# The Atomic Billiard Board, or: Understanding the Swerve to Mechanistic Determinism

## Post by “Charles” of November 11, 2022 at 3:06 PM

> Quote from Karl Marx, Essay on French Materialism
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> *The metaphysics of the seventeenth century, as specially represented for France by Descartes, had materialism for its antagonist from its hour of birth. In person this antagonist confronted Descartes in the shape of Gassendi, the restorer of Epicurean materialism. French and English materialism always remain in close relationship with Democritus and Epicurus.*

I'm writing this brief and abridged summary both as a reference for new-comers or for those unfamiliar with this point in (relative) Epicurean history and for potential future use, on top of forcing myself to publish my thoughts. I'm writing this at work, and I'll likely update it with more robust references, quotes, and examples when I have the time.

Something that has often been discussed, particularly on the Lucretius Podcast, and by me whenever I am discussing 18th Century Epicureans, almost exclusively those in France, is the development and theory of atomic physics. There was a definitive shift in between the atomic swerve of Epicurus and even Lucretius, to the mechanism and materialism of the Enlightenment. The key difference between these is not only in their approach and theory, but primarily when it comes to the question of free will and determinism. For the sake of eliminating redundancy, I won't be explaining much of the source material we know from Epicurus and Lucretius, instead I'll focus on the brief history and overview of the evolution of atomic physics from the many Epicurean thinkers of the Enlightenment, and how it differs.

> Quote from Pierre Gassendi, Epicurean Syntagma
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> *Let us here now admire the wisdom and the foresight of the great Creator of nature, that in regard all our actions and operations are of themselves painful and troublesome, and these also.., being natural, as seeing, hearing c. He hath caused them all to be sweetened with pleasure; and the more necessary these operation are for the preservation of our species, the greater pleasure nature hath allotted them; otherwise all creatures would neglect or forget not only the act of generation, but even eating and drinking itself, if there were not certain natural instigations that stir and move us, and by causing some kind of pain and uneasiness, minds us of the action, which the pleasure that ought to appease this pain and uneasiness, doth promote and encourage.*

It was Gassendi who brought Epicurus from the brink of obscurity throughout the late Middle Ages and Renaissance and into the Enlightenment. His staunch opposition to Aristotelian Teleology and Cartesianism and his insistence on natural philosophy led to him adopting Epicurus and fashioning him in a much more palatable, Christian version. First by playing the apologist and defending the life of Epicurus, citing Laertius among others the truth behind his biography and dispelling the myths and negative connotations associated with his mere name. Then, by merging the power of God's creation to extend into the creation of atoms, and then the hedonism of men. Although much of Gassendi's work on Epicurus was written in the later end of his life in scattered writings, it wasn't until after his death that his works had been collected and published together. Giving us a time frame of the late 1660's as a starting point. Despite the recuperated form of Epicureanism, Gassendi is rightfully credited with the revival of Epicureanism as a philosophy whose ideas had merit and were worthy of great study and scrutiny. Yet it is from this point, that we see the starting point of a deterministic view of Epicurean materialism.

A contemporary trend growing around this time was also the development of mechanism. Some of its earliest proponents included the likes of Bernard Lamy, Newton, Descartes, and to a lesser extent Leibniz. The basic premise of mechanism is that throughout nature, there are certain processes that, which are inter-linked, are all the result of mechanical principles and sequences in a sort of causal manner. The earlier thinkers applied mechanism almost exclusively to nature and not to human nature. Both are extraordinarily deterministic no matter how these mechanistic processes are designed and executed. Yet alongside this growing theory, some applied it to human nature. Among the first was Hobbes, but later, and more importantly was Julien Offray de la Mettrie, whom I've written about and have made many threads about on this forum.

La Mettrie, a somewhat radical Epicurean, advanced the field of mechanism and materialism with the publishing of his book "Machine Man" (or Man a Machine). Which advocated the idea that all human functions can be reduced a series of chemical and mechanical principles acting upon one another, that the soul itself is made of matter, and that it is in our nature to pursue pleasure. In addition to denying the feasibility of free will through the logic of these biological principles. Although this position was not unique to La Mettrie, as contemporaries and some before him had advocated this idea before, La Mettrie is being mentioned solely for his self-professed Epicurean beliefs.

> Quote from La Mettrie, Man a Machine
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> That is certainly the most that can be said in favor of the existence of God: although the last argument is frivolous in that these conversions are short, and the mind almost always regains its former opinions and acts accordingly, as soon as it has regained or rather rediscovered its strength in that of the body. That is, at least, much more than was said by the physician Diderot, in his “Pensées Philosophiques,” a sublime work that

> will not convince a single atheist. What reply can, in truth, be made to a man who says, “We do not know nature; causes hidden in her breast might have produced everything. In your turn, observe the polyp of Trembley: does it not contain in itself the causes which bring about regeneration? Why then would it be absurd to think that there are physical causes by reason of which everything has been made, and to which the whole chain of this vast universe is so necessarily bound and held that nothing which happens, could have failed to happen, causes, of which we are so invincibly ignorant that we have had recourse to a God, who, as some aver, is not so much as a logical entity? Thus to destroy chance is not to prove the existence of a supreme being, since there may be some other thing which is neither chance nor God—I mean, nature. It follows that the study of nature can make only unbelievers; and the way of thinking of all its more successful investigators proves this.”
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> […]
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> In fact, if what thinks in my brain is not a part of this organ and therefore of the whole body, why does my blood boil, and the fever of my mind pass into my veins, when lying quietly in bed, I am forming the plan of some work or carrying on an abstract calculation? Put this question to men of imagination, to great poets, to men who are enraptured by the felicitous expression of sentiment, and transported by an exquisite fancy or by the charms of nature, of truth, or of virtue! By their enthusiasm, by what they will tell you they have experienced, you will judge the cause by its effects; by that harmony which Borelli, a mere anatomist, understood better than all the Leibnizians, you will comprehend the material unity of man. In short, if the nerve-tension which causes pain occasions also the fever by which the distracted mind loses its will-power, and if, conversely, the mind too much excited, disturbs the body (and kindles that inner fire which killed Bayle while he was still so young); if an agitation rouses my desire and my ardent wish for what, a moment ago, I cared nothing about, and if in their turn certain brain impressions excite the same longing and the same desires, then why should we regard as double what is manifestly one being? In vain you fall back on the power of the will, since for one order that the will gives, it bows a hundred times to the yoke. And what wonder that in health the body obeys, since a torrent of blood and of animal spirits forces its obedience, and since the will has as ministers an invisible legion of fluids swifter than lightning and ever ready to do its bidding! But as the power of the will is exercised by means of the nerves, it is likewise limited by them.....

In borrowing heavily from Holbach and making an allusion to a quote found within his System of Nature, La Mettrie makes his stance clear. “Nothing which happens, could have failed to happen.” In a Materialist philosophy, Nature reigns supreme, and if Nature is the regarded as the creator of all things chemical and physical in plant, animal, man, and even matter and energy, then every person would be comprised of the same constituent parts. It is only their unique combinations that serve to separate one from another. As such, these constituent parts

are also what compel us towards pleasure and drive us from pain. This was the position taken by many of the Enlightenment era thinkers inspired by Gassendi and Lucretius within the context of France's own budding field of natural philosophy and science.

For now I'll publish the thread, but throughout the weekend I'll try and update it with some further alterations and compare the different developments from other self-proclaimed Epicureans, such as Holbach, Boyer, or Sade. Hopefully by the end of this little endeavor there will be a consistent trend and timeline in the advancement of this idea from Epicurus into the Enlightenment. I personally suspect that the increasingly popular and common usage of "Nature" as a shoe in for a creator or deity bears some responsibility for this difference.