

TIME FOR ÉMILIE DU CHÂTELET

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This essay offers an account of the core of Du Châtelet's understanding of time and attempts to situate it with respect to more familiar views of her era. The essay is divided into three sections. The first section argues that Du Châtelet holds that we have a foundational idea of successive being and defends a particular interpretation of her understanding of that crucial concept. The second section argues that time for Du Châtelet is the order of successive beings insofar as they succeed each other and fleshes out that suggestion in part by drawing comparisons between Du Châtelet's relationism and Leibniz's relationism. The third section explicates Du Châtelet's reasons for thinking that substantial views of time are natural and useful but also false and dangerous. The essay concludes by drawing some connections between Du Châtelet's views on time and her views on space.

Introduction

Recent scholarship has seen a flourishing of work on Émilie Du Châtelet.¹ Much progress has been made on central themes of her natural philosophy, including, for example, her views on *vis viva*, idealism, and her relation to Newton and Leibniz. Nonetheless, we are clearly only at the beginning of our efforts to understand Du Châtelet's wide-ranging and subtle natural-philosophical system. Even important, central issues of Du Châtelet's thought remain almost

1. For overviews of recent secondary literature on Du Châtelet, see Detlefsen (2018); Project Vox Team (2019); Rodrigues (2012).

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entirely neglected, themes, for example, such as Du Châtelet's views on optics and the nature of fire.²

This essay explores a topic concerning Du Châtelet's natural-philosophical system whose neglect is especially striking.³ Time is one of the most basic, central, and essential concepts of physics, and Du Châtelet appropriately devotes an entire chapter to the subject in her *Institutions de physique* (1740), subsequently entitled *Institutions physiques* (1742).⁴ Although the chapter is presented in Du Châtelet's clear and direct style, her treatment of time can be difficult to follow for the simple reason that it takes for granted a host of distinctions, debates, and discussions that are now quite unfamiliar, while forging an original and subtle view concerning the nature of time and temporality.

In what follows, I offer an account of the core of Du Châtelet's understanding of time and attempt to situate it with respect to more familiar views of her era. The essay is divided into three sections. The first section argues that Du Châtelet holds that we have a foundational idea of 'successive being' and defends a particular interpretation of her understanding of that crucial concept. The second section argues that time for Du Châtelet is the order of successive beings insofar as they succeed each other and fleshes out that suggestion in part by drawing comparisons between Du Châtelet's relationism and Leibniz's relationism. The third section explicates Du Châtelet's reasons for thinking that substantial views of time are natural and useful but also false and dangerous. The essay concludes by drawing some connections between Du Châtelet's views on time and her views on space. On the reading offered here, just as Du Châtelet is an idealist about space but nonetheless a realist about spatiality, so likewise she is an idealist about time but nonetheless a realist about temporality.

1. A Foundational Idea of Successive Being

Paraphrasing Aristotle, Aquinas famously warns that 'a little error in the beginning leads to a great one in the end'.⁵ In approaching Du Châtelet's views on

2. For important exceptions concerning optics, see Nagel (2012, 2022); Gessell (2019). On fire, see Kawashima (2005); Veldman (2026).

3. For important exceptions, see Brading (2019: 63 and fn. 15; 2025); Carus (2022, forthcoming); Hagengruber (2026); Hagengruber and Wells (2024); Reichenberger (2021, n.d.).

4. I have used Du Châtelet (1742) as the default version of her *Institutions*. Unless noted, I am responsible for all translations in what follows. I have, however, benefited from, and been frequently guided by, the translations of Du Châtelet (1740) made by Judith P. Zinsser and Isabelle Bour in Du Châtelet (2009) as well as by Katherine Brading et al. in Du Châtelet (2018). I have similarly benefited from translations in Dyck (2019) of Wolff's *German Metaphysics* and by unpublished translations of Wolff's *Ontologia* by Bryce Gessell.

5. Aquinas's remark occurs at the opening of his *On Being and Essence* (Aquinas 1976). Aquinas is paraphrasing (Aristotle 2020: 9, 271b8–13).

time, I think the easiest little error to make is to overlook her commitment to a foundational idea of successive being. Indeed, I suggest that the most central, animating thought of her entire discussion of time is the thought that all our other temporal notions—insofar as they are well-founded—presuppose a foundational idea of successive being. For Du Châtelet, it is our direct awareness of our own successive being, and our indirect awareness of the successive being of other creatures, that grounds, but is not grounded in, our ideas of time, motion, and measurements of time.⁶

Given its central role, it should come as no surprise that the notion of successive being is ubiquitous in Du Châtelet's chapter on time in the *Institutions*. Using terms such as 'succession', 'successive beings', 'successive things', and the verb 'to succeed', to reference successive being, Du Châtelet opens Chapter 6 by comparing time and space, telling us that 'there is a great deal of analogy between time and space' (1742: 94). 'In space', she tells us, 'one simply considers the order of the coexistents insofar as they coexist; and in duration, the order of successive things, insofar as they succeed each other, abstracting from any other internal quality than simple succession' (1742: 94). She uses the same family of terms eight sections later to define time itself, writing that 'time is really nothing other than the order of successive beings; and one forms the idea of it inasmuch as one considers only the order of their succession' (1742: 102). In fact, the notion of successive being is so common in Du Châtelet's discussion of time that—with one exception—the term 'succession', or one of its cognates, occurs in every single section of Chapter 6 that is more than one sentence long. And the exception? It only proves the rule. For although the final section of Chapter 6 does not explicitly use the term 'succession' or its cognates, its whole point is to contrast the successive being of creatures with the permanent being of God.⁷

But what is successive being for Du Châtelet? How are we to understand this notion evidently so central to her discussion of time? In his extremely helpful treatment of medieval to early modern views on successive being, Robert Pasnau sketches two general pictures of how philosophers have thought about successive being (2013: 374–80). We might call the first general picture the *narrow interpretation*. The narrow interpretation attempts to draw a distinction among created beings—between, for example, substances like Socrates and this ox, and more ephemeral entities like motion and time. As Pasnau relates, medieval philosophers appear to have pursued two rather different strategies in trying to

6. For an overview of the history of the concept of successive being, see especially Pasnau (2013: 374–98). For possible influences on Du Châtelet's thinking about successive being, see especially Christian Wolff's discussion in his *Ontologia* ([1730] 1977: 570, 573, 581) and *German Metaphysics* (1720: 133–34). See, however, also Locke's *Essay* (1998: 174–86, II.xiv).

7. For discussion of Du Châtelet's understanding of God's permanent being, see McDonough (2025).

capture this distinction (narrowly interpreted) among creatures (2013: 377). On what Pasnau calls the ‘synchronic approach’, the distinction is ‘drawn in terms of whether an entity could wholly exist at an instant’ (2013: 377). The rough idea is that Socrates, for example, is a permanent being because he could wholly exist at an instant, while the motion of his body is a successive being because no motion could possibly exist at an instant. On what Pasnau calls the ‘diachronic approach’, the distinction is drawn in terms of ‘whether a thing endures for more than an instant’ (2013: 378). The rough idea here is that permanent beings endure while successive beings do not. The ox, for example, is a permanent being, on this approach, because it remains numerically the same from one instant to the next, while motion is a successive being because nothing of it endures numerically from one instant to the next; it rather goes ‘through time in flux, meaning that “some” of it exists at one time and “a totally different such exists” at a different time (lines 2–3)’ (Pasnau 2013: 379).

