

Émilie Du Châtelet, *Foundations of Physics*, 1740.

Translation by Katherine Brading *et al.*¹ at the University of Notre Dame and Duke University. Footnotes are ours except where otherwise indicated.

Du Châtelet's marginal notes are placed in **{bold}** in the closest appropriate place in the text. Please see the French original for the position of each note in the margin alongside the paragraph. Figures are available in the original text, and online via the BNF.

Chapter 7. Of the Elements of Matter

Translation of the passages not included the Zinsser and Bour translation.

132. {Our Soul has obscure representations of all that happens in the whole Universe.} In truth, our Soul represents the entire Universe, but in a confused way, whereas God sees it so distinctly that none of the relations therein escape Him. This is another of Mr. Leibniz's views, one that most needs to be clarified and saved from ridicule, with which we could charge it: his claim that this representation of the entire Universe, and of all its changes, is an attribute of our Soul.

We know, and all Philosophers agree, that motion propagates in the plenum to all distances; the smallest stone thrown into the Ocean disturbs the equilibrium of this immense mass of water, and forms there rings whose ending we do not distinctly discern. Let us imagine, for example, that a boat is floating on the Sea, and that we throw stones of different sizes to different distances from this boat. We perceive that each stone generates rings, and that these propagate as waves, more or less strongly in proportion to the distance they travel and the power of the cause that produced them. Thus, this boat will successively receive impressions from all of the stones, each of which is such that one could determine the cause and the distance. Now, we are in the same situation as this boat: our Body swims in an infinite fluid, and waves come and hit it from all sides, bringing with them the character of their origin. When an impression in our sense organs is strong, and excites in us a violent motion because the object that causes it is close, we perceive it and we have a very clear idea of it. As the object that causes the sensation becomes further away, the impression it makes upon our sense organs becomes less strong, and the clarity of the idea that it excites in us degrades accordingly and diminishes proportionately; for by the law of continuity, the clarity of the idea must follow the force of the impression. Thus, when the object is very distant and cannot make a perceptible impression upon our senses, the idea must also become imperceptible, that is to say, must form an obscure representation. Now, objects continue to make an impression on us however far away they may be placed because in the plenum all motion must produce waves to infinity, like this stone that one throws into the Ocean, of which I

¹ Penelope Brading, Ashton Green.

just spoke, and the waves, propagated and spread to infinity, must necessarily reach us, and consequently, there must occur in our Soul a representation relative to the movement that our organs experienced. For, if at a certain distance the representations that the objects excite in our Soul ceased, even though the impressions that they make upon our senses continued, there would be a leap in Nature, which would be contrary to the principle of sufficient reason (§13) for there would be no reason why the clarity of an idea would gradually diminish following the proportion of the impressions up to a certain point, and would then cease at this point as if by a leap even though the reason why it ought to continue remained. Thus, once one accepts the principle of sufficient reason, and the plenum that follows from it, one is obliged to agree that we receive impressions from all the motions that happen in the Universe, and that our Soul has obscure representations of them, due to the constant connection that there is between the impressions of the Body and the representations of the Soul.

See Bour and Zinsser for a translation of the remainder of §132.

133. *See Bour and Zinsser for a translation of the beginning of §133. The remainder of §133 reads as follows:*

It is also by this dissimilarity that one can understand how non-extended Beings can form extended Beings. For the Elements exist all necessarily external to one another (since one can never be the other), and all of them being, as we have just seen, united and linked together, the result is an assemblage of several diverse Beings that exist external to one another and by their connection make a whole. But I have shown that we cannot represent extension other than as an assemblage of several diverse, coexisting things, which exist external to one another (§77): therefore, conclude the Leibnizians, an aggregate of simple Beings must be extended. Thus, from the Metaphysical union of the Elements among themselves flows the Mechanical union of the Bodies that we see; for all Mechanics that falls under our senses derives in the end, and in going back to the first source, from superior and Metaphysical principles.

134. The composite Beings cannot subsist without the simple ones, nor can they receive any change that is not founded in the Elements; thus the composite Beings are not Substances in themselves, but assemblages of Substances or of simple Beings. **{Each composite Being is not a Substance, but an aggregate of Substances, that is to say, of simple Beings.}** For in the composite Being, there is nothing Substantial except the Elements; all the rest, such as the size, the shape of the parts, their situation among themselves, the Physical qualities of Matter (such as hardness, ductility, malleability,² etc. that constitute the composite Being), are nothing but Modes. Take a Watch, for example: the shape of the wheels, their combination, the quality of the spring, the hardness of the parts, etc. constitute the Watch; however, it is obvious that all these

² The 1740 “meabilité” is corrected to “malléabilité” in the 1742 edition.

things are nothing but Modes that can vary without the matter of the Watch perishing. Consequently, nothing substantial perishes even though a composite Being ceases to be, and even though it forms another Being through the different combination of its parts, since the Elements always continue to subsist and to endure through any separation that may happen to the parts that make up the composite Beings. However, extension must seem to us a Substance, for we see that it endures, and that it can be modified (§52). But if we examine this idea with the eyes of the Understanding, we will be obliged to recognize that it is nothing but a Phenomenon, an abstraction from several real things which we confuse and thereby form this idea of extension. This confusion is the origin of nearly all the objects that fall under our senses, and of the realities often being infinitely different from the appearances (§53). Thus, if we could see distinctly all that composes extension, this appearance of extension that falls under our senses would disappear and our Soul would perceive only simple Beings existing external to one another, in the same way that if we distinguish all the small portions of matter differently moved that compose a portrait, this portrait that is only a Phenomenon would disappear for us. **{How extension can result from the assemblage of simple Beings.}** Thus, the same confusion that is in my organs and whereby the resemblance of a human face results from the assembly of several portions of matter differently moved (of which none has any relation to the Phenomenon that results from it for me),³ this same confusion, I say, makes the Phenomenon of extension result for us from the assemblage of simple Beings and their internal differences. But as it is impossible for us to represent to ourselves the internal state of all the simple Beings (upon which, nevertheless, the Phenomenon of extension depends), all perception of the realities must by our nature escape us. And there remains to us, of the confused ideas that we have of each of these simple Beings, only an idea of several things coexisting and linked together, without us knowing distinctly how they are linked, and it is this confused idea that engenders the Phenomenon of extension.

³ This passage contains a typographical error in the 1740 edition. The 1742 edition is corrected to read: “qui fait que la ressemblance ... resulte de l’assemblage”.