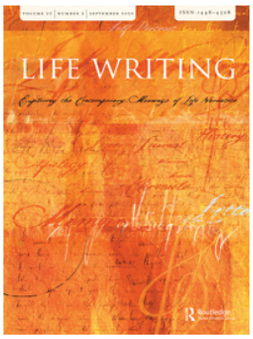

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Technologies of Automathographies: Mary Somerville and the Republic of Mathematics

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ABSTRACT

This paper reads Mary Somerville's *Personal Recollections* as an archive of *automathography*, tracing her desire to become a mathematician within the constraints of Victorian auto/biography. It argues that mathematics is both the object of Somerville's desire and the driving force of her retrospective gaze. While shaped by significant editorial interventions, the memoir mobilises the conventions of life writing to negotiate gendered discourses of knowledge, authority, and intellectual legitimacy. Somerville's love for mathematics emerges early in her narrative, then recedes into the background – sustained through selective editorial strategies such as the inclusion of letters, social anecdotes, and accounts of intellectual affiliation – before resurfacing with intensity in the final chapters as a site of longing and loss. By reading the *Recollections* through an *automathographic* lens, this paper reveals a dynamic rhythm of presence and absence in the telling of Somerville's mathematical becoming. In doing so, it argues that her memoir does not merely reflect on a life of mathematical passion; it actively founds and sustains her place within the Republic of Mathematics – a domain historically shaped by masculine affiliation but reimagined here through the intimate logic of *automathographical* desire.

KEYWORDS

Mary Somerville; automathographics; mathematics and desire; gender and science; narrative assemblage; Republic of Mathematics

> I am now in my 92nd year (1872); still able to drive out for several hours; I am extremely deaf, and my memory of ordinary events, and especially of the names of people, is failing, but not for mathematical and scientific subjects. I am still able to read books on the higher algebra for four or five hours in the morning, and even to solve the problems. Sometimes I find them difficult, but my old obstinacy remains, for if I do not succeed today, I attack them again on the morrow. I also enjoy reading about all the new discoveries and theories in the scientific world on all branches of science. (Somerville 2001, 303)

In the last pages of her *Recollections* Mary Somerville reflects on the physical and mental abilities of her old age and although admitting failures in hearing and remembering 'ordinary events' and people's names, she takes pride in the fact that her skills in reading, understanding and practising higher mathematics remain unassailable, while the pleasure of learning about new scientific theories and ideas is both fervent and intense.

Mary Somerville's *Personal Recollections* were first published in 1873, a year after her death, as a book edited, curated, and annotated by her daughter Martha. The work saw multiple editions following its initial release.[1] There are two versions of the manuscript of the *Recollections* in Somerville's papers, housed at the Bodleian library in Oxford: a first draft handwritten by Mary Somerville probably around 1869 and a second draft handwritten by Mary's daughter, Martha Somerville, with textual insertions written by her mother.[2] Finally, in 2001, Dorothy McMillan edited the *Recollections* in a new publication which includes extracts from the first and second draft. While receiving a number of favourable reviews at the time of its publication (see McMillan 2001, 9), Somerville's memoir was forgotten, until it was reprinted in 1975 by the American Mathematical Society. Although Somerville's position in the history of science and mathematics was mostly marginalised and forgotten in the twentieth century (see Stenhouse 2021a, 10), her memoir and scientific

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work did become the object of a small number of studies.[3] In this context and within the area of auto/biographical research, Alice Jenkins has examined the *Recollections* as a case study in Victorian print culture, focusing in particular on 'questions of mediation, relation and originality, as they were manifested in Somerville's situation as a writer who was not male, not English, and yet an iconic figure in Victorian British culture' (1999, 163). Jenkins is more interested in Somerville's authorial intentions in the wider context of the conventions of Victorian autobiography. In this light she reads Somerville's account of her life alongside the autobiographies of three other eminent Victorian intellectuals, Frances Power Cobbe, Harriet Martineau and Margaret Oliphant. Cobbe and Martineau were Somerville's friends, communicating mostly through letters, while Cobbe influenced the final editing of the *Recollections*, as transpires from her correspondence with Martha Somerville:

> I think your Introduction is most touching and so genuine and honest, it is sure to go straight to the reader's heart […]. I have only made a few verbal alterations twisting some of the sentences a little (so as to avoid the little colloquialisms you fall into of ending your sentences with a preposition and dividing some of them a little differently). But I would not touch the substance of what you say for anything. […] Dear Martha I feel quite happy now about the work. The book will make the world love your Mother more and not admire her an atom the less.[4]

In editing her mother's memoir, Martha Somerville followed the advice of several friends; however, she remained within the conventions of Victorian autobiography, framing the narrative through the lens of the angel in the house – a domestic ideal – while also highlighting her mother's mathematical and scientific achievements. Julia Swindells (1999) has critically examined Martha's editorial choices, particularly her ambivalence in both defending her mother's radical views and contending with the contradictions of being a woman scientist – an emerging and often contested figure in Victorian culture and beyond. Swindells argues that Mary Somerville's decision to write her *Recollections* was, in essence, an act of reckoning with the past, an attempt to make sense of a life devoted to science while simultaneously navigating the roles of woman, daughter, wife, and mother: 'an autobiography which negotiates (abetted by editorial processes) its subject, its first person, and its narrative around the relationship between science and domesticity' (Swindells 1999, 100).

Over the years, scholars have examined the sections of the first and second drafts that were excluded from the 1873 publication and its subsequent editions. More recently, Somerville's life and work have attracted renewed critical attention, particularly within the histories of science and mathematics, as well as in interdisciplinary studies exploring the entanglements of science and literature. [5] This paper advances these discussions by shifting the focus from the editorial omissions in Somerville's published memoir to the significance of its selections.

Bringing together Paul Halmos' (1985) concept of 'automathography' – the unfolding of a life through mathematics – and Leigh Gilmore's notion of 'autobiographics' (1994), which interrogates the interplay of truth and power in autobiographical writing, I argue that Somerville's memoir is not merely a retrospective account but a site of becoming, shaped by what I conceptualise as *technologies of automathographies*. These technologies do not function as static inscriptions of a life already lived but as dynamic *assemblages* – configurations of heterogeneous elements, including texts, bodies, affects, and social structures, that do not simply reflect pre-existing identities but produce new modes of existence.[6] In this light Somerville's memoir does not fix her within a stable subject-position but instead charts a plane where mathematical thought and life emerge through desire, movement, and transformation. By reading her memoir as an assemblage – an open-ended constellation of forces rather than a closed textual artefact – this paper offers a novel epistemological framework within life history research, foregrounding the unstable, nonlinear processes through which Somerville's mathematical subjectivity takes shape.