The narrow interpretation may be contrasted with a second general picture of the distinction between successive and permanent being. The *broad interpretation*, as we may call it, is perhaps most deeply rooted in what Pasnau describes as the ‘one formulation of the distinction [between permanent and successive being] that is universally accepted [amongst medieval philosophers]: that a permanent entity exists all at once, whereas a successive entity does not’ (2013: 375). The picture, according to Pasnau, may be associated with Walter Burley’s characterization of successive entities: ‘This is the difference between permanent and successive things: that a permanent thing exists all at once (*tota simul*) ... whereas it is incompatible with a successive thing to exist all at once (*In Phys.* III text 11, f. 65rb)’ (Pasnau 2013: 375). In reference to Burley’s characterization, Pasnau writes that ‘the core idea of the permanent-successive distinction, on this way of framing it, is that successive entities exist partly at one time and partly at another, never wholly at any one time, whereas the whole of a permanent entity—every part of it—exists at the same time’ (2013: 375).

I’ve called this second general picture ‘broad’ because, rather than drawing a narrow distinction amongst creatures, it suggests that creatures are generally successive entities. (It won’t matter for our purposes if there are, or could be, exceptional, special, or limiting cases, for example, instantaneous *states* of created beings.) Making the point that, in the broad sense, creatures are generally successive beings, Pasnau writes:

A tree, for instance, gains and loses leaves, and never has all of those leaves at once. Something similar seems true of finite minds: their thoughts come and go in such a way that the mind never possesses all of its thoughts at once. Moreover, even if we were to conceive of a completely unchanging substance, that substance would still endure through time. This suggests

that the entirety of its existence could not be captured at any one instant, inasmuch as its existence extends through time, having one part now and other parts at other times. If ‘part’ is understood broadly enough, such an entity does not have all its parts at once. (2013: 376)

On the broad view, the distinction between successive being and permanent being is no longer (at least generally) a distinction amongst creatures but rather a distinction between the kind of being enjoyed by creatures and the kind of being enjoyed by God. On this picture, creatures in general are successive beings. Like Pasnau’s tree, they are always at least partially coming into being and partially passing out of being. They never exist ‘all at once’. In this regard, they stand in sharp contrast to God. God is never partially coming into being nor ever partially passing out of being. God is completely necessary. He is fully existent at all times. He is unchangeable, simple, and eternal in Boethius’ sense of enjoying ‘the all-at-once and complete possession of unending life’ (2013: 376–77).

With a distinction between broad and narrow conceptions of successive being, we can return to Du Châtelet and ask: in her discussion of time, does she have in mind a broad or narrow conception of successive being? Not surprisingly, she doesn’t give us an answer in those exact terms. Nonetheless, I think there are two strong indications that she has a broad conception of successive being in mind.

The first indication is to be found in the contrasts that she does and does not draw in her discussion of time. Does: If Du Châtelet is working with the broad picture, we should expect her to draw, in her discussion of time, a contrast between creatures in general and God. For the whole point of the broad picture is to contrast the successive being of creatures in general with the permanent being of God. And that, of course, is exactly what we find in Chapter Six of the *Institutions*. Sections 94–103 discuss successive being without qualification. Section 104, however, abruptly switches gears. There she invokes God as a contrast, declaring that ‘[w]ith regard to God, it cannot be said that he is in time, for there is no succession in him, nor can any change happen to him’, explaining, in perfect accordance with the broad picture, that ‘God is at once all that he can be, whereas creatures can only successively achieve the states of which they are capable’ (104). Does not: If Du Châtelet were working with the restrictive picture, we should expect her to draw, in her discussion of time, a contrast amongst creatures, that is, a contrast between successive creatures and permanent creatures. But no such contrast is drawn by Du Châtelet. As we would expect given the broad picture, she makes no effort whatsoever to explicate a distinction between, on the one hand, things like Socrates and this ox, and on the other hand, things like time and motion.

The second indication that Du Châtelet has a broad conception of successive being in mind is to be found in her definition of time itself. Du Châtelet holds

that time is ‘the order of successive things, insofar as they succeed each other’. In the next section, we’ll look more closely at some subtle details related to Du Châtelet’s definition of time. Here, however, we may simply note that her definition makes better *prima facie* sense on the broad interpretation of successive being than on the narrow interpretation. For on the broad interpretation, Du Châtelet is suggesting that time is the order of things like Socrates and this ox, insofar as they succeed one another temporally. Time is the successive order of the existence of, for example, Socrates, Plato, and Aristotle. This ox, its offspring, and their offspring. That is at least a sensible start on an account of time. On the narrow interpretation, in contrast, Du Châtelet would be suggesting that time is the order of things like motion and time ‘insofar as *they* succeed each other’ (emphasis added). But this—by Du Châtelet’s own lights—must be a much less promising start on an account of time. For, Du Châtelet explicitly denies that time is essentially related to motion (112; compare Locke 1988: 180, II.xiv.19).⁸ For her, time simply cannot be the order of motions insofar as they succeed each other. But the suggestion that time is the order of times is also obviously problematic. For even if we can make sense of the notion of times succeeding each other, it would be circular at best, paradoxical at worst, to say that time is the order of times, insofar as they succeed each other. The assumption that Du Châtelet has a broad conception of successive being in mind in her discussion of time thus not only makes better sense of the distinctions she draws and does not draw in Chapter 6 of the *Institutions* but also makes better sense of her very definition of time as ‘the order of successive things, insofar as they succeed each other’.

Against the suggestion that Du Châtelet is working with a broad understanding of successive being, it might be argued that Du Châtelet’s thinking about time, and presumably about successive being, is greatly influenced by Leibniz. With this thought in mind, one might object that in his fifth letter to Clarke, Leibniz rejects *entia successiva* and therefore must have rejected a broad understanding of successive being (Pasnau 2013: 375, fn. 1). If we take Du Châtelet to have followed Leibniz on this point, we should conclude that she similarly has a narrow understanding of successive being, and that the attribution to her of a broad understanding of successive being would set us on the wrong path to making sense of her account of time in the *Institutions*.⁹ The objection is coherent and worthy of consideration. Nonetheless, I don’t think that it is compelling. Indeed, I think we should resist both of its main contentions, namely, (i) that Leibniz’s remarks in his fifth letter to Clarke show that he must have rejected a broad understanding of successive being, and (ii) that if Leibniz had rejected a

8. For discussion of the relationship between time, measure, and motion in Du Châtelet, see McDonough, (forthcoming).

9. I owe this objection to an anonymous reviewer.

broad understanding of successive being, that would give us a strong reason to suppose that Du Châtelet did as well. Let's look at both points more closely, taking them in reverse order.

