usually appears as a quaint historical episode in work on this pedagogy.¹ This article focuses on it directly. The stakes in the conflict were momentous: control over the organisation and direction of the schooling of the new proletariat in the world's largest empire. Monitorial schooling was thought to be a major invention and discovery. Contemporaries saw it as a powerful new force of world-making, similar to other techno-scientific innovations that propelled social

CONTACT Bruce Curtis  bruce_curtis@carleton.ca

¹For a sample only of a major outpouring of work, R. Aldrich, "The British and Foreign School Society, Past and Present," *History of Education Researcher*, no. 91 May (2013): 5–12. A. Allen, "The Examined Life: On the Formation of Souls and Schooling," *American Educational Research Journal* 50, no. 2 (2013): 216–50. M. Caruso, "The Persistence of Educational Semantics: Patterns of Variation in Monitorial Schooling in Columbia (1821–1844)," *Paedagogica Historica* 41, no. 6 (2005): 721–44. M. Caruso and E. R. Vera, "Pluralizing Meanings: The Monitorial System of Education in Latin America in the Early Nineteenth Century," *Paedagogica Historica* 41, no. 6 (2005): 645–54. B. Curtis, "Joseph Lancaster in Montreal (bis): Monitorial Schooling and Politics," *Historical Studies in Education/Revue d'histoire de l'éducation* 17, no. 1 (2005): 1–27. L. Mesquita, "The Lancastrian Monitorial System as an Education Industry with a Logic of Capitalist Valorisation," *Paedagogica Historica* 48, no. 5 (2012): 661–75. P. Ressler, "Marketing Pedagogy: Nonprofit Marketing and the Diffusion of Monitorial Teaching in the Nineteenth Century England," *Paedagogica Historica* 47, no. 3 (2011): 263–81. J. Tuschurnev, "Diffusing Useful Knowledge: The Monitorial System of Education in Madras, London and Bengal, 1789–1840," *Paedagogica Historica* 44, no. 3 (2008): 245–64.

transformation and capitalist industrialisation. For Andrew Bell, his work created a new experimental science. His system, as he put it, “consisting of a series of consecutive rules, linked together at the closest union, and depending on a common principle, assimilates itself to a science, however humble that science may be”. Bell’s most ardent champion, Robert Southey, declared that after Bell’s work “education has been for the first time reduced to a science”, and Joseph Lancaster repeatedly described his work as the practice of experiment.²

In this first part, I retrace the course of the priority conflict over monitorial schooling from the late 1790s to about 1820. While examining the substance of the conflict, I am especially concerned with its implications for a fledgling science of pedagogy, and hence I make connections between educational history and science and technology studies (STS). My aim is not to use the latter to explain the monitorial conflict. Rather, I suggest that work in educational history can inform ongoing debates concerning boundary work in techno-science, while attending to STS may encourage educational historians to think of the grounds for claims that pedagogy is itself a techno-science.³

The monitorial conflict was “messy”: protagonists spoke on and off the discursive field of science (experiment, discovery, innovation, engineering) when it suited their purposes. In this they were no different from promoters of other sciences-in-formation in the period in question. Contemporary partisans of social medicine, to take only one example, were unable to identify the particular mechanisms that tied sanitary measures to the health of individuals. In debate, they were forced off the terrain of mainstream medical science and compelled to argue in terms of engineering.⁴

Still, priority disputes have been held to demarcate the field of science from common sense, and to distinguish the natural from the human sciences. The existence of such disputes in pedagogy troubles such views. In this first part, I outline briefly the Lancaster and Bell versions of monitorial schooling and show that initially the two actors seem to have engaged in scientific cooperation. The second part then traces the conditions for the emergence of a dispute over priority in invention. It follows the English debate through the pamphlet, periodical and sermon literature. I conclude with some remarks on what the debate suggests about demarcation and about the conditions of possibility of a science of pedagogy.

One peculiarity of the Lancaster–Bell conflict from point of view of STS is that a fundamentally political-religious struggle was presented as resolvable by appeals to priority in scientific discovery. Work in science studies has located priority struggles in a social

²Andrew Bell, *An Experiment in Education Made at the Male Asylum of Madras. Suggesting a System by which a School or Family may teach itself under the Superintendence of the Master or Parent* (London: Cadell & Davies, and W. Greech, 1797), 36. Joseph Lancaster, *Improvements in Education, as it Respects the Industrious Classes of the Community, Containing, among other important Particulars, An Account of the Institution for the Education of One Thousand Poor Children, Borough Road, Southwark, and of the New System of Education in which it is Conducted*, 3rd ed., with additions (London: Darton & Harvey, 1805), 1, 4, 10. R. Southey, “Bell and Lancaster’s Systems of Education,” *Quarterly Review* 6, no. 11 (1811): 264–304, here 302.

³I am mindful of Robin Alexander’s discussion of the different meanings of “pedagogy” in Britain in comparison with continental Europe and America. The monitorial controversy covers the broad range of curriculum, evaluation, teaching methods, and schoolroom management. See R. Alexander, “Still No Pedagogy? Principle, Pragmatism and Compliance in Primary Education,” *Cambridge Journal of Education* 34, no. 1 (2004): 7–33.

