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## Chapter Two:

### Consciousness and Mental Causation, or, Living with Lucretius

In 1682, Thomas Creech published the first complete translation of *The Nature of Things* into English. Greeted with some fanfare on its appearance, Creech's edition stood at the crest of a Lucretius revival of several decades in the making, including complete or partial translations by Lucy Hutchinson, John Evelyn, and John Wilmot, the Earl of Rochester.<sup>1</sup> One common explanation for this renewed interest in the poem has been that its cosmology was so amenable to the new cultures of science and observation. The universe is composed only of atoms and void; all forms of life rise from a swarming mass of particles in motion. So Lucretius argued and so the seventeenth century discovered, even as it resisted the lengths to which Lucretius was prepared to go in denying an immaterial soul and an afterlife of reward or punishment. My point in this chapter is not to challenge this notion of the Lucretius revival so much as to focus on some questions of consciousness and agency that concern a world reducible to atoms. Accepting that the world is made only of matter, how can matter think? And, assuming that matter can think, what kind of agents and types of action can matter create?

These questions turn out to be exceptionally hard to answer and touch on issues of real sensitivity around life, death, and human agency. According to Lucretius, atoms are indivisible and thus imperishable. They build various forms of life for as long as they remain in steady combinations and scatter to the void at the moment of death. Complex

objects like humans and rocks rise from these smaller, invisible particles because particles have an intrinsic tendency to swerve, collide, stick together and build composite entities--living and inert alike.<sup>2</sup> Death "dissolves but not annihilates" living entities because it unlocks their contingent forms and returns atoms to the cosmos from which all things are created.<sup>34</sup> Scandalously for a culture committed to Christian ideas of reward and punishment in an afterlife, the poem concludes on this basis that "Souls are born and grow,/ And all by age decay as Bodies do" (iii, 81).<sup>5</sup> "Nothing sinks to Hell, and sulphurous flames,/ The seeds remain to make the future frames" (iii, 97). The gods turn out to be merely superior forms of matter, indifferent to the affairs of humans and preferring to live without anxiety or desire for things they cannot have. Their serene existence ought not to be a source of fear; it should instead provide a model for how we might conduct our lives in the time we are given, in this the only world there is. This turn to a secular conception of agency, however, created several problems for the writers with whom I'm concerned. First, it left ambiguous the way in which material souls could have the kinds of properties (desires, intentions and the like) that lead to discernable actions. Second, it left unstated who or what is having these desires or intentions in the first place. I'll treat these problems one at a time, though I think we'll see that they are really versions of each other, and that each arises out of the same commitment to there being nothing outside the physical world, a commitment that most of us now take entirely for granted.

### **I. Facing up to the Hard Problem of Consciousness**

Creech notes on the side of a long passage from book three of the poem that Lucretius means to show how "the Mind is Material" because it is "composed of Seeds small and

round" (iii, 73). On the face of it, this is hardly surprising. Lucretius has already committed himself to the notion that "unfruitful *Nothing*, nothing breeds," that all things that exist must trace their origins to other things that exist, not to the void where there is nothing (i, 8). Since the mind is clearly something, it must be made from the atoms or seeds that compose all matter. How is it then that "*sensibles*," as the poem describes thought, "rise from *seeds* void of *sense*"? (iii, 61). In their very nature, "sensibles" seem to be immaterial. Try to hold onto a thought and it will run through your fingers. Throw a ball against an idea and it will sail through the air. Yet clearly thoughts are something. They exist in the world and therefore are not drawn from the void in which seeds fall. The revival of Lucretius thus came full bore against what philosophers now call "the hard problem of consciousness."<sup>6</sup> The hard problem is this: