



CHAP. VIII.

## CHAPITRE VIII.

*De la nature des Corps.*

**du Châtelet's ontology:  
element, corpuscle, body**

# Aim and method

To pinpoint her metaphysics on the map of early-modern positions. Specifically, her doctrine of substance and body.

Approach: strongly internalist. I seek to reconstruct her foundation from within.

External heuristic: the needs and state of physical theory ca. 1742.

I make no claims about influence. (They're notoriously hard to establish.) So, I refer to other figures just to illuminate her own views—by triangulation from adjacent or remote philosophical positions.



# Cui bono?

An important hermeneutic prize is du Châtelet's foundational project for physics. But, to grasp and assess that project, it helps to see the basis clearly.

In the same vein: how many strata are there to her ontology — and what keeps them together?

Only then can we ask meaningfully: **Just how much non-trivial mechanics can it support?**



# -Ism about ultimates

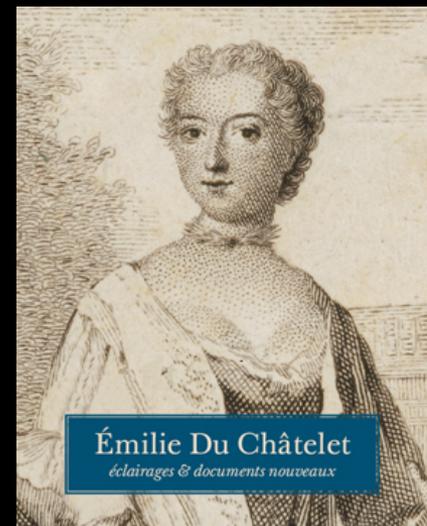
Was du Châtelet an idealist about substance? Or was she really a *realist*?

S-idealism: All substances are **minds** or analogues of minds. Their existence is genuine and basic. Everything else has ‘derivative’ existence, qua **intentional** objects of mental representations.

S-realism: The negation of the above. Hence, at least some substances are **non-mental**. Their acts and states have *no* intentional content, or ‘aboutness.’

Du Châtelet denotes basic substance by the terms ‘simple being’ and ‘**element**.’ (As does Chr. Wolff).

Are du Châtelet’s ‘elements’ an *idealist* metaphysic?



Émilie Du Châtelet  
éclairages & documents nouveaux

# -Ism about ultimates

Some age-specific tests for S-idealism:

1. Negative: the blanket **denial** that substance has any traits essential to mechanistic bodies: size, shape, internal structure, ‘intestine’ motion.
2. ‘Force’ used as weasel word — to denote a power to **represent**. By 1740, ‘force’ has become entrenched as efficient cause of *kinematic* change, or ‘motion.’
3. A dual test: (a) the denial of **inter-substance** transeunt causation. That entails (b) perception ought to be a key trait of ‘elements.’ More generally: *cogitationes*, viz. **intentional** states with semantic content.



Test (1) is the weakest, (3) the strongest. Do elements pass any of them?

## -Ism about ultimates

Du Châtelet's elements pass the first test. She denies them *any* feature that counts as corporeal in her doctrine.

Elements are “non-extended Beings, without parts... They have no figure... ; no size, and fill no space, and have no internal motion.” (I 120, 122)



However, that's **inconclusive**. There *are* substances that pass this test and yet are *not* mind-like, so their metaphysics is **not idealism**.

Cf. the 'physical monads' of Wolff and the early Kant. They're simple (=partless), unextended, and endowed with active and passive force. But they're *not* mentalistic.

## -Ism about ultimates

And, her doctrine fails test (2) as well. Her elements have forces, but they're *transeunt* actions — exerted on **other** elements. It's not pseudo-force, i.e. a propensity to *represent* intentional objects.



Wolff on why he would not follow Leibniz into idealism:

“Leibniz asserts that the entire world is **represented** within each simple thing... I question whether I should accept this assertion. I can see *no* necessity that **all** simple things must have the **same kind of force**. (*einerley Art von Kraft—German Metaphysics*, 1720, §598)

My elements must *not* be confused with Leibnizian monads. Elements have the kind of **force** from which the force of *bodies*... can be **derived intelligibly**. (*Additions to the German Metaphysics*, 1724, § 218)

The elements of bodies are “**physical** monads... or physical points, one might call them.” (*Cosmologia generalis*, 1731, §216)

# -Ism about ultimates

Du Châtelet's ontology does not pass test (3) for substance idealism either.