⁴Much current debate in the natural and human sciences has turned towards “mess” in method and analysis. Such is certainly the case for STS. See for instance, J. Law, *After Method: Mess in Social Research* (London: Routledge, 2004), and more generally, E. J. Hackett, Olga Amsterdamska, Michael E. Lynch and Judy Wajcman, eds., *The Handbook of Science and Technology Studies* (Cambridge, MA: MIT Press, 2007). For the debate between medical clinicians and sanitarians see J. Cole, *The Power of Large Numbers: Population, Politics, and Gender in Nineteenth-Century France* (Ithaca, NY: Cornell University Press, 2000). For the consequences of seeing sanitation as an engineering rather than a clinical issue, D. S. Barnes, “Confronting Sensory Crisis in the Great Stinks of London and Paris,” in *Filth: Dirt, Disgust, and Modern Life.*, ed. W. A. Cohen and R. Johnson (Minneapolis: University of Minnesota Press, 2005), 103–29.

system of science where claims are judged according to collective norms. The school conflict appealed to priority in discovery in order to leverage claims for the legitimate adoption of one or other version of the pedagogy. Participants actively debated the substance of discovery and innovation, and tried to establish norms by which to identify them. Yet claims to priority did not finally determine the selection of either version of monitorial schooling. Legitimacy in pedagogical practice was ultimately determined on the basis of power relations, not on disciplinary criteria of discovery or invention. As priority lost its practical purchase in the dispute, the losing side attempted to appeal to norms of economy and efficiency to support its position. These too paled before organisational and institutional power, and before claims that the safety of the state depended on the moral education of the people in the national religion. As the dominance of a religious investment of schooling was (re-)established, analysts came to argue that there had been no “discovery” involved in monitorial schooling in the first place.

For STS, then, this case illustrates that the demarcation of science is bound up with autonomy from political power. For the history of education, the matter is more convoluted: the denial of priority called into question the existence of pedagogy as a discovery science. Yet it also posited monitorial pedagogy as a techno-science, one involving a configuration of powerful and distinctive practices, capable of making moral subjects, independent of religious doctrine and political belief. At the core of monitorial method was a standard model of practice.

Priority disputes

The boundaries that might demarcate science from other forms of activity continue to be debated in science studies, as is the very definition of the objects “science” and “discovery” or “invention”.⁵ I take Pierre Bourdieu’s position that, to the extent that it is autonomous, a field of science is bounded by the reign of conventional norms of practice, including methods of investigation and epistemological and ontological presuppositions. Scientific practice in this view is veridical: it seeks systematically to expel error in keeping with specific norms of truth and method. The degree of autonomy of any particular technical and scientific field, and the reach of the field’s authority, are empirical and historical questions, yet strong sciences and technologies can typically parlay their command of disciplinary truth or practical efficacy into forms of social and political-economic authority. It is typical of low-status sciences, as it is of forms of knowledge production that do not acquire the status of science, that discoveries or demonstrations validated by the field’s conventional norms do not acquire general legitimacy beyond the field itself.⁶

⁵N. Aronson, “The Discovery of Resistance: Historical Accounts and Scientific Careers,” *Isis*, 77, no. 4 (1986): 630–46. A. Brannigan, “The Reification of Mendel,” *Social Studies of Science* 9, no. 4 (1979): 423–54. R. Evans, “Introduction: Demarcation Socialised: Constructing Boundaries and Recognising Difference,” *Science, Technology, & Human Values* 30, no. 1 (2005): 3–16. T. F. Gieryn, “The U.S. Congress Demarcates Natural and Social Science (Twice),” in *Cultural Boundaries of Science: Credibility on the Line* (Chicago: University of Chicago Press, 1996), 65–114. T. F. Gieryn, “Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists,” *American Sociological Review* 48, no. 6 (1983): 781–95. A. Prasad, “The (Amorphous) Anatomy of an Invention: The Case of Magnetic Resonance Imaging (MRI),” *Social Studies of Science* 37, no. 4 (2007): 533–60. S. L. Star, “This is Not a Boundary Object: Reflections on the Origin of a Concept,” *Science, Technology, & Human Values* 35, no. 5 (2010): 601–17.

⁶P. Bourdieu, “The Specificity of the Scientific Field and the Social Conditions of the Progress of Reason,” *Social Science Information* (1975): 19–47. P. Bourdieu, *Science de la science et réflexivité. Cours du Collège de France. 2000–2001* (Paris: Éditions Raisons d’Agir, 2001).

Historians and sociologists have been interested in struggles over priority in discovery as elements that structure the social system of science. They are seen as key forces in the politics of credentials and status distribution. Despite the recognition that discoveries take place in a context of collective labour and common culture, successful priority claims establish individual reputations and affect the distribution of prestige and of material resources. Those who lose the struggle for priority are condemned to the status of mere replicators.⁷

The absence of priority disputes has been seen to demarcate common knowledge from science. Randall Collins, for instance, argued that priority disputes usually occur only in “rapid discovery sciences”. The social sciences, including pedagogical science, are not rapid discovery sciences, in this view, for they lack a clear research frontier, and their practitioners tend to recycle a finite body of texts in keeping with the fashion of the moment. In this reading, priority disputes occur:

in those fields in which there is a great deal of consensus on the criteria for a significant contribution, fields in which reputations – rather than having to wait for later generations to sort out whose ideas are worth remembering – are quickly established.

They “do not much occur in philosophy, the humanities, and social sciences. Such disputes are a very focused and specific form of acrimony, corresponding to the highly focused and specialised organisation of some fields of intellectual work”. The debate over monitorial schooling is at least an exception to this claim. Collins did remark cogently that “the most severe intellectual acrimony occurs where the arguments on intellectual terrain are entangled with positions in larger political and especially political/religious struggles”.⁸

The conventional view, that the stakes in priority disputes are prestige and resources within a scientific field, where contestants share values and norms concerning the means and ends of practice, is in decline in the face of contemporary “academic capitalism”.⁹ Yet truncated conceptions of the political remain common in the literature, and priority stakes are rarely understood to be the fundamental nature of class, religious or state power. Starting with Robert Merton’s work,¹⁰ science studies focused on the relationship between the dynamics of internal struggles for priority and their consequences for the social structure of science. The demonstration of a violation of shared norms in the conduct of investigation was seen to destroy priority claims, but not the reward structure in which they are anchored. The character of the inventor or discoverer could not determine the fact of invention.

