

Constructing the “home-side” of a scientific legacy: Mary Everest Boole, pedagogy, and domesticity

Abstract

The Victorian writer Mary Everest Boole (1832–1916) developed an idiosyncratic pedagogical treatment of arithmetic, algebra, and logic. Her pedagogy favored active, child-directed learning, and is now generally admired as ahead of its time, though it must be deciphered through fairly eccentric delivery. A recurring theme in Mrs. Boole’s prolific writing is the misunderstood legacy of her late husband, the renowned mathematician and logician George Boole (1815–1864). As existing literature has shown, she worked to promote a morally and religiously charged understanding of his work. More fundamentally, she presented an all-encompassing pedagogical perspective on Mr. Boole’s life and work. Across her voluminous publications, Mrs. Boole filtered everything—mathematics, logic, religion, morality, and homelife—through the lens of pedagogy. She used this expansive conception of teaching to span the gulf between professional and domestic work, thereby claiming a privileged domestic perspective on her husband’s intellectual output and enlisting his legacy as a resource for her own writing. The Booles’ entangled careers show how particular ways of practicing domesticity could shape and be shaped by mathematical identities and ideas.

Introduction

Around the turn of the twentieth century, the Victorian writer and pedagogue Mary Everest Boole (1832–1916; Fig. 1) developed an idiosyncratic treatment of arithmetic, algebra,

and logic. The spirit of her approach is well conveyed by the prefatory warning that opens her *Logic Taught by Love* (1905, p. vii): “This book will seem to some a mere medley. Is it a text-book of Logic, a pious exhortation, or a treatise on Mythology? Why cannot the author choose some plan and stick to it?” These questions offer a fairly apt summary of how not just that book but her work more generally reads. (Her answer to the rhetorical question was that she sought to “call attention to the fact that our life is being disorganized by the monotony of our methods of teaching” [ibid.].) Mrs. Boole’s writing is an unconventional mixture of insight and opacity. Her readers encounter a disorienting range of notions and claims, which even her most devoted admirers admitted were by turns thoughtful and inscrutable.

Today her pedagogical views—which favored active, child-directed learning—are generally admired as ahead of their time, though whatever influence she exerted on the eventual spread of similar ideas was minor at best.¹ Her work was relatively little known, but it inspired a remarkable degree of sustained dedication in those it influenced. She was, broadly speaking, a marginal figure, but hers was a kind of securely established marginality: a recognized node within an unorthodox but not unknown network rather than a state of true obscurity.

Central to both the substance of her writing and the way she positioned it as the work of an expert was the legacy of her late husband, the renowned mathematician and logician George Boole (1815–1864). He is widely acknowledged as a pioneer of the mathematical treatment of

¹ A resemblance is visible between her ideas and the widely admired theories of Maria Montessori (1870–1952), though there is no indication of influence. For a late-twentieth-century argument for the prescience and continuing relevance of her pedagogical thinking, see Michalowicz (1996).

logic in his *Mathematical Analysis of Logic* (1847) and *Investigation into the Laws of Thought* (1854).²

Mr. Boole was nearly two decades Mrs. Boole's senior, and when he died in 1864 at the age of 49, he left her a widow still in her early thirties. Only in the years after his death did she begin her own prolific career as an author. As Mrs. Boole's career unfolded in the ensuing decades, she elaborated an unconventional perspective on Mr. Boole's mathematics, one that placed moral and religious meanings at the center. She constructed that perspective through a steady emphasis on pedagogy, which served to join the professional and domestic sides of George Boole's life and work.

Mrs. Boole's rhetorical use of the homelife she shared with Mr. Boole illustrates the entanglement of domesticity and intellectual work. They did not collaborate in the conventional sense of, say, coauthoring, yet Mrs. Boole's framing aims to establish a view of their combined written output as an interrelated whole. Recent historiography of science has increasingly appreciated the degree to which practices of domesticity and knowledge making have been intertwined even well into the modern era of supposed public-private boundaries; attending to domesticity is one way analysis of intensely gendered relationships can move beyond individual gendered identities to see the role of gender in science as something worked out interactively in specific situations.³ Much of this literature centers experiment, showing how families and households have collaborated in the daily work of carrying out empirical studies. In Mrs. Boole we find a Victorian thinker who emphasized the domestic dimensions of

² The literature on George Boole's logic is extensive. For a useful entry point, see Gasser (2000).

³ For an up-to-date review of this literature, see Opitz (2022). On the interplay between this approach and the historiography of mathematics and gender, see the introduction to the present special issue (Dunning and Stenhouse, 2023). Especially relevant here is Richards' (2021) illuminating family history of Augustus and Sophia De Morgan and their forebears.

knowledge production from a different angle, framing the home as a place not so much of conducting experiments but rather of cultivating logical deduction. In this light her spousal account of a logician's life and work became a privileged perspective. As she continually insisted, their marriage and home life shaped and were shaped by the learned texts her husband published.

The temporal separation between Mr. and Mrs. Boole's respective publishing careers distinguishes them from examples of more straightforwardly collaborating couples in the history of science.⁴ Considered strictly as authors, they are an example of the dynamic of sequential careers that Amy Ackenberg-Hastings (2023) describes in the case of John Farrar and Eliza Ware Rotch. The Booles pursued sequential careers, and yet they collaborated: in the usual sense while Mr. Boole was alive, and in a sense after his death as well. I suggest that Mrs. Boole engaged in what we might think of as asynchronous collaboration by positioning her work in sustained dialogue with her late husband's.⁵ This intentionally expansive notion of collaboration is a lens for reflecting on what it meant for Mary Everest Boole to attempt to work with an absent collaborator. Through this work she attempted to shape George Boole's posthumous legacy, and ultimately (though never explicitly) to present that legacy as a product of both their writings. By asserting the centrality of elements that went unstated in his books, elements visible only from her domestic perspective, she claimed an indispensable role for her own writing in any adequate interpretation of George Boole's career.

⁴ Major works in this vein include Abir-Am and Outram (1987), Pycior et al. (1996), and Lykknes et. al (2012).

⁵ Beyond the case at hand, the intellectual history of widows working in dialogue with the legacy of a deceased husband merits further scholarly attention in general. An illuminating case study is (Koven, 1993).

I consider that claim of indispensability as its own kind of intellectual product, worthy of analysis in order to understand the Booles' relationship and the discursive work that Mrs. Boole positioned it to do, as opposed to merely uncovering a mathematician's private life as a means for better understanding his work. The Booles' careers as mathematicians, teachers, writers, spouses, and parents were not mutually independent; all these identities and the day-to-day work that substantiated them were inseparable for the Booles. This was true of both spouses, though it is difficult to perceive in Mr. Boole's writing, which followed the professional conventions of academic writing of his day; then as now, these norms served effectively to obscure the elements of an author's context which were held to be non-professional. In contrast, Mrs. Boole was a freely unconventional writer, and moreover she was in a position to leverage her late husband's scholarly authority by accentuating the domestic aspect of intellectual life. Given the strategic value of shaping his legacy in this way, it is important to read her accounts as speech acts by an agent with her own interests and perspectives rather than as disinterested chronicles. By observing the strategic aspect of her characterization of their life together, I mean to illuminate how she used specific elements of their story to a specific end, but not to insinuate that she fabricated those elements, which are corroborated by other sources at least in broad strokes. Her writing waxes lyrical in places, but there is consensus that her biographical claims are basically sound.⁶ She constructed an image of George Boole's writing as the technical professional expression of a joint intellectual and pedagogical project expressed largely in

⁶ See in particular Laita (1980).

private, which became publicly accessible only through her own mystical-cum-educational works.