The paper unfolds in four interwoven parts, each tracing a facet of Mary Somerville's automathographical desire under the umbrella of the Republic of Mathematics (Oosterhoff 2016), a notional space of intellectual and affective belonging that both echoes and exceeds the earlier 'Republic of Letters', as I will further discuss. This imagined republic functions here not only as a historical reference but as an epistemic structure that holds together the disparate identities and narrative tensions that Somerville's memoir negotiates. Following the introduction, I begin with an overview of scientific life writing, outlining its genre-specific constraints and the gendered conditions of authorship that frame Somerville's *Personal Recollections*. I

then chart *Automathographical Desires* within the plane of the 'Republic of Mathematics' across five subsections. *First Encounters* traces the emergence of Somerville's mathematical desire through informal and affective moments – glimpses of algebra, advice from a painter, and self-directed study – rather than formal instruction. These scenes mark the genesis of her automathographical becoming. *Flows and Interruptions* examines how domestic and social constraints, particularly her first marriage, threaten to displace her intellectual life. Yet her desire persists, finding expression through solitude and resistance. Here, automathography becomes a means of sustaining thought under erasure. *Daughter, Widow, Mother, and Student of Mathematics* explores how familial roles and experiences of loss intersect with, rather than obstruct, Somerville's epistemic life. These entangled identities become formative conditions of her belonging to the 'Republic of Mathematics'.

Becoming a Mathematician and Scientist considers how Somerville constructs a scientific self within – and often against – the gendered expectations of nineteenth-century science. Her love for mathematics emerges not as background, but as a structuring desire that enables her intellectual entry. Finally, *Writing and Publishing in Science and Mathematics* attends to the editorial strategies and recognitions that shaped the memoir's public reception. These narrative choices simultaneously constrain and amplify her automathographical voice, allowing her to claim epistemic legitimacy within a republic that did not assume her place. In conclusion, I return to automathography as a conceptual tool – not merely a genre but a form of epistemic narration under exclusion. Somerville's *Recollections* do not just recount a life shaped by mathematical longing; they actively reimagine the contours of the Republic of Mathematics itself.

Writing the female self in science and mathematics

Evelyn Fox Keller (1977, 90) highlights the deep reluctance within the scientific community – especially for women – to share personal impressions and experiences, particularly when they cast science in a negative light. Auto/biographical writing, in its various forms, challenges the long-standing ideals of objectivity and disinterest that have shaped both scientific discourse and the figure of the scientist. For women, these challenges are even more pronounced, reinforcing the now well-established argument that 'gender shapes the culture of science, just as it shapes any other culture' (Govoni 2014, 14). Georgina Ferry (2014, 59) further observes that biography has long been a contentious genre for historians of science, not merely a tool for recovering forgotten figures or making their work accessible. Paola Govoni (2000) has similarly explored the uneasy relationship between biography and feminism, which has contributed to the biographical approach's low epistemic status in the history of science. More broadly, Massimo Mazzotti (2014, 114) notes that the auto/biographical genre – dating back to antiquity – has always oscillated between constructing heroic portrayals of scientists and reinforcing a narrative of human reason's progress.

Amid the challenges of using an auto/biographical approach in the history of science, mathematics stands out as an especially challenging field. Thomas Hankins (1979, 12) describes it as 'devilishly difficult' because 'mathematics seems to have a life unto itself'. Unlike physical theories, which are shaped by cultural worldviews, mathematics is seen as self-contained and self-referential. However, Hankins acknowledges that cultural influences can become apparent when mathematics intersects with physics and philosophy. In the opening pages of his automathography, Halmos states, 'I like words more than numbers and I always did' (1985, 8). He distinguishes an automathography from a traditional autobiography, which he defines as 'the story of my origins and my life' (1985, 8). Yet can such a separation truly be maintained? Throughout his account, Halmos reflects on childhood memories, personal aspirations, relationships, formative environments, and the broader political and cultural contexts that shaped his mathematical trajectory. His narrative unfolds from the vantage point of a male mathematician who navigated the professional networks and opportunities available to men in the twentieth century. This does not mean he was unaffected by prejudice – his identity as a Jewish immigrant with a Hungarian accent posed its own challenges, despite his American education (see Halmos 1985, 15). Still, as I read his automathography, I could not help but consider how profoundly different the experience of becoming a mathematician would have been for a woman in the same era, let alone in the nineteenth century, when Mary Somerville lived and worked as a mathematician and scientist.

In thus gendering Halmos' notion of 'automathographies', what I argue in this paper is that reading women mathematicians and scientists' auto/biographical documents is a way of better understanding not

only the gendered micro histories in science, but also and perhaps more importantly the slow process of the long way to gender equality, which is still unfolding in our days. In this light automathographies become an important tool in what drawing on Michel Foucault (1988) I configure as *technologies of automathographies*. In offering this notion, I redeploy Gilmore's notion of 'autobiographics' to configure the discursive ways in which truth and power are interwoven in the writing of auto/biographical texts:

> I offer the term *autobiographics* to describe those elements of self-representation, which are not bound by a philosophical definition of the self derived from Augustine, not content with the literary history of autobiography, those elements that instead mark a location in a text, where self-invention, self-discovery, and self-representation emerge within the technologies of autobiography- namely, those legalistic, literary, social and ecclesiastical discourses of truth and identity through which the subject of autobiography is produced. (1994, 42)

Just as Gilmore asserts that 'the autobiographical subject is a representation and its representation is its construction' (1994, 25), I argue that Somerville's image as a woman mathematician and scientist is actively produced through the automathographical act – the writing and editing of her *Recollections*. In this light, the lens of automathographics expands the notion of autobiographical writing by situating the act of narrating a mathematical life within broader epistemic, cultural, and gendered structures. It signals more than a personal recounting of mathematical formation; it encompasses the textual negotiations, strategic self-fashioning, and epistemological frameworks that shape how a mathematical life is inscribed and legitimised. Somerville's *Recollections* thus serve not merely as a retrospective account but as a site where competing discourses on gender, intellect, and scientific authority converge. The construction of her image as a woman mathematician unfolds within a discursive terrain that both enables and constrains the ways she can narrate her intellectual development. Given that the notion of a woman scientist – and particularly a woman mathematician – was met with scepticism and resistance, *Recollections* becomes a space of tension, where Somerville's mathematical self is both asserted and negotiated. The act of writing and editing her memoir constitutes an automathographical process, one that does not simply document but actively participates in the making of the woman mathematician as a historically and culturally emergent figure.

The passages in the *Recollections* that illuminate how Somerville conceptualised and articulated her mathematical formation do not only chart Somerville's personal intellectual trajectory but also reveal her contribution to the evolving cultural imagination of what it meant to be a woman engaged in both science and mathematics. Her memoir does more than recount a life; it participates in a broader historical moment when the boundaries between disciplines – once fluid and porous – were beginning to solidify, and when new forms of scientific and mathematical personhood were emerging in response. In earlier centuries, especially during the early modern period, science, mathematics, and philosophy were not separated into discrete domains. Figures such as Descartes, Newton and Leibniz moved easily across these fields, with intellectual activity understood as a unified pursuit encompassing natural philosophy, mathematical inquiry, and speculative thought. As Pamela Smith (2009) has emphasised, it was only in the late modern period that increasingly rigid disciplinary boundaries and professional hierarchies began to dominate, setting the stage for the specialised fields we now inhabit. Somerville's work occupies a transitional position in this landscape: she was both a mathematician and a scientist, equally at home translating and discussing Laplace's *Mécanique Céleste* (Somerville 1831), as she was composing *On the Connexion of the Physical Sciences*, a synthetic work that drew together astronomy, physics, chemistry, and geography (Somerville 1834). Indeed, Somerville is often hailed as 'the world's first scientist', a title linked to the supposed coining of the term *scientist* by William Whewell in his 1834 review of her book *On the Connexion of the Physical Sciences*. (Somerville 1834) The *Oxford English Dictionary* credits this review as the term's first recorded usage. However, as Brigitte Stenhouse (2021a, 1n1) has clarified, Whewell did not in fact use the word 'scientist' in that review, nor in any other context directly associated with Somerville's work. Still, the persistence of this attribution speaks to how Somerville came to embody the composite figure that the new term was intended to name – one who moved across disciplinary territories, integrating mathematical reasoning with empirical science in a mode of knowledge-making that was, at the time, only beginning to be institutionally defined.