⁷S. E. Cozzens, *Social Control and Multiple Discovery in Science: The Opiate Receptor Case* (Albany: State University of New York Press, 1989). J. C. Gaston, *Originality and Competition in Science* (Chicago: University of Chicago Press, 1973). J. Guetzkow, M. Lamont and G. Mallard, “What Is Originality in the Humanities and the Social Sciences?,” *American Sociological Review* 69, no. 2 (2004): 190–212. W. O. Hagstrom, “Competition in Science,” *American Sociological Review* 39, no. 1 (1974): 1–18. M. Strevens, “The Role of the Priority Rule in Science,” *Journal of Philosophy* 100, no. 2 (2003): 55–79. S. Timmermans, “A Black Technician and Blue Babies,” *Social Studies of Science* 33, no. 2 (2003): 197–229. G. Windholz and P. A. Lamal, “Vagaries of Science: Priority, Independent Discovery and the Request for Recognition,” *Psychological Record* 43, no. 3 (1993): 339–50.

⁸R. Collins, “On the Acrimoniousness of Intellectual Disputes,” *Common Knowledge* 8, no. 1 (2002): 47–70; quotations at 56–7.

⁹R. Collins, “Sociology: Proscience or Antiscience?,” *American Sociological Review* 54, no. 1 (1989): 124–39. R. Collins, “Why the Social Sciences Won’t Become High-Consensus, Rapid-Discovery Sciences,” *Sociological Forum* 9, no. 2 (1994): 155–77. T. Osborne and Nikolas Rose, “Do the Social Sciences Create Phenomena? The Example of Public Opinion Research,” *British Journal of Sociology* 50, no. 3 (1999): 367–96.

¹⁰P. Dear and S. Jasanoff, “Dismantling Boundaries in Science and Technology Studies,” *Isis* 101, no. 4 (2010): 759–74.

¹⁰R. K. Merton, “The Ambivalence of Scientists,” *Bulletin of the Johns Hopkins Hospital* 16, February (1964): 77–97. R. K. Merton, “Priorities in Scientific Discovery: A Chapter in the Sociology of Science,” *American Sociological Review* 22, no. 6 (1957): 635–59. R. K. Merton, “Resistance to the Systematic Study of Multiple Discoveries in Science,” *European Journal of Sociology* 4, no. 2 (1963): 237–82. R. K. Merton, “Singletons and Multiples in Scientific Discovery: A Chapter in the Sociology of Science,” *Proceedings of the American Philosophical Society* 105, no. 5 (1961): 471–586. R. K. Merton and R. Lewis, “The Competitive Pressures (I): The Race for Priority,” *Impact of Science on Society* XXXI (1971): 151–61.

Of course, the larger literature has attended closely to some political matters, including the political economy of research and state support for particular varieties of science. These investigations are not my concern here.¹¹ As well, geo-political forces have been seen to influence priority disputes at least since Merton's 1957 mention of competition between Soviet and American science in the arms race. Occasionally, a scholar has investigated the effects of geo-political struggles inside scientific practice itself. In the literature on Soviet cold war science, for instance, Slava Gerovich detailed how work in the field of cybernetics had to negotiate the tensions between different official ideological strains in relation to bourgeois science and had to deal with party politics and party apparatuses. Again, Susan Greenhalgh showed how a political faction advanced in China by drawing on high-prestige missile science and on one strain of western demography to tie its population science to the nation's "modernization" and international prestige.¹²

Most commonly, however, geo-political forces are seen to bolster claims to invention after the fact. Thus the seventeenth-century dispute around the lymphatic system involved the comparative prestige of the Crown in Sweden and Denmark, and that around the discovery of the circulation of blood in the same century pitted French against English national pride.¹³ The method of least squares in statistics was claimed by the American Robert Adrain, the Frenchman Adrien Marie Legendre and the German Carl Friedrich Gauss within a short period at the beginning of the nineteenth century, against the backdrop of inter-state competition in measurement practice.¹⁴ The claim to priority in cholera vaccination that pitted the Spaniard Jaime Ferran against the Russian expatriate Waldemar Haffkine in the late nineteenth and early twentieth centuries was bound up with political struggles inside France and Russia; with French and Spanish competition for prestige in national science; and with the administrative power of the British colonial regime in India.¹⁵ Both state support for medical science and access to colonial subjects were central to Robert Koch's successful claim to discovery of the cholera vibrio.¹⁶ More recently, Robert Gallo's claims to have discovered the AIDS virus against the competing claims of the group around Luc Montagnier were bolstered initially by the greater international prestige of the American scientific establishment in relation to that of the French, and by public pronouncements of

¹¹M. Jacob, "Boundary Work in Contemporary Science Policy: A Review," *Prometheus* 23, no. 2 (2005): 195–207.

¹²S. Gerovich, "Mathematical Machines' of the Cold War: Soviet Computing, American Cybernetics and Ideological Disputes in the Early 1950s," *Social Studies of Science* 31, no. 2 April (2001): 253–87. S. Greenhalgh, *Just One Child: Science and Policy in Deng's China* (Berkeley: University of California Press, 2008).

¹³C. T. Ambrose, "Immunology's First Priority Dispute: An Account of the 17th-century Rudbeck–Bartholin Feud," *Cellular Immunology* 242, no. 1 (2006): 1–8. A. D. Farr, "The First Human Blood Transfusion," *Medical History* 24, no. 2 (1980): 143–62.

