

Time

1867 words

In the Scholastic tradition, time is distinguished from duration. Whereas duration is an attribute of things, time is the measure of motion, that is, a mathematical quantity measuring the duration of a process. This measure is obtained by comparing it with the duration of a motion assumed to be uniform, such as that of a clock or of the Sun.

Descartes upholds this distinction. In the *Principles of Philosophy* (1644; §57) he argues that although time is called “the measure of motion”, the duration involved in moving things is no different from that of things at rest. “But in order to measure the duration of all things, we compare their duration with the duration of the greatest and most regular motions which give rise to years and days, and call this duration ‘time’. Yet nothing is thereby added to duration, taken in its general sense, except for a mode of thought” (AT VIIIA 27; CSM I 212). Thus duration is an attribute of things which is in the very things it is an attribute of; while time, when it is “distinguished from duration taken in the general sense and called the measure of motion, is simply a mode of thought” (27).

Moreover, Descartes, argues, the distinction between a particular substance and its duration is only a conceptual one, a distinction of reason. The distinction between a substance and one of its attributes is one of reason if the substance is unintelligible without that attribute. “Such a distinction is recognized by our inability to form a clear and distinct idea of the substance if we exclude from it the attribute in question” (AT VIIIA 30; CSM I 214). For example, Descartes explains, “since a substance cannot cease to endure without also ceasing to exist, the distinction between a substance and its duration is merely a conceptual one” (30).

These distinctions are essential to a correct understanding of Descartes’ proof of the existence of **God** (see **cosmological argument**) from a consideration of “the nature of time” in the Third Meditation (AT VII 49; CSM II 33), or, as re-expressed in the *Principles*, “from the fact that our existence has duration” (I, §21; AT VIIIA 13; CSM I 200). The passage from the *Meditations* runs as follows:

I do not escape the force of these arguments by supposing that I have always existed as I do now, as if it followed from this that there was no need to look for any author of my existence. For since every lifetime can be divided into innumerable parts, each of which

in no way depends on the others, it does not follow from my having existed a short while ago that I must exist now, unless there is some cause which creates me as it were again at this moment—that is, conserves me. For it is quite clear to anyone who attentively considers the nature of time that the same force and action is plainly needed to conserve any thing at each moment it endures as would be needed to create it anew if it did not yet exist.

Pierre **Gassendi** objected to this argument that the parts of time, far from being mutually independent or separable, form an “inviolable series and connection”, with the later parts depending on the earlier (Fifth Objections, AT VII 301; CSM II 209). Moreover, since the parts of time are “external, successive, and not active”, their dependence or independence on each other can make no difference to anything’s creation or conservation (301; 209-10). In reply, Descartes accuses Gassendi of failing to heed the distinction between time as a continuous abstract quantity and concrete duration, the “duration of the enduring thing”:

And this is clearly demonstrated by what I explained about the independence of the parts of time, which you try in vain to evade by proposing *the necessity of the sequence which exists among the parts of time* considered in the abstract. It is not this that is at issue here, but rather the time or duration of the enduring thing, and you will not deny that the individual moments of this time could be separated from those next to them, that is, that the enduring thing could at any single moment cease to exist. (AT VII 369-70; CSM II 254-55).

This reference to the individual moments of duration (in contrast to the continuous sequence of instants in a continuous time) has led many interpreters to suppose that Descartes means that duration is made up of discrete moments, and that the continuous creation alluded to in the argument for the existence of a creator should be understood instead as a *discontinuous re-creation* of the world in successive atomic moments: the so-called “classic thesis”. Such an interpretation began with Descartes’ immediate successors, such as Louis de **la Forge**, and immediately took root, as evidenced by the fact that both Pierre Bayle and Gottfried Leibniz assumed it to be the natural interpretation of Descartes’ position.

There are strong reasons for doubting the classic thesis, however. First, it is in conflict with Descartes’ views on **atoms** and **indivisibles**. To Henry More he writes that

“it would imply a contradiction for there to be atoms which are conceived of as extended and at the same time indivisible” (to More, 5th Feb. 1649; AT V 273; CSM-K 363) (see **Atom**). Applied to duration, this would preclude extended, indivisible moments. And in a letter to Mersenne of 1638 Descartes dismisses Galileo’s composing of matter and lines “from an infinity of actual points” as “only an imagination pure and simple” (AT II 383). So it is no more likely that Descartes would countenance the composition of a continuous duration from durationless instants than he would a composition of extension from an infinity of extensionless points. Nevertheless, the fact that Descartes refrained from trying to solve the problem of the composition of the continuum gives us no reason to question his being committed to duration’s being continuous, and there being instants everywhere in it, just as there are points everywhere in a continuous line.