This paper thus foregrounds the historical entanglement of mathematics and science – not only as it shaped Somerville's intellectual world, but as it resurfaces in her narrative self-construction. Her *Recollections* serve as a unique lens through which to examine how scientific and mathematical subjectivities were

formed in the interstices of disciplinary transformation, before the firm establishment of the categories we now take for granted. Somerville's example invites us to reconsider not only the gendered contours of scientific authorship, but also the very epistemic architectures that structure our understanding of science and mathematics as separate, specialised domains.

Automathographical desires

The language of love has long shaped the history of mathematics, not merely as metaphor but as a relational infrastructure through which knowledge, authority, and intellectual belonging were constituted. In early modern Europe, mathematical authors and their students routinely invoked amicitia and amatores matheseos – lovers of mathematics – in prefaces, paratexts, and colophons (see Oosterhoff 2016, 556–557). These expressions were never merely ornamental. They articulated a collective identity, positioning mathematics as a practice of emotional as well as intellectual commitment. In this 'Republic of Mathematics', as the sixteenth-century mathematician Oronce Fine had configured it (Oosterhoff 2016, 551), affection served as a mode of inscription: a way to claim authorship, forge alliances, and become legible within a pedagogical lineage.

This tradition of affective epistemology finds a distant but resonant echo in the writings of Mary Somerville. In contrast to the collaborative, paratextual declarations of Renaissance collectives, Somerville's articulation of mathematical love takes the form of a solitary, retrospective narrative. Her autobiographical writings present mathematics not only as a rational enterprise but as a deeply emotional and imaginative vocation. This automathographical love – a self-inscribed and gendered claim to mathematical life – extends the early modern idiom of love-as-affiliation while also transforming it. For Somerville, affection is no longer a public bond between peers, but an inward, sustaining force: a medium of wonder, perseverance, and belonging in a field that largely excluded her from formal recognition.

There is, then, a structural continuity between Renaissance and Romantic articulations of mathematical desire: both mobilise affect to sustain epistemic identity. Yet Somerville's iteration of this tradition diverges in crucial ways. Love, for her, is not a sign of collective affiliation but a resistant and restorative resource – an intimate logic through which she writes herself into what Oronce Fine once called 'a republic of mathematics' (Oosterhoff 2016), a domain that did not presume her inclusion. Her memoir is less a contribution to a preexisting intellectual community than the imaginative creation of one. Through the language of affection, Somerville reclaims what the early Republic of Letters claimed but rarely extended: the possibility of mathematical intimacy beyond the bonds of gendered privilege.

First invoked by Francesco Barbaro in 1417, the Republic of Letters was a notional community of scholars and readers, held together by shared practices of correspondence, reading, and intellectual exchange (Oosterhoff 2016, 552). As Richard Oosterhoff has observed, the respublica literarum was rooted in the humanist traditions of erudition and epistolary sociability, and functioned primarily as a rhetorical device: to invoke it was to gesture toward inclusion, to invite one's reader into a hoped-for public, to make of them a friend (2016, 552). When Oronce Fine reimagined this space as a Republic of Mathematics, he was not only aligning himself with that older lineage of humanist exchange, but also recasting mathematics itself as a site of affective and intellectual communion (Oosterhoff 2016, 553–554). Somerville, writing centuries later and from the margins of that tradition, both inherits and transforms this legacy – asserting through automathographical love the right to belong, and in doing so, reshaping the very contours of mathematical public life.

To understand the conditions of possibility for such an automathographical formation to emerge, it is important to trace the circumstances that led to the writing and eventual publication of her autobiographical reflections. The idea of composing an account of her life arose shortly after the publication of her final scientific work, Molecular and Microscopic Science (1869). At the time, Somerville and her two daughters were living in Italy, where they had settled around 1838 in response to a series of protracted financial crises that had afflicted the family over the years. The late 1860s marked a period of profound personal difficulty. Her husband William Somerville had died in 1861, followed by the death of her son Woronzow Greig in 1865. In the wake of these losses, Somerville found herself seeking a new direction in her scientific work. Although she initially considered returning to her earlier studies in physical science, it was her daughters who persuaded her to begin something new: to narrate the life she had lived through mathematics

I was now unoccupied, and felt the necessity of having something to do, desultory reading being insufficient to interest me; and as I had always considered the section on chemistry the weakest part of the connection of the Physical Sciences, I resolved to write it anew. My daughters strongly opposed this, saying, 'Why not write a new book?' (Somerville 2001, 280)

Somerville followed their advice and threw herself in a new field with some trepidation as

> 'it was a formidable undertaking at my age, considering that the general character of science had greatly changed'. (2021a) As Stenhouse has commented 'the type of books that Somerville wrote and published, especially as regarding mathematical content, was heavily influenced by her desire and need to make a profit from her writing'. (2021a, iii) But when the book was finally sent to print, Somerville did not feel at all happy with her decision to write 'a popular book' instead of engaging with her real passion for mathematics. She wrote candidly about her disillusion in the penultimate chapter of her *Recollections:*
>
> In writing this book [*Molecular and Microscopic science*] I made a great mistake, and repent it. Mathematics are the natural bent of my mind. If I had devoted myself exclusively to that study, I might probably have written something useful, as a new era had begun in that science. (Somerville 2001, 286)

Following the lineage of the amatores matheseos discussed above, Halmos insists that to become a mathematician, 'you must love mathematics more than anything else'. (1985, 400) Pure love is not enough of course, 'you must work at it hard and without stop, and you must never give up', he has further noted (Halmos 1985, 400). And yet when it comes to the hierarchy of existential needs, desires and strives, the love of mathematics comes first: 'I am not saying that the love of mathematics is more important than the love of other things. What I am saying is that to the extent that one's loves can be ordered, the greatest love of a mathematician (the way I would like to use the term) is mathematics' (Halmos 1985, 401).

It is precisely the allure of mathematics that emerges as the central object of Somerville's automathographical desire. Throughout the *Recollections*, we encounter this love not as a rhetorical flourish but as a vital force – what Hannah Arendt once described as a coup de foudre that 'lights up the heart' and opens it to 'the truest sense of the world' (Arendt 2002, DVI.3.126). Somerville's passion for mathematics pulses through her memoirs, surfacing both in explicit recollections and as a persistent subtextual rhythm. And yet, this passion has remained largely imperceptible in the dominant readings and interpretations of her Recollections – often overshadowed by more visible markers of scientific achievement or biographical convention.