¹⁴E. Brian, *La mesure de l'État. Administrateurs et géomètres au XVIIIe siècle* (Paris: Albin Michel, 1994). E. Brian, "Statistique administrative et internationalisme statistique pendant la seconde moitié du XIXe siècle," *Histoire et Mesure* 3, no. 4 (1989): 201–24. A. Desrosières, *La politique des grands nombres: histoire de la raison statistique* (Paris: La Découverte, 1993). S. Stigler, "Gauss and the Invention of Least Squares," *Annals of Statistics* 9, no. 3 (1981): 465–74.

¹⁵G. H. Bornside, "Waldemar Haffkine's Cholera Vaccines and the Ferran–Haffkine Priority Dispute," *Journal of the History of Medicine and Allied Sciences* 37, no. 4 (1982): 399–422. I. Löwy, "From Guinea Pigs to Man: The Development of Haffkine's Anticholera Vaccine," *Journal of the History of Medicine and Allied Sciences* 47, no. 3 (1992): 270–309.

¹⁶D. Arnold, *Colonising the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley: University of California Press, 1993). W. B. Cohen, *Urban Government and the Rise of the French City: Five Municipalities in the Nineteenth Century* (New York: St Martin's Press, 1998). R. J. Evans, *Death in Hamburg: Society and Politics in the Cholera Years, 1830–1910*. (Oxford: Clarendon Press, 1987). M. Pelling, *Cholera, Fever and English Medicine. 1825–1865* (Oxford: Oxford University Press, 1978).

the American health secretary. The eventual resolution of a subsequent patent dispute over a test for AIDS was matter of high politics.¹⁷

In these cases, state and geo-political power impinge on priority disputes by bolstering the claims of one or another claimant, or by negotiating a settlement between them. Some studies show that scientific workers must navigate, and may reproduce, dominant social patterns of race, class, gender and ideology.¹⁸ The monitorial schooling dispute differs both in the nature of the object of techno-science – social subjectivity, and hence the future of society – and in the stakes – political hegemony. Moreover, in this peculiar dispute, regal state power lined up behind one and then the other of the claimants, with the ultimate consequence that the very proposition that something had been “discovered” was rejected. That rejection left opponents in a common field of practice, despite their real differences.

A mighty moral engine

Contemporary STS readers might not consider pedagogy to be a techno-science, yet Bell and Lancaster’s contemporaries had no doubts about the matter. Bell explicitly defined what he had developed as a science, and repeatedly urged others to try to use his discovery, so that “its comparative value may be ascertained by experiments fairly made, the only just criterion of every theory of science, of politics, or education”. His schoolmaster was a laboratory technician, working to “watch over and to conduct this machine”, gathering practical insight into its operation. Lancaster claimed to operate in a sphere above sectarian politics, in which practices were based on their demonstrable efficiency. His system became modular, with a number of standard manuals circulating.¹⁹

Both versions of monitorial schooling were described in machine-like terms as inventions capable of re-making the world and were compared to major discoveries in physical science, medicine and engineering technology. The Lancasterian model school in the Borough Road in London and the National Society’s model school at Baldwin’s Gardens were obligatory stops on the middle-class European educational tours that became common after 1810. Early visitors were awe-struck by their pedagogical productivity.²⁰ As Lancaster’s partisan, Sydney Smith, put it approvingly in his *Edinburgh Review*, “the order Mr Lancaster has displayed in his school, is quite astonishing. Every boy seems to be the cog of a wheel – the whole school is a perfect machine”.²¹ For his arch-enemy, the educator and schoolbook author

¹⁷J. Heilbron and J. Goudsmit, “À propos de la découverte du virus du SIDA: Mécanismes de concurrence et de défense dans un conflit scientifique,” *Actes de la Recherche en Science Sociale* (1987): 98–104. A. Rawling, “The AIDS Virus Dispute: Awarding Priority for the Discovery of the Human Immunodeficiency Virus (HIV),” *Science, Technology, & Human Values* 19, no. 3 (1994): 342–60.

¹⁸Timmermans, “A Black Technician and Blue Babies.”

¹⁹Bell, *An Experiment in Education Made at the Male Asylum of Madras*, 36. Andrew Bell, *An Analysis of the Experiment in Education, Made at Egmore, Near Madras. Comprising a System, alike fitted to reduce the expence of tuition, abridge the labour of the Master, and expedite the progress of the Scholar; and suggesting a Scheme for the better administration of the Poor-Laws, by converting schools for the lower orders of youth into schools of industry*, 3rd ed. (London: T. Bensley, Cadell & Davies, 1807), 10. Anon, *Instructions for forming and conducting a Society for the Education of the Children of the labouring Classes of the People, according to the general Principles of the Lancasterian or British Plan* (London: Longman, 1810). J. L. Rhees, *A Pocket Manual of the Lancasterian System of Education in its Most Improved State, as practised in the Model School First School District of Pennsylvania* (Philadelphia: publisher unknown, 1827). J. F. Reigart, *The Lancasterian System of Instruction in the Schools of New York City*, Contributions to Education, No. 81 (New York: Teachers College, Columbia University, 1916).

²⁰J. Griscom, *A Year in Europe . . . in 1818 and 1819* (New York: Collins, 1823), J. Griscom, *Monitorial Instruction: an address at the opening of the New York High School, with notes and illustrations* (New York: publisher unknown, 1825).

²¹S. Smith, “Mrs Trimmer on Lancaster’s Plan of Education,” *Edinburgh Review* 9 (1806): 177–84, at 182.