- elements **act** on each other. They even move relative to one another. They stand in at least **three kinds of relations**: topological [*hors de*], temporal [earlier-later] and transeunt-causal.
- circumstantial evidence: *never* does she ascribe mentalistic attributes to her elements. They **lack** perception, appetite, and expression, i.e. global representations.

Interim conclusion: du Châtelet is a **realist about some substances**. At the very least, she is a **dualist**. (Surely her God and minds are not material?)



## -Ism about body

In *Institutions de physique*, substance and body belong in different realms.

So, even though du Châtelet is a substance realist, might she be an idealist about body? Let's get precise:



Existence idealism

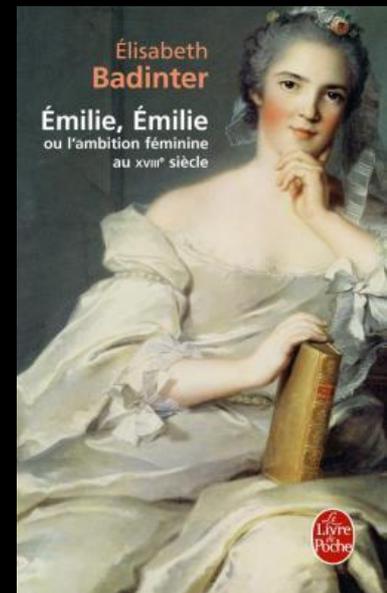
A body exists just in case it's a member in the set of **intentional** objects *common* to mind-like perceivers.

Essence idealism

The attributes P, Q, R, etc. essential to bodyhood are *all* **mind-dependent**.

# Existence idealism?

This seems safe to rule out. Du Châtelet would count as a **realist** about the **existence** of body. Her doctrine escapes the lure of idealism on *this* count.



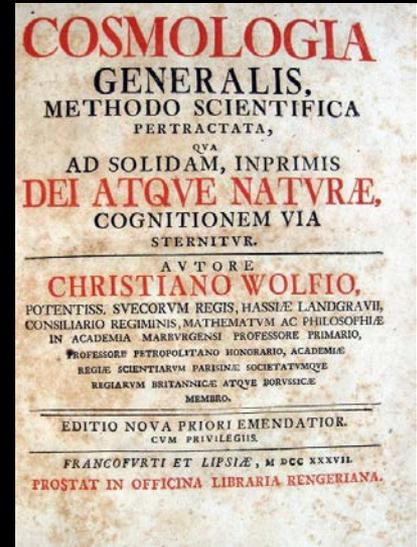
*C*-realism about existence

A body **is** an 'aggregate' of 'elements.'  
Namely, a mereological sum of non-mental,  
partless reals. Presumably, aggregation  
obtains independently of minds.

# -Ism about corporeal essence

Recall the *essentialia* of a Castellan body: extension, motive force, and force of resistance. [I 143]

For her, *all three* are **mind-dependent** attributes. They *inhere* in minds like ours; and obtain *solely* in virtue of sense-organs like ours.



“The extension [of bodies] is only a *Phenomenon*... whose idea we have formed through the *confusion* of several real things... If we could *see distinctly* all that composes the extended, the *appearance of extension* (falling under our senses) *would disappear*, and our Soul would grasp *nothing but simple* Beings existing outside each other.” [I 134]

“Both matter [=extension + force of inertia] and active force are *nothing but Phenomena* resulting from the confusion in our *perception*, which confusion is a consequence of the imperfection of our organs... *Everything* that our senses grasp is just phenomena that would *cease to exist for us*—if only our senses became more perfect, and our perceptions more distinct.” [I 152-3]

# Essence idealism

On this count, du Châtelet qualifies as an **idealist**. Her notion of phenomenon passes the test for mind-dependence and intentional existence.



## Essence *C*-idealism

Essential to bodyhood is to **appear** to minds like ours in three *mutually-irreducible* ways: qua extended, endowed with active force, and ‘force of inertia.’ [I 147, for mutual independence]

“Phenomena are images or *appearances* arising from several realities by confusion. ... Hence, a Being more perfect than us would have *completely different* notions of the things it saw than we have.” [I 153-4]

# Two body problems

Du Châtelet's ontology is 3-layered: elements, 'corpuscles,' and bodies. Cf. also Chr. Wolff, *Cosmologia generalis*, 1731.

Because of that, she faces **two** foundational tasks:



‘Origin’                      How do corpuscles relate to elements, exactly? Can she afford a **literal** account of that—or is it irreducibly metaphorical? (e.g., *ortus*, *origine*, *naissance*, *resultat*, etc.)