First encounters

In what follows, I begin to retrace this affective genealogy of mathematical love, focusing on the early scenes in which Somerville's desire first takes narrative form. These initial moments – structured through the subtle *technologies of automathography* – signal not just the awakening of intellectual curiosity but the shaping of a lifelong attachment. We return, then, to Burntisland, her coastal hometown in Scotland, where an invitation from a young lady friend to view some 'fancy works' unexpectedly opened the door to the enchanted world of algebra:

> I went next day, and after admiring her work, and being told how it was done, she showed me a monthly magazine with coloured plates of ladies' dresses, charades, and puzzles. At the end of a page I read what appeared to me to be simply an arithmetical question; but on turning the page I was surprised to see strange looking lines mixed with letters, chiefly X's and Y's, and asked; 'What is that?' 'Oh', said Miss Ogilvie, 'it is a kind of arithmetic: they call it algebra; but I can tell you nothing about it'. (Somerville 2001, 70)

Although often mentioned in Somerville's biographical literature, her encounter with Miss Ogilvie's magazine, is I argue an act of automathographics par excellence: it marks the very moment in which Somerville's mathematical subjectivity begins to take shape – an event that is not merely autobiographical but constitutive of the way she constructs and narrates herself as a mathematician. Her coup de foudre for algebra is not framed as a gradual intellectual development but as an electrifying moment of revelation, a sudden encounter with an unknown yet deeply alluring language. This is not just a personal memory but an inscription of mathematical becoming, a moment in which desire and epistemology intertwine to form the conditions of possibility for Somerville's later trajectory.

Indeed, what makes this passage particularly striking is its staging of the event: Somerville is led to this discovery not through formal education or mentorship but through an incidental social visit, framed within

the domestic world of 'fancy works'. The juxtaposition between ornamental needlework – traditionally associated with femininity – and the 'strange looking lines mixed with letters' highlights a rupture between the expected trajectory of a young girl's education and the alternative path Somerville's desire for mathematics will take. The encounter itself is mediated through a lack of knowledge – Miss Ogilvie cannot explain what algebra is, leaving Somerville to experience it as a mystery, an enigma that invites further inquiry.

This moment, then, is not just a recollection of first contact with algebra; it is the textual inscription of mathematical desire, rendered in a form that retrospectively positions it as the beginning of a trajectory that was anything but inevitable. Through the technologies of automathographies at play in Recollections, Somerville transforms this brief episode into an epistemic turning point. The unknowability of algebra in that moment – the inability of her friend to explain it – functions as a generative void, one that calls Somerville into the mathematical world. Her memoir does not merely record this event; it constructs it as a foundational moment of subjectivity, in which Somerville's self as a mathematician first takes shape through an encounter with the limits of knowledge.

Somerville's automathographical journey unfolds through a series of epistemic disorientations and unexpected revelations, moments where mathematical knowledge emerges not as a linear progression but as a series of ruptures and reconfigurations. After her initial coup de foudre with algebra – an encounter that left her feeling 'very sad and forlorn' (Somerville 2001, 70), unable to grasp its meaning – her desire for mathematics did not dissipate. It transformed, finding new paths of entry. Rather than encountering formal instruction, Somerville's first structured engagement with mathematical reasoning came through her lessons in drawing and painting, a domain that, like algebra, operated through symbols and representations but was more readily available to a young woman of her time.

It is within this context that another fortuitous encounter reshapes her trajectory: in Chapter 3 of her Recollections, she recalls how the Scottish landscape painter Alexander Nasmyth, while discussing perspective with some acquaintances, inadvertently provided her with the key to her next mathematical step. 'You should study Euclid's Elements of Geometry' (Somerville 2001, 71), he remarked, 'the foundation not only of perspective, but of astronomy and all mechanical science' (Somerville 2001). This seemingly offhand comment was, for Somerville, a revelatory moment, an instance of automathographical intensity in which her fragmented desire for mathematical knowledge found a new form. Geometry, rather than being presented as an abstract discipline, was tied to artistic practice and the physical world, making it suddenly legible within the discursive space available to her. This moment underscores how Somerville's engagement with mathematics did not follow conventional educational pathways but instead emerged through assemblages of disparate influences – social interactions, artistic training, household constraints, and self-directed study. The absence of structured instruction forced her to construct her own epistemic network, pulling knowledge from whatever sources she could access. Her brother's tutor, Mr. Craw, became another unwitting facilitator in this process, procuring for her Euclid's Elements and Bonnycastle's Algebra – texts she had 'so long and earnestly desired' (Somerville 2001, 73).

The desire that had been ignited in Burntisland now took concrete form in self-study, as Somerville devoted herself to mathematics within the constraints of her domestic life. She continued to fulfil the expectations of a dutiful daughter, engaging in household tasks, sewing, playing the piano, and painting, but the night belonged to Euclid. 'I sat up very late reading Euclid' (Somerville 2001, 74), she recalls, marking her entry into mathematical thought as a practice of temporal transgression – an activity pursued in stolen hours, outside the sanctioned rhythms of daily life. What we see here is an automathographical narrative that is not simply about self-instruction but about the ways in which mathematical subjectivity is shaped through contingencies, interruptions, and moments of sudden illumination. Somerville's Recollections do not merely recount the facts of her mathematical development; they construct it as a process of nonlinear discovery, marked by encounters that reframe what is possible. Her journey into mathematics is not a steady climb but an assemblage of desires, obstacles, and chance moments – each one inscribed in the memoir as a formative event, retrospectively woven into a coherent narrative of becoming.

Flows and interruptions

Somerville's automathographical journey, already marked by obstacles and detours, encountered one of its most profound interruptions in 1804 when she married Samuel Greig and moved to London. Marriage,

within the heteropatriarchal cycle of women's time, often functioned as a rupture in a woman's intellectual pursuits, displacing personal aspirations in favour of domestic obligations. Greig, who held a 'very low opinion of the capacity of [her] sex' (Somerville 2001, 93) and had no interest in science, was not a supportive partner in her mathematical ambitions. Her new life in London, confined to a 'small and ill-ventilated' (Somerville 2001, 93) bachelor house, was anything but intellectually stimulating. And yet, as her Recollections reveal, this period did not extinguish her mathematical passion – it reconfigured it. Isolated and alone for most of the day, Somerville turned this solitude into an opportunity: 'I continued my mathematical and other pursuits' (2001, 93), she writes, articulating a quiet defiance against the constraints imposed on her.

What emerges from these early chapters of the Recollections is a textual interweaving of passion and constraint, a narrative in which Somerville's desire for mathematics is persistently negotiated through what I have configured as technologies of automathographies. Her love for mathematics is not simply a given – it is an attachment that must be sustained through active, and often precarious, forms of engagement. It begins as an overwhelming, almost fated encounter, a coup de forlorn, but its continuation is anything but inevitable. Algebra, an elusive and enigmatic presence in her youth, could not be readily accessed in her family's library. Even when she found a pathway to mathematics through painting lessons, she had to beg her brother's tutor to bring her books from Edinburgh, as a young woman could not simply walk into a bookshop and purchase them herself. Her intellectual trajectory is thus structured by absences and denials, by the social and material limitations placed on her access to knowledge.

