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# Reading letters of an eighteenth-century femme philosophe: love as an existential and creative force in Émilie Du Châtelet's correspondence

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## ABSTRACT

In this article the author considers the letters of Émilie Du Châtelet, an eighteenth-century woman mathematician, philosopher and scientist. The central argument of the paper is that Du Châtelet's letters leave traces of the process of becoming a *femme philosophe*, while also throwing light in her involvement in the scientific, philosophical and cultural formations of the early modern period. In this context Du Châtelet's personal letters carry inscriptions of love as a creative force of life and are tightly intertwined with her 'laboratory letters', her correspondence with important mathematicians and scientists of her times. In thus making connections between 'the personal' and the 'scientific' in Du Châtelet's correspondence, the paper sketches a feminist critical perspective on a plane of thinking around love as an existential force in its interrelation with mathematics, science and philosophy.

## KEYWORDS

Epistolary intra-actions;  
laboratory letter; love;  
scientific correspondences;  
women mathematicians

You wrote me once that you could come to Paris. Do you still have this project, do you imagine this possibility? It would be great to be there; we would spend our lives together, face to face, but it might be that it would be unbearable for you, especially during the first trip. If I go to Cirey this fall, or any time soon, I will have to come back here this winter to see M. de Richelieu and for my Newton, which is a very serious business and very essential for me. I can't work on it now, I'm so dazzled; I only vegetate, and I only feel that I am capable of thinking and feeling because I love you.<sup>1</sup>

On 5 June 1748, Émilie Du Châtelet (1706–1749) wrote a letter to her lover Jean François de Saint-Lambert contemplating the difficulties of their future together.<sup>2</sup> She was forty-two years old, an aristocrat of the highest rank and already an established scientist, as the author of *Institutions de physique*,<sup>3</sup> first published in 1740 and almost immediately translated in German and Italian in 1743. Du Châtelet vacillates between her desire to spend time with her lover in the Château de Cirey in Champagne—her family estate, where she

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had previously lived and worked happily with Voltaire—and to be in Paris, the city where she was born and grew up, and where she was at the time working for a translation of and commentary on Newton's *Principia*, eventually published posthumously in full, in 1759.

In the above short extract of a very long letter comprising twelve densely handwritten pages, Du Châtelet admits that her love for de Saint-Lambert is a vital force in her life, while acknowledging however that 'her Newton' was equally 'essential' for her existence. As it turned out to be her work on Newton's *Principia*, which was much more than a translation, was not just 'essential' for Du Châtelet's existence, but also a critical contribution to the history of science and mathematics.<sup>4</sup> It is such complex encounters between love as an existential force in its interrelations with scientific, philosophical and mathematical work and study that I explore in this paper, by looking into the epistolary archive of an eighteenth-century woman mathematician, philosopher and scientist.

The paper emerges from a wider Leverhulme funded project<sup>5</sup> of writing a feminist genealogy of 'automathographies', a term Paul Halmos has used to narrate the life process of becoming a mathematician.<sup>6</sup> By tracing women mathematicians' historical emergence as subjects of knowledge, what I argue in this essay is that Du Châtelet's letters leave traces of the process of becoming a woman mathematician, philosopher and scientist—a *femme philosophe*—while also throwing light in her involvement in the scientific and cultural formations of the early modern period.

The socio-historical and cultural patterns of women's engagement with science in Europe from the Renaissance onwards have been well treated in the literature from a wide range of perspectives.<sup>7</sup> Patricia Phillips has particularly pointed to the emergence of 'the scientific lady' as a response to women's exclusion from the all-male field of classics:

For many women science was a preferable alternative to the classics. It had two great advantages. It was a study that demanded serious attention and yet the student needed no more elaborate preparation than commitment, application and an independent mind.<sup>8</sup>

Here it is also important to acknowledge that during the seventeenth and early eighteenth centuries, which is the period that Du Châtelet became of age, science was increasingly practiced by independent scholars outside the confines of institutions. Judith Zinsler has argued that during the period of this public turn 'more women of the privileged classes had an opportunity to engage in the intellectual discourses of their day',<sup>9</sup> an argument that can contextualize Du Châtelet's engagement with science and mathematics.

Karen Detlefsen however, has taken issue with the narrative that 'when science belonged to exclusive, private institutions, it was dominated by men, and when science became more public, women became practitioners in greater numbers'.<sup>10</sup> Without refuting the idea of the 'rise of public science', Detlefsen has posed some pertinent questions, regarding the divide between 'the private' and the 'public', the meanings that we ascribe to institutions, as well as to the very notion of 'natural philosophy' itself, given its different connotations in the history of science.<sup>11</sup> What Detlefsen has argued instead is that although there was 'a slight respite' of women's marginalization within the world of scientific knowledge, ideas and debates during the seventeenth century, their overall marginalization was due to their 'exclusion from educational and scientific institutions'.<sup>12</sup>

Over the years, scholars in the field of gender and science have worked tirelessly in recovering women's position in the history of science from different angles, perspectives, and disciplinary fields and in this context there is a rich body of literature around women's contribution to the history of science, philosophy and mathematics.<sup>13</sup> Feminist historians and cultural theorists have also looked at the various ways women in the early modern period struggled to forge intellectual authority through textual and visual constructions of themselves as scholarly personae.<sup>14</sup> In this context, women's epistolary writing has been the focus of several studies over the years not only as a literary field documenting their contribution in the social, cultural and political formations of modernity, but also as a platform documenting their textual self-representation.<sup>15</sup> As Madeleine Schurch has observed however, women's letters as discursive sites for the production of scientific knowledge has not been explored.<sup>16</sup> It is this gap in the literature that this paper is addressing, by contributing to a wider field acknowledging the diversity of women's letter-writing practices, while also mapping new paths in the interface of the personal and the scientific, particularly following existential trails of love as a creative force in the field of gender and science.

Elsewhere in my work I have explored women's epistolary narratives, not only as important 'documents of life'<sup>17</sup> in terms of revealing meaning about socio-historical, cultural and political practices, but also as traces of existential explorations of the female self.<sup>18</sup> In this context I have further looked at epistolary narratives of love, gender and agonistic politics, following philosophical trails of love as a force of life, rather than as a technology of disciplining women, in the wider field of feminist love studies.<sup>19</sup> In thus following epistolary narratives of love as a creative force in the field of gender and science, the paper revolves around Du Châtelet's personal and scientific correspondence, but it makes connections with a small but burgeoning body of literature around love and mathematics.<sup>20</sup> While the thrust of the paper is on literary approaches to epistolarity in throwing light on the process of becoming a *femme philosophe*, it nevertheless draws on a critical body of literature that has painstakingly documented and solidified Châtelet's significant contribution in the history of mathematics, science and philosophy.<sup>21</sup>

The paper unfolds in four parts: after this introduction, I look at the field of scientific and mathematical correspondences and consider their importance in tracing the historical emergence of the eighteenth-century figure of the woman scientist, particularly focusing on Du Châtelet's scientific correspondence.<sup>22</sup> In the next section I turn to Du Châtelet's love letters to Saint-Lambert, while making connections with her other personal letters to friends and confidantes, but also mapping them on the plane of her scientific and philosophical work. By way of conclusion what I suggest is that Du Châtelet's letters create an important archive where her struggle to contribute to the cultural and scientific formations of the European Enlightenment is critically entangled with love as an existential and creative force.