First, would Leibniz's rejection of a broad understanding of successive being give us a strong reason to suppose that Du Châtelet rejects a broad understanding of successive being as well? I see no reason not to concede that Du Châtelet was influenced by Leibniz and his followers, as, indeed, she famously acknowledges—perhaps too generously—in the Preface to the *Institutions* (XII).¹⁰ That said, however, I think there is no reliable inference from Leibniz's views to Du Châtelet's views. Elsewhere I've argued that Du Châtelet's understanding of space and eternity differ quite radically from Leibniz's, and in the next section, I'll suggest two crucial ways in which her views on time are specifically at odds with Leibniz's views (McDonough 2026, 2025). Others have similarly shown important respects in which Du Châtelet is at odds with Leibniz on topics ranging from substance to causation to the Principle of Sufficient Reason (see, for example, Amijee 2025_a, 2025_b; Carus 2025; Henkel 2025; Stan 2018; Wells 2021, 2023). While Du Châtelet no doubt drew some inspiration from Leibniz and his followers, her views are often starkly at odds with Leibnizian views. Even if Leibniz did embrace a narrow understanding of successive being, I don't think that that fact alone would give us a strong reason to assume that Du Châtelet did as well, especially when weighed against relatively direct evidence (given above) that she did not.

Second, and furthermore, I don't think that it is even clear that Leibniz himself embraced a narrow conception of successive being. In his fifth letter to Clarke, Leibniz does indeed deny that *time* is an *entia successiva*, but the specific conclusion he draws—'that time can only be an ideal thing'—suggests that he is concerned not with the successive being of creatures in general but with the nature of time per se. Denying that time itself is a successive being, however, is perfectly consistent with supposing—as the broad understanding suggests—that, for example, each monad continuously unfolds in a temporal order in accordance with its own law of the series in such a way that 'the entirety of its existence could not be captured at any one instant' (Pasnau 2013: 376). Leibniz's metaphysics is, of course, complicated and open to dispute, and this isn't the place to dig into its details. Suffice it for present purposes to note that Leibniz's passing remark about time's not being a successive being leaves open questions about his understanding of the notion of successive being itself and its applicability to creatures in general. Perhaps, as Pasnau suggests, in denying

10. For an extended discussion of Du Châtelet's relationship to Leibniz and Wolff, with an extensive bibliography of the related literature, see Carus and McDonough (2025).

that time is an *entia successiva*, Leibniz meant to signal his embrace of a narrow conception of successive being. But perhaps, as I think is more likely, he meant merely to indicate that time itself—as an ideal entity in the divine intellect (see section 2 below)—must be a permanent, not a successive, being. If the latter view is indeed correct, the inference from Leibniz’s rejection of a broad understanding of successive being to Du Châtelet’s rejection of a broad understanding of successive being would not only rest on an unreliable inference, it would rest on an unreliable inference from a view that Leibniz did not hold.

In the sections that follow, I will assume, at least for the sake of argument, that Du Châtelet does hold a broad understanding of successive being, and I will try to show how her broad conception of successive being grounds her account of time as well as her opposition to alternative conceptions of time and their implications. I’d like to close this section, however, by noting how recognizing Du Châtelet’s commitment to successive being clarifies a potentially puzzling passage that occurs in Section 97 of Chapter 6 of the *Institutions*. Contrasting her own view of time with ‘the idea of time as an absolute being, existing independently of successive beings’—that is, with Newton’s and Clarke’s view—Du Châtelet writes:

When we pay attention to the continuous succession of several beings, and we represent to ourselves the existence of the first A as distinct from that of the second B, and this second B distinct from that of the third C, and so on, and we notice that two never exist together; but that A, having ceased to exist, B soon succeeds it; and that B, having ceased, C succeeds it, and etc., we form a notion of a being we call *time*. And insofar as we relate the permanent existence of one being to these successive beings, we say *that it lasted a certain time*. (1742: 97)

If we overlook Du Châtelet’s commitment to a foundational idea of successive being, this passage must strike us—as it once struck me, and as I know it has struck others—as being hopelessly circular. For the notion of succession at stake in the passage is clearly a notion of *temporal* succession, and if temporal succession is to be understood in terms of time, then it clearly cannot be used (as Du Châtelet clearly does use it) to explicate time itself. Recognizing Du Châtelet’s commitment to a foundational idea of successive being, however, dissolves the puzzle. Du Châtelet is indeed suggesting that our notion of time is grounded in our notion of successive being. For her, however, our idea of successive being is not in turn grounded in anything. We have a foundational idea of successive being that grounds, but that is not grounded in, our idea of time. Much as Descartes took his foundational idea of extension to ground ideas of spatial location, spatial magnitude, and space, so Du Châtelet takes her foundational idea of successive being to ground ideas of temporal order, temporal duration, and time.

2. Time as the Order of Successive Being

But what, exactly, is time for Du Châtelet? Armed with the notion of successive being, Du Châtelet's answer can be put succinctly. As she tells us in the first sentence of Chapter Six, time, for her, is simply 'the order of successive things, insofar as they succeed each other, abstracting from any other internal quality than simple succession' (1742: 94). Every word counts. Du Châtelet takes for granted that there are 'successive things', beings such as Louis XIII, Louis XIV, and Louis XV. She proposes that successive beings can be put in order 'insofar as they succeed each other'. Ordered with respect to temporal succession, we can say that Louis XIII was temporally succeeded by Louis XIV, who was temporally succeeded by Louis XV. In ordering them with respect to temporal succession, nothing matters except their successive being. Neither their intelligence, nor vanity, nor height is relevant to temporal order. In ordering French kings with respect to time, we set aside 'any other internal quality than simple succession', and—to repeat—time itself is just that 'order of successive things, insofar as they succeed each other' (1742: 94).

Highlighting some similarities and differences with Leibniz's more familiar account of time may help us to get a more textured understanding of Du Châtelet's proposal. Her account of time overlaps with Leibniz's mature view of time in at least three important respects.¹¹ First, and most obviously, Du Châtelet agrees with Leibniz that time is essentially relational, that is, that time is to be identified not with a temporally extended thing—a backdrop or container—but rather with an order, a structure, or a system of relations. In fact, on this point, even Du Châtelet's wording comes very close to Leibniz's as well as to Christian Wolff's. In both the 1740 and 1742 editions of the *Institutions*, Du Châtelet indicates that time is an order by using the expression 'order of successive things'—in the French, 'l'ordre des choses successives' (1742: 94). Leibniz, in his fifth letter to Clarke, uses the expressions 'an order of successive things' and 'the order of successions' (Leibniz and Clarke 2000, 5:105; see also 3:4); in the French translation by Pierre des Maizeaux, read by Du Châtelet,¹² 'un Ordre des choses Successives' and 'l'ordre des successions' (Des Maizeaux 1720: 138; see also 31). Similarly, in his *Ontologia*, Wolff introduces his definition of time as the order of successive things in a continuous series, in Latin, 'ordo successivorum in serie continua', and quotes Leibniz's definition of time, using the Latin expression 'ordinem successionum' ([1730] 1977: 572; see also 1720: 94). In suggesting that time is an order, structure, or system of relations, and in hewing closely to the very wording used by Leibniz and Wolff, Du Châtelet is in close agreement with Leibniz's relational view of time.