Yet, it is precisely in these gaps and interruptions that automathographics take shape. The loneliness of her first marriage – physically isolating, emotionally stifling – becomes, paradoxically, an occasion for study. Deprived of companionship and cut off from her Scottish intellectual network, Somerville reclaims time for mathematics in the quiet hours of the day. Here, automathography functions as a mode of survival, a way of sustaining an intellectual life in conditions that sought to erase it. If marriage, in the dominant gendered order, was meant to redirect her energies elsewhere, Somerville's story demonstrates a counter-movement: she does not abandon mathematics but instead carves out spaces, however constrained, in which she can continue. This subtle resistance, this insistence on mathematical thought despite adversity, is central to the automathographical process – an ongoing negotiation between desire and constraint, possibility and limitation, in the making of a mathematical self.

Daughter, widow, mother and student of mathematics

Her husband's untimely death in 1807, paradoxically, opened new pathways for Somerville's intellectual life. As a young widow, now financially independent, she returned to Scotland and immersed herself fully in the pursuit of mathematics. The removal of direct domestic constraints did not simply restore an earlier passion; rather, it enabled a new phase of automathographical intensification, a renewed engagement with mathematics not as a passing infatuation but as a rigorous, systematic endeavour. Despite being largely self-taught, she approached her mathematical education with discipline and purpose: 'By this time I had studied plane and spherical trigonometry, conic sections, and Ferguson's Astronomy' (Somerville 2001, 95), she recalled, though she also confessed to the formidable difficulties she faced in attempting to read Newton's Principia (Somerville 2001). At this juncture, Somerville recognised that true mathematical fluency required deeper immersion. Through the support of friends, relatives, and, crucially, an expanding network of mathematicians and intellectuals willing to aid her studies, she began assembling a formidable mathematical library. Among her most significant mentors was William Wallace, who played a crucial role in guiding her self-education. Somerville recalled that Wallace, who was later appointed Professor of Mathematics at the University of Edinburgh, was particularly supportive of her ambitions. When she expressed her desire to undertake a rigorous study of mathematics and astronomy, he provided her with a comprehensive reading list. The recommended texts, primarily in French, included works by Francœur, Lacroix, Biot, Poisson, Lagrange, Euler, Clairaut, Monge, and Laplace, covering subjects from algebra and calculus to mechanics, geometry, and celestial mechanics (Somerville 2001, 96).

The sheer breadth and depth of this reading list underscore Somerville's automathographical trajectory – not simply an individual effort to master mathematics but a deliberate self-fashioning within a wider intellectual field. Her mathematical library, predominantly populated by French authors, reflected the shifting landscape of mathematical thought in the early nineteenth century. As Stenhouse has observed, Somerville's adoption of the French analytical tradition was significant, occurring at a moment when British

mathematics was widely perceived to be in decline (2021a, iii). British mathematicians, still entrenched in the geometric methods of Newton, had resisted the innovations of continental analysis, a reluctance exacerbated by the Newton-Leibniz controversy over the origins of calculus. Somerville herself lamented this stagnation: 'At this period mathematical science was at a low ebb in Britain' (2001, 95), she observed, noting that 'reverence for Newton had prevented men from adopting the 'Calculus', which had enabled foreign mathematicians to carry astronomical and mechanical science to the highest perfection' (2001, 95).

Somerville's ability to acquire 'such a treasure' (2001, 96) of mathematical texts was made possible by the modest but secure income left to her by her late husband. While her passion for mathematics remained unapproved by her wider family, she no longer needed to hide it. As revealed in her *Recollections*, her daily life revolved around caring for her young children, immersing herself in mathematics, and playing music. Reflecting on her journey, she wrote:

> I was thirty-three years of age when I bought this excellent little library. I could hardly believe that I possessed such a treasure when I looked back on the day that I first saw the mysterious word 'Algebra', and the long course of years in which I had persevered almost without hope. It taught me never to despair. I had now the means, and pursued my studies with increased assiduity; concealment was no longer possible, nor was it attempted. (2001, 96–97)

This moment in Somerville's automathography – the transition from passionate curiosity to structured, rigorous study – was not merely an accumulation of knowledge but a reorientation of intellectual allegiance. Her engagement with the French mathematical tradition was not incidental but fundamental to her formation as a mathematician. The *Recollections* thus present not only a personal history, but a narrative entangled with larger epistemic shifts, as Somerville positioned herself within a broader, transnational mathematical discourse.

Somerville also benefited from the intellectual support of a small but influential circle of progressive men associated with the Edinburgh Review, a journal advocating broader educational opportunities, including for women. Among her key mentors were Professor John Playfair, a central figure in Edinburgh's mathematical and scientific circles, and his protégé William Wallace, as we have seen above. Playfair's advice – to persist even when encountering difficulties – became foundational to her approach to learning:

> He knew that I was reading the Mécanique Céleste, and asked me how I got on? I told him that I was stopped short by a difficulty now and then, but I persevered till I got over it. He said, 'You would do better to read on for a few pages and return to it again, it will then no longer seem so difficult'. I invariably followed his advice and with much success. (2001, 98)

This ethic of perseverance, central to Somerville's automathographics, illuminates what I have conceptualised as 'the agonistics of mathematical education' – the struggle, effort, and persistence required for intellectual mastery (see Tamboukou 2024). In deploying 'agonism' here, I follow Arendt's interpretation of the term as an affirmative striving for achievement, creation, and recognition. Arendt describes the 'agonal spirit' of the public realm as a space where individuals distinguish themselves through unique deeds or accomplishments – aien aristeuein, always to excel. (1998, 41) While Somerville's ambitions were not in politics, she sought distinction in the realm of science, longing to assert a place for women beyond the limits imposed by her time: 'I was intensely ambitious to excel in something, for I felt in my own breast that women were capable of taking a higher place in creation than that assigned to them in my early days, which was very low' (2001, 78). Her automathographical narrative, then, is not merely a personal account of learning mathematics but an assertion of intellectual becoming – a negotiation of knowledge, struggle, and aspiration within a gendered epistemic landscape.

Although Playfair instilled in Somerville the *agonal* spirit of mathematical study, it was through her correspondence with John Wallace, William Wallace's brother, that she engaged in a more direct mathematical exchange. They discussed difficulties, compared approaches, and shared solutions to problems published in the New Series of the Mathematical Repository, a journal associated with the Military College at Marlow. Mathematical periodicals with Q&A sections, like the Mathematical Repository, played a crucial role in shaping mathematical knowledge and education across Britain, Europe, India, and the USA from the seventeenth century onward (see Despeaux 2014). As Sloan Despeaux has observed, their enduring popularity in Britain stemmed from the merging of two traditions: the recreational problem-solving culture of eighteenth-century almanacs and the problem-oriented approach of Cambridge-trained mathematicians,

reinforced by the rise of written examinations. This hybrid model fostered a unique mathematical discourse that bridged class divides and resisted the pressures of professionalisation (Despeaux 2014, 5). Stenhouse has further highlighted how these journals provided access to advanced mathematics and served as an alternative educational pathway for those excluded from formal institutions (2020, 8). When Somerville won her first medal in the journal's prize section, it not only affirmed her mathematical abilities but also marked her first public recognition in a world that largely excluded women from scientific discourse.