### Epistolary laboratories

Scientific correspondence was central in processes of knowledge production and dissemination in the eighteenth and nineteenth centuries.<sup>23</sup> As Schurch has aptly observed, the *Philosophical Transactions*, the first peer-reviewed journal, of the Royal Society was

largely based on epistolary exchanges between scientists and the editor: ‘Natural philosophers would address observations and experimental reports to the secretary of the Royal Society, Henry Oldenburg (1619–1677), which he would then publish often verbatim’.<sup>24</sup> Mapping the contemporary field of mathematical correspondences, as well as their critical editions, Maria Teresa Borgato and Irène Passeron have argued that letter writing continues to be important in the spreading of scientific ideas ‘even in times of a great number of specialized journals’.<sup>25</sup> Moreover, mathematical correspondences display a great variety of topics beyond the remit of mathematical sciences, including ‘letters between mathematicians and from mathematicians to politicians, publishers, and men and women of culture.’<sup>26</sup> Finally, it is not only the letters of famous mathematicians that are of interest in the history of mathematics; contributions from lesser known mathematicians become a component of a wider *assemblage* ‘in the reconstruction of biographies, as well as the genesis of scientific ideas, in analysing relations and debates and, ultimately, in the correct dating and interpretation of various memoirs’.<sup>27</sup> Overall, the on-going digitization of mathematical works and correspondences ‘is of major interest in the field of the history of mathematics’.<sup>28</sup>

In the context of epistolary worlds and the digital turn in archival research, letters have become particularly important at throwing light in women’s engagement with science in the eighteenth and nineteenth centuries and there is an increasing interest in their scientific correspondence.<sup>29</sup> In considering Du Châtelet’s scientific correspondence, Roland Bonnel has coined the term of the ‘lettre laboratoire’, suggesting that her letters should be taken as sites where she conducted experiments.<sup>30</sup> He has further shown that her laboratory work was methodical, chronological, and went through her scientific work from her first published essay on the nature of fire,<sup>31</sup> her magnum opus, *Institutions de physique*<sup>32</sup> and finally her swan song, the translation of and commentary on Newton’s *Principia*.<sup>33</sup> Taking this idea further, Arianne Nicole Margolin has dissected the notion of Du Châtelet’s ‘epistolary laboratory’ by meticulously showing, how the laboratory—the site par excellence of the scientist’s work—was transposed within the context of the epistolary form:

Like many eighteenth-century philosophers, Du Châtelet primarily used the letter both privately and publicly to challenge and to explore. The series of letters between 1737–1741 used numerous rhetorical tactics to construct and formulate a series of image-based and logical arguments to support the *vis viva* or the *forces vives* [living forces]. Through constructing these thought experiments on paper, she successfully facilitated the spread of Newtonian ideas, sparked, and persuaded in scientific debate, and unified Newtonian and Leibnizian theories into classical physics.<sup>34</sup>

While Bonnel and Margolin have analyzed Du Châtelet’s scientific correspondence tracing her specific contributions to knowledge and research in natural science and mathematics, my reading is more focused on the process of her constitution as a mathematician, philosopher and scientist. In doing so I am interested in how the literary structures, persistent patterns, as well as formal characteristics of the letter, what Janet Altman has theorized as ‘epistolarity’,<sup>35</sup> are entangled in cultural *assemblages* in mathematics. Here, the notion of the *assemblage* is taken from Deleuze and Guattari’s philosophical vocabulary,<sup>36</sup> as a configuration denoting the complexity of discursive and non-discursive components and formations in the constitution of knowledge, culture, as well as gendered subjectivities in mathematics.<sup>37</sup>

Altman deployed 'epistolarity' as a frame of reading letters, arguing that the stylistic properties of the letter 'significantly influence the way meaning is consciously and unconsciously constructed by writers and readers of epistolary works.'<sup>38</sup> Detaching 'epistolarity' from the letter form itself, Schurch has meticulously studied its influence 'on textual, cultural and epistemological productions' in the eighteenth-century scientific scene.<sup>39</sup> Schurch has focused on how epistolary qualities blend with other forms of writing in the creative process of knowledge production and dissemination. In this light, epistolarity is 'a mobile concept' in Schurch's analysis that focuses on the creative qualities of the form, without necessarily turning it into a genre. It thus becomes an analytical tool, 'a way of examining the creativity and functionality of letters and other types of text'<sup>40</sup> that present epistolary qualities, such as 'direct address, the exchange of loose sheets of paper, and the text as a site of experiential expression.'<sup>41</sup>

In deploying epistolarity as a way of reading, understanding and analyzing Du Châtelet's letters in their interrelation with other auto/biographical documents, I have thus configured the notion of 'epistolary sensibility' as a methodological move that goes beyond the long-term historical practice of using letters as mere 'sources' or 'data' and includes amongst other practices, a striving for understanding that is driven by the documents under investigation, considering the content, form and context of letters and analyzing them in their interrelation. Elsewhere in my work I have mapped the epistolary field in its interrelation with auto/biography.<sup>42</sup> In doing so I have highlighted feminist approaches to epistolarity that have engaged in depth with the form and content of women's letters in a wide range of socio-historical, cultural and political fields.<sup>43</sup> But as already noted above, women's scientific correspondence is still a neglected field in epistolary analytics and this includes Du Châtelet's letters, particularly so in the anglophone literature around her life, as well as her philosophical and scientific work.<sup>44</sup>

Bonnel has particularly underlined this gap in the critical literature around Du Châtelet's correspondence, which 'is cited to reveal biographical details, but it is not analysed',<sup>45</sup> in terms of its epistolary traits and rhetoric. In addressing this gap, Bonnel has identified three types of letters in Du Châtelet's scientific correspondence: 'the letter argument' [lettre-dispute], where she responds to questions about her work, and presents, explicates and supports her scientific ideas; the 'letter-gazette', a type of a scientific newsletter, where novelties and debates are evoked and finally 'the laboratory letter', which takes the form of an examination, where previous literature on the topic is critically reviewed, constructive criticisms are made, hypotheses are configured, thought experiments are tested and new ideas and findings are put forward.<sup>46</sup> In Bonnel's classification, the 'letter-laboratory' is 'the most original' type of the scientific correspondence, although it emerges from and is intertwined with the 'letter-gazette'.<sup>47</sup>

In the context of Du Châtelet's voluminous and multi-faceted correspondence and since all letters are always dialogic, there is a particular analytical interest in the I/you/they epistolary relation and its three main figures: the sender/writer, the recipient and what Altman calls 'the external reader'.<sup>48</sup> In the case of scientific correspondences, the external reader may be the whole scientific community, particularly in the case of 'open letters', as for example Du Châtelet's polemical correspondence with Jean-Jacques Dortous de Mairan, secretary of the Royal Academy of Sciences in Paris.<sup>49</sup> Although famous, this correspondence was an exception in Du Châtelet's scientific

exchanges however, which were mostly of a private nature, in the sense that they were written with a particular recipient/reader/reviewer in mind. This derives from the structure of her letters—which often have a chaotic reasoning—the informal style of writing, as well as the materiality of the manuscripts, with erasures, corrections, as well as dense and rapidly written lines.<sup>50</sup> It is precisely the noisy materiality of Du Châtelet's epistolary manuscripts—even in their digitized form—that has driven my decision to draw on them instead of her edited and published correspondence, and particularly so with her correspondence with Maupertuis at the French National Library (BNF) and with de Saint Lambert, housed in the Morgan Library in New York.<sup>51</sup>

Considering the form and context of Du Châtelet's letters Margolin has shown that they unfold within the dominant philosophical discourses of the times—didactics and polemics: 'didactics is important because it achieves an instructional goal',<sup>52</sup> Margolin argues. But given the intense debates and rivalries between the Cartesians, the Newtonians and the Leibnizians in the eighteenth-century French scientific community,<sup>53</sup> Du Châtelet's letters were also polemical. As Marie-Claire Grassi has argued, three features can be traced in the polemical epistolary form: an open dialogism, an ironic tone, but also and perhaps most importantly, a simple style, a refined argumentation, since the aim of the polemical letters is after all to convince.<sup>54</sup> Combined together, the dialogic and the polemical epistolary elements present an intellectual crisis to their audiences, argues Margolin, at the same time of articulating a response, 'showing that the author-scientist has mastered the subject and can express themselves in a pleasant and elegant way.'<sup>55</sup>

My reading of Du Châtelet's letters to Pierre Luis Moreau de Maupertuis, who was also her tutor, as well as to other significant mathematicians and scientists of her time, has traced many more entangled components however, beyond the dialogic and the polemical, including self-reflections, playfulness, but most importantly ambivalence, particularly in the dangerous territory between physics and metaphysics:

You will have undoubtedly found my question quite ridiculous when I asked you how it followed that the same quantity of motion could subsist in the universe, supposing that the force of bodies in motion is the product of their mass by the square of their speed,<sup>56</sup>

Du Châtelet noted in a letter to Maupertuis, written from her château in Cirey on April 30, 1738, while she was preparing the publication of her *Institutions de physique*. While playfully admitting that 'you are the master in Israel and I am ignorant and seek to instruct myself trembling before you',<sup>57</sup> she also adds that ignorant as she was, she had managed to find the answer to her 'ridiculous' question:

Since I wrote to you, I read what M. Leibniz gave in the *Acta Eruditorum* on forces vives, and I saw that he distinguished between the quantity of motion and the distinct quantity of force; and then I found what I needed.<sup>58</sup>

Despite her discovery however, she still needed Maupertuis' advice on the metaphysical problem of freedom: 'I believe myself free and I do not know if this quantity of force, which is always the same in the universe, does not destroy liberty',<sup>59</sup> since 'if we have not the power to begin motion, we are not free',<sup>60</sup> she observed while asking a mathematician to enlighten her, given the pure truth that only mathematical analyses could ever convey.