Sarah Trimmer, by contrast, Lancaster's goal was to generalise Jacobin ideas in England and, as she put to Andrew Bell, "he has seized upon your admirable plan of instruction, as an engine to give it a speed".²² Bell bragged that his invention was "an engine ... giving that facility, expedition, and economy to the education of youth, which physical machinery had often given to the arts and manufactures", while his partisan, Robert Southey, echoed Bell's claim of a "discovery to vaccinate the next generation against the [moral] pestilence which has infected this", trumpeting that it was as important as the printing press had been to the development of letters. Southey commented in 1816, as the Church of England worked to generalise Bell's system, that "the cost of national education is rendered so trifling, by Dr Bell's intellectual steam-engine, that the expense would present no obstacle". Southey was scornful of those who described Lancaster to be as great an inventor as Count Rumford, the fireplace improver, but in the mid-1820s a Canadian commentator could still remark that "mutual instruction has made the name Lancaster as famous in the method of educating children as that of Newton was in Physics".²³

The novelty of monitorial schooling lay in its systemic application of military drill, industrial division and decomposition of labour, elaborate systems of signing and symbolising, and rational accounting to the teaching of reading, writing and arithmetic on a large scale to children and young people. Changes in the manner of teaching to read, to write and to calculate involved technical innovations. The pedagogical system went through a number of elaborations and "improvements" between Andrew Bell's first published version of it in 1797, and Joseph Lancaster's 1833 "experiments" shortly before his death. One issue in the priority dispute concerned the relative importance of the system's invention or discovery, of its elaboration and extension, and of its publication and promotion.

In a printed handbill distributed in Ireland in 1806 to advertise his "new and mechanical System of Education for the use of Schools," Lancaster wrote:

By this System, paradoxical as it may appear, above One Thousand Children may be taught and governed by one Master only, at an expense reduced to Five Shillings per annum, [for] each Child, and supposed susceptible of further reduction. The average time for Instruction, in Reading, Writing, and the elements of Arithmetic, is twelve Months. Among many other advantages which distinguish this System, is a new method of teaching to Read and Spell; whereby one Book, worth about Seven Shillings, will serve to teach Five Hundred Boys, who, in the usual method, would require Five Hundred Books, worth above Twenty-five Pounds. The Improvement is three times greater by the new method than the old. Any Boy, who can read, can teach Arithmetic with the certainty of a mathematician, although he knows nothing about it himself: he may do more, he may inspect the Progress of his class; and, when their proficiency in the rules of arithmetic they are in, is ascertained, have them removed to an higher class.²⁴

Lancaster's characteristic exuberance with numbers – he frequently cited such things as the number of words a boy could read in a lesson multiplied by the number of lessons in a day,

²²A. Bell, *The Madras School, or Elements of Tuition*, 4th ed. (London: J. Murray, 1808), 130. R. and C. C. Southey, *The Life of the Rev. Andrew Bell...*, 3 vols. (London and Edinburgh: John Murray and William Blackwood & Sons, 1845), II, Trimmer to Bell, 1 October 1805. The correspondence is pp. 130–60.

²³R. Southey, "On the State of the Poor, and the Means Pursued by the Society for Bettering their Condition," in *Essays, Moral and Political* (London: John Murray, 1832 [1816]), 157–247, at 231. *Le Canadien*, 19 January 1825.

²⁴Public Record Office of Northern Ireland, D/207/60/1, handbill included in Lancaster to Foster, 9 October 1806.

week, month and year, multiplied by the number of boys, to arrive at the total amount of reading shared by all in a school – was a source of sport for his critics.²⁵

Still, while Bell intended that each of his students use a selection of school books, Lancaster eliminated the necessity of providing books, pens, ink or paper by having all but the most advanced classes use reading lessons printed on large cards posted along the walls of the schoolroom, while they wrote on slates with slate pencils. In his later descriptions, groups of 10 under the supervision of a student monitor moved regularly and frequently from their seats in rows facing the front of the schoolroom, where collective work was done, to teaching circles arranged facing the walls. A novel technology of signs and symbols involved the use of messages on “telegraphs” – large signposts located around the schoolroom – to coordinate movement. Lancaster promoted individual achievement by encouraging “emulation” through the taking of places in the monitorial groups, each student wearing a number attesting to its standing. While Bell’s schools contained a “black book” for recording instances of misconduct, with Lancaster an elaborate system of accounting, worked by specialised monitors, who distributed tickets and emblems and kept records, made frequent individual promotion and demotion possible. Students were encouraged individually to accumulate tokens, which could be exchanged for prizes, and to compete for achievement medals. Lancaster’s achieving students wore tickets in the schoolroom, inscribed with such messages as “Merit in Spelling” or “Merit in Reading” and pasteboard prints were also worn. The best students were distinguished by different grades of medals. Bell’s partisans initially denounced the political and moral dangers of encouraging the “lower orders” to compete for prizes and distinction, but Bell’s schools soon adopted similar practices.²⁶

The six achievement classes in Lancaster’s model were also encouraged to compete among themselves for pride of place, and misbehaviour was dealt with by the distribution and recording of demerit tickets, as well as by a school jury. The jury had formed part of Bell’s initial description of the system. Lancaster elaborated a bizarre catalogue of punishments, including the attaching of weights and shackles to the bodies of delinquents, punishment parades before the whole school, in which offenders wore demeaning costumes, and cross-gender public humiliations. Students were not beaten, in principle, and Lancaster regularly took his boys on school outings.

Both sorts of monitorial schools adopted a phonic method of teaching to read but, as Lancaster pointed out, his schools also based instruction in arithmetic on the reading and copying of problems and solutions, in contrast to the prevailing method of teaching by rules, supported by Bell. As Lancaster’s advertisement claimed, any student able to read could teach arithmetic without knowing anything about it, and could learn arithmetic by teaching it. Both Bell and Lancaster claimed ignorant children could be turned into competent schoolmasters in a few weeks or less. By the middle 1810s, in both versions, students learned to write as soon as – if not before – they learned to read, and they learned to read in the vernacular. Writing was by dictation; there was no place for composition, at least for the great majority of students.