11. For discussion of the development of Leibniz's views on time, see especially Arthur (2021) and De Risi (2025).

12. See Du Châtelet (2009: 156, fn. 77).

Second, Du Châtelet agrees with Leibniz that there is a sense in which time is *ideal* or *abstract*. In his correspondence with Clarke, Leibniz had suggested, for example, that ‘time without things is nothing else but a mere ideal possibility’, that anyone who considers the nature of time ‘will easily apprehend that time can only be an ideal thing’, and that space per se is ‘an ideal thing like time’ (Leibniz and Clarke, 2000, 5:55, 5:49, 5:33).¹³ Du Châtelet agrees with Leibniz that extension and space, like time, are abstract orders (1742: 79, 87, 89). She likewise proposes that ‘[w]hen we pay attention to the links between our ideas, we grasp that in the abstract notion of time the mind only considers beings in general; and that having abstracted from all the determinations these beings can have, only adds to this general idea, that of their non-coexistence’ (1742: 98). ‘In this manner’, Du Châtelet tells us,

one forms an ideal being, consisting in a uniform flow, which must be similar in all its parts, since in order to form it one uses the same abstract notion for each being without determining anything of its nature, and one considers in all these beings only their successive existence without caring about how the existence of one gives birth to another’. (1742: 98)

In maintaining that ‘by the analysis of our ideas’, we can see that ‘time is only an abstract being’, Du Châtelet is thus again in agreement with Leibniz. Both affirm that there is a sense in which time is not only an order, but an ideal or abstract order (1742: 96).

Third, Du Châtelet agrees with Leibniz that the supposition that the world as a whole could have been created earlier or later implies a violation of the Principle of Sufficient Reason. In his correspondence with Clarke, Leibniz famously maintains that it is an impossible fiction ‘to suppose that God might have created the world some millions of years sooner’ (Leibniz and Clarke 2000, 4:15). He argues that ‘since God does nothing without reason, and no reason can be given why he did not create the world sooner ... the question why it was not otherwise ordered becomes needless and insignificant’ (Leibniz and Clarke 2000, 4:15; see also 5:55). Du Châtelet agrees. She writes that ‘if time is an absolute being consisting in a uniform flow, the question of why God did not create the world six thousand years earlier or later ... forces one to admit that something happened without sufficient reason’ (1742: 96). She elaborates:

13. Leibniz expresses the same idea in the *New Essays*, writing, for example, that ‘[t]hings which are uniform, containing no variety, are always mere abstractions: for instance, time, space, and the other entities of pure mathematics’ (1996: 110). The *New Essays* was not published until 1769, some twenty years after Du Châtelet’s death.

For the same succession of beings in the universe being conserved, God could make the world begin earlier or later, without thereby causing any disturbance ... since all instants are equal, when only succession is attended to there is nothing in them that could have led to a preference for one over another, to the extent that no diversity in the world would have been caused by this choice'. (1742: 96)

She thus concludes, with Leibniz, that if creation took place against a background of absolute time, then 'one instant would have been chosen in preference to another to make this world actual without sufficient reason, which cannot be accepted (1742: 96; compare 1742: 74).

Although Du Châtelet's understanding of time agrees in clear and important ways with Leibniz's, I'd like to suggest that it nonetheless differs in two essential ways as well. First, while Du Châtelet and Leibniz agree that there is a sense in which time is ideal or abstract, their views on the relationship between time and actual temporal order differ significantly. Leibniz holds an essentially Platonic view of the relationship between ideal or abstract time and the temporal order of the actual world (see 1996: 47–52). For Leibniz, ideal or abstract time prefigures creation and exists independently of the created order of the world (see Leibniz and Clarke 2000, 5:106). Like all ideal or abstract entities, ideal or abstract time exists in the divine intellect (Leibniz 1996: 447; 1976: 336, 488). It is uncreated, necessary, and modal in the sense that it places limits on both actual and possible beings (Leibniz and Clarke 2000, 5:104). The temporal order of the actual world, in contrast, is, well, actual. It is contingent and grounded in the existence of created beings. Its structure is limited or 'governed' by abstract or ideal time in much the same way as Leibniz takes the spatial relations holding between bodies to be limited or 'governed' by the abstract or ideal structure of Euclidean geometry (1875, 4:490–492). For Leibniz, ideal or abstract time is related to the temporal order of the world in a broadly Platonic manner. It is the ideal, necessary, perfect form that stands over its real, contingent, imperfect instantiation.

In contrast to Leibniz, Du Châtelet holds an essentially nominalist view of the relationship between abstract time and actual temporal order. Her view in this respect is much closer to Wolff's than to Leibniz's (see especially Wolff 1977: 587, 339; see more generally Descartes 1984: 214–15, *Principles*, Part 1, section 62). For Du Châtelet, abstract entities in general are just actual things thought about, or viewed, abstractly. Because they are just actual things thought about, or viewed, abstractly, abstract entities cannot exist independent of the actual things of which they are abstractions. Du Châtelet's nominalist view of abstraction comes out perhaps most strikingly in her suggestion that 'without a multitude of things that we count, there would be no real and existing Numbers'

(1742: 87), a claim that echoes Wolff's suggestion that 'number differs from the things which have been numbered, but does not exist unless those things are existing' (1977: 587).¹⁴ The same view is evident in Du Châtelet's treatment of space, when she suggests that 'since the Abstract cannot subsist without something Concrete, that is to say without a real and determined Being from which we are abstracting, it is certain that there is Space only insofar as there are real and coexisting things; and without these things there would be no Space' (1742: 87; see also Wolff 1977: 46). The same nominalist story applies to time. Du Châtelet insists in Section 102 that 'there is no time without successive beings arranged in a continuous sequence; and there is time as soon as such beings exist' (1742: 102; see also Wolff 1977: 574, 587). In the next section, she underscores the point again, adding that

time, which is nothing other than the order of continuous successions, could not exist if things in a continuous sequence did not exist. Thus, there is time when there are successive things, and it is removed when one removes these things ... time, like space, is nothing absolute outside of things. (1742: 103)

Thus, while Leibniz and Du Châtelet agree that time is ideal or abstract, Du Châtelet's understanding of what it means for something to be ideal or abstract differs radically from Leibniz's. Their different views on the nature of abstract entities drives an important wedge between their views on time, pushing Du Châtelet away from Leibniz and towards Wolff.

Second, while Du Châtelet and Leibniz agree that time is to be identified with an order, they nonetheless disagree in a profound way about the metaphysical reduction of time. Leibniz maintains that time itself is reducible to causes or reasons and the principle of noncontradiction. The full story is complicated by the intricacies of Leibniz's metaphysics, and especially by his thinking about time both in terms of physical and monadological metaphysical schemes. Nonetheless the basic picture is straightforward enough. Leibniz suggests that two states of a being are successive only if they are contradictory. If a substance is both F and not-F, it must be F at one time and not-F at another time. Of two such contradictory states, one state is earlier than the other if and only if the one state causes or involves the reason for the other state, that is, if one state makes the other state 'intelligible'. Thus, for example, Leibniz tells us that 'from two contradictory states of the same thing, that is earlier in time which is prior by nature, i.e., which involves the reason for the other, or what amounts to the same

14. For an interesting discussion of how Du Châtelet's understanding of the objects of mathematics relates to their role in science, see Wells (2021).

thing, which is more easily understood'. He continues: 'For example in a clock, in order to understand completely the present state of its hands, it is required that we understand its reason, which is contained in the preceding state; and so on' (Leibniz 2001: 269). Leibniz, we might say, is a radical reductionist with respect to time. Leibniz wishes not only to reduce actual time to a system of relations, he wishes to reduce worldly temporal relations to the intrinsic properties of creatures and the principle of noncontradiction. Leibniz aims to reduce not only time, but temporality itself.¹⁵