What we have in this letter is a series of textual traces of the unfolding of Du Châtelet's scientific and philosophical thought, which develops through wonders, reflections, study, conversations and disputes. This is why Bonnel argues that her letters look like a laboratory, 'which acts as a space of research, a matrix of reflection and not only a place of communication'.<sup>61</sup> Through her letters, Du Châtelet would throw herself in a perpetual dialogue, not only with her epistolary interlocutors, but also with herself, as we have seen in her metaphysical questions above. Her critique unfolds as a reflection, but also with 'formulations of hypotheses, conditional proofs, deductions from conclusions, writing down of intuitions'.<sup>62</sup> In this sense her letters virtually recreate the space of a laboratory, while her recipients become collaborators in an experiment within a physics cabinet, as Bonnel has aptly commented.<sup>63</sup>

What Bonnel has not considered however, is that Du Châtelet was also a woman and despite her elite status, she had to fight against the amateur/salonnaire image that was prevalent in the cultural and intellectual circles of eighteenth-century France. To put it simply, she had to struggle to be taken seriously. The extract below from a letter to Frederick of Prussia, written in 1740 is revealing of her continuous struggle to establish herself as a scientist and philosopher on equal terms with her contemporaries:

I am my own person and only responsible to myself for everything I am, what I say, and what I do. There may be metaphysicians and philosophers whose knowledge is greater than mine. I haven't met them yet. But even they are only weak human beings with faults, and when I count my gifts, I think I may say that I am inferior to none.<sup>64</sup>

Within the epistemological considerations of the dialogic nature of the epistolary form, Du Châtelet's correspondents have significantly impacted upon the form and content of her letters. Indeed, throughout her life as a learned woman, she corresponded with a body of stellar mathematicians, who were all important scholars, academicians and university professors. Apart from Maupertuis, her correspondents included Alexis-Claude Clairaut, who eventually became her tutor and took care of the publication of 'her Newton' after her death.<sup>65</sup> The Swiss mathematicians Leonhard Euler and Johann Bernoulli and his son Johann II, were also among her correspondents, as well as the English scientist and physician James Jurin and the French mathematician and physicist François Jacquier.<sup>66</sup>

Du Châtelet's position in the epistolary relationship had variations and changes over time. With Maupertuis, she corresponded as 'a schoolgirl' [écolière], in the early phase: 'I have studied a lot and I hope you will be a bit less displeased with me than last time'<sup>67</sup> she wrote to him on a Monday, between January and February, 1734. In a later letter during the same period, she complained about being neglected: 'You don't want to encourage a schoolgirl, because I still don't know if you found my work good',<sup>68</sup> she wrote. Later on, when her mathematical knowledge advanced and her critical thought deepened, the tutor became a scientific advisor:

I have taken up, Sir, the sweet habit of writing to you for all the posts, and I cannot detach myself from it, even today that I have no pretext, to send a letter to you. I confess that I am a little annoyed to consult you from afar,<sup>69</sup>

she wrote on 26 January 1739, while sending Maupertuis a long list of questions about his book *La Figure de la Terre*.<sup>70</sup> In the final phase of their correspondence, when she was



preparing the publication of the *Institutions de physique* they eventually became colleagues, who were discussing, debating and had ultimately agreed to disagree:

I did not expect you to become Leibnizian, nor that the monads would conquer you. I do not know, however, if the metaphysical ideas, which are at the beginning of the book, do not at least deserve to be known<sup>71</sup>

she wrote from Brussels on 8 August 1841.

As Du Châtelet's biographer Judith Zinsser has written, her letters were important in maintaining her relations with the scientific community and their debates: 'she consulted with her correspondents, made clear her disagreements—later footnoting their works in her writings—and sent them her own publications.'<sup>72</sup> Although the frequency of her epistolary communication with the *savants* varies, and it is only with Maupertuis that we can create a narrative sketch of their epistemic relationship, Du Châtelet's scientific correspondence is an exemplary showcase of complex interplays between networks of mathematicians across Europe. Her correspondence further reveals the cultural contingency of the conditions of the production and dissemination of mathematical knowledge, through imaginary belongings in the 'Republic of letters',<sup>73</sup> particularly given the fact that traveling abroad was a harsh gendered restriction for her, irrespective of her social class and status. As Zinsser has commented, 'a marquise could not travel alone',<sup>74</sup> and yet traveling was essential for the Republic of letters, the means to meet 'the learned with whose work you were already familiar',<sup>75</sup> but particularly for mathematics to work and think with them.

Zinsser has also commented that sustaining her relationships with a network of scientists all over Europe, was as important, as her correspondence with her courtier friends, 'who made possible the advancement of her family'.<sup>76</sup> Sometimes both personal and scientific matters were discussed with the same correspondent, even in the body of the same letter. While communicating with Jacquier about her book on Newton, she would also ask him about her daughter, who had married to an aristocratic family in Naples and had moved there:

Tell me if you saw my daughter at Naples and if you were happy about it. She must have given birth now [...] They haven't started printing my Newton yet. Figures are engraved. It will be a matter of six months before the book can appear. I would very much like to be able to consult you and truly express the esteem and friendship with which I am, sir, your very humble and very obedient servant.<sup>77</sup>

In the context of Du Châtelet's correspondence, letter writing could also be a clandestine act, an informal exchange of new scientific ideas. Indeed, there were rigid restrictions on what could be published and circulated in the scientific community, given that Newton's and Leibniz's ideas were controversial in the Cartesian establishment of eighteenth-century France.<sup>78</sup> Du Châtelet's official publications carry an important note under their title on their first page: 'avec approbation & privilège du Roi' [with Royal approbation]. The King's approval was an official sanction, required for all books published in France and its neglect had serious consequences. When Voltaire's *Lettres philosophiques*, or *Letters Concerning the English Nation*<sup>79</sup> were published in May 1734, an order to arrest him was issued. It was not only the lack of the official sanction, but also the book's content, comprising a series of critical essays based on Voltaire's experiences of living in

exile in Britain between 1726 and 1729. His critique was seen as an attack on the French political system and thus led to his persecution. Incidentally this was a legal crisis that triggered his move to the Château de Cirey, where he found refuge, while his influential friends, under du Châtelet's co-ordination were trying to secure the King's pardon.<sup>80</sup>

As Mary Favret has therefore argued, the epistolary form acquired a public voice in the eighteenth century, while 'epistolary characters entered the discourse of the age and became the property of cultural history'.<sup>81</sup> Favret has further pointed to 'the complicated history of the letter between the eighteenth and twentieth centuries, a period during which the structure and practice of personal correspondence were repeatedly rewritten through political and social change'.<sup>82</sup> The production and dissemination of mathematical knowledge was part and parcel of such histories and women mathematicians like Du Châtelet often wrote and debated about culture, science and politics in their personal, as well as scientific correspondence, thus exposing 'relationships between functionality, creativity, fictionality and history', as Schurch has aptly observed.<sup>83</sup>

Moreover, epistolary exchanges usually imply distance and therefore linguistic, cultural and in the case of women mathematicians' correspondence, gender differences. The problematics of language and translation therefore become central in the search for meaning and understanding, particularly if we consider that Du Châtelet's letters, have never been translated in English in their entirety, apart from some extracts that have been included in her English biographies.<sup>84</sup> Useful as they are, these translated epistolary extracts are components of the context and logic of the biographer's discourse and cannot be studied in the context of Du Châtelet's *epistolarium*,<sup>85</sup> that is her wider collection of letters and bodies of correspondence, within which the narrative and epistemic value of her letters can only emerge. It is thus du Châtelet's *epistolarium* that I will consider in the next section, particularly focussing on her correspondence during the last two years of her life, 1748–1749.