²⁵R. Southey, “Bell and Lancaster’s Systems of Education,” *Quarterly Review* 6, no. 11 (1811): 264–304, at 272. R. Southey, *The Origin, Nature, and Object, of the New System of Education* (London: John Murray, 1812), 32. “Mr Lancaster seems to have borrowed this notion from the Roman Catholics, whose religious fraternities are founded upon a supposition that every member is entitled to the full benefit of all the prayers which are said by the whole.”

²⁶Anon., *Regulations for the Quebec Central Schools For Boys and Girls. Conducted upon the Madras System*, CHIM 56340 (Quebec: National and British Printing Office, 1820).

Military-style drill was especially evident in Lancaster's model, as students were to engage in common activities on command. They were to march in order into the schoolroom, take their places at their benches, together to remove their hats on command, and then to be seated. Similarly, slate writing was meant to be executed collectively on command and students moved from benches to monitorial circles and back again on command as well. Such movements were frequent – as many as 10 times each in morning and afternoon. One striking feature of the system to observers – initially one of its positive features, but eventually one of its major limitations, as rote learning revealed its inadequacies – was that no one, teacher, monitor or student, was ever left to his/her own devices or allowed to be idle. Combined with a factory-like division of labour and the breaking down of lessons into simple, discrete modules, the militarisation of instruction was seen to hold the key to pedagogical productivity. The system was called “mutual instruction”, since the students taught one another, but also “simultaneous instruction”, since all students were constantly engaged in learning under supervision.

The importance of accounting practice to science, state formation and capitalist development has been underlined repeatedly in a number of literatures.²⁷ Monitorial schooling was a rare and early application of rational accounting practices to human conduct on a large scale. This disciplinary technology worked both on the population of student bodies and on individual subjectivities. At the level of population, accounts of conduct objectified and ranked comportment and, in principle at least, made it into an actionable object for school authorities. At the level of individual subjectivity, knowledge of the existence of an objectified account of one's comportment in the school's demerit book may have encouraged self-scrutiny and the development of conscience. As well, the school's reward structure encouraged interpersonal competition, and perhaps also encouraged delayed gratification and foresight, things held to be essential to subjectivity and character in capitalist society.²⁸

Added to these totalising and individualising dimensions of the system was the institution of the school jury. Both Bell and Lancaster saw the adoption of this most “civilising” of British institutions in the elementary school as an important aspect both of school government and of training for civic responsibility. The authority of the school's practices would be reinforced when judgements about conduct were endorsed by students themselves. At the same time, students would gain practical experience under the guidance of the teacher in making rational judgements on the basis of objective evidence.²⁹

Andrew Bell's “Madras system” was far less elaborate than Joseph Lancaster's “British system”, at least in the respective authors' descriptions. Bell tended to oppose the huge schools promoted by Lancaster and suggested instruction on a smaller scale, without Lancaster's elaborate technical devices. Since his schools might be taught by a teacher with many assistants, and were to be overseen by a superintendent, Bell suggested that one superintendent

²⁷K. Hoskin, “Education and the Genesis of Disciplinarity: The Unexpected Reversal,” in *Knowledges: Historical and Critical Studies in Disciplinarity*, ed. E. Messer-Davidow, D. R. Shumway and D. J. Sylvan (Charlottesville: University Press of Virginia, 1993), 271–304. K. W. Hoskin and I. Macvie, “Accounting and Examination: A Genealogy of Disciplinary Power,” *Accounting, Organisations, and Society* 11, no. 2 (1986): 105–36. M. Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998). T. Porter, “Quantification and the Accounting Ideal in Science,” *Social Studies of Science* 22, no. 4 November (1992): 19–59.

²⁸I discuss public education as population government in the Foucauldian sense at length in *Ruling by Schooling Quebec*.

²⁹C. Mondelet, *Letters on Elementary and Practical Education. To which is added a French translation* (Montreal: John James Williams, 1841).

could oversee several schools. Lancaster insisted that his schools, with their extensive apparatus, needed only one trained teacher.

Both models promoted industrial training. Bell was preoccupied by reforming the English Poor Law and argued that money wasted in supporting the parish poor would be better used “to train them in the arts and manufactures which abound in this country, [to] render them useful and happy members of the community, and gradually correct some of those evils which threaten the overthrow of the state”.³⁰ He did not specify how such training would be organised, but urged the creation of an investigative Board of Education, on the model of the Board of Agriculture, whose function should be to document existing educational practices through “the investigation of facts”. In a passage seized upon by his opponents as proof that he meant to keep the poor ignorant and dependent, Bell wrote:

It is not proposed that the children of the poor be educated in an expensive manner, or even taught to write and cypher. Utopian schemes, for the universal diffusion of general knowledge, would soon realize the fable of the belly and the other members of the body, and confound that distinction of ranks and classes of society, on which the general welfare hinges, and the happiness of the lower orders, no less than that of the higher, depends ... there is a risk of elevating, by an indiscriminate education, the minds of those doomed to the drudgery of daily labour, above their condition, and thereby rendering them discontented and unhappy in their lot. It may suffice to teach the generality, on an economical plan, to read their bible and understand the doctrines of our holy religion.³¹

In fact, students were taught to calculate and to write from dictation even in the first versions of Bell’s scheme; this statement came after he had been enlisted in the fight against Lancaster’s supposed creation of social ambitions among the poor.