Becoming a mathematician and scientist

Somerville's engagement with mathematics continued even after her second marriage to William Somerville in 1812, and by the 1820s, her reputation had spread across Europe. Her automathographical journey – rooted in perseverance, dialogue, and intellectual self-fashioning – illustrates how she transformed herself from an isolated, self-taught student into a celebrated mathematician on an international stage. Somerville's *Recollections* however, do not explicitly document her engagement with the European calculus tradition or her use of Leibnizian notation. Instead, she embeds her mathematical presence within the automathographics of travel and intellectual sociability, crafting a narrative that keeps her passion for mathematics alive while remaining accessible to a broader audience. Her *Recollections* meticulously detail encounters with leading European mathematicians, positioning social and spatial experiences as key technologies of automathographic self-construction. A pivotal moment in this narrative occurs during her early engagement with French mathematicians in London:

> When MM. Arago and Biot came to England to continue the French arc of the meridian through Great Britain, they were warmly received by the scientific men in London, and we were always invited to meet them by those whom we knew. They had been told of my turn for science, and that I had read the works of Laplace. Biot expressed his surprise at my youth. (Somerville 2001, 115–116)

This early introduction to the French scientific elite continued in Paris in 1817, where Somerville and her husband socialised with prominent figures, including François Arago and Pierre-Simon Laplace. Her Recollections emphasise the material and cultural dimensions of these encounters – Laplace's elegant wife, their visit to his estate at Arcueil, and the prized autographed copy of Système du Monde he gifted her. These elements function as automathographic devices, structuring her mathematical presence through spatial, material, and relational signifiers (see Somerville 2001, 116–117). As Somerville wrote to her mother in a letter dated August 18, 1817, they were met 'with uncommon attention' and 'besides seeing all kinds of public institutions we were invited with much hospitality to the houses of the most celebrated philosophers of France, who made entertainments on purpose to make us acquainted with everyone who was eminent in science'.[7] This period of intense intellectual and social engagement, extending through Switzerland and Italy, enabled Somerville to speak authoritatively about European science. As Elizabeth Chambers Patterson notes, her firsthand exposure to Parisian scientific circles strengthened her position within transnational mathematical networks. Upon returning to England in 1818, Somerville had undergone what Patterson aptly describes as a time 'of glorious development' (1983, 30) – an automathographic process that would shape her later achievements.

It was not solely the French mathematical community, but also the British contingent circulating French analysis, that profoundly shaped Somerville's serious engagement with higher mathematics, a point Stenhouse astutely underscores. (2021a, 48) In her *Recollections*, Somerville reflects on her admiration for Charles Babbage's mathematical contributions, noting that he had advocated for the adoption of French analytical methods in English science, among other reforms aimed at professionalising the field: 'We went frequently to see Mr. Babbage while he was making his Calculating-machines. He had a transcendent intellect, unconquerable perseverance, and extensive knowledge on many subjects, besides being a first-rate mathematician' (2001, 141).

Somerville's own mathematical reminiscences reveal a distinct web of personal and intellectual connections, particularly with Ada Lovelace, whom she informally mentored during the period both families lived in Chelsea. (see Tamboukou 2023) Their relationship continued through a lifelong correspondence, illustrating how personal mentorship intertwined with the exchange of mathematical ideas. Somerville takes pride in having encouraged Ada to pursue mathematics, seeing it as both a personal and professional achievement. She recalls: 'Ada was much attached to me, and often came to stay with me. […] She always

wrote to me for an explanation when she met with any difficulty. Among my papers, I lately found many of her notes, asking mathematical questions' (Somerville 2001, 150). Through these interconnected memories, Somerville positions herself not only as a participant in the 'Republic of mathematics' of her time but as an active contributor to the informal yet rigorous networks of knowledge exchange – both personal and professional – that shaped the mathematical landscape. This entangled relationship with both her contemporaries and mentees demonstrates the broader epistemic and affective dimensions of her intellectual labour, situated within an ongoing, self-reflexive process of mathematical inquiry, a *technology of automathography* par excellence.

Considering Somerville's intellectual engagement with Lovelace and her advocacy for women's education in mathematics and science, it is striking that *Recollections* omits any mention of Sophie Germain, especially since Somerville visited Paris in 1817, just one year after Germain made history as the first woman to win the Grand Prix of Mathematics from the Institut de France (see Musielak 2020, 83). Germain's exclusion from Somerville's account becomes a site where *technologies of automathographies* reveal the limits of access to intellectual spaces, even as they construct the narratives of those who did manage to be included. Many of the mathematicians Somerville references were, in fact, familiar with Germain's work; Laplace, Poisson, and Biot, who were part of the review committee awarding her the Grand Prix, certainly knew her contributions (Musielak 2020, 86). Yet, despite her groundbreaking work, Germain's position in the intellectual community was precarious, as evidenced by her contentious relationship with Poisson, who refused to acknowledge her as his peer. Their scientific correspondence, public debates, and acrimonious exchanges in journals highlight the tensions at play. Poisson's refusal to see Germain as a legitimate competitor not only reflects a professional rivalry but underscores the gendered barriers that rendered her intellectual contributions suspect in the eyes of some male counterparts. [8] In her *Recollections*, Somerville recounts a dinner hosted by Madame Biot, where 'distinguished persons' (2001, 117) were presented, including Monsieur and Madame Poisson, who had recently married. This event illustrates the kind of social and intellectual networks Somerville was embedded in, networks that often-excluded figures like Germain. While Somerville was able to participate in such social gatherings, Germain's position as a single woman limited her access to the informal, yet crucial, spaces where mathematical knowledge circulated among professionals and their families.

Stenhouse (2021b) has emphasised the role of scientific households in circulating mathematical ideas in nineteenth-century Britain, noting that William Somerville's support for his wife allowed her entry into these intellectual and social networks. For single women like Germain, however, these opportunities were far more restricted. Despite Germain's immense contributions to mathematics, her lack of access to these support structures – both professional and social – demonstrates how *technologies of automathographies* operate not just as tools of inclusion but also of exclusion. Somerville's narrative, shaped by the access she had to these intellectual spaces, contrasts sharply with Germain's experience of being systematically sidelined, not only by her male peers but by the very social technologies that governed who could enter the networks that circulated knowledge. Thus, the omission of Germain from Somerville's *Recollections* is not just a missed opportunity to acknowledge an intellectual peer; it is also indicative of how the very processes through which mathematical knowledge is constructed, shared, and remembered – through letters, social gatherings, and institutional recognition – can simultaneously include some while excluding others. *Technologies of automathographies*, in this sense, are shaped by both the opportunities they provide for visibility and the gendered limitations that restrict access, revealing the complex, often uneven distribution of intellectual and social capital in the scientific world.

Writing and publishing in science and mathematics

Restrictions and limitations notwithstanding, in her *Recollections* Somerville acknowledges the extensive support she received from a transnational network of scientists across the UK, France, Switzerland, Italy, and more broadly in Europe and North America: 'I have uniformly met with the greatest kindness from scientific men at home and abroad. If any of them are alive when this record is published, I beg they will accept of my gratitude. Of those that are no more I bear a grateful remembrance' (2001, 153). This network not only facilitated her intellectual growth but also positioned her as the sole candidate to translate Laplace's Mécanique Céleste into English – a project that cemented her reputation as a mathematical thinker. Her selection was underpinned by her recognition as 'the lady who, Laplace says, is the only woman

who understands his works', as noted by Maria Edgeworth in a letter included in the *Recollections* (Somerville 2001, 171).