### Epistolary intra-actions: between love and mathematics

In the previous section we have seen how Du Châtelet's scientific correspondence became instrumental in the production and dissemination of knowledge, sustained her relations with the wider mathematical community in Europe and ultimately forged her self-representation as a scholarly persona. Du Châtelet was a voluminous correspondent however, and the forms and types of her letters are polyvalent and multi-functional. Indeed, her letters are important auto/biographical documents, seizing moments of the everyday, dealing with worldly issues and business affairs and carrying marks of socio-economic, historical and political experiences, formations and circumstances.<sup>86</sup> Apart from the letters of the everyday, there are letters to friends and confidants, where existential questions are raised, and confessions are made. There are also philosophical letters, evoking subjects of a cultural nature in the traditional style of literary correspondences of her time and last but not least, there are her love letters, where discursive expressions of intense passions and feelings are etched, but also struggles with the beloved are staged, dreams unfold, and future plans are made. Taken together as an *epistolarium*, her letters utterly chart a map where the process of becoming a woman mathematician, scientist and philosopher can be traced.

Bonnel has argued that Du Châtelet's scientific correspondence is a separate category which only rarely encroaches on the other types of her correspondence.<sup>87</sup> My counter-argument however, is that the letters that she wrote either to tutors, fellow mathematicians, but also lovers, family members and friends carry traces of complex entanglements between science, culture and affects in their dynamic 'intra-actions'—a notion that atomic physicist and feminist philosopher Karen Barad has coined as a juxtaposition to the usual notion of interactions.<sup>88</sup> As Barad has suggested, while interactions occur between already established and separate entities, which exist independently, intra-actions emerge as relations between components on the wider realm of quantum mechanics. Intra-actions emphasize the entangled nature of phenomena, where entities and their boundaries dynamically emerge and are continuously reconfigured and where agency is not limited to human or conscious actors but extends to all material and discursive phenomena.<sup>89</sup> In this light, phenomena, such as mathematical proofs, scientific experiments, cultural creations, as well as wider knowledge formations actually emerge as an effect of intra-actions between minor components, such as those included in the materiality of writing, the darkness of the laboratory, the subdued atmosphere of the château, or a walk in the country. In the same vein, individuals, such as women mathematicians, philosophers and scientists do not pre-exist their relations and interactions, but rather emerge 'through and as a part of their entangled intra-relating',<sup>90</sup> including their correspondences, both personal and scientific. On this plane of intra-actions however, the epistolary boundaries between 'the private' and 'the public' are always open and fluid.

Du Châtelet in the company of Voltaire created a scientific abode in the château of Cirey, where they spent many months 'Newtonizing'—as they called their discussions of Newton's theories—reading, thinking, writing and conducting experiments within an actual cabinet of physics that Voltaire had acquired. During the prolonged period of their studies, they would also invite friends—important philosophers and scientists amongst them—organizing a range of social activities, including dinner parties, philosophical discussions over coffee, theatrical performances, masquerades, opera singing and card games.<sup>91</sup> Writing from Cirey to Maupertuis, Du Châtelet paints the way philosophy, culture and mathematics were entangled in her lived experiences, in a letter dated, December 1, 1736:

We have used your absence to render the people who inhabit Cirey worthy of you, for one does not lose hope of seeing you here one day. We have become real philosophers. The companion of my solitude has written an introduction to the philosophy of M. Newton, which he has dedicated to me and the frontispiece of which I send you. I believe that you will find the verses worthy of the philosopher of whom they speak, and of the poet who made them. You will find this almost printed on your return. If you had been in this part of the world, one would have asked for your advice. You have for a very long time wanted to make a philosopher of the first of our poets and you have succeeded, for your advice contributed to his determination to give himself up to his thirst for knowledge. As for me, you know more or less the dose of physics and mathematics I can take. I enjoy a great advantage over the greatest philosophers: that of having had you as my master. I am yet more proud, if possible, to see that you have not forgotten me.<sup>92</sup>

Such social gatherings at Cirey offer an exemplary case of Gillian Russell's concept of 'domiciliary sociability', a plane encompassing the private and the public, as a way of

intervening in the cultural and political formations of the early modern period, which also incorporated the production of scientific knowledge.<sup>93</sup> Through various modalities of sociable practices—which were however underpinned by serious and solitary study—Du Châtelet, was able to position herself as an active agent in the making of scientific knowledge, even if her status was not always officially recognized. Despite being the first woman to publish a paper in the proceedings of the Paris Academy of Sciences, Du Châtelet was never admitted in its circles, although she became a member of the Bologna Academy of Sciences, in 1746, soon after the publication of her *Institutions de physique* and its translation in Italian.<sup>94</sup> Moreover, while the interest in her scientific correspondence is primarily focussing on the period preceding the publication of her *Institutions de physique*, a synchronic analysis of her love letters to Saint-Lambert—written in the period between the winter of 1748 and her untimely death in the autumn of 1749—with the few scientific letters that she wrote during this time, but also with letters to friends and confidantes, reveals strong links between ‘the personal’ and ‘the scientific’, as I will further discuss.

Du Châtelet must have met Saint-Lambert sometime in the winter of 1748, while residing at the chateau de Lunéville, in Lorraine.<sup>95</sup> She had been invited there with Voltaire by Stanislas, former king of Poland, to join his court, but far gone were the days of her love with Voltaire.<sup>96</sup> They had stopped being lovers in around 1741, although they remained companions and life-long friends till the end.<sup>97</sup> Du Châtelet’s disillusion with love is forcefully expressed in her philosophical essay, *Discourse on Happiness*<sup>98</sup>: ‘one knows more of love by the unhappiness it causes than by the often obscure happiness it produces in men’s lives.’<sup>99</sup> But despite her disenchantment, Du Châtelet was adamant that being stuck in the regrets of the past was not helpful: ‘there is no point in looking back and one must always brush from one’s mind the memory of one’s errors’.<sup>100</sup> Retrospection was helpful in taking stock of past experiences, but it should be followed by the willingness to throw oneself to new passions and pleasures: ‘the ability to benefit from an initial examination, dismiss sad ideas and substitute agreeable ideas is one of the mainsprings of happiness, and we have this in our power, at least up to a point.’<sup>101</sup> Passions are necessary for being happy wrote Du Châtelet, but instead of pursuing passions that are dependent on others, we should seek independence and thus ‘the love of study is of all the passions the one that contributes most to our happiness.’<sup>102</sup>

Love thus emerges as a creative force of life in Du Châtelet’s philosophical discourse, a search for beauty and truth, following, but also bending the tradition of its founding philosophical text, Plato’s *Symposium*. My point here is that through her philosophical treatise, *Discourse on happiness*, as well as through her love letters, Du Châtelet engages not only with the ethereal and intellectual elements of love, but also with its embodiment and materiality, aspects that derive from its Sapphic tradition, as I have discussed elsewhere at length.<sup>103</sup> Thus, Du Châtelet’s encounter with Saint-Lambert, combined with her love for study and the happiness attached to the glory that the publication of her magnum opus, *Institutions de physique* had already brought her, was an event, where past, present and future were brought together as an exemplary Bergsonian *durée*.<sup>104</sup> As she wrote in the *Discourse*, ‘we are made happy in the present moment, not only by our actual delights, but also by our hopes, our reminiscences. The present is enriched by the past and the future.’<sup>105</sup> In this context, Voltaire was in the past and Saint-Lambert in the future,

while her present was enmeshed in the pleasures of loving and writing—both love letters and ‘her Newton’.