For his part, Lancaster proposed that girls spend half of each day learning manual skills, including colouring botanical prints, gardening and making clothing. He reproduced a lengthy account of the new straw-plaiting industry, which he claimed could provide work for 50,000 boys and girls. It is not clear that Lancaster acted on this proposal, which was a publicity squib for his patron William Corston’s national straw-plaiting industry.³²

Lancaster was more enthusiastic about fostering achievement for young people than was Bell. His bizarre punishments offended many would-be supporters: Samuel Taylor Coleridge, for one, who read out passages on the subject from *Improvements* at a Royal Institution meeting on 3 May 1808 before smashing the book onto the floor and launching into a vicious diatribe against Lancaster.³³ But in England and its colonies, doctrinal religious instruction was what most distinguished the two systems. Bell’s version anchored the education of the poor and the proletariat firmly in the institution and in the official doctrine of the state church. Students were taught the Church of England catechism, were required to attend that church’s Sunday services (whatever their religious background) and eventually the Madras schools used a series of Anglican schoolbooks. Lancaster’s British system, by contrast, used scripture passages as reading lessons “without note or comment”

³⁰A. Bell, *An Experiment in Education*, 2nd ed. (London: Cadell & Davies, 1805), 61.

³¹*Ibid.*, 62.

³²Lancaster, *Improvements in Education, as it Respects the Industrious Classes of the Community*, 134ff.

³³R. Foakes, “Thriving Prisoners’: Coleridge, Wordsworth and the Child at School,” *Studies in Romanticism* 28, no. 2 (1989): 187–206. Coleridge was taken to task for violating the Institution’s rules by attacking a living person and one who was absent. He explained that he had been disturbed by Lancaster coming to visit him with a friend just before the lecture to solicit money. He refused to acknowledge the former. See Coleridge to Bell, 17 May 1808, quoted in Southey and Southey, *Life of Andrew Bell*. See also S. T. Coleridge, *Essays on His Times in The Morning Post and The Courier*, ed. D. V. Erdman (London: Routledge & Kegan Paul, 1978).

and taught what it considered to be a generic Christian morality. Students were to attend the religious institution of their choice weekly. The debate over priority in discovery split along politico-religious lines.³⁴

By the third edition of his *Improvements*, Lancaster's scheme had become far more elaborate than Bell's. Successive commentators noted that Bell's later descriptions included more detail and incorporated several of Lancaster's practices, such as the awarding of medals to students, which Bell's supporters had initially denounced. Yet, from Bell's point of view, the core of the invention was "the mode of tuition by the scholars themselves" and elaborations such as Lancaster's were simply artistic flourishes.³⁵

In practice, of course, school promoters and managers might use techniques and procedures drawn indiscriminately from either Lancaster or Bell, declaring nonetheless that they had adopted only one system.³⁶ An example was the Orchard Street, Westminster, school organised by the reformer Patrick Colquhoun and described in his 1806 *New and Appropriate System of Education for the Labouring People*. Colquhoun insisted his was a Madras (Bell) school under the Established Church; he taught the catechism, insisted on Sunday church attendance and echoed the line that the poor should be taught just enough to make them moral and contented in their station. His method of teaching arithmetic was taken directly from Lancaster – whom he credited – but other Lancasterian innovations, such as paste board spelling cards, slate writing, and the awarding of badges and medals were also in use without acknowledgement.³⁷

Initial cooperation

The priority controversy began in earnest in 1805–1806, and it was not provoked initially either by Bell or by Lancaster. Indeed, Lancaster acknowledged repeatedly in the early editions of his work that many of his ideas had come from Bell. He did suggest that he had made some improvements in instruction before reading Bell's 1798 pamphlet, and he regretted not having seen it earlier, for "if I had known it, it would have saved me much trouble, and some retrograde movements". He continued that "as a confirmation of the goodness of Dr Bell's plan, I have succeeded with one nearly similar, in a school attended by almost three hundred children". Teaching students to write collectively using sand tables was acknowledged as having come from Bell. Lancaster was "endeavouring to walk in his footsteps" and, instead of describing sand tables himself, he urged the reader to get a copy of Bell's pamphlet "which will save me going into greater detail, and afford him greater satisfaction". All that Lancaster claimed initially as his own was "the system of rewards, and

³⁴While Lancaster's opponents routinely argued that since his system taught no particular doctrine students would end up with no principles at all, it was the insistence of Joseph Fox that BFSS students study *only* the scriptures for reading lessons and that all must attend Sunday church services that drove Francis Place away from the organisation. Place and James Mill had eliminated scripture reading from the West London Lancasterian Association school; it was resumed when Place finally quit the Society in 1815. G. Wallas, *The Life of Francis Place* (London: Longmans, Greene, 1898), 107–11.

³⁵Bell, *An Experiment in Education Made at the Male Asylum of Madras*, 10.

³⁶Work in STS reminds us that putting any technical plan into practice involves jiggling and shaking formal advice, so that one can produce something like the intended result; see, for instance, N. Goodman and C. Z. Elgin, *Reconceptions in Philosophy and Other Arts and Sciences* (London: Routledge, 1988), especially Elgin's "Knowing and Making". M. Lynch, "Protocols, Practices, and the Reproduction of Technique in Molecular Biology," *British Journal of Sociology* 53, no. 2 (2002): 203–20.

³⁷P. Colquhoun, *A New and Appropriate System of Education for the Labouring People; Elucidated and Explained, According to the Plan which has been Established for the Religious and Moral Instruction of Male and Female Children, Admitted into the Free School, No. 19, Orchard Street, in the City of Westminster....* (London: Hatchard, 1806).

the new method of teaching to spell”, although he did not specify how his spelling method differed from Bell’s.³⁸

In November 1804, Lancaster wrote to Bell that he had begun teaching in 1798, that he had had difficulty in dealing with large numbers of poor children, and that “in puzzling myself what to do, I stumbled upon a plan similar to thine; not, however, meeting with thy book till 1800, I have since succeeded wonderfully”, implying that Bell’s ideas were responsible. Lancaster claimed he would be more successful still were he not continually travelling to drum up subscriptions. He described some of the difficulties he was having at school and concluded, “if thou wilt favour me with any original reports of the Asylum at Madras – for nothing is more essential than minutiae – I should be much obliged”.³⁹