Domesticity is not one predetermined thing; the particular expression of domesticity that the Booles embraced—and that Mrs. Boole accentuated in her recollections—revolved around education. The home was a place for teaching. Ascribing an educational quality to every aspect of her relationship with her husband, Mrs. Boole developed a particular, pedagogically oriented way of framing the home as a place of knowledge. Other historians who have considered Mrs. Boole's treatment of her husband's legacy have shown that she worked hard to promote a specific, morally charged understanding of his life and work. Kevin Lambert has shown how Mrs. Boole used two commemorative stained-glass windows "to encourage a very particular interpretation of George Boole's books on logic" as being fundamentally expressions of his Dissenting religious views (2008, p. 208). (Mr. Boole never explicitly revealed in writing the substance of those views.) Concurring with Lambert's reading of the Booles' religious lives and afterlives, here I stress the specifically pedagogical perspective Mrs. Boole brought to bear on all aspects her husband's thought. She filtered everything—mathematics, logic, religion, morality and homelife—through the lens of teaching. The image of pedagogical domesticity she constructed provided a powerful context for her original writing. K. G. Valente has rightly characterized Mrs. Boole as "knowingly and tactically [occupying] a privileged position from which she developed her own ideas by contextualizing her husband's innovative work" (2010, p. 73). Whereas he emphasizes an underappreciated philosophical cohesion to her doctrines, I seek instead an understanding of her tactics and the intellectual and rhetorical affordances of domesticity that made them possible.

By claiming a privileged domestic perspective, and by using that authority to construct a thoroughly pedagogical image of George Boole's life and work, Mary Everest Boole made herself a collaborating partner in the project of building his legacy. No less importantly, she connected that legacy to her own pedagogical writings. The history of this activity throws light on the partially flexible contours of gender, domesticity, and knowledge-making in Victorian Britain. Instruction offered a way of practicing domesticity that allowed Mrs. Boole an uncommon degree of intellectual attainment without threatening a resolutely patriarchal organization of the family that she at least sometimes endorsed. The vicissitudes of a long widowhood, however, transformed the meaning of that pedagogical domesticity. Through commemoration, her marriage became a source of potential authority underwriting her efforts to advance a new interpretation of Mr. Boole's mathematical career, which in turn undergirded her own subsequent career as a pedagogical thinker.

Lessons in courtship

George and Mary Everest Boole's relationship was, like so many marriages, structured by asymmetries. In addition to the basic patriarchal assumptions that shaped most Victorian unions, their relationship had been first that of tutor and pupil. This pedagogical dynamic persisted when they became husband and wife, and also shaped their understanding of parenting their five daughters.⁷ Additionally, there was a marked temporal asymmetry, though it could only be fully perceived in retrospect. At the time of their marriage, George had already

⁷ For an overview of the larger Boole clan, see Chas (2019); see also Kennedy (2016).

lived 39 years to Mary's 23. He died less than a decade later, at the age of 49, after which she lived another 51 years. The differences of age and longevity thus aligned to position their marriage as the closing chapter of his life and only the opening phase of her long adulthood. This in turn creates a narrative asymmetry: our knowledge of their lives together is predominantly mediated by Mrs. Boole. In this section I introduce some biographical details and describe in particular the didactic quality that characterized their earliest interactions, which seems to have persisted as their relationship evolved.

George Boole, a native of Lincoln in the English midlands, was a schoolmaster, mathematician, and eventually Professor of Mathematics at Queen's College in Cork, Ireland. Teaching was a central part of his life and work from an early age. He was born in 1815, the first of four children of John and Mary Ann Boole. John, a shoemaker by trade, was an enthusiastic amateur scientist but an inept businessman. George was sixteen when the family's financial situation came to require urgent intervention. Always a precocious young scholar, George found work as a teacher and then after a few years opened his own reasonably successful day school. He accepted a job running a boarding school in 1838, then left that position to establish his own boarding school not long after.⁸ Meanwhile he developed a serious interest in mathematical research and began publishing papers of his own in the *Cambridge Mathematical Journal*, which stood at the center of a movement toward increasingly abstract algebraic practices in British mathematics.⁹ Through this work, by 1849 he achieved sufficient stature in

⁸ Biographical information follows MacHale (2014). On George Boole's work as a schoolmaster, see pp. 25–33.

⁹ For a contextual analysis of the significance of Boole's work in relation to the mathematics and logic of his milieu, see Durand-Richard (2000). On the role played by the *Cambridge Mathematical Journal*, see Crilly (2004).

the British mathematical community to be appointed Professor of Mathematics at the new Queen's College in Cork. He relocated to Ireland, and in Cork soon became friends with the College's Vice-President and Professor of Greek, John Ryall, and soon met Ryall's visiting niece Mary Everest.

Miss Everest was born in 1832 in Gloucestershire but raised largely in France, where her family moved in 1837 to be near the homeopathic doctor Samuel Hahnemann, for the sake of her father Thomas Everest's health.¹⁰ Mr. Everest was an Anglican clergyman, but according to his daughter he held a scandalously pluralist view of religion for a cleric of his generation, believing all religions approached the same unknowable truth.¹¹ The family returned to England in 1843, but those childhood years were decisive in that, at the end of her long life, Mary reported never having really learned to think in English, her facility writing English prose notwithstanding (Cobham, 1951, pp. 15–16). Her interest in mathematics took root during those early years under the influence of a tutor named M. Déplace, whose teaching she praised for creating “a protecting influence without the slightest interference with either my thoughts or my feelings” (Boole, 1931a, p. 1515). The family moved in prominent intellectual circles, her father being friends with mathematicians Charles Babbage and John Herschel. Mary was also close with her uncle Sir George Everest, the surveyor-general of India after whom the mountain is named in English; she once referred to this imperialist renaming as a “queer kind of vandalism” (Boole, 1931c, p. 948).¹²

¹⁰ The central biographical source is Cobham (1951).

¹¹ On Mr. Everest's beliefs, see M. E. Boole (1931c, pp. 954–55).

¹² (Boole, 1931c) illustrates well Mrs. Boole's fervent admiration for Indian culture as she perceived it. She felt keenly the absurdity of British chauvinism, and occasionally seemed to suggest a related absurdity in imperialism itself, but more often characterized imperial rule as a benign opportunity for cultural exchange. Her great admiration

In 1850 the Everests visited Ryall in Cork, where they met George Boole. Mrs. Boole later recollected that she “had heard, long before, of his learning and genius, and was disappointed to find him so unlike my girlish ideas of a scientific author,” though she did not explain wherein the discrepancy lay (Boole, 1931b, p. 16). She reported that “a friend asked him to give me a little instruction on the subject of acoustics,” and that he seemed glad to give the lessons, though he tried more to excite Miss Everest’s interest in nature and poetry than in mathematics at this early stage of their pedagogical friendship (p. 17). At this time Mr. Boole was in his mid-thirties, Miss Everest a teenager.

The Everests returned to England, and Miss Everest’s mother (also named Mary) kept up the friendship with Mr. Boole, thus facilitating the budding pedagogical relationship. She would report on her daughter’s mathematical progress in her correspondence, conveying messages to the professor: “Mary desires me to say that she is getting on rather ‘slow and sure’ with the Trigonometry, that she has no *particular* difficulty to send you but she does not get on as quickly as when you were here—Need she do all the difficult examples—because the ‘Tricks’ take her a long time to find out sometimes [...]. PS Mary will send you some papers when I write again that you may see how she is getting on—she much fears you will not think she is getting on very fast.”¹³ Apparently the promised papers were slow to arrive. In a letter that to my knowledge does not survive, Mr. Boole must have interpreted the delay uncharitably, for Mrs. Everest was quick to correct an apparent, implicitly gendered dismissal of her daughter’s

of “Indian thought” seems to have been sincere, but surely also participated in the essentializing discourse famously diagnosed in Said (1979). Indeed she describes her and Mr. Boole’s deep respect for Ernest Renan, one of Said’s central examples (1931b, pp. 37–8, 41).

¹³ Mrs. Mary Everest to George Boole, 2 September 1852, BP/1/233, papers of George Boole, F.R.S. (1815–1864), University College Cork Library, Ireland, <http://georgeboole.ucc.ie/> (hereafter: **Cork Boole Papers**).

silence as a sign of caprice. "You are very much mistaken," she wrote, "in fancying that 'fickleness' has anything to do with her not sending you questions in Mathematics. She wishes to overcome the difficulties alone if possible. Her love for mathematics began almost in her cradle and I see no reason to think that it cools at all."¹⁴ By the next year Mr. Boole had evidently become quite convinced of his pupil's promise. He described the Everests' recent visit to Cork in a letter to his sister, writing, "Mrs. & Miss Everest are here. I dined with them today took a walk after dinner & gave Miss E a lesson in mathematics in which she has as I have told you an extraordinary quickness of apprehension & solidity of judgment such indeed as I have never seen surpassed."¹⁵

In 1852 he visited the Everests in Gloucestershire. His informally didactic manner was on full display, and with more of the children than just Mary. "He was very kind and fatherly to us younger members of the family," she recalled, and he would "teach us mathematics, not as a lesson, but as a matter of interest" (Boole, 1931b, p. 18). He had evidently overcome his reluctance to encourage Miss Everest's enthusiasm for mathematics, but in his lessons he continued also to emphasize poetry, nature, or whatever else captured his imagination: "Besides teaching us mathematics, Mr. Boole would insist on reading Milton to us. He went into ecstasies over bits of field that seemed to me just like all other fields. He discovered queer old books on the shelves that no one else ever looked at" (p. 19). She portrayed him as greeting the world in a perpetual state of earnestness and awe, which he was eager to instill in others.

¹⁴ Mrs. Mary Everest to George Boole, undated, BP/1/234, Cork Boole Papers.

¹⁵ George Boole to Maryann Boole, 4 May 1853, BP/1/99, Cork Boole Papers.

The rapturous attitude he so readily shared with the children around him sprang from a private religious disposition that he guarded fiercely. This personal Dissenting faith of his, which historians have generally taken to be the principal insight into his life to be gained from Mrs. Boole's writings, played a catalyzing role in their relationship's evolution beyond platonic tutelage. In Mrs. Boole's account of one particularly intense moment they shared at this early stage, Mr. Boole alluded to—only to reject immediately—the possibility that their connection was building toward marriage:

One day I said to him that I never dared talk to any of my teachers about certain things which were matters rather of feeling than of knowledge, as they would be sure to think I meant something irreligious. The instantaneous change from his usual manner was wonderful. I felt for the first time in my presence he had taken off some sort of mask. He begged me, in a nervous, eager way, never to talk about such things to anyone but himself, as people would be sure to misunderstand me. Next day he put me through a long catechism as to what I intended to do with my life; and ended by saying that, as he was too old ever to think of marrying, he would, if I liked, be my friend, and direct my education (Boole, 1931b, p. 19).

Mr. Boole, a man who suffered immensely under the weight of his secret heterodox faith, seems in this brief exchange with a young girl to have glimpsed the possibility that he was not alone in coming to unconventional religious conclusions. There is a strange pathos in his “wonderful” shift to a “nervous, eager” demeanor as he impressed upon Miss Everest the danger of

revealing such thoughts outside their private conversations. (She would, after he was gone, become entirely unafraid to display her heterodoxy.) It is unclear in what the next day's "catechism" consisted, though Mrs. Boole clearly recalled it as intensely didactic. Mr. Boole would eventually change his mind about marrying, but he prioritized his catechizing impulse.

The shift toward a romantic relationship came only with a decisive change in Miss Everest's circumstances. As she described it, upon her father's death in 1855,

[Mr. Boole] found me ill and in trouble, and proposed to take possession of me and my affairs. Friends gave me many warnings; about the difference in our ages; about his ill-health, and my own; about his small income, his irritable nervous system, and overworked brain. He himself had many scruples and doubts about imprisoning a young girl's life. But we made arrangements to be married as soon as possible; in this unpromising fashion, as it might have seemed, began a married life so happy that to look back over most of it seems like the remembrance of a sunny dream (Boole, 1931b, pp. 20–21).

They were well aware that theirs did not seem the ideal start to a marriage, but despite the worries they both entertained, their time together seems to have been genuinely joyful. Already during their engagement, Mr. Boole marveled, "It is delightful to me to feel that I can tell you anything that concerns myself without the least reserve, and that things which it might be vanity for me to tell to other people, may, without any scruple of the kind, be told to you." He went on to describe to her his recent pleasure at learning how highly "the confessed leaders of

thought and opinion" in Cambridge rated his work. Despite his professed casting off of scruples, however, he persisted in modestly insisting, "I cannot bring myself to write down what they say about my book."¹⁶ Even the delight of newfound intimacy could alter his behavior only so much.

Living and narrating pedagogical domesticity

George and Mary were married in 1855 and proceeded to have five daughters in nine years. They lived according to an understanding of familial roles that was unremarkable at the time in its patriarchal aspect, though the particular way they practiced domestic patriarchy was strikingly pedagogical in tone. Educational thinking saturated the family's shared identity and way of life.

Our access to their pedagogical domesticity is largely mediated by Mrs. Boole. This asymmetry is important to bear in mind, but it should not be contrasted to an imagined ideal of unmediated knowledge of their marriage as a thing in itself. As Phylliss Rose wrote in her classic study of five Victorian marriages, "To the extent that we impose some narrative form onto our lives, each of us in the ordinary process of living is a fitful novelist," and thus "every marriage [is] a narrative construct—or two narrative constructs" (1984, pp. 6–7). Rose illustrates how in a sense a marriage consists simply in the stories its two participants tell to themselves and others about their lives married to one another. From this perspective Mr. and Mrs. Boole were both necessarily narrators of their marriage, though only her narration is available to us at any length

¹⁶ George Boole to Miss Mary Everest, 15 August 1855, quoted in Boole (1931b), p. 21.

in writing. As Rose observed, there is a power in portraying one's marriage in print as the surviving spouse, regardless of the voice and content of the depiction.¹⁷ We have already seen ample documentation in correspondence of the didactic origins of Mr. and Mrs. Boole's relationship, and both spouses pursued careers rooted in education, so there no reason to question the veracity of Mrs. Boole's pedagogically-oriented portrayal.¹⁸ Nevertheless, her particular characterization of their home life arose through constructive narrative work. A full picture of the Booles' legacies must take that work into account.

When Mrs. Boole became a writer as a widow, her output was strikingly eclectic, but her husband's mathematical and logical legacy was a recurring theme. Her most widely cited piece in connection with Mr. Boole is an essay titled "Home-side of a Scientific Mind," which she published in the *University Magazine* in 1878, having written it "some years earlier" (Boole, 1931b, p. 1). It has been a central biographical source on George Boole for over a century. But in her framing remarks, she draws an interesting contrast between biography and her actual aims: "I would prefer [these notes] to be regarded rather as fragmentary studies of inner history in this nineteenth century, than as constituting a personal memoir. To those to whom they may have value, I would rather they came as an ethical than as a biographical contribution" (ibid.). So this account of who Mr. Boole was at home and in private, is, in Mrs. Boole's estimation, not just interesting because it pertains to an important researcher. She presents Mr. Boole's inner life

¹⁷ Rose evokes this power in her reflections on Thomas Carlyle's decision to publish his late wife Jane's letters, which display her brilliance and portray him as a detestable husband. Rose deemed his decision a "courageous and imaginative act" of repentance but also one that made "[Jane's] genius, her sacrifice, and her suffering ... *his* creations, a literary artifice based on her raw materials, surely, and sculpted according to her directions, but willed into permanent existence by him" (1984, p. 257).

¹⁸ Though it does not particularly bear on the questions at hand, there is also at least one brief outside account of them "strolling through the Pantheon Bazaar [in London], she having hold of his arm" (quoted in MacHale and Cohen, 2018, p. 282).

and ethical outlook as issues of relevance surpassing the biographical. In the title's formulation, the home-side is an aspect of the scientific mind, not something distinct from it.

She performed a rhetorical maneuver, conceding at first "the presumption of the attempt" of speaking for his inner life, noting their difference of age and also demeanor—"he had been all his life so earnest," whereas she took things less seriously. She admitted, "I am sure he never can have shewn me more than a very small part of his mind" (Boole, 1931b, p. 1). But, in a quick reversal, she observed that his reserve would have done even more to prevent anyone else from understanding his mind: "And yet he lived so retired that others seem to know even less about him than I; so that it seems to fall to me to try to tell at least something of what he was" (p. 2). Mrs. Boole did not claim to understand her late husband fully, and certainly not to speak for him. But she confidently asserted that she had come closer to understanding him than anyone else could presume to do. Her domestic account was to be privileged: it offered the only possible access to an indispensable facet of Mr. Boole's scientific mind.

The dominant note in that domestic account is pedagogical. The basic social coordinates that structured their relationship all derived from teaching: in addition to the didactic origins of Mr. and Mrs. Boole's relationship, Mr. Boole supported the family as a university professor and writer of textbooks, and both spouses agreed that Mrs. Boole could and should contribute to the work he approached as a vocation. Mrs. Boole recalled that Mr. Boole had "promised that if I married him I should help him with his work; but as to what sort of help I could give, he turned out to have no clearer idea than I had myself. For the first year or two it seemed as if this cherished purpose was never to be realised" (Boole, 1931b, p. 28). A collaborative mission based

in his academic work was shared in principle before they identified any particular project to undertake.

The arrangement they eventually found revolved around problems of clarity of instruction. We have seen that Mr. Boole described his wife as an able student of mathematics, but she had never studied the topics on which he was currently writing. Ultimately she saw utility in her perspective as a learner rather than an authority. She explained,

As I had not sufficient knowledge to assist my husband in prosecuting mathematical researches, I would try to make use of my ignorance, by representing the uninstructed public, who waited for enlightenment till he should make himself intelligible. I was to be a sort of lay-figure, or milliner's doll, on whom the new book should be tried, to judge of the effect. We were to begin at once on a text-book of Differential Equations, which my adviser undertook to publish. To the best of my recollection I learned the very meaning of the term Differential Equation from the MS. It was up-hill work for us both. At times the author jumped *à pieds joints* over real difficulties; at others he would write out an elaborate proof of some point so simple that one missed it altogether (Boole, 1931b, p. 28).

At the time, Mrs. Boole had not yet studied differential equations; she embraced her status as a student (even to the point of referring to her husband as her "adviser"). She was not interested in claiming to have been his mathematical peer; the didactic marital dynamic seems to have been mutually agreeable. Mrs. Boole's status as a student came with its own kind of authority,

in contrast to the hapless expert's inability to distinguish between "real difficulties" and points too simple to merit proof. She reported having him rewrite chapters as many as five times before deeming them readable.¹⁹ Through their student–adviser relationship, they worked toward a shared goal of accessible textbook instruction.

With this working pattern established, the couple involved Mr. Boole's formal students in their domestic writing process as well. Mrs. Boole recalled, "[I]ntercourse with the students is one of the things which I can look back upon with unmitigated pleasure. For several years I knew every undergraduate who had any special aptitude for mathematics, and many of them very intimately." She reported that "they seemed quite at home in the house. They came at all times of the day; to take a walk with the Professor, or to copy or collate almost illegible MSS. with me. Usually only one or two came at a time; but sometimes we had students' parties, and those evenings were glorious fun. I think the Professor talked rather less than the rest of us, but laughed even more" (Boole, 1931b, p. 29).

The distance between domestic and professional academic spaces continued to shrink. As Mrs. Boole worked with her husband to help make his writings clear, eventually he decided it would help if she attended his courses at Queen's College. And so, she wrote:

For a few weeks I joined the senior class; but the higher education of women was a new idea in the country in those days, and a lady who attended mathematical classes was

¹⁹ The exact substance of Mrs. Boole's understanding of differential equations following this process of collaborative rewriting is not recoverable from surviving sources. Setting that question aside, I take this anecdote as a strong indication that she and her husband did attempt this form of collaboration. I thank one of the anonymous reviewers for feedback that prompted me to sharpen this point.

something quite anomalous. One old lady told me, in a terrible fit of excitement, that it was 'quite unmaidenly' of me to accompany my husband into his lecture room. To save trouble I desisted. But the senior class themselves had more liberal views on the rights of women; they kindly migrated to our own house in the suburbs for lectures (Boole, 1931b, p. 29).

Controversy was thus avoided by allowing formal instruction to take place in the home. Casting the objections of the unnamed "old lady" as a "terrible fit" in the face of what was new "in those days," Mrs. Boole depicted her own willingness to desist as patient tolerance of a conservatism more ridiculous than harmful. Her mild reaction to the threat of exclusion reflected her own coexisting progressivism and conservatism on questions of sex, which would later crystallize in her advocacy of women's higher education paired with indifference to women's suffrage.²⁰

Against this backdrop of constant pedagogy, she presented home life with Mr. Boole as driven by teaching in a more general interpersonal sense. "He had made a thorough study of the subject of domestic relations," she explained, and he "faced the difficulties which presented themselves in the same reverent and scientific spirit as he would a new mathematical problem" (Boole, 1931b, p. 22). Thus she characterized his expertise as extending to home life, sometimes infantilizing herself in her narration of episodes from early in their marriage. "The first time

²⁰ As Valente has observed, these coexisting commitments aligned her with a sizable camp of Victorian women, though she was anomalous in defending those views by appealing to mathematical logic rather than Christian morality or imperialism (2010, p. 67). As Julia Bush (2005) has argued, the phenomenon of Victorian women fighting for women's higher education while opposing suffrage only appears contradictory when anachronistically viewed in relation to lines drawn between feminism and anti-feminism in the twentieth century.

that I indulged in an explosion of temper at being thwarted," she wrote, "he gravely walked away. I was dreadfully frightened then; and of course the next thing was to try to get up a hysterical reconciliation. He looked at me for a few minutes with the air of a kind doctor considering the symptoms of a delirious child; and then gently and tenderly, but very resolutely, remarked that I was tired and had better come home and get some dinner" (Boole, 1931b, p. 22). She gave no hints as to the substance of the disagreement, nor any indication that she considered his thwarting and subsequent walking away to be in any sense blameworthy. She depicted their arguments as inevitable quotidian affairs, not entertaining any Victorian ideal of submissive wifedom that avoids conflict in the first place, but she repeated without qualification her husband's patriarchal pronouncements. When she once tried to justify "contesting some point rather hotly" by deeming "the matter important for the children's welfare," he responded that "nothing was so important to children's welfare as harmony between their parents." Therefore, he continued, "no educational advantage that a mother could procure for her child could ever compensate for the injury which she inflicted on it by indulging for a moment any feeling of irritation against its father before its birth" (pp. 22–23). A child's wellbeing, according to this view, depended above all on a harmoniously patriarchal structuring of domestic life. Mrs. Boole's opinion of that decree remained opaque.

Regarding the education of children, Mr. Boole favored discipline and learning by rote. He believed in the value of copying from books, and more generally that understanding must be preceded by firmly established habit. "He used constantly to impress on me that plodding, patient, obedient *work* has more to do with making children good and pious than any talk about God, or about morals or duties," Mrs. Boole wrote, "for it keeps the right part of the brain at

work; whereas very much moral or metaphysical speculation, no matter on what subject, is a less healthy exercise, and in early life a positively mischievous one" (Boole, 1931b, p. 6; emphasis in the original). Mr. Boole had become convinced of the importance of practice preceding understanding during his time as a schoolmaster. Already in a lecture to the Lincoln Mechanics' Institute in 1848 he stressed that a "child acquaints itself with things before it learns the names of things [...] it does not begin with the rules of language but with the practice of language—and it is so also in the formation of the moral habitudes" (Boole, 2018, p. 148). This pedagogical viewpoint applied equally to intellectual as moral development. In an unfinished draft of an elementary textbook on mathematical logic, Mr. Boole wrote:

The student must [...] be contented in the beginning to follow certain directions and perform certain processes without inquiring into the proof of their validity. This is not an unreasonable requirement. Clear conception of the objects of a science and some practice in its methods are often great assistance in the attempt to master its principles.²¹

Whether raising children or instructing a reader in his algebraic approach to logic, Mr. Boole applied a consistent theory of the mind as an organ that learns by doing and thus benefits first of all from a properly formed habit. This suggestion of a subconscious learning process that precedes rational comprehension would become an important theme in Mrs. Boole's own pedagogical thought.

²¹ George Boole, fragment C45, pp. Q.8–Q.9, in Box 3/8, George Boole Papers, MS 782, Library of the Royal Society, London, United Kingdom. On the textbook project to which this fragment seems to belong, see Dunning (2020, pp. 65–76).

Thus Mr. Boole taught Mrs. Boole mathematics, and together they taught their children according to their moral commitments. The “sunny dream” of their marriage was cut shorter than necessary by Mr. Boole not living into old age, but given their age difference they had always expected for her to have many years remaining without him.²² Mr. Boole was, according to Mrs. Boole, “fond of picturing in our conversations what my life would be when the children grew old enough to be a help and comfort to me. But if I brought him into the picture he would stop me at once. ‘No, my child,’ he would say, ‘you will be very happy, but I shall not be there’” (Boole, 1931b, pp. 36–37; Fig. 2). They did not avoid talking about the family’s life without him; they shared a view of their time together as one chapter to be followed by others.

From the domestic sphere to the printed page

A career, like a marriage, is a malleable construct that takes on specific meaning meaning through narration: a career is a narrative of work done over the course of an individual life. And that narrating is not limited to a single voice. A celebrated mathematician, for example, is—by definition—celebrated by other people: others have collaborated in the project of narrating that individual’s life as one in which extraordinary work was accomplished. An individual’s mathematical career can continue to be shaped and reimagined after their death. Mary Everest Boole, having been her husband’s confidant and interlocutor while he was

²² Mrs. Boole has sometimes been unfairly blamed for George’s untimely death. The myth suggests that she, out of her own misplaced trust in crank doctors and medical theories, called for treatment that seems to have been lamentably misguided. Desmond MacHale and Yvonne Cohen have recently debunked this accusation, using Mr. Boole’s correspondence to demonstrate that his serious interest in hydropathy predated his marriage to Mary Everest. In light of today’s knowledge his death appears to have been avoidable, but the likely unhelpful treatment he received was consistent with his own medical views and preferences. The sources do not support the insinuation that Mrs. Boole imposed any quackery on him in his final days (Boole, 2018, pp. 331–42).

alive, continued to contribute to the project of constructing his career and legacy after he was gone. She began to write, and he occupied a central place in her writing.

She entered the world of authorship only gradually. In the immediate aftermath of Mr. Boole's death, she first supported herself by taking a job as a librarian at Queen's College in London, in 1865. She obtained this post through Frederick Denison Maurice, a prominent theologian of a liberalizing persuasion and a founding figure in Christian socialism. Mr. Boole had profoundly revered Maurice, though he disagreed with him considerably. The Booles had been preparing to reach out to him when Mr. Boole died; the newly widowed Mrs. Boole followed through on writing to Maurice and he promptly offered her a job (Cobham, 1951, p. 25).²³

Queen's was a women's college that offered education but no degrees. Students were taught by male professors, and, as Mrs. Boole recalled, "women were admitted on the teaching staff only as subordinate assistants" (Boole, 1931f, p. 1092). Despite her formally subordinate role, she began offering what she described as "a true-logic class" on Sunday evenings. What she meant by this evidently risked appearing subversive. Queen's operated under clerical auspices, and Mrs. Boole "had therefore to be very careful not to suggest doubts of the wisdom either of clerical authorities generally, or of our own in particular" (Boole, 1905, p. 133). She drew a stark contrast between the week's formal instruction and her Sunday evening lessons:

²³ Mrs. Boole recounted her relationship with Maurice in (Boole, 1931d). It has been suggested that, on Maurice's advice, she destroyed a large amount of material she had collected for an extended biography of her husband (MacHale and Cohen, 2018, p. 324).

On week-days the girls had, of course to attend to one subject at a time, and to look at each from a prescribed point of view. On Sundays I read to them any book, or allowed them to talk of any subject, that seemed to interest them, and encouraged the free play of their minds; but I took care to lead the conversation into the channel of finding what light one subject of study throws on another. The characteristics of the week-day lessons being *submission* and *specialization*, I made those of the Sunday lessons *free expansion* and *unification* (Boole, 1905, p. 133; emphases in the original).

The distinction here was not between stultifying discipline and progressive freedom; Mrs. Boole was adamant that the *alternation* between these modes of study was the key to true learning. She quoted a student's high praise of the instruction she received on those Sunday evenings and commented that "the result indicated is due to the observance of a Sabbath of Freedom, sharply contrasted with week-day discipline. No such good effects follow the practice of leaving girls to think at random, and to study what they choose (or not study at all), all the week long" (Boole, 1905, p. 134).²⁴

Mrs. Boole spent a decade at Queen's before leaving in 1873 and briefly obtaining employment as secretary to her friend James Hinton (1822–1875), a fashionable surgeon, altruist philosopher-cum-mystic, and later notorious as an alleged advocate of polygamy.²⁵ She acknowledged the rather drastic shift of affiliation from Maurice's sphere to Hinton's, recalling, "My way was thenceforth not difficult to see:—If they reject you in one clique flee to another"

²⁴ On Mrs. Boole's far-reaching commitment to the value of alternating between opposites, see Valente (2010).

²⁵ On Hinton, see Clark (2011) and Koven (2004, introduction).

(Boole, 1908, p. x). The precise nature of her rejection at Queen's remains murky. She either resigned or was terminated due to some combination of her growing heterodoxy and her unstable mental health at the time (1905, p. 134).²⁶ Her friendship with Hinton had begun during her years as librarian at Queen's, and they grew closer while she worked for him. Rumored to be lovers, they were in any case intensely close intellectually, rapturously stimulating one another's interest in religious and mathematical topics liberally construed.²⁷ In 1880, five years after Hinton's death, his son Charles Howard Hinton (1853–1907) married the Booles' eldest daughter Mary Ellen Boole (1856–1908). The younger Hinton played his own important role in the cultural history of the Victorian mathematical imagination, popularizing a metaphysically loaded notion of four-dimensional space.²⁸

Though her professional and financial situation remained irregular, the widowed chapters of her life ultimately turned out to be a time of immense productivity. Moving in religiously nonconformist circles in turn-of-the-century London, so unlike her family's midcentury Cork milieu, she no longer confined herself to what Mr. Boole had deemed a wife and mother's sphere of action. She began to write and in time became an extremely prolific and wide-ranging author. Sometime in the early 1880s she wrote *The Message of Psychic Science to the World*, based on some lectures she had given to ladies she described as eager to understand "the

²⁶ On the college authorities' wariness of Mrs. Boole, see Kaye (1972, pp. 101–2). Kaye refers to her departure as termination, but George Batchelor reports that according to the Council of Queen's College meeting minutes she resigned while suffering a "temporary derangement" (1996, p. 18).

²⁷ She invoked his friendship in (1884, p. vi), and referred to his ideas numerous times in that work. Havelock Ellis, in his notes on Hinton, recorded that according to Mrs. Fancourt Barnes "Mrs. Boole really was his mistress"; Notes by Havelock Ellis, 1884, f. 41, Add. MS. 70528, Havelock Ellis Papers, vol. V (ff. 129), Miscellaneous correspondence and papers relating to Hinton, British Library London. I am indebted to the identification of this letter by Anna Clark (2011, p. 53).

²⁸ On Charles Hinton see Henderson (2013); Throesch (2017); and Blacklock (2018).

opinions really held by some of those authors whose views [they had] seen caricatured in *Punch* and censured in religious periodicals”; in particular, Mrs. Boole discussed Darwin’s theory of evolution, mesmerism, spiritualism, homeopathy, and phrenology (Boole, 1908, p. 2). The work had a troubled publication history. In her preface to its eventual 1908 edition published by C. W. Daniel, she recounted that Maurice, himself “a fanatical opponent of all investigation of such phenomena from the experimental or scientific side,” nonetheless “believed the Church of England system made possible an indefinite expansion of liberality.” He therefore reportedly told her “I cannot advise the publication of a book which I do not understand. If you have any doubts, it is safest to delay. But if you see your way, *let nothing stop you*” (pp. ix–x; emphasis in the original). She claimed that Macmillan accepted the manuscript but allies of Maurice believed it would reflect badly on their movement and pressured the publisher into suppressing it, so instead she had it privately printed in 1883. The text opened with a poem by George Boole, “The Fellowship of the Dead,” celebrating the harmonious afterlives of “All who with a pure intent / Were on Nature’s knowledge bent” (p. vii). Thus prefaced, all that followed was presumably to be taken as pure pursuit of natural knowledge in the manner Mr. Boole commended.

The next year she published *Symbolical Methods of Study*, a volume based on her Sunday evening lessons. Here “symbolical methods” seem to serve as an evocative label for a whole outlook rather than a set of mathematical techniques in any ordinary sense. She described it as “a humble attempt to reproduce in a form intelligible to young people, the thoughts of some teachers of Symbolic Method of our time” —George Boole prominent among them— “as expressed in their conversation and letters.” She connected, for example, “G. Boole’s idea that

the perfect friendship is that which exists between two persons of exactly opposite tastes and habits of thought harmonized by similar aims and views of life” to the use of x and $1 - x$ to denote a class and its complement in his algebraic system (Boole, 1908, p. vii).

Her writing continued apace from then on. By the time of her death in 1916, a half-century after Mr. Boole’s, she had published over a dozen books and penned articles for a diverse swath of periodicals. Her *Collected Works* (Cobham, 1931) fill four volumes and over fifteen hundred pages. She treated a bewildering span of topics, often discussing mathematics, mental hygiene, and mythology all on the same page. As one devotee described her omnivorous interests, “all is fish which comes to her net” (Daniel, 1923, p. 19). Eclectic as this work was, however, its focus on learning and mental development was nearly constant.

Her best-known contributions to educational thinking were *Lectures on the Logic of Arithmetic* (Boole, 1903) and *The Preparation of the Child for Science* (Boole, 1904), both published by the Clarendon Press in Oxford. The *Lectures* offered a series of meditative lessons intended to supplement rather than replace an arithmetic textbook. “Not more than one chapter is intended for use in any one term,” she rather cautiously stipulated, explaining that this “lesson for the term may be repeated each week with varying illustrations” (Boole, 1903, p. 7). Each lesson aimed to clarify the purpose of some potentially puzzling aspect of arithmetic, “to present the premises involved in various arithmetical operations in a manner which concentrates instead of scattering the power of attention, and thus leaves the pupils fit to attend to the teacher’s reasoning” (p. 11). Mrs. Boole engaged frequently in speculative anthropology, reasoning for example, “We may be sure that Primitive Man could tell his wife that there was a wolf near when he could not say ‘Six Wolves.’ Perhaps he said ‘Woo-oo-oo-oo’ by way of a sort of

imitation of a wolf's howl" (p. 33). Typical Victorian notions of savagery and civilization abound, though somewhat surprisingly she located her imagined savages in England rather than farther afield: "You have heard, my dears, that, a long time ago, there were no people in this country except savages" (p. 29). She used these images of the deep past to explain the conventions and abstractions contemporary adults insisted children learn to use:

Very long ago people had no notion how to make cakes or puddings. When they caught an animal, they roasted it by a fire; and when they found roots fit to eat, they roasted them in hot ashes; and that was all they knew about cooking [...]. Suppose a woman is a very clever cook and finds out how to make things just right, it is well for her to be able to tell other women just what she found answered best [...]. Now how is the woman, who has made a nice cake, to tell others how much she put in? She has to use weights or else measures (Boole, 1903, pp. 66–67).

Her speculative narratives frequently related to food and often transposed images of conventional Victorian gender roles to the imagined past. In this context she illustrated mathematical devices serving clear everyday functions, thereby aiming to reveal some sensible purpose to arithmetical training.

In *Preparation of the Child for Science*, Boole emphasized the role of the unconscious mind in learning. She suggested that, while science had largely supplanted classics as the subject most parents wanted their children to study, assumptions about education grounded in the study of ancient languages continued to shape instruction in areas of study where they were completely

inappropriate. In place of an old-fashioned emphasis on learning facts correctly from the start, she proposed an approach to early learning that revolved around unsupervised play. Parents were responsible for “providing abundantly safe opportunities for going wrong, and learning by experience, in matters of no consequence” (Boole, 1904, p. 56). She stressed also the crucial role of the passage of time, arguing that this sort of play did not itself lead to scientific learning but rather prepared the ground of the unconscious mind; only over a period of years did this preparatory activity yield readiness to learn scientific theory. More important than the caliber of the textbook or even the teacher, she wrote, was “a sufficient time-interval between the child’s first introduction to the subject and his first introduction to the textbook and its machinery” (p. 88). She recalled her own youthful discovery that she could create curves by stitching certain patterns of lines, and how she explored this craft for fun without direction or instruction. Later, when she studied geometry, “the teacher came not as an outsider thrusting on me the knowledge of something unfamiliar and strange; but as a brother-seer more advanced than myself, who could show me how to make further progress on a path which I had already entered with delight” (p. 92). Playful exploration and time elapsed had established a tacit, intuitive feel for certain shapes and their relations, on which a knowledge of geometry proper could be built. Learning was a way of life that unfolded over time; proper education could not be rushed by overzealous parents and teachers.

Mrs. Boole positioned this volume in a detailed intellectual lineage with a preface describing it as “an attempt to utilize on behalf of little children the life-work of many great men now almost forgotten” (p. 7). She then provided short descriptions of the work of ten key influences, among them French philosopher and encyclopedist Nicolas Antoine Boulanger,

English polymath Charles Babbage, Indian mathematician Ramchundra, and of course her husband. She linked Mr. Boole's "self-acting algebraic notation" to Babbage's "Automatic Thinker of iron and brass," declaring that both reveal "the psychological value of certain traditional opinions on metaphysical subjects"; she asserted that the use of Boole's notations in the physical sciences "would be largely facilitated if mathematical teachers had clear idea of their meaning and origin" (pp. 8–9). Through her publications she sought to disseminate these lessons as she understood them. Viewed through the lens of education as an overarching project—that is, the lens Mrs. Boole applied in her home-side account—her and her husband's respective works appear to stand in closer proximity.

A legacy of one's own

Mrs. Boole's image of a deeply and constantly pedagogical homelife was by all indications well grounded in reality. That image also, by portraying Mr. Boole as a primarily pedagogical thinker, served to enlist his authority and prestige in support of Mrs. Boole's own more explicitly pedagogical writings. By emphasizing their shared focus on teaching that was revealed by a domestic perspective, she highlighted the threads common to his writing and hers. She did not need to present herself as a mathematical scholar as her husband had been recognized in order to wield his scholarly authority. When Mrs. Boole portrayed herself, in recollections, as an utterly naive reader of Mr. Boole's mathematical drafts, she was describing her *past* ignorance; their domestic collaboration had resulted in serious learning. And later, when she was a widow and a prolific author, she no longer equated herself with the

“uninstructed public.” Nor did she present herself as a mathematical researcher; her focus was unambiguously on education, mathematical and otherwise.

While her overarching pedagogical attitude was consistent, the subject matter of Mrs. Boole’s works ranged freely; her reception was often characterized by a sense that her volume’s titles tended not to indicate their contents transparently. A review essay considered her *Symbolical Methods of Study*, published in 1884 by Kegan Paul, Trench & Co., alongside recent works on logic by F. H. Bradley, J. N. Keynes, and A. Sedgwick. The reviewer noted,

We have added Mrs. Boole’s book to the other works on our list mainly on account of its title, which misled us and may mislead students of logic into thinking that some further revelation as to Boole’s logic is contained in Mrs. Boole’s little volume. This consists, however, of certain mystical applications of symbolism, and, at the same time, of some very shrewd comments [...]. Mrs. Boole’s book is in reality a collection of *pensées*, often fanciful, but still more often full of sympathetic insight [...]. The little volume may be recommended to a far wider circle than its badly chosen title would be likely to attract (Anonymous, 1984, pp. 467–68).²⁹

Even more mainstream books such as *Lectures on the Logic of Arithmetic* largely matched this description. A review of that later work in the same periodical expressed a similar complaint:

²⁹ The review misprinted her title as “*Symbolic Methods of Study*.”

This is emphatically an interesting little book, but hardly in the way one would suppose from its title. It is, in truth, an amusing mixture of sense and nonsense. The relevance of much of its varied matter to the subject of logic or arithmetic is not easy to detect; but, in spite of this rather serious drawback from the educational point of view, Mrs. Boole somehow manages to captivate the reader by the quaintness and originality of her discussions (Anonymous, 1904, pp. 55–56).

It was often difficult to know what Mrs. Boole was talking about, but there was a recurring pattern of readers finding her words strangely compelling all the same. Even her most sympathetic supporters acknowledged that clarity tended to flicker rather than shine steadily in her writing. But the sense of underlying wisdom her admirers perceived was profound. One such admirer was Florence Daniel, whose husband, the prominent radical publisher Charles Daniel, published many of Mrs. Boole's books. In Mrs. Daniel's words, "[S]ometimes it seemed to me that she was mad, and sometimes inspired. Sometimes what she said seemed the simplest commonsense, at other times, her words were stumbling blocks and her ideas seemed foolishness. Then came revelation, and the glory of that series of perceptions is over me still" (Daniel, 1923, p. 22).

After Mrs. Boole's death, her works found a receptive audience among members of the progressive education movement in the United States of America, achieving greater recognition than they had in Britain during her lifetime, though still tending to win scattered admiration rather than traceable influence. Her refrain that mathematics is "a hygienic gymnastic for the brain" appealed to advocates of the ascendent mental hygiene movement, which asserted that

personality development was a primary concern of elementary education, which should therefore be informed by psychiatry.³⁰ Mrs. Boole found a particularly ardent devotee in Ethel Sturges Dummer, an activist and author who played an important role as a kind of patron and organizer in the Chicago School of sociology and was also involved in the progressive movement in education. Dummer, whose personal library functioned as a significant communal institution, promoted Mrs. Boole by eagerly lending out her works. She stressed Mrs. Boole's prescience in emphasizing unconscious mental processes long before the gradual embrace of Sigmund Freud's work in the United States made interest in the unconscious mind widespread.³¹

Dummer seems to have been the driving force behind the publication of Boole's four-volume *Collected Works*, the very existence of which encapsulates her idiosyncratic reception. The collection, edited by E. M. Cobham and put out by C. W. Daniel in 1931, seems to suggest by its scale alone that Mrs. Boole commanded some kind of audience. C. W. Daniel was an important disseminator of anarchist, pacifist, and vegetarian literature, a major early publisher of Tolstoy's works in English translation, and also a leader in the spread of cheap paperbacks with his "People's Classics" series.³² His financial risk in this case, however, was substantially defrayed by Dummer, who offered to cover costs up to £500 for a *Collected Works* originally

³⁰ E.g. M. E. Boole (1897, p. 27). On the mental hygiene movement in America, see Cohen (1983).

³¹ Dummer (1931, p. x). On Dummer, see Platt (1992; her "virtually public" library discussed at p. 26); also relevant is a biography by Dummer's granddaughter, Ethel M. Lichtman (2009). On the reception of Freud in the United States, see Burnham (2012).