Automathographics, in this context, reveals how Somerville's narrative constructs her mathematical self through relational dynamics rather than isolated genius. Her account highlights the reciprocal exchanges of knowledge, gratitude, and recognition that underlie her achievements. When Laplace died in March 1827, Somerville was already 'established in the minds of English and French philosophers as an able student of [his] work', as Patterson notes (1983, 49), emphasising her integration into a cross-cultural intellectual milieu. The gift of 'a lock of the great mathematician's hair' (1983, 49) symbolises her acceptance within this scholarly community and the esteem with which her talents were held.

The detailed account in Chapter 11 of the *Recollections* – beginning with Lord Henry Brougham's letter to her husband on 27 March 1827 – further illustrates how her participation in the translation project was not merely a matter of individual initiative but was embedded in the institutional networks of the *Society for the Diffusion of Useful Knowledge*:

> I assure you I speak without any flattery when I say that of the two subjects which I find it most difficult to see the chance of executing, there is one, which – unless Mrs. Somerville will undertake – none else can, and it must be left undone, though about the most interesting of the whole, I mean an account of the Mécanique Céleste; (Somerville 2001, 156)

Within the framework of automathographics, Somerville's *Recollections* illustrate the complex interplay between individual intellectual labour and the collaborative structures that both enabled and constrained her work on Laplace's Mécanique Céleste. (Somerville 1831) Her initial surprise at being chosen as the sole person capable of disseminating Laplace's ideas in England reveals her acute awareness of the cultural and educational gaps she was expected to bridge. According to Brougham's letter, there were scarcely 'twenty people who know this great work, except by name: and not a hundred who know it even by name' (Somerville 2001, 156). This remark underscores the daunting task Somerville faced – not only to translate but to render the advanced mathematics comprehensible to a much wider audience.

By agreeing to undertake this challenge 'upon condition of secrecy, and that if I fail the manuscript shall be put into the fire' (Somerville 2001, 157), Somerville strategically negotiated her position within the scientific community, safeguarding her intellectual reputation while acknowledging the high stakes of the endeavour. Automathographics, as an analytical lens, foregrounds how she navigated these relational dynamics, constituting her mathematical self not merely through her mastery of the material but through her negotiation of expectations, risks, and responsibilities.

The *Recollections* convey a keen sense of the intellectual depth required for the task. Somerville recognised that her translation would need to provide foundational knowledge of 'the differential and integral calculi' (Somerville 2001, 157), implicitly positioning herself as both mediator and educator. Her awareness of the layered demands of the project – 'to prove various problems in physical mechanics and astronomy' (Somerville 2001, 157), as well as to produce diagrams that Laplace himself deemed unnecessary for advanced mathematicians – reveals her strategic adaptation to the needs of her audience. By making these complexities visible, she simultaneously demonstrates her expertise and highlights the relational labour of knowledge dissemination. Framing this within automathographics emphasises how Somerville's narrative constitutes herself as a mathematician through her engagement with the expectations of her peers, her anticipated readers, and the scientific institutions of her time. Her strategic choices reflect her awareness of the gendered and intellectual constraints she faced, as well as her will to surpass them. This relational perspective challenges traditional narratives of solitary genius, revealing instead the intricate web of connections, negotiations, and educational imperatives that shaped her pioneering work.

For the three years Somerville dedicated to translating Mécanique Céleste, her engagement with mathematics unfolded not in isolation but through a dynamic exchange with her scientific correspondents, including Augustus De Morgan, Charles Babbage, and John Herschel (see Patterson 1983, 69–73). As her letters included in her *Recollections* attest, these connections were not merely sources of assistance but also sites of negotiation, where the challenges of British mathematical resources and scholarship became starkly apparent. Patterson remarks that her papers document not only 'the help she had from willing colleagues, but often the sad state of British mathematical resources and scholarship'. (Patterson 1983, 69) The

act of translation, then, was not just linguistic or conceptual but also infrastructural, requiring her to navigate the limitations of the intellectual landscape around her.

The correspondence extends beyond Britain, threading into the networks of French astronomy. Writing to Alexis Bouvard at the Paris Observatory on 27 November 1829, Somerville sought material for a pen-portrait of Laplace: 'Every circumstance relating to such a person will be read with avidity in this country, and you can perhaps procure for me, or direct me how to procure anything authentic that has been published' (in Patterson 1983, 70). Though this biographical sketch did not make its way into the published version of The Mechanism of the Heavens, the request itself signals her attentiveness to the reception of her work and the role of narrative in framing scientific authority. What emerges from these exchanges is a form of *automathography* shaped not by solitary achievement but by the entangled rhythms of correspondence, intellectual scarcity, and transnational collaboration. The translation of Mécanique Céleste was never a static task but one that unfolded through negotiations – across languages, disciplines, and institutional borders. Somerville's letters included in the *Recollections* mark the material traces of this process, revealing how mathematical labour was embedded in circuits of knowledge exchange that exceeded the printed page.

Thus, following the tradition of the translator's intervention in the scientific text, that goes back in the early modern period and certainly echoes Émilie du Châtelet's translation of Newton's *Principia,* Somerville wrote a substantial piece, entitled 'Preliminary Dissertation' in which she introduced French analysis, as well as the principles of French physical astronomy.[9] In this light her work was not just a translation, but rather 'a rendition of Laplace in English' (Patterson 1983, 71). To do this, 'she employed the Continental notation, included all steps in mathematical demonstrations, carefully defined symbols, compared her approaches with Newtonian ones to the same material, and frequently added investigative findings' (Patterson 1983, 71).

Translation here is not taken 'as the process of mechanically reproducing a text in a foreign language, but [rather] as an active process which can require critical engagement with the source text and offers the translator scope to make original contributions to scientific knowledge', Stenhouse has remarked, by critically examining the mathematical work that Somerville conducted during the translation process (2021a, 88). Kathryn Neely has further commented that the book is 'more and less' than simply a translation: 'It is more because Somerville contextualised and interpreted Laplace's work, included subsequent contributions of others where they were relevant, and substituted simpler methods of demonstration in some cases. It is less because she treats Laplace's text selectively' (2001, 97).

Somerville's *Recollections* do not include any direct reference to her complex and studious mathematical work, and yet the importance of her work is illustrated through the inclusion of a number of letters she received from John Herschel, who carefully read her initial drafts, encouraged her to continue, but also provided specific and detailed comments on revising two sections, one on 'the illustration of the principle of virtual velocities' and the other as just 'a trifling remark [which was] a mere matter of metaphysical nicety, and perhaps hardly worth pencilling your beautiful manuscript for'.[10]

Moreover, Somerville's initial fears that Laplace's work could never be 'popularised' (2001, 157) turned out to be the case. When the manuscript was finished, Brougham clearly saw that both the length of the treatise, as well as its superior quality were not suitable for the publication series of bringing 'sound literature and self-improvement within the reach of all', (Patterson 1983, 50) that he was supervising. His decision not to include the book in the library for the *Society for the Diffusion of Useful Knowledge* was not a disaster, however, but rather a new beginning for the book and Somerville herself. Somerville's excellent treatise was a living example of what a reformed science culture in Britain could achieve and both Herschel and Babbage 'must have been anxious lest it be lost to English readers', Patterson has commented (1983, 73).