Yesterday you said things so tender and so touching that you have penetrated my heart, so love me always in this way. Believe that, when you love me, I adore you. I spent the most agreeable night that I could spend without you, you never left my thoughts ... You wish me to tell you about what I will do today. What I want to do every day of my life: I will see you, I will love you, I will say it to you. But I want to read that in the charming eyes that I adore.<sup>106</sup>

This undated short letter-fragment, probably written sometime in the summer of 1748 is one out of the 99 extant letters that Du Châtelet wrote to Saint-Lambert in the period between 1748 and 1749. Read as an *epistolarium*, these letters carry the traits of the ‘lettre d’amour’: they become unique through the individual style revealed by the passion of love; they please, seduce and convince; they modify the real, which is transcended by expectation; they ignite imagination, exacerbate desire, and heighten feelings; they initiate and refresh the game of love, but they are also painfully marked by time and space. Through the epistolary exchange the two lovers—as successively readers and writers—live in the Bergsonian *durée*: while they are immersed in the present pleasure of reading and writing, the letter brings back sweet memories of past pleasures, while at the same time projects the two lovers in the future in anticipation of more love pleasures to come.<sup>107</sup> What is usually not included in the amorous epistolary discourse is the agony over the completion of a scientific piece of work, as in Du Châtelet’s letter to the beloved, dated June 16, 1748:

I am leaving all my business affairs, and my book, which you must have the fairness to regard as a business, because it is still very essential for me. This book is awaited, promised, it begun two years ago, my reputation depends on it. It was certainly nothing less than necessary to undertake it, but it is essential to finish it, and to do it well. And it is a work of which what remains for me to do demands the greatest contemplation and the greatest concentration.<sup>108</sup>

The letter above was sent from Paris, where Du Châtelet had gone to work on her book, amongst other affairs that she had to deal with. Her separation with the beloved had proved to be torturous however: his letters had driven her to despair, had made her understand ‘that you no longer love me, that you no longer want to love me, that you repent of having loved me’.<sup>109</sup> He had written her ‘the harshest and most distressing things’<sup>110</sup> to the point of making her ‘die of grief’.<sup>111</sup> The lover’s discourse ‘exists only in outbursts of language’, Roland Barthes has famously written<sup>112</sup> and indeed Du Châtelet’s letters to Saint-Lambert overflow with outbursts of language, which express her desire for excessive emotions:

Although I am perhaps more a geometer than you, I am not so stiff. I will not tell you that I will always love you in proportion to what I will be loved; but I will tell you that I cannot be happy loving you if you do not love me excessively. Remember that when it comes to love, enough is never enough.<sup>113</sup>

What is rare and unique in these amorous epistolary exchanges, however, is that Saint-Lambert’s rival is not Voltaire, the husband, or even a new lover: it is ‘her Newton’, who keeps her away from the beloved. As stated in the June 16 letter above, Du Châtelet decided to throw her work in the air and run to the beloved in Commercy, the summer

retreat of the Stanislas court: the sacrifice of 'her Newton' was the utter proof of her love. Indeed, there was absolutely no time for study work in Commercy, as both Du Châtelet and Voltaire were engaged in staging theater productions for the king's entertainment.<sup>114</sup> As she wrote to her friend *compte d'Arsenal*, apologizing for having neglected their correspondence, 'it is true that twenty-four hours are not enough to repeat two or three operas, as well as so many comedies'.<sup>115</sup> Under such circumstances, her decision to hastily join her lover, was a temporary break from the scientific task at hand, which she fervently resumed in the beginning of 1749.

Writing to *Jacquier* on 15 February, 1749, from Paris—where she had returned to work for 'her Newton'—she would admit that this project had completely absorbed her and that she had a lot of work to do since she had lost a whole year in Lorraine where she had found it impossible to work 'in the middle of the dissipation and the cut-off life that one leads there'.<sup>116</sup> Her letter went on to describe the structure of the book and particularly her work for the preface of the second volume, where she would present and explicate Newton's system 'without figures and without algebra'.<sup>117</sup> Her plan also included a section on the figure of the Earth and the theory of the moon and the comets, where she would report on the new discoveries and especially those of *Mr. Clairaut*. That was her plan that she intended to send to *Jaquier* as soon as it was ready. Her determination to complete her project is also inscribed in a letter to the Swiss mathematician *Johann II Bernoulli*, written on the same day:

I have come here to finish my Newton, and I won't leave until it is finished. You will certainly receive one of the first copies. I am very sorry not to have been able to bring your insights into the work, but I would like you to find it worthy of you.<sup>118</sup>

Having returned to Paris for serious work, Du Châtelet wrote to two famous mathematicians on the same day, as a way of binding herself to the promise of completing her *Newton*. These two letters create a sort of epistolary pact for their sender. And yet, three days later, on February 18, 1749, she would write a passionate letter to *Saint-Lambert*, apologizing for some 'cruel' letters that she had sent him, while fearing that he was about to break up with her:

I don't know what to make of your last two letters. Are you detached from me? I will not believe it until you tell me again, I will never console myself [...] If you send me back my portrait, which I had the imprudence to ask for again in my last letter, you will give me a death blow. However, I hardly doubt it anymore, by the coldness of your last letter, and the way you seem to be heading for a breakup.<sup>119</sup>

Her letter above, as well as several others that she wrote to the beloved in the same period, are inscribed in the discourse of what *Mikhail Bakhtin* has configured as 'the discourse of pathos', which is traced in the baroque novel and unfolds through the modes of *apologia* and *polemic*. This discourse of pathos is 'prosaic' according to *Bakhtin*: 'it continually senses the resistance offered by alien discourses, alien points of view [and] is associated with justification (self-justification) and accusation'.<sup>120</sup> Du Châtelet's love letters enact features of the novelistic pathos: although they emerge from real life situations and bridge the gap between presence and absence—as all love letters do—they also create a fictional reality for the amorous relationship, which can only exist in the textual space of the epistolary act. Indeed, the *Bakhtinian*



novelistic pathos, transposed into ‘an epistolary pathos’ runs as a red thread throughout Du Châtelet’s love letters, weaving together suffering, despair, sadness and passions as rhetorical tropes of her desire to be recognized, accepted and reciprocated by the beloved. Within the discourse of the ‘epistolary pathos’, Du Châtelet follows the moves and gestures of an epistolary novel heroine, who ‘justifies herself, accuses her lover, breaks down his resistance to reading her letter, and refutes the logic of his viewpoint.’<sup>121</sup> Her letters further foreground ‘the secret of love’, the desire ‘to be known as oneself’ by the beloved, as Jessica Benjamin has written.<sup>122</sup>

Through narrative iteration, the epistolary pathos renders ineffable affects perceptible: Du Châtelet uses repetitive topics and arguments and expresses the same desires, fears and doubts, over and over again. There are even stylistic recurrences in the letters of a woman, who definitely knew how to write: words and phrases are often repeated in the same sentences, as a way to impress her overwhelming emotional state upon her reader/recipient. Sometimes she even seems to realize her deficiencies as an author, when she writes: ‘This letter is full of inconsistencies, it only feels too much for the turmoil you have put in my soul.’<sup>123</sup>

In this context, Du Châtelet’s worry about her lover’s health is a recurring and constant theme in their correspondence: ‘You are ill, and I am eighty leagues away from you! You are sick, and I am not at your bedside! All my anger is over, and I only feel my worry and my despair’,<sup>124</sup> she wrote on February 18, 1749 from Paris. In the order of the discourse of pathos, her letter further unfolds as both an apologia and a polemic: she apologizes to the beloved for being away, offers an explanation by drawing on the inefficiency of the amorous language, but still fights, pushes for her letter to be read, notwithstanding the deficiencies of language and expression:

No, I don’t have anger anymore, no I never will. No, all I have now is emotion, pain at having displeased you. My last letter will have afflicted you, perhaps revolted you, but it came in the wake of so many others so tender that it is impossible that we have not unraveled, in the fury that reigned there, all the love that had dictated it. No, I believe your heart is as sincere and tender as it has always seemed to me.<sup>125</sup>

By deploying Bakhtinian tropes in the analysis of the novel, my point here is that the emotional extravagance of love letters cannot be taken at face value in terms of pinning down their writer/sender in a subject position—a desperate marquise who writes passionate letters to the beloved, as some strands in the literature revolving around Du Châtelet’s amorous relationships have maintained.<sup>126</sup> As I have argued elsewhere in my work, epistolary narratives carry signs of forceful passions and unspeakable affects, but they cannot represent reality: they simply respond to it.<sup>127</sup> At the same time of presenting herself as an inconsolable lover, Du Châtelet posits ‘her Newton’ as an urgent existential project par excellence, but also stresses the fact that her love for study would be her salvation from the miseries of love: ‘I always try to keep my soul in such a situation that I find resources in my courage, in my philosophy, and especially in my love for study, if you abandon me’ she wrote to Saint-Lambert from Paris.<sup>128</sup>

In this context, love in Du Châtelet’s correspondence and philosophical writings, cannot be simply taken as a disciplinary technology submitting women in the heteropatriarchal regimes of modernity. Indeed, the thesis ‘against love’<sup>129</sup> has been the dominant



discourse for years in feminist debates, that go back to Mary Wollstonecraft's philosophy.<sup>130</sup> In the context of this trend, feminist engagement with Du Châtelet's work have critically interrogated the way her life and amorous relationships have overshadowed her mathematical, scientific and philosophical work.<sup>131</sup> While acknowledging the importance of this feminist critique, my approach in this paper, as well as elsewhere in my work,<sup>132</sup> follows traces of a different take on love, that departs from previous negative approaches and highlights the creative dynamism of love, situating it as 'a question for feminism in the twenty-first century'.<sup>133</sup> This body of literature also draws on black feminist studies, wherein love has been importantly theorized as a source of power in Black women's lives.<sup>134</sup>

Its creative forces notwithstanding, there is no doubt that love has been a thorny issue in women's lives in general and Du Châtelet's experience in particular. Apart from having worked for Newton's translation and commentary for a long time, the urgency of its completion arose from another serious problem Du Châtelet was grappling with in the beginning of 1749: an unexpected pregnancy at the age of forty-two, a very risky situation for a woman of her times and not only. 'Well, I must therefore tell you my unfortunate secret'<sup>135</sup> she wrote to her friend Mme de Boufflers-Remiencourt, a powerful woman at the Lorraine court, on April 3, 1749. Her pregnancy was described as an affliction, and she wrote openly about 'how much I fear for my health and even for my life'.<sup>136</sup> She further found it 'ridiculous' to be pregnant at her age, and also embarrassed to discuss it with her son. And yet she needed to plan and having taken the decision to give birth at the Lunèville Château, she was asking for her friend's support: 'you understand how much I count on your friendship and how much I need you to console me and help me bear my condition', she wrote.<sup>137</sup> Du Châtelet was very well educated to be aware of what was at stake with her pregnancy. She went on tirelessly working for 'her Newton' till the very last days of her pregnancy. 'I don't go out anymore, I only do my As and Bs', she wrote to Mme de Boufflers on 10mMay 1749, particularly stressing that she had not even seen the tragedy *Aristomène*, first staged in Paris at the end of April, 1749. Her letter to Saint-Lambert sent from Paris on 21 May, 1749 gives an idea of her fervent work schedule:

My departure does not depend absolutely on me, but on Clairaut and the difficulty of what I do. I sacrifice everything to that, even my looks. I beg you to remember that if you find me changed. Have you any idea of the life I have led since the departure of the king? I rise at 9 o'clock, sometimes at 8, I work until 3, I have my coffee at 3 o'clock; I take up work again at 4, I leave it at 10 in order to have a little to eat alone, I chat until midnight with M. de V., who attends my supper, and I take up work again from midnight to 5 o'clock. Sometimes I wait for M. Clairaut, and I attend to my affairs and read through my proofs. Mme Du Deffand, Mme de B, everybody without exception is denied for supper and I have made a rule for myself not to go out to supper, in order to be able to finish my work.<sup>138</sup>

In the same letter she admits that in the beginning of her séjour in Paris, she had not managed her time well since she was only working during the day and had social outings in the evening. But the work did not progress and in the end, she realized that she run the risk of losing 'all the fruit of my work in case I die in childbirth'.<sup>139</sup> Indeed, one of her last extant letters before she died was addressed to Claude Salier, the royal librarian, to whom she deposited her manuscripts: 'I use the liberty, you have given me to leave in your hands the manuscripts, which I have great interest in

securing that they will remain after me.’<sup>140</sup> While wishing that all would go well with the birth, despite her fears, she nevertheless asked the librarian ‘to put a number in the manuscripts and to register them, so that they are not lost.’<sup>141</sup> These manuscripts were indeed not lost, but many others of her papers were dispersed in different archives, particularly as they followed Voltaire’s papers, which were bought by the Russian Empress Catherine the Great, and they are still emerging from their hideouts.<sup>142</sup> We are still in the beginning of recognizing the *Époque Émilienne*,<sup>143</sup> but there is a lot of work to be done, in recovering Du Châtelet’s contribution to the history of science and philosophy and this includes the translation of her full correspondence in English.

## Epistolary entanglements and existential becomings

In this article I have considered Du Châtelet’s epistolary archive as a repository of documents that trace the process of becoming a woman mathematician, philosopher and scientist in eighteenth century Europe. Du Châtelet’s letters to a number of important mathematicians of her times have been read as ‘laboratory letters’, sites of experimentation, but also textual spaces for the creation, display and dissemination of mathematical, scientific and philosophical ideas and knowledge. Her personal letters and particularly her amorous correspondence with Saint-Lambert have been read as discursive expressions of love, not just for the beloved/addressee but perhaps more importantly as a creative force of life encompassing Du Châtelet’s passion for study as a pathway to happiness. On the plane of epistolary analytics, that considers the form, the content and the context of letters in their complex interrelation, the personal and the scientific are therefore tightly interwoven in Du Châtelet’s *epistolarium* through the creative forces of love. What I have finally argued is that it is through such epistolary entanglements and intra-actions that Du Châtelet emerges *as a femme philosophe* par excellence of the European Enlightenment.

## Notes

1. Émilie Du Châtelet to Jean François de Saint-Lambert, Morgan Library and Museum, Department of Literary and Historical Manuscripts, MA 2287.59., f.9. Unless otherwise indicated all translations are mine.
2. For biographical details on Saint-Lambert, see Roger Poirier and Jean François de Saint-Lambert, *1716–1803: Sa vie, son oeuvre* (Sarrerequimes: Pierron, 2001).
3. *Institutions de physique* : nouvelle édition (Hildesheim: Georg Olms, 1742).
4. The significance of du Châtelet’s translation of and commentary on Newton’s *Principia* in the history of science was recognized and solidified in the entry on Newtonianism in Diderot and d’Alembert’s famous *Encyclopédie*. See D’Alembert and Jean Le Rond, ‘Newtonianism or Newtonian Philosophy’, in *The Encyclopedia of Diderot & d’Alembert Collaborative Translation Project*, trans. Terry Stancliffe (Ann Arbor: Michigan Publishing, University of Michigan Library, 2015). Originally published as ‘Newtonianisme, ou Philosophie Newtonienne’, in *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, 11:122 (Paris, 1765). It has further been meticulously treated in the relevant literature. For the most recent overview of this literature, see Ruth Hagengruber, ed., *Époque Émilienne* (Cham: Springer, 2022), particularly Chapters 7: Hartmut Hecht, ‘Three French Newtonians and Their Leibnizian Background’, 175–196; Chapter 10: Michel Toulmonde, ‘Émilie Du