³² On Daniel, see the online appendices to the Archives of the Charles William Daniel Company, ARCH00279, International Institute of Social History, Amsterdam, The Netherlands (hereafter: **Daniel Papers**), <https://search.iisg.amsterdam/Record/ARCH00279> (accessed 14 October 2023). Mrs. Boole became close with Mr. Daniel and his wife Florence, as evidenced by friendly letters to "Dear Charlie" in which she asks him to "give Florence a scolding and kiss for me" and hoping they would make a promised visit to see her soon (n.d.). Mary Everest Boole to Charles Daniel, 20 November [no year given], Folder 217, Accrual 2005, Daniel Papers.

expected to comprise two volumes. Once assembled, Mrs. Boole's writings filled more than twice as many pages as the editor and publisher had anticipated. Dummer extended her contribution by advancing another £200 purchasing copies to distribute in America, while the C. W. Daniel Company assumed responsibility for the remainder of the approximately £1,200 that the venture ultimately cost (Daniel, 1929; 1930a; 1930b; Dummer, 1930).³³

Financial support by an individual philanthropist should not be taken as indication that the volumes constituted a mere vanity project. Dummer regularly supported academic endeavors in a manner comparable to the (then emerging) role of foundations and funding agencies.³⁴ Readers took Boole's *Collected Works* seriously, though likely not in sufficient numbers to justify their publication on commercial grounds. Mathematician Dorothy Wrinch greeted their publication with "great delight" in a review for *The Mathematical Gazette*, characterizing Mrs. Boole's as "a mind which had always one and the same desire, namely to seek truth by means of the canons of scientific method, whatever the subject-matter which happened at the moment to be engaging her attention." She tactfully noted that, as a result, "Much of these four volumes is of interest only as a record of an exceptional and an exceptionally gifted personality," while affirming that the core pedagogical works—especially *Lectures on the Logic of Arithmetic* and *The Preparation of the Child for Science*, also *Philosophy and Fun of Algebra* and *Some Master Keys of the Science of Notation*—"are of value in themselves" (Wrinch, 1933, p. 331).

³³ C. W. Daniel to Ethel Dummer, 29 August 1929; C. W. Daniel to Ethel Dummer, 20 October 1930; Ethel Dummer to C. W. Daniel, 7 November 1930; C. W. Daniel to Ethel Dummer, 22 November 1930, all in the Papers of Ethel Sturges Dummer, 1689-1962, A-127; M-55, 514., Box: 32, Schlesinger Library, Radcliffe Institute,

³⁴ For a comparison of Dummer's activity to other contemporary funding models, see Platt (1992, pp. 25-26).

Appropriately, it is the pedagogical core of Mrs. Boole's thought that continues to engage occasional readers even today. A concept she dubbed "teacher lust" — an instructor or leader's "desire to make those under him conform to his ideals" — is a topic of some ongoing discussion in scholarship on pedagogy (Boole, 1911, pp. 141–44, quote on p. 143).³⁵ Her most successful pedagogical contribution was likely the technique of curve-stitching, which (as mentioned above) she invented while still a child and later realized furnished valuable mathematical experience.³⁶ By stitching a series of straight lines, children could produce the appearance of curves, hopefully gaining geometric intuition along the way. Thus the quintessentially feminine-coded practice of stitching became a means to traditionally masculinized mathematical knowledge. In *Lectures on the Logic of Arithmetic*, Boole offered a lesson to prepare the way for this activity. She instructed students to picture an enclosed field with a rabbit hole in one corner. The rabbit has wandered to an adjacent corner, when a dog enters through the gate, in the center of the side opposite the side bounded by the rabbit's current location and its hole. Using a diagram on the blackboard, the teacher charts the rabbit's dash along the wall back to its home and the dog's simultaneous sprint in a straight line toward it at each successful moment (Fig. 3). "Now sit slack, shut eyes, and think what the curved line is and how it came. Open eyes and sit up. What is the curved line? The path which the dog really ran, when at each step he meant only to go down some straight line" (Boole, 1904, p. 136).

³⁵ Boole insisted on the parallelism of the cravings of stomach, sex-organ, and brain, making the materialist observation that "All desires are lusts of the flesh in so far as they are prompted by impulses stored up in any part of the nervous tissue" and rejecting "any such foolish notion as that sex-passion is a lust of the flesh and teacher-lust is a thing pure and good, which may legitimately be indulged in to the uttermost" (ibid., pp. 141; 143). Recent interest has not emphasized the analogy to other forms of lust, instead developing teacher lust as a model of one particular well-intentioned but arguably unproductive teaching behavior. See Tyminski (2010).

³⁶ She recounted her youthful discovery in (1904, pp. 91–93). On this part of her work, see Innes (2004).

Made vivid through narrative, this meditative exercise shows how straight lines can define a curve, a phenomenon she also encouraged children to explore with a needle and thread. This tactile practice of curve-stitching remains a valued activity in mathematical pedagogy today, as illustrated by an American Mathematical Society outreach activity at the 2016 USA Science & Engineering Festival (Fig. 4), and by the experiment described in (Magrone et al., 2019).

Conclusion: The uses of home-side history

Mrs. Boole published recollections that cast her husband's work in a light that amplified real but partial affinities between their intellectual projects. In so doing, she made their shared domesticity a resource. When she wrote in a brief 1904 article that Mr. Boole "had always intended to write out some day in plain English the meaning of his magical notations; but, as he used to say, he could not see his way," the implication was clear that her own work offered the best available insight into the meaning of a prestigious mathematical legacy (Boole, 1931e, p. 76). This inherited prestige by association was valuable but not decisive: her devotees valued her work for its own insights, insights of a kind quite foreign to Mr. Boole's writing. And on the other hand, any algebraic logician suspicious of mystical *pensées* would perceive quickly upon opening one of her books the nature of the project she pursued. During her widowhood in London, she moved in circles quite different from the world the family had inhabited in Cork, and the writing she produced bore little resemblance to Mr. Boole's. Mrs. Boole's modest but definite success as an idiosyncratic pedagogical author is thus certainly not reducible to her husband's legacy; rather that legacy served as one critical ingredient in the career she built for herself.

That she was able to enlist Mr. Boole's legacy as an element of her own authority was due to the pedagogical domestic history she could credibly present as central to his thought and work. In her public account of the home-side of George Boole's mind, Mary Everest Boole crafted a fundamentally didactic image that encompassed both the mathematical and moral significance of his life. She thereby projected a sense of continuity with her own explicitly pedagogical writing. George Boole's career was a narrative project on which they both worked in different ways and at different times. She contributed to that career by helping him revise his work for clarity while he was alive, and she continued to work on it by casting it in new narrative light after his death—while, simultaneously, beginning to construct an authorial career of her own, and wielding his authority as a source of credibility. By asserting the importance of her domestic perspective on her husband's mathematics and logic, Mary Everest Boole positioned herself as an indispensable voice in the construction of an inseparably mathematical, moral, and pedagogical legacy for George Boole.

A pedagogical worldview was central to their asynchronously shared intellectual project; but there can be no ignoring the fact that, after Mr. Boole's death, of the two, only Mrs. Boole could exert active, ongoing agency over that project. We have no means of drawing an exact boundary between the commitments they shared and those she articulated independently but expressed in the context of elucidating his work. As an asynchronous collaborator, Mrs. Boole claimed a stake in the narrative around Mr. Boole's work. She shaped that narrative, both in her articulation of an individual perspective, and in the lasting influence she exerted on later historians, even while not all her claims have been accepted by other writers. In this way, even though George Boole was deceased, Mary Everest Boole continued to contribute to the project

of defining his work's significance along lines she could plausibly claim had structured their domestic life together. Not only does a scientific mind have its home-side, but a home, its science, and the way they get remembered, are often the work of more than one mind.

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