Composition                      How do *mesoscopic* bodies relate to corpuscles? Are **compound** bodies even possible? Do they have any *genuine* unity or is that wholly mind-induced?

# On the origin of corpuscles, I

Three roads from substance to least body, in the 1700s:



Monadic grounding

A corpuscle is the smallest bit of **content common** to the ‘perceptions’ of minds like ours, at some time  $t$ . Late canonical Leibniz.

Physical monadology

A corpuscle **just is** an element. Has size, but it’s indivisible. So is the force-carrier itself: a mass-point of size *zero*. Early Kant.

Agnostic pasting

Elements are indivisibles *somehow* glued by a **mystery force** into sub-visible composites, or aggregates. Chr. Wolff.

# On the origin of corpuscles, II

Monadic grounding

Unlikely. For it to be her view, elements must be *minds*.

Physical monadology

Unlikely. All elemental forces are actions at a *distance*. And, physical monads violate Law of Continuity: mass distribution varies *discontinuously*.

Agnostic pasting

This **could** be her view:

“It is *impossible* for us to represent **clearly** the motive force [of body]. We would conceive it **distinctly** only if we could represent to ourselves the exact manner [*de quelle façon*] the force resides in **each simple** Being, such that it yields — in the composite that these simples form by aggregation — the motive force whose effects fall under our senses.” (I 155)

# Building from blocks?

Corpuscles are the building blocks of bodies. How does the building go?

Enlightenment mechanical theory singles out two more essentials, *in addition to* her PSR-driven list. They are: **kinematic possibility** and mass distribution, i.e. the **spread of efficient agency**. Three **irreducible** kinds of corpuscles arise.



the ‘hard body’

Rigid, i.e. impossible to deform. Finite size. Filled with mass. ‘Metaphysical rocks.’ d’Alembert. Newton?

the ‘physical monad’

Zero-sized,  $\rightarrow$  extensionless. Mass located at a point. Finite volume, empty but active. All action is at a distance. Early Kant; Boscovich.

the ‘squishy atom’

Deformable, compressible. Infinitesimal size. Filled with mass. Support contact forces *and also* action-at-a-distance force. Euler, at times; later Kant.

# Corpuscles: a parting riddle

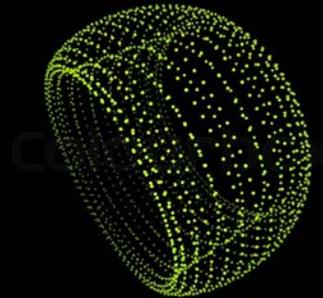
There is an enduring mystery about corpuscles, in du Châtelet's ontology. The source of the difficulty: Ground-level corpuscles are **unobservable** *ex suppositione*. That entails a dilemma for her:

Scylla

Corpuscles **must** be extended — because the modes of extension (=size, shape, motion) do indispensable explanatory work. They take over the role of 'particles' in the 'mechanical philosophy.'

Charybdis

Du Châtelet's idealism about extension **rules it out** for corpuscles. Then without extension, they're just 'aggregates' of elements. But aggregation is not explanatory. Not where it's needed, anyway.

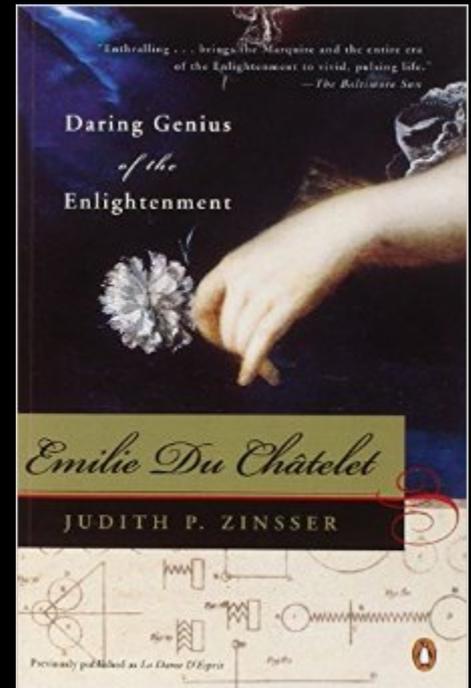


# Some conclusions

Du Châtelet's metaphysics of material substance seems to be a species or realism.

Still, there is a strong idealist strand running through her doctrine of body.

More analytic work is needed, so as to sort out the pattern of the whole tapestry.



— *Tantum est.* —