In contrast to Leibniz, Du Châtelet holds a less radically reductionist view of time. As we've seen, Du Châtelet and Leibniz both wish to reduce time to an order, to a system of relations. But as we noted in the first section, Du Châtelet takes successive being as a primitive metaphysical notion. Successive beings have successive 'parts' that are ordered with respect to one another insofar as they are successive. Du Châtelet does not directly identify time with successive beings or their successive 'parts'. She insists that because time necessarily involves an abstract way of apprehending successive beings, it is 'different from the things that succeed each other in a continuous sequence' (1742: 103; compare Wolff 1977: 575). But while she denies that time can be simply identified with successive beings, she nonetheless takes it for granted that time is partially grounded in successive beings, that is, that time is grounded in something that is *per se* temporally structured (on this point, see also Carus, forthcoming). In maintaining that time is 'the order of successive things, insofar as they succeed each other' (Du Châtelet 1742: 94). Du Châtelet effectively rejects Leibniz's ambitious—perhaps overly ambitious—proposal to reduce not just time but temporality itself to causes or reasons and the principle of noncontradiction. In advocating for a more modest—perhaps more promising—reduction of time, Du Châtelet is once again significantly at odds with Leibniz and his particular brand of relationism about time.

3. Against Newtonian Absolute Time

As we've just seen, Du Châtelet embraces a subtle, relationist view of time, according to which time is 'the order of successive things, insofar as they succeed each other' (1742: 94). Her positive account of time echoes her subtle, relationist view of space as 'the order of the coexistents insofar as they coexist' (1742: 94; see also 1742: 72). In embracing relationist views of time and space, Du Châtelet consciously sets herself against the non-relationist views of time and space associated

15. For a reductive reading of Du Châtelet along these lines, see Brading (2025: 13–15). On Brading's reading, Du Châtelet postulates a non-temporal causal order that merely 'manifests itself as a temporal succession in how we experience the world' (2025: 14).

with Newton and Clarke. As I have argued elsewhere, however, her rejection of absolute space is nuanced (McDonough 2026). She argues that our idea of absolute space is demonstrably *false* (1742: 74). But she also insists that it is nonetheless *natural*, perhaps even inevitable (1742: 77–85). Indeed, she even concedes that our idea of absolute space is *useful* (1742: 86). Having made such admissions, she nonetheless goes on to argue that abstract ideas—paradigmatically, our abstract idea of absolute space—are nonetheless ‘*dangerous* when we take them for realities’ (1742: 86; emphasis added). Given that Du Châtelet holds that our ‘notions of time and space are very similar’ (1742: 94), it should perhaps come as no surprise that she is likewise ambivalent about our idea of absolute time. As with absolute space, she holds that our idea of absolute time is *false*, *natural*, *useful*, and *dangerous*.

Du Châtelet’s central argument in Chapter 5 of the *Institutions* for the conclusion that absolute space is false draws on what are now familiar Leibnizian ‘shift’ arguments (see, for example, Leibniz and Clarke, 2000, 4:6 and 4:13). She notes that ‘if Space is a real Being and subsistent without the Bodies that could be placed in it, it makes no difference in which part of this homogeneous Space one places them, provided that they keep the same order among themselves’ (1742: 74). If space were absolute, bodies could be placed in it indifferently here or there. Du Châtelet puts the point in terms of divine choices, writing that if space were absolute, then

there would not have been any sufficient reason why God would have placed the Universe in the place where it is now, rather than in any other, since he could have placed it 10,000 leagues further away, and put the East where the West is; or indeed he could have reversed it, so long as he kept things in the same situation among themselves. (1742: 74)

Absolute space would thus violate the Principle of Sufficient Reason—the ‘principle on which all contingent truths depend’ (1742: 8)—and so ‘one cannot help but acknowledge that Mr. Leibniz was right to banish absolute Space from the Universe, and to regard the idea that several Philosophers believe they have as an illusion of the imagination’ (1742: 74). She concludes, with finality, that ‘Mr. Leibniz’s reasoning against absolute Space is ... irrefutable, and one is forced to abandon this Space, or renounce the principle of sufficient reason; that is to say, renounce the foundation of all truth’ (1742: 74). The idea of absolute space, according to Du Châtelet, is thus demonstrably false.

So is the idea of absolute time. In Chapter 6, Du Châtelet argues in a parallel manner that ‘[t]he Principle of Sufficient Reason proves that time is not separate from things’ (1742: 96).¹⁶ She maintains that just as Leibniz was able to

¹⁶ For more general discussion of the role of the Principle of Sufficient Reason in Du Châtelet’s natural philosophy, see Carus (2025) and Wells (2021, 2023).

show how the principle of sufficient reason definitively refutes the doctrine of absolute space, so 'M. Leibniz had no trouble countering ... the English doctor [M. Clarke] and his opinion on the nature of time by the principle of sufficient reason' (1742: 96). Once again, she makes her central point by appealing to now familiar shift arguments. She explains:

For if time is an absolute being consisting in a uniform flow, the question of why God did not create the world six thousand years earlier or later becomes real, and forces one to admit that something happened without sufficient reason. For the same succession of beings in the universe being conserved, God could make the world begin earlier or later, without thereby causing any disturbance. Now since all instants are equal, when only succession is attended to there is nothing in them that could have led to a preference for one over another, to the extent that no diversity in the world would have been caused by this choice. Thus, one instant would have been chosen in preference to another to make this world actual without sufficient reason, which cannot be accepted. (1742: 96; see also Wolff 1977: 586)

Just as the postulation of absolute space would lead to a violation of the Principle of Sufficient Reason and must therefore be rejected, so too the postulation of absolute time would lead to a violation of the Principle of Sufficient Reason and must therefore be rejected. By Du Châtelet's lights, the idea of absolute time, like the idea of absolute space, is demonstrably false. Both stand in clear violation of the Principle of Sufficient Reason, which can be abandoned only by those who are willing to renounce the foundation of all contingent truths (1742: 8).

Having argued that our ideas of absolute space and time are demonstrably false, Du Châtelet goes on to argue that we nonetheless arrive at them naturally, even inevitably. Her account of how we arrive at our idea of absolute time parallels her account of how we arrive at our idea of absolute space.¹⁷ Her two accounts have, of course, different starting points. Du Châtelet maintains that our idea of absolute space has its deepest roots in our thinking about extension, which she takes to involve the representation of two things as being external to one another, and yet as being or belonging to the same thing. She thus writes, for example, that 'we cannot represent to ourselves several different things as being one, without this resulting in a notion ... we call Extension', and 'once we represent to ourselves parts both diverse and unified, we have the idea of an extended Being' (1742: 77; compare Wolff 1977: 544). Her account of time, in

17. For a fuller discussion of Du Châtelet's account of how we arrive at our idea of absolute space, see McDonough (2026).

contrast, has its deepest roots in our thinking about ‘the continuous succession of several beings’ as when, for example, ‘we conceive of the existence of the first A as distinct from that of the second B, and this second B distinct from that of the third C, and so on’ (1742: 97; see also Wolff 1977: 571). Although there are subtleties in the details, these are, I think, perfectly reasonable starting points for Du Châtelet’s error theories of our ideas of absolute space and time. She is simply proposing that our idea of absolute space is rooted in our idea of coexistence, while our idea of absolute time is rooted in our idea of successive existence.¹⁸