Secondly, the interpretation of many proponents of the classical thesis as entailing an alternation of being and non-being is in direct conflict with Descartes’ claim that a substance and its duration are only conceptually distinct, according to which “the duration of a thing simply [is] a mode under which we conceive the thing insofar as it continues to exist” (AT VIII A: 26; CSM I 211). This makes it impossible to attribute to him a view where a substance goes in and out of existence over time. Just as “it is a manifest contradiction for [bodies] to be apart, or to have a distance between them, when the distance in question is nothing” (AT VIII A: 51, CSM I 231), so will it be impossible for there to exist temporal gaps between any putative atoms of duration.

It would seem prudent, therefore, to accept Descartes as his word when he writes of *continuous* creation: a substance—and indeed the whole world—is conserved in existence if at every instant of its duration God is exerting “the same force and action” as was necessary to create it in the first instant. Because of the constancy and immutability of God’s action, “the world is continually conserved through an action identical with its original act of creation” (*Principles* II, §42; AT VIII A: 66, CSM I 243). Consequently, “the motion which he conserves is not something permanently fixed in parts of matter, but something that is mutually transferred when collisions occur”, resulting in an overall conservation of the **quantity of motion** in the world.

The equating of conservation with continuous creation is, of course, a traditional doctrine, as Descartes reminds Gassendi in their exchange, something neglected by those

who “attend only to causes of *coming to be*, but not to causes of *being*” (AT VII: 301; CSM II 209). He gives the example of an architect or builder who causes a house to come to be, where the completed house “can remain in existence quite apart from the cause in this sense”—the same example used by St. Augustine (*de Genesi ad litteram* 4.12.22), who adds: “The world could not last like this for the duration of an eyeblink if God were to withdraw his governance from it.”

Now, when God conserves a creature in being (*in esse*) by continuously creating it, according to Augustine he will be keeping in existence its *seminal reason*, from the actions of which its accidents will flow. But Descartes rejects such entities as seminal reasons and the substantial forms of the Scholastics. Thus, it was thought, Cartesian bodies have no power to act. This interpretation is a major motivation for the classic thesis; it was, of course, also one of the planks on which La Forge erected his **Occasionalism**. For if a body has no power of self-conservation and no power to act, La Forge maintained, it will not be able to cause other bodies to move, but will simply be recreated by God at each successive moment together with its successive modes, including place. Descartes himself, however, wrote quite unqualifiedly about bodies having the power to act on other bodies. For from the fact that bodies have no power to conserve their own existence it does not follow that they have no force or action; indeed, God conserves them in existence by endowing them with this very force and action. A body will have the motive force that it does provided God sustains the world by his creative action, but without this action, as Augustine and Aquinas maintained, the world and all the bodies in it would have no force and no continued existence.

See Augustine; Gassendi, Pierre; La Forge, Louis de; Force; Quantity of Motion; Occasionalism; Substantial Form; Indivisibles; Atoms.

For Further Reading

Arthur, R. T. W. 1988. “Continuous creation, continuous time: A refutation of the alleged discontinuity of Cartesian time,” *Journal of the History of Philosophy* **26**, no. 3 (July 1988): 349-375.

——— 2007. “Beeckman, Descartes and the Force of Motion,” *Journal for the History of Philosophy*, 45: 1-28.

- 2011. “Beeckman’s Discrete Moments and Descartes’ Disdain,” forthcoming in *Intellectual History Review*.
- Beyssade, J-M. 1979. *La Philosophie Première de Descartes*. Paris: Flammarion.
- Bonnen, C. and D. Flage. 2000. “Descartes: The matter of time,” *International Studies in Philosophy* 32: 1-11.
- Frankfurt, Harry. 1999. “Continuous creation, ontological inertia, and the discontinuity of time,” in *Necessity, Volition, and Love*, Cambridge: Cambridge University Press.
- Garber, Daniel. 1992. *Descartes’ Metaphysical Physics*. Chicago: Chicago University Press.
- Gorham, Geoffrey. 2004. “Cartesian causation: continuous, instantaneous, overdetermined,” *Journal of the History of Philosophy* 42: 389-423.
- 2007. “Descartes on Time and Duration,” *Early Science and Medicine* 12: 28-54.
- 2008. “Cartesian Temporal Atomism: A New Defence, a New Refutation,” *British Journal for the History of Philosophy* 16: 625 – 637.
- Gueroult, Martial. 1984. *Descartes’s Philosophy Interpreted According to the Order of Reasons*, 2 vols., Roger Ariew (ed. and trans.), Minneapolis: University of Minnesota Press.
- Kemp Smith, Norman. 1952. *New Studies in the Philosophy of Descartes*, London: Macmillan.
- Levy, K. 2005. “Is Descartes a temporal atomist?,” *British Journal for the History of Philosophy* 13: 627-674.
- Secada, J.E.K. 1990. “Descartes on time and causality,” *Philosophical Review* 99: 45–72.