The becoming of the book was thus a process that ran in parallel with Somerville's becoming a renowned mathematician. As Foucault has famously proclaimed, 'If you knew when you began a book what you would say at the end, do you think that you would have the courage to write it?' (in Rux 1988, 9). Somerville seems to be in the spirit of Foucault's idea that 'the game is worthwhile insofar as we don't know what will be the end' (1988, 9) and the writing of this book was certainly 'a game' not only with Somerville's entanglement in the circle of scientists who were trying to reform British science and take British mathematics out of its stagnant waters,[11] but also a game with the image of womanhood itself. The *Recollections* include long

references on how she managed to combine scientific writing with her duties as a wife and mother, but also maintaining her social relations and engagements:

> I rose early and made such arrangements with regard to my children and family affairs that I had time to write afterwards; not, however, without many interruptions. A man can always command his time under the plea of business, a woman is not allowed any such excuse. At Chelsea I was always supposed to be at home, and as my friends and acquaintances came so far out of their way on purpose to see me, it would have been unkind and ungenerous not to receive them. Nevertheless, I was sometimes annoyed when in the midst of a difficult problem some one would enter and say, 'I have come to spend a few hours with you'. However, I learnt by habit to leave a subject and resume it again at once, like putting a mark into a book I might be reading; this was the more necessary as there was no fire-place in my little room, and I had to write in the drawing-room in winter. Frequently I hid my papers as soon as the bell announced a visitor, lest anyone should discover my secret. (2001, 158)

The above extract of the *Recollections* has often been cited in the literature around Somerville and particularly the feminist strands of it, as expressing her simultaneous struggle and negotiation with a patriarchal culture that excluded women from science.[12] It has also been discussed in relation to how Somerville's image as a woman scientist in the Victorian era is being crafted through the memoir.[13] Notwithstanding its importance in throwing light on women's position between domesticity and science, what I argue, however is that this extract is overflowing with Somerville's desire and love for mathematics. Although there was no space in the memoir for displaying the rigorousness of her mathematical work, extracts such as the above are textual expressions of a love that not only motivated Somerville's whole life, but also the writing of the memoir as an inscription of her passion for mathematics. The rich inclusion of enthusiastic reviews and letters that followed the reception of the *Mechanisms of the Heavens* also add to the sketching of Somerville's automathographical desire that is archived in the textual space of her *Recollections*.

Automathographics in the Republic of Mathematics

In this paper, I have approached Mary Somerville's *Personal Recollections* as an archive that preserves the traces of her automathography – an assemblage that narrates her desire to become a mathematician. Despite the heavy editorial interventions that shaped the memoir within the restrictive conventions of Victorian auto/biography, the *Recollections* emerge as a work of automathographics. They navigate and negotiate the discourses of power and truth that defined the possibilities of becoming a woman mathematician and scientist in her time.

Central to my argument is the notion that mathematics is not merely an intellectual pursuit for Somerville but the very object of her desire and the driving force behind her retrospective gaze. Her love for mathematics – persistent though often submerged – animates the memoir. It surfaces most explicitly in the early chapters, where she recalls her first encounters with mathematical ideas and her enchantment with their beauty and logic. As the narrative progresses, this love is gradually sublimated, folded into the memoir's public tone and concealed by the conventions that governed women's life writing in the nineteenth century. These editorial decisions – including the selective inclusion of letters that highlight her mathematical aptitude, or anecdotes that emphasise her scientific sociability during continental travels – function as narrative strategies that simultaneously disclose and withhold her automathographic impulse. Mathematics becomes the silent thread that binds these episodes, shaping her subjectivity and situating her within the shifting boundaries of the scientific networks of her time. The narrative rhythm of the *Recollections* is thus marked by oscillation: between revelation and concealment, aspiration and constraint, public image and private longing. In the closing chapters, this suppressed desire returns with renewed intensity. Somerville reflects on her life and expresses regret at not having been able to devote herself more fully to what she had most deeply longed for – uninterrupted engagement with mathematics. This late return of her passion underscores the automathographic structure of the memoir, in which retrospection becomes an act of recovery: a means of inscribing mathematical longing where it had been previously erased or displaced.

Personal Recollections thus stands as Somerville's contribution to a lineage of amatores matheseos – not as part of an established brotherhood of mathematical affiliation, but as a solitary rewriting of its terms. If the Republic of Letters offered a rhetorical space for inclusion through epistolary friendship, and Fine's

'Republic of Mathematics' (Oosterhoff 2016) extended this ideal into the affective domain of mathematical collaboration, then Somerville's memoir represents a radically singular entry into this tradition. Her automathographical desire asserts a right to belong in a republic that never expected her arrival. Through the intimate logic of love, she carves out a space of epistemic attachment that both echoes and reconfigures the communal ideals of early modern mathematics. Her memoir does not simply recall a life shaped by mathematical longing – it founds and sustains her position within the Republic of Mathematics, transforming its imagined community through the force of her automathographical desire.

Notes

1. There are seven recorded editions in the nineteenth century 1873, 1874, 1875, 1876, 1879, 1885, 1895, published in London and Boston, but only two in the twentieth century published in 1975 and 1986 in New York.
2. Oxford, Bodleian Libraries, Mary Somerville Collection/MSC: Dep. c.355, fol. MSAU-2; MSAU-3.
3. See amongst others: Baker 1948; Jenkins 1999; Patterson 1983; Sanderson 1974; Swindells 1999.
4. Frances Power Cobbe to Martha Somerville, Jul. 11, 1873, cited in McMillan 2001, 12.
5. See amongst others, Arianrhod 2012; Boswell 2017; Brock 2006; Jenkins 2007; Lamprecht 2015; Neeley 2001; Secord 2014; Stenhouse 2020, 2021a, 2021b; Wiegand Brothers 2015.
6. Here as elsewhere in my work in life-writing, I deploy the notion of *assemblages* from Deleuze and Guattari's (1988) philosophical vocabulary. See Tamboukou 2025.
7. Mary Somerville to Lady Fairfax, MSC: Dep. c.357, fol. MSFP-4.
8. Mary Somerville to Lady Fairfax, MSC: Dep. c.357, fol. MSFP-4 For a detailed discussion of Poisson's rivalry with Germain, see Musielak 2020, particularly chapters 6; 7 and 8.
9. See Arianrhod 2012, for a comparative study of Du Châtelet's and Somerville's translations and Findlen 1995 for the early modern period tradition.
10. Letter from Herschel to Somerville, included in Somerville 2001, 160.
11. See Patterson, *Mary Somerville and the Cultivation of Science* for a detailed discussion of the movement to reform British science in the 1830s, particularly the section 'The Atmosphere of 1830'; pp. 55–68.
12. See Neeley 2001, particularly Chapter 2.
13. See Jenkins 1999 and Swindells 1999.

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