Having secured her starting points, Du Châtelet proposes that the next step in arriving at our ideas of absolute space and time involves a process of abstraction. In the case of space, she suggests that starting with a multitude of coexisting things, we abstract away all the features that make the individual things or parts distinct: ‘[I]n order to form the idea of extension, we consider only the plurality of things and their union ... we exclude every other determination ... plurality and unity ... are the only determinations to which we pay attention ... and so any two parts of extension can differ from each other only in being two not one’ (78). Additionally, she proposes that due to this process of exclusion, ‘all of extension must be conceived of as uniform, homogenous, and having no internal determination that distinguishes one part from another’ (78; compare Wolff 1977: 552). Finally, she insists that abstraction plays a similar role in forming our idea of absolute time. She thus tells us, for example, that by paying ‘attention to the links between our ideas’, we create

an ideal being, consisting in a uniform flow, which must be similar in all its parts, since to create it one uses the same abstract notion for each being without determining anything of its nature, and one considers in all these beings only their successive existence without caring about how the existence of one gives birth to the next. (1742: 98)

If the first step in forming our ideas of absolute space and time involves ur-notions of coexisting beings and successive beings, the second step involves abstracting from those ur-notions to form abstract, generic ideas of uniform, homogenous extension and duration.¹⁹

18. It is perhaps worth underscoring that—on the interpretation offered here—our ideas of coexistence and successive existence are in turn grounded in our experience of reality, that is, in our experience of coexisting and successive beings. Although space and time are ideal, spatiality and temporality are in the world *per se*. For an alternative, more constructivist, more Kantian, reading, on which our idea of succession is essentially rooted in the mind’s ordering activity, see Hagengruber (2026).

19. For a complementary account of Du Châtelet’s explanation of how abstraction from succession gives rise to the illusion of time as a self-subsisting being, see Carus (2022). Carus emphasizes that Du Châtelet’s originality lies in explaining how our false idea of time arises through a psychologically natural process of abstraction and reification.

The final step in Du Châtelet's error theory of how we arrive at ideas of absolute space and time involves our reifying our uniform, homogenous ideas of extension and duration. Indeed, she suggests that our notion of absolute space just is our notion of extension reified, that is, imagined as being 'distinct from all that is real, from which we have separated it by abstraction' (79). Du Châtelet argues that by reifying homogenous, indiscernible extension, we come to 'envisage that this extension can subsist by itself' (79), so that 'this ideal Being, extension, that we form from the plurality and the union of all these Beings, must appear to us to be a substance ... [so that] we are led to represent Space as a substance independent of the Beings that are placed in it' (80). Likewise, with respect to time, Du Châtelet suggests that our idea of absolute time just is our notion of duration reified. Indeed, she proposes that our abstract notion of duration 'must appear to us independent of existing things and subsisting by itself' (99). 'For', she argues,

since we can distinguish the successive manner for beings to exist, the manner of their internal determinations, and of the causes which gave birth to this succession, we must regard time as a being apart, separate from things and capable of subsisting without actual and successive things, since we can still think of this successive existence, after having destroyed with our thoughts all the other realities, that is to say, having abstracted from them. (99)

According to Du Châtelet, we thus arrive at our ideas of absolute space and time, by beginning, respectively, with ideas of coexisting beings and successively existing beings, abstracting, again respectively, generic notions of extension and duration, and then reifying those ideas to form notions of independently existing substances, namely, absolute space and absolute time. The path we tread from thinking about coexisting and successive things to ideas of absolute space and time is, to be sure, a misleading path insofar as Du Châtelet thinks that the existence of absolute space and time is demonstrably impossible. But it is nonetheless a natural, perhaps even inevitable, path for human cognizers.

Having argued that our ideas of absolute space and time are natural, Du Châtelet further concedes that they are also *useful*. Immediately following her declaration that 'with a little attention we see that ... nothing like this idea [of absolute space] does or can exist' (1742: 85), she defends the 'usefulness of abstractions' (1742: 86). She states flatly that our 'power of forming, by abstraction, imaginary Beings that contain only the determinations we want to examine, and of excluding from these Beings all other determinations ... is very useful' (1742: 86). Indeed, she declares that 'imaginary notions are ... infinitely helpful in the search for truths' and that 'fictions help us to find new truths and new rela-

tions ... [since] our mind rarely has enough strength to contemplate that which is Abstract in the Concrete without being distracted by the multiplicity of things that it must represent to itself' (1742: 86). In the case of space, 'when we want to measure a distance', for example, 'we can represent it to ourselves as a Line with neither width nor thickness, and without any internal determination', and we can similarly 'consider a width, an extension, without thickness when we do not want to consider the rest' (1742: 86; see also Wolff 1977: 582).

Du Châtelet's thinking about the usefulness of abstractions with respect to space is general enough that one might reasonably attribute to her a parallel view with respect to time. If abstractions are useful because they allow us to focus 'only on the determinations we want to examine' in the case of space, one might reasonably assume that abstractions should also allow us to focus 'only on the determinations we want to examine' in the case of time as well. If, in the context of space, abstractions are 'infinitely useful in the search for truths' since 'our mind rarely has enough strength to contemplate that which is Abstract in the Concrete without being distracted', then one might reasonably suppose that the same should hold true in the context of time. But we needn't assume or suppose. For Du Châtelet explicitly tells us that our notion of abstract time 'can have its uses, when it only concerns the magnitude of the duration and comparisons of the duration of several beings together', and concludes that '[a]s in geometry one is only concerned with these sorts of considerations, so the imaginary notion [of time] can easily be put in place of the actual one' (1742: 101; see also Wolff 1977: 581). Our idea of absolute time is—albeit demonstrably false—not only natural but also useful.

Natural and useful but, Du Châtelet insists, also *dangerous*. Part of the danger of our ideas of absolute space and time lies simply in the fact that they may lead us away from the straight path of truth. Du Châtelet thus suggests, for example, that 'those who wanted to apply to actual Space the demonstrations that they had deduced concerning imaginary [absolute] Space could not help but lose themselves in labyrinths of errors from which they could find no way out' (1742: 87). Likewise, the idea of absolute time, according to Du Châtelet, has entangled even clever philosophers, like Clarke, in 'meaningless' questions and forced them to embrace falsehoods that violate the inviolable Principle of Sufficient Reason (1742: 96). The dangers of absolute space and time, however, are not limited to mundane confusion and error. For, as Leibniz and others had also charged, the ideas of absolute space and time invite impious views as well. The notion of absolute space implies, according to Du Châtelet, that God acts 'without reasons within his own Understanding' and that God acts by 'an arbitrary will' (1742: 74). Even more alarmingly, the doctrine of absolute space attributes to space 'all the attributes of God'. It suggests that space, like God, is 'truly infinite, immutable, uncreated, necessary, incorporeal, and omnipresent' (1742: 75).