Lancaster spent several days at Swanage with Bell near Christmas in 1804 and, although Lancaster’s account of their visit has not survived, the 1805 edition of *Improvements* mentioned some things he had learned and again offered credit to Bell. His method of writing letters and figures in sand “was taken in the outline from Dr Bell, formerly of Madras”, but Bell “did not say, in his printed account of that institution, whether wet or dry sand was used”. Lancaster apparently started by using wet sand, but then had to smooth it using a hot iron after each lesson. “These difficulties were obviated by my hearing from Dr Bell, that it was dry sand”. Again, for the phonetic method of teaching to spell and read, Lancaster was “much indebted to Doctor Bell, late of Madras”. Lancaster had himself “reduced it to practice, and f[ou]nd it does honour to its benevolent inventor”.⁴⁰ In his 1803 edition, Lancaster had reported using the same books as did Bell for reading instruction (including, ironically, Sarah Trimmer’s *Spelling Book*). But in developing the method, he “added several valuable improvements”, especially replacing books with “reading and spelling cards”.⁴¹ Again, Lancaster was “indebted to Dr Bell” for having students spell words read out to them by monitors, “believing it was his peculiar invention”. While the 1805 edition of *Improvements* introduced a great deal of new material with regard to school organisation and government, the only thing Lancaster explicitly claimed was “to have invented an entire new method of teaching arithmetic”. Bell continued to teach the subject by having students learn rules, then applying them to problems. Lancaster treated arithmetic instruction as a reading practice and dispensed with the learning of rules.⁴²

By contrast to Lancaster’s elaborate system, Bell’s 1805 edition of his *Experiment* is a bare-bones document. He offered a few more details on how to go about organising a school, and on the necessary administrative staff. He counselled the use of dry sand on a moveable tray that could be shaken smooth for writing practice, and he offered the proposal for a Board of Education as discussed earlier. In fact, to this point, the textual evidence suggests that Lancaster was acting in precisely the experimental spirit that Bell had urged repeatedly on his readers.

While a few people had started schools after reading Bell’s pamphlet, Bell himself had done little to promote the matter before 1805. In a letter to Lancaster soon after the Swanage visit, Bell thanked him for reviving his interest in a subject about which he had almost

³⁸Lancaster, *Improvements in Education, as it Respects the industrious Classes of the Community...*, 46, 58–60.

³⁹Southey and Southey, *The Life of the Rev. Andrew Bell*, 116–30.

⁴⁰Lancaster, *Improvements in Education*, 46–7; 58–60.

⁴¹*Ibid.*, 61–2.

⁴²*Ibid.*, 64.

completely forgotten.⁴³ By contrast, Lancaster was extremely active in promoting his system and attracted a degree of support from members of the Anglican clergy. But it was regal patronage that opened the financial floodgates: in 1805, after a lengthy interview, during which George III famously expressed the wish that every child in England should learn to read its Bible, Lancaster received recognition and a subscription (£225) from the king, Queen Charlotte, and their three daughters. The younger sons, the Dukes of Sussex and Kent, joined the group that formed around Lancaster, and at times the group's meetings were held at Kensington House. The Whig leanings of the dukes were well known, and the group included not only some of the Benthamite circle, but several extremely well-to-do Nonconformist capitalists and professionals. There was a strong Quaker presence, not only in the person of William Allen, but also through the support of the Wakefields, Priscilla, and especially her son Edward. The wealthy Baptist Joseph Fox subsidised Lancaster lavishly, and the politicians Joseph Hume and Samuel Whitbread – who would propose a national Lancasterian school system in Parliament in 1807 – gave added clout to the project. Lancaster claimed to have over a thousand subscribers. Part of his undoing was the habits of extravagance and dissipation that sudden wealth encouraged.⁴⁴

The prospect that capitalists, Whig radicals, utilitarians and Nonconformists would undermine the Church of England through control of the formation of the rising generation of working-class people and the poor incensed and alarmed the Evangelicals. Their alarm was increased because they believed that young people were to receive schooling that embodied all of the cultural degradation, vulgarity and dissipation they saw personified by Lancaster himself.

The second part of this article begins with the attack by the Evangelical educator and children's book author, Sarah Trimmer, on Lancaster himself and on his claims to invention.

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Notes on contributor

Bruce Curtis, PhD (Toronto), FRHistS, FRSC, is a professor of sociology and of history and a Member of the Institute of Political Economy at Carleton University in Ottawa, Canada. In addition to a number of article-length contributions, his monographs in educational history are: *Ruling by Schooling Quebec: Conquest to Liberal Governmentality. A Historical Sociology* (University of Toronto Press, 2012); *True Government by Choice Men? Inspection, Education and State Formation in Canada West* (University of Toronto Press, 1992); and *Building the Educational State: Canada West, 1836–1871* (Althouse/Falmer, 1988). He has also published the first historical sociology of census-making in Canada, *The Politics of Population: State Formation, Statistics, and the Census of Canada, 1840–75* (University of Toronto Press, 2001).

⁴³Fox (Pythias), *A Vindication of Mr. Lancaster's System of Education*, 16.

⁴⁴G. F. Bartle, "Benthamites and Lancasterians: The Relationship Between the Followers of Bentham and the British and Foreign School Society During the Early Years of Popular Education," *Utilitas* 3, no. 2 (1991): 275–88. J. Sherman, *Memoir of William Allen, F.R.S.* (Philadelphia: Henry Longstreth, 1851). B. Taylor, "Jeremy Bentham and Church of England Education," *British Journal of Educational Studies* 27, no. 2 (1979): 154–7. W. Thomas, *The Philosophic Radicals: Nine Studies in Theory and Practice, 1817–41* (Oxford: Oxford University Press, 1979).