- Châtelet and Newton's *Principia*, 235–254 and Chapter 11, George, E. Smith, *Du Châtelet's Commentary on Newton's Principia: An Assessment*, 255–310.
5. See details of this project, <https://sites.google.com/view/numbersandnarratives/a-feminist-genealogy-of-automathographies> (accessed September 19, 2023).
  6. Halmos, *I Want to become a Mathematician: An Automathography* (New York: Springer, 1985).
  7. See amongst others, Kathleen P. Long, ed., *Gender and Scientific Discourse in Early Modern Culture* (Farnham: Ashgate, 2010); Judith Zinsser, *Men, Women and the Birthing of Modern Science* (DeKalb, IL: Northern Illinois University Press, 2005); Patricia Fara, *Pandora's Breeches: Women, Science and Power in the Enlightenment* (London: Pimlico, 2004); Leigh Ann Whaley, *Women's History as Scientists: A Guide to the Debates* (Santa Barbara, CA: ABC-CLIO, 2003); Patricia Phillips, *The Scientific Lady: A Social History of Women's Scientific Interests, 1520–1918* (London: Weidenfeld and Nicolson, 1990).
  8. Phillips, *The Scientific Lady*, 28.
  9. See Zinsser, 'Introduction', in *Men, Women and the Birthing of Modern Science*, 4.
  10. Karen Detflensen, 'The Rise of a Public Science? Women and Natural Philosophy in the Early Modern Period', in *The Cambridge History of Philosophy of the Scientific Revolution*, eds. David Marshall and Dana Jalobeanu (Cambridge: Cambridge University Press, 2022), 129, 128–145.
  11. See *Ibid.*, 128n1, 141.
  12. *Ibid.*, 142.
  13. Londa Schiebenger's work has been influential in this field. See Londa L. Schiebenger, *The Mind Has No Sex?: Women in the Origins of Modern Science* (Cambridge, MA: Harvard University Press, 1989). See also the Center for the History of Women Philosophers and Scientists, for a rich overview of this field, its history, literature, present and future projects, <https://historyofwomenphilosophers.org/about/> (accessed July 2, 2023).
  14. See Beatrijs Vanacker and Lieke van Deinsen, eds., *Portraits and Poses: Female Intellectual Authority, Agency and Authorship in Early Modern Europe* (Leuven: Leuven University Press, 2022).
  15. See Schurch, 'Women, Empiricism and Epistolarity, 1740–1810' (PhD thesis, University of York, 2019, for a recent overview of this field in the early modern period.
  16. Schurch, 'Women, Empiricism and Epistolarity', 30.
  17. Ken Plummer, *Documents of Life 2* (London: Sage, 2001).
  18. See Maria Tamboukou, *Nomadic Narratives, Visual Forces: Gwen John's Letters and Paintings* (New York: Peter Land, 2010).
  19. See Tamboukou, *Epistolary Narratives of Love, Gender and Agonistic Politics: an Arendtian Approach* (London: Routledge, 2023).
  20. See Halmos, *An automathography*; Kochina Pelageya, *Love and Mathematics: Sofia Kovalevskaya*, trans. Michael Burov (Moscow: Mir Publishers, 1985); Edward Frenkel, *Love and Math, The Heart of Hidden Reality* (New York: Basic Books, 2013); David Fortus, Jing Lin, Knut Neumann and Troy D. Sadler, 'The Role of Affect in Science Literacy for All', *International Journal of Science Education* 44, no. 4 (2022): 535–555.
  21. See Hagengruber, *Époque Émilienne*, for an overview of this literature.
  22. Here it is important to remember that mathematics, science and philosophy were overlapping fields in the early modern period. See amongst others, Ruth Watts, *Women in Science: A Social and Cultural History* (London: Routledge, 2007).
  23. See amongst others, the Darwin letters project on the importance of letters in Darwin's scientific work, <https://www.darwinproject.ac.uk/> (accessed July 24, 2022).
  24. Schurch, 'Empiricism and Epistolarity', 37.

25. Maria Teresa Borgato and Irène Passeron. 'Introduction', in *Mathematical Correspondences and Critical Editions*, ed. Maria Teresa Borgato, Erwin Neuenschwander, Irène Passeron (Cham: Birkhäuser, 2018), vii, vii–xxi.
26. Ibid.
27. Ibid.
28. Ibid., viii.
29. See Schurch, 'Women, Empiricism and Epistolarity' for an overview of the literature.
30. 'La Correspondance scientifique de la marquise Du Châtelet: La "Lettre-laboratoire"', in *Femmes en toutes lettres: Les Epistolaires du XVIIIe siècle*, ed. Marie-France Silver and Marie-Laure Girou Swiderski (Oxford: Voltaire Foundation, 2000), 79–95.
31. 'Dissertation sur la nature et la propagation du feu'. Paris: Académie des sciences (concours), 1738.
32. *Institutions de physique*.
33. *Principes Mathématiques de la Philosophie Naturelle*, 2 vols. (Paris: Desaint & Saillant, 1756).
34. 'Le laboratoire épistolaire dans les oeuvres scientifiques de la marquise du Châtelet'. Graduate Student Theses, Dissertations, & Professional Papers. 614., 2008: ii, <https://scholarworks.umt.edu/etd/614> (accessed February 23, 2023).
35. Janet Altman, *Epistolarity: Approaches to a Form* (Ohio: Ohio State University Press, 1982).
36. Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: The Athlone Press, 1988[1980]).
37. For an extended discussion of the use of assemblages in narrative analysis, see Tamboukou, *Nomadic Narratives, Visual Forces*.
38. Altman, *Epistolarity*, 4.
39. Schurch, 'Empiricism and Epistolarity', 21.
40. Ibid., 23.
41. Ibid., 9.
42. For an extended discussion of epistolarity in auto/biographical research, see Tamboukou, 'Epistolary Lives: Fragments, Sensibility, Assemblages in Auto/Biographical Research', in *The Palgrave Handbook of Auto/Biography*, eds. Anne Chapell and Julie M. Parsons (Basingstoke: Palgrave, 2020), 157–164.
43. See amongst others, Martin Meritxell-Simon, *Barbara Bodichon's Epistolary Education: Unfolding Feminism* (Basingstoke: Palgrave Macmillan, 2020); Liz Stanley, *The Racialising Process: Whites Writing Whiteness in Letters, South Africa 1770s–1970s* (Edinburgh: X Press Independent Publisher, 2017); Margaretta Jolly, *In Love and Struggle: Letters in Contemporary Feminism* (New York, NY: Columbia University Press, 2008).
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45. 'Lettre laboratoire', 81.
46. Ibid., 81–82.
47. Ibid., 82.

48. Altman, *Epistolarity*, 88. See also Sabine Gruffat, *L'Épistolaire* (Paris: Ellipses, 2001), 4, although Gruffat only uses the notion of 'the reader'.
49. In 1740, Du Châtelet challenged the Cartesian views of Mairan, who responded by writing an open letter. She wrote a rejoinder and their correspondence was reprinted in various publications in French, but was also translated into Italian and German. See *Réponse de Madame la Marquise du Châtelet à la Lettre que M. de Mairan, Secrétaire Perpétuel de l'Académie Royale des Sciences, lui a Écrite le 18 Février 1741 sur la Question des Forces Vives* (Bruxelles: Foppens, 1741).
50. See 'Lettres de la marquise DU CHATELET à M. de Maupertuis. (1734–1741)', Bibliothèque Nationale de France [BnF, ms.fr.12269]. Also available in Gallica, <https://gallica.bnf.fr/ark:/12148/btv1b6000754n> (accessed November 3, 2022).
51. A discussion of the epistemological consequences of working with digitized manuscripts goes well beyond the limitations of this paper, but I have written elsewhere about it. See Tamboukou, 'The Visual Turn and the Digital Revolution', *a/b: Auto/Biography Studies* 32, no. 2 (2017): 359–362.
52. Margolin, 'Le laboratoire épistolaire', 38.
53. See amongst others, John Bennett Shank, *The Newton Wars and the Beginning of the French Enlightenment* (Chicago: Chicago University Press, 2008), for an elaboration on these debates and controversies.
54. Marie-Claire Grassi, *Lire l' épistolaire* (Paris: Dunod, 1998), 109.
55. Margolin, 'Le laboratoire épistolaire', 38.
56. Du Châtelet to Maupertuis, January 1734, BnF, ms. fr.12269, ff.78–80.
57. Ibid.
58. Ibid.
59. Ibid.
60. Ibid.
61. Bonnel, 'La letter laboratoire', 81.
62. Ibid.
63. Ibid.
64. Cited in <https://historyofwomenphilosophers.org/project/directory-of-women-philosophers/du-chatelet-emilie-1706-1749/>.
65. See Passeron, 'Muse ou élève?' for du Châtelet's correspondence with Clairaut.
66. See Bonnel, 'La letter laboratoire' for more details about her scientific correspondents, pp. 82–84.
67. BnF, ms.fr. 12269, f.5r.
68. Ibid., f.12r.
69. Ibid, f.131r.
70. *La Figure de la Terre, déterminée par les Observations de Messieurs Maupertuis, Clairaut, Camus, Le Monnier & de M. l'Abbé Outhier, accompagnés de M. Celsius* (Paris: Imprimerie Royale, 1738), available on Gallica, <https://gallica.bnf.fr/ark:/12148/bpt6k625769> (accessed January 10, 2023).
71. BnF, ms.fr. 12269, f.168v.
72. Judith Zinsser, *Daring Genius of the Enlightenment, Émilie du Châtelet* (New York: Penguin, 2006), 118.
73. Dena Goodman, *The Republic of Letters: a cultural history of the French enlightenment* (Ithaca: Cornell University Press, 1994).
74. Zinsser *Daring*, 116.
75. Charles-Etienne Jordan, *Histoire d'un voyage littéraire fait en MDCCXXXIII* (The Hague: Adoren Hoetiers, 1735), cited in *ibid*.
76. *Daring Genius*, 118.
77. Du Châtelet to Jacquier, December 17, 1745. In Ulla Kölving & Andrew Brown, eds., *La Correspondance d', Émilie du Châtelet* (Fernel-Voltaire, Centre international d'étude du xviii<sup>e</sup> siècle, 2 vols), Vol.2, 278.
78. For the debates and controversies of Newton's reception in France, see amongst others, Shank, *The Newton Wars* and Hartmut, 'Three French Newtonians'.

79. See the Voltaire Foundation entry for more details on this influential publication, <http://www.voltaire.ox.ac.uk/lettres-sur-les-anglais/> (accessed January 15, 2023).
80. See Zinsser, *Daring Genius*, 90–91.
81. Mary A. Favret, *Romantic Correspondence: Women, Politics and the Fiction of Letters* (Cambridge: Cambridge University Press, 1993), 13.
82. *Ibid.*, 15.
83. Schurch, ‘Empiricism and Epistolarity’, 24.
84. See Frank Hamel, *An Eighteenth-Century Marquise: A Study of Émilie du Châtelet and her Times* (New York: James Pot & Co, 1910); Samuel Edwards, *The Divine Mistress: A Biography of Émilie du Châtelet, The Beloved of Voltaire* (New York: David McKay, 1970); Esther Erhman, *Mme du Châtelet: Scientist, Philosopher and Feminist of the Enlightenment* (Leamington Spa: Berg, 1986) and Zinsser, *Daring Genius*.
85. Liz Stanley, ‘The Epistolarium: on Theorising Letters and Correspondences’, *Auto/Biography* 12 (2004): 216–50.
86. For an enlightening discussion of the use of epistolary practices about the mundane and the ordinary see Liz Stanley, ‘Letter-Writing and the Actual Course of Things: Doing the Business, Helping the World Go Round’, in *The Palgrave Handbook of Auto/Biography*, eds. Julie, M. Parsons and Anne Chappell (London: Palgrave Macmillan, 2020), 165–182.
87. *Ibid.*, 81.
88. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007).
89. *Ibid.*, 141.
90. *Ibid.*, ix.
91. See Zinsser, *Daring Genius*, particularly, Chapter Three, ‘Mon Academie’: Châtelaine of Cirey.
92. Du Châtelet to Maupertuis, BnF, ms.fr. 12269, f.61v–62r.
93. Gillian Russell, *Women, Sociability and Theatre in Georgian London* (Cambridge: Cambridge University Press, 2007).
94. See Zinsser, *Daring Genius*, 209.
95. For more details of their meeting and relationship, see Zinsser, *Daring Genius*, particularly Chapter 6, pp. 260–279.
96. The Peace of Vienna in 1738 recognized Augustus III as king of Poland but allowed Stanislas to keep his royal titles, while granting him the provinces of Lorraine and Bar for life. See Zinsser, *Daring Genius*, for more details on du Châtelet’s relationship with the Lorraine court, particularly Chapter 6.
97. Du Châtelet’s love relationship with Voltaire is a much-discussed topic in the literature, but it is beyond the scope of this paper, given that their correspondence was not preserved. See amongst others, Ira Wade, *Voltaire and Madame du Châtelet: An Essay on the Intellectual Activity at Cirey* (Princeton: Princeton University Press, 1941); Nancy Mitford, *Voltaire in Love* (London: Hamish Hamilton, 1957) and David Bodanis, *Passionate Minds: Émilie du Châtelet, Voltaire, and the Great Love Affair of the Enlightenment* (New York: Three Rivers Press, 2006).
98. Du Châtelet wrote this essay in the period between 1740 and 1748. It was published after her death, although multiple manuscripts were circulating while she was still alive. For more details about this work, see Émilie du Châtelet, ‘Discourse on Happiness’, in *Selected Philosophical and Scientific Writings*, ed. Judith Zinsser, trans. Isabelle Bour (Chicago & London: The University of Chicago Press, 2009), 345.
99. *Ibid.*, 350.
100. *Ibid.*, 356
101. *Ibid.*
102. *Ibid.*, 357.



103. See Tamboukou, *Sewing, Fighting and Writing: Radical Practices in Work, Politics and Culture* (London: Rowman and Littlefield International, 2015), particularly Chapter 4.
104. In his philosophy of time, Henri Bergson has made the distinction between 'objective', calendar time and la durée [duration], which is the time of our lived, subjective experiences. See *Time and Free Will: An Essay on the Immediate Data of Consciousness*, trans. Frank L. Pogson (London: George Allen & Unwin, 1970 [1889]).
105. Du Châtelet, 'Discourse on Happiness', 358.
106. Morgan, MA 2287.27.
107. For a rich discussion of the 'love letter' see amongst others Linda S. Kauffman, *Discourses of Desire: Gender, Genre and Epistolary Fictions* (Ithaca and London: Cornell University Press, 1986).
108. Morgan, MA 2287.61, f.1.
109. Ibid.
110. Ibid.
111. Ibid.
112. *A Lover's Discourse: Fragments*, trans. Richard Howard. London: (Vintage Books, 2002 [1977]), 3–4.
113. Letter from Paris, dated June 19, 1748, Morgan, MA 2287.66, f.2.
114. See Zinsser, *Daring Genius*, 259–260 for details of such performances.
115. Letter from Commercy, dated July 20, 1748, in Kölving and Brown, *La Correspondance*, Vol.II, 339.
116. Ibid., 395.
117. Ibid.
118. Ibid., 392.
119. Morgan, MA 2287.82, f.4.
120. *The Dialogic Imagination: Four essays*, ed. Michael Holquist, trans. Caryl Emerson and Michael Holquist (Austin: The University of Texas Press, 2002), 394.
121. Kauffman, *Discourses of Desire*, 45.
122. 'Master and Slave: the Fantasy of Erotic Domination', in *Powers of Desire: The Politics of Sexuality*, eds. Ann Snitow, Christine Stansell, and Sharon Thompson (New York: Monthly Review Press, 1983), 290, 280–299.
123. Letter sent from Bar-le-Duc, dated, April 25, 1748, Morgan, MA 2287.52, f.3.
124. Morgan, MA 2287.82, f.1.
125. Ibid.
126. See amongst others, Edwards, *The Divine Mistress*; Elisabeth Badinter, *Emilie, Emilie, l'ambition féminine au XVIIIème siècle* (Paris: Flammarion, 1993); Mitford, *Voltaire in Love*.
127. See Tamboukou, *Nomadic Narratives, Visual Forces*, 26.
128. Paris, June 16, 1748, Morgan, MA 2287.61, f.3.
129. Laura Kipnis, *Against Love: A Polemic* (New York: Pantheon Books, 2003).
130. See Susan Mendus, *Feminism and Emotion: Readings in Moral and Political Philosophy* (Basingstoke: Palgrave, Macmillan, 2000).
131. See amongst others Judith P. Zinsser and Julie Candler Hayes, *Emilie Du Châtelet: rewriting Enlightenment philosophy and science* (Oxford: Voltaire foundation, 2006).
132. See Tamboukou, *Epistolary Narratives of Love, Gender and Agonistic Politics*.
133. See Anna Jónasdóttir, and Ann Ferguson, eds., *Love: A Question for Feminism in the Twenty-First Century* (London: Routledge, 2013).
134. See bell hooks, *All about Love: New Visions* (London: Women's Press, 2000).
135. In Kölving and Brown, *La Correspondance*, Vol.II, 419.
136. Ibid.
137. Ibid., 420.
138. Morgan, MA 2287.89, ff.2-3.
139. Ibid., 3.



140. In Kölving and Brown, *La Correspondance*, Vol.II, 478.
141. Ibid.
142. See ‘Émilie Du Châtelet (1706–1749): The Saint Petersburg Manuscripts’ Ruth E. Hagengruber, Andrew Brown, Ulla Kölving, Stefanie Ertz (2020–2021), <https://historyofwomenphilosophers.org/stp/> (accessed January 10, 2023).
143. Ruth Hagengruber, ed., *Époque Émilienne: Philosophy and Science in the Age of Émilie Du Châtelet (1706–1749)*, Vol. 11 (Springer Nature, 2022).

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