The heretical conclusion that ‘Space is an attribute of God’, Du Châtelet warns, ‘indeed follows very naturally from the supposition of absolute Space’ (1742: 75; see also Wolff 1977: 599). The same holds with respect to absolute time. Although the idea of absolute time can be, as we’ve seen, useful when making substitutions ‘in geometry’, nonetheless, Du Châtelet warns, ‘we should refrain from making the same substitution in metaphysics and physics; for then we would fall into these difficulties of making the duration an eternal being’ (1742: 101; see also Wolff 1977: 581). The demonstrably false, natural, and useful notion of absolute time—like the demonstrably false, natural, and useful notion of absolute space—thus proves to be, on a final note, dangerous as well.

Conclusion

I have argued elsewhere that Du Châtelet ascribes to a ‘spaceless’ metaphysics. For her, the idea of space is nothing more than an abstract way of thinking about the order of coexisting things. Like Descartes, many Scholastics, and Aristotle, Du Châtelet holds that the postulation of space as an independent entity existing in addition to bodies, their relations, and our thoughts about them, is otiose and confused. Like Descartes, many Scholastics, and Aristotle, she argues that the void, understood as a volume without body, is pointless and paradoxical. Because she thinks that space is nothing more than an abstract way of thinking about the (spatial) order of coexisting things, she, of course, rejects the spatial substantivalism of Newton and Clarke, criticizing it as false and dangerous. But because she holds a nominalist rather than a Platonist view of abstract ideas, and because she thinks that abstract ideas cannot exist absent the objects or ideas from which they are abstracted, she also de facto rejects Leibniz’s specific brand of spatial relationism, which treats space as a divine idea and as a necessary constraint on the order of possible coexistence. Although she grants that we have an idea of space as the order of coexistence, Du Châtelet thus nonetheless ascribes to what may be called a ‘spaceless’ metaphysics in the specific sense that she denies that space exists—either as a substance or as an idea in the divine intellect—independently of our thinking about the order of beings insofar as they coexist. On her view, space is merely an abstract way of thinking about a world that is spatially ordered *per se*.

In this essay I have, in effect, argued that Du Châtelet is likewise best read as ascribing to what we might call, in a parallel fashion, a ‘timeless’ metaphysics. She takes for granted that creatures enjoy a kind of successive being, a kind of being that stands in contrast to the non-successive being of God. As successive beings, creatures do not—at least typically—exist fully at any one moment. They are in a continual process of coming into being and passing out of being.

Socrates' youth is followed by his middle age, is followed by his senior years. Socrates' existence is followed by Plato's existence, is followed by Aristotle's existence. For Du Châtelet, time is the order of successive beings insofar as they are successive. It is the order of Socrates' youth, middle age, and senior years. It is the order of the existence of Socrates, Plato, and Aristotle. Because she thinks that time is nothing more than an abstract way of thinking about the (temporal) order of successive things, she, of course, rejects the time substantivalism of Newton and Clarke, criticizing it as false and dangerous. Given her views on abstraction and the nature of creaturely existence, however, she also de facto rejects Leibniz's Platonic brand of temporal relationism as well as his endeavor to ground temporality in something other than successive being. Although Du Châtelet grants that we have an idea of time as the order of successive being, she nonetheless ascribes to what may be called a 'timeless' metaphysics in the specific sense that she denies that time exists independently—either as a substance or as Platonic idea—of our thinking about the order of successive beings insofar as they are successive. On her view, time is merely an abstract way of thinking about a world that is temporally ordered per se.²⁰

Competing Interests

The author has no competing interests to declare.

References

- Amijee, Fatema. 2025a. "Du Châtelet's Causal Idealism." *British Journal for the History of Philosophy*, 33 (4): 1–22. DOI: <https://doi.org/10.1080/09608788.2024.2389869>
- Amijee, Fatema. 2025b. "Du Châtelet's Rejection of Leibniz's World Apart Doctrine." In *Émilie Du Châtelet in Relation to Leibniz and Wolff: Similarities and Differences*, edited by Clara Carus and Jeffrey McDonough, 113–132. DOI: https://doi.org/10.1007./978-3-031-80541-7_7
- Aquinas, Thomas. 1976. *De Ente et Essentia*. Vol. 43. Sancti Thomae De Aquino Opera Omnia. Rome.
- Aristotle. 2020. *De Caelo*. Translated by C. D. C. Reeve. Indianapolis Cambridge: Hackett Publishing Company, Inc.
- Arthur, Richard T. W. 2021. *Leibniz on Time, Space, and Relativity*. Oxford University Press. DOI: <https://doi.org/10.1093/oso/9780192849076.001.0001>

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- Brading, Katherine. 2019. *Émilie Du Châtelet and the Foundations of Physical Science*. Routledge Focus on Philosophy. New York: Routledge. DOI: <https://doi.org/10.4324/9780429435171>
- Brading, Katherine. 2025. "Du Châtelet on the Metaphysics and Epistemology of Time." *British Journal for the History of Philosophy* 33(6), 1–22. DOI: <https://doi.org/10.1080/09608788.2025.2563895>
- Carus, Clara. 2022. "Du Châtelet's Contribution to the Concept of Time." In *Epoque Emilienne: Philosophy and Science in the Age of Emilie Du Châtelet*, edited by Ruth Hagengruber. Springer, 113–128. DOI: https://doi.org/10.1007/978-3-030-89921-9_5.
- Carus, Clara. 2025. *Das Prinzip vom zureichenden Grunde bei Émilie Du Châtelet: eine philosophiegeschichtliche Einordnung von Du Châtelets Beitrag zum Prinzip vom zureichenden Grunde in einem Vergleich zu G.W. Leibniz und Christian Wolff*. Frauen in Philosophie und Wissenschaft. Springer VS. DOI: <https://doi.org/10.1007/978-3-658-46350-2>.
- Carus, Clara. Forthcoming. "The Relationship between the Subject and the Object in Space and Time—A Comparison between Du Châtelet and Kant." In *Copernican Turns. Émilie Du Châtelet and Kant*, edited by Ruth Hagengruber and Aaron Wells. Springer.
- Carus, Clara, and Jeffrey K. McDonough, eds. 2025. *Émilie Du Châtelet in Relation to Leibniz and Wolff: Similarities and Differences*. 1st ed. Women in the History of Philosophy and Sciences, no. 23. Cham: Springer Nature Switzerland. DOI: <https://doi.org/10.1007/978-3-031-80541-7>
- De Risi, Vincenzo. 2025. "The Genesis of Relationalism: Leibniz's Early Theory of Space and Newton's Scholium." *Oxford Studies in Early Modern Philosophy* (12): 98–143. DOI: <https://doi.org/10.1093/9780198958062.003.0004>
- Des Maizeaux, Pierre. 1720. *Recueil de Diverses Pieces, Sur La Philosophie, La Religion Naturelle, l'histoire, Les Mathematiques, Etc. Par Mrs. Leibnitz, Clarke, Newton, et Autres Auteurs Célèbres*. Amsterdam: H. Du Sauzet.
- Descartes, René. 1984. *The Philosophical Writings of Descartes*. Vol. 1. Edited and translated by John Cottingham, Robert Stoothoff, and Dugald Murdoch. Cambridge: Cambridge University Press.
- Detlefsen, Karen. 2018. "Émilie Du Châtelet." In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Winter 2018. <https://plato.stanford.edu/archives/win2018/entries/emilie-du-Châtelet/>.
- Du Châtelet, Émilie. 1740. *Institutions de physique*. Paris: Prault fils. Citation is to section number.
- Du Châtelet, Émilie. 1742. *Institutions physiques*. Amsterdam: Aux dépens de la Compagnie. Citation is to section number.
- Du Châtelet, Émilie. 2009. *Selected Philosophical and Scientific Writings*. Edited by Judith P. Zinsser, translated by Isabelle Bour and Judith P. Zinsser. Illustrated edition. Chicago: University of Chicago Press.
- Du Châtelet, Émilie. 2018. *Foundations of Physics*. Translated by Katherine Brading et al. <https://www.kbrading.org/translations>.
- Dyck, Corey W., ed. 2019. *Early Modern German Philosophy (1690–1750)*. Translated by Corey W. Dyck. Oxford University Press.
- Gessell, Bryce. 2019. "'Mon Petit Essai': Émilie Du Châtelet's *Essai Sur l'optique* and Her Early Natural Philosophy." *British Journal for the History of Philosophy* 27 (4): 860–79. DOI: <http://doi.org/10.1080/09608788.2018.1559134>

- Hagengruber, Ruth Edith. 2026. "Émilie Du Châtelet on Time." In *The Routledge Companion to Philosophy of Time*, edited by Nina Emery. Routledge.
- Henkel, Christian. 2025. "Physical Influx Theory: The Case of Émilie Du Châtelet." *British Journal for the History of Philosophy* 33 (3): 562–83. DOI: <https://doi.org/10.1080/09608788.2024.2383624>
- Kawashima, Keiko. 2005. "The Issue of Gender and Science: A Case Study of Madame Du Châtelet's Dissertation *Dur Le Feu*." *Historia Scientiarum* 15 (1): 23–43.
- Leibniz, G. W. 1875–1890. *Die philosophischen Schriften*. Edited by C. I. Gerhardt. Reprint, Adamant Media Corporation, Citation is to volume and page.
- Leibniz, G. W. 1976. *Philosophical Papers and Letters: A Selection*. Translated by Leroy E. Loemker. 2nd ed., 2nd print. Synthese Historical Library, no. 2. Dordrecht: Riedel.
- Leibniz, G. W. 1996. *New Essays on Human Understanding*. Translated by Peter Remnant and Jonathan Bennett. Cambridge Texts in the History of Philosophy. Cambridge: Cambridge University Press.
- Leibniz, G. W. 2001. *The Labyrinth of the Continuum: Writings on the Continuum Problem, 1672–1686*. Translated by Richard T. W. Arthur. Yale University Press.
- Leibniz, G. W., and Samuel Clarke. 2000. *Leibniz and Clarke: Correspondence*. Edited by Roger Ariew. Indianapolis, IN: Hackett Publishing Company, Inc. Citation is to letter and paragraph number.
- Locke, John. 1998. *An Essay Concerning Human Understanding*. Edited by Roger Woolhouse. Reprint edition. London: Penguin Classics.
- McDonough, Jeffrey K. 2025. "Du Châtelet, Wolff, and Leibniz on Divine Eternity." In *Émilie Du Châtelet in Relation to Leibniz and Wolff: Similarities and Differences*, edited by Clara Carus and Jeffrey K. McDonough. Cham, Switzerland: Springer, 93–111. DOI: https://doi.org/10.1007/978-3-031-80541-7_6
- McDonough, Jeffrey K. 2026. "Émilie Du Châtelet Against Spatial Metaphysics." In *The Bloomsbury Companion to Emilie Du Châtelet*, edited by Fatema Amijee. Bloomsbury Academic Press.
- McDonough, Jeffrey K. Forthcoming. "Émilie Du Châtelet on Time, Measure, and Motion." In *Systematic Thinkers in Early Modern Philosophy: Essays in Honor of Alan Nelson*, edited by Patrick J. Connolly and Jan-Erik Jones.
- Nagel, Fritz. 2012. "'Sancti Bernoulli Orate pro Nobis'. Emilie Du Châtelet's Rediscovered *Essai Sur l'optique* and Her Relation to the Mathematicians from Basel." In *Emilie Du Châtelet Between Leibniz and Newton*, edited by Ruth Hagengruber. International Archives of the History of Ideas / Archives Internationales d'histoire des idées, vol. 205. Springer Netherlands, 97–112. DOI: https://doi.org/10.1007/978-94-007-2093-0_3
- Nagel, Fritz. 2022. "'Les Corps Agissent Sur La Lumière.' Émilie Du Châtelet's Deliberations on the Nature of Light in Her *Essai Sur l'optique*." In *Époque Émilienne*, edited by Ruth Hagengruber. Women in the History of Philosophy and Sciences, vol. 11. Springer International Publishing AG, 219–233. DOI: https://doi.org/10.1007/978-3-030-89921-9_11
- Pasnau, Robert. 2013. *Metaphysical Themes, 1274–1671*. Oxford: Clarendon.
- Project Vox Team. 2019. "Gabrielle Émilie Le Tonnelier de Breteuil, La Marquise Du Châtelet." Project Vox. Duke University Libraries. <https://projectvox.org/du-Châtelet-1706-1749/>.
- Reichenberger, Andrea. 2021. "Émilie Du Châtelet on Space and Time." *Revue d'histoire Des Sciences* 74 (2): 331–55. DOI: <https://doi.org/10.3917/rhs.742.0331>

- Reichenberger, Andrea. n.d. "Chapter 6. Of Time." *History of Women Philosophers and Scientists*. Accessed March 1, 2024. <https://historyofwomenphilosophers.org/chapter-6-of-time/>.
- Rodrigues, Ana. 2012. "Émilie Du Châtelet, a Bibliography." In *Émilie Du Châtelet Between Leibniz and Newton*, edited by Ruth Hagengruber. *International Archives of the History of Ideas / Archives Internationales d'histoire des idées*, vol. 205, 207–246. Springer Netherlands.
- Stan, Marius. 2018. "Émilie Du Châtelet's Metaphysics of Substance." *Journal of the History of Philosophy* 56 (3): 477–96. DOI: <https://doi.org/10.1353/hph.2018.0048>
- Veldman, Michael. 2026. "Du Châtelet's Metaphysics of Science and the Dissertation on Fire." In *Bloomsbury Handbook of Émilie Du Châtelet*, edited by Fatema Amijee. Bloomsbury Publishing.
- Wells, Aaron. 2021. "Du Châtelet on Sufficient Reason and Empirical Explanation." *Southern Journal of Philosophy* 59 (4): 629–55. DOI: <https://doi.org/10.1111/sjp.12433>
- Wells, Aaron. 2023. "Science and the Principle of Sufficient Reason: Du Châtelet contra Wolff." *Hopos: The Journal of the International Society for the History of Philosophy of Science* 13 (1): 24–53. DOI: <https://doi.org/10.1086/723961>
- Wolff, Christian. 1720. *Vernünfftige Gedanken von Gott: der Welt und der Seele des Menschen, auch allen Dingen überhaupt, den Liebhabern der Wahrheit mitgetheilet*. Rengerische Buchhandl. Citation is to section number.
- Wolff, Christian. (1730) 1977. *Philosophia prima, sive ontologia*. Edited by Jean Ecole and Charles Corr. 2. Nachdruckaufl. *Gesammelte Werke / Christian Wolff*. Hildesheim: G. Olms. Citation is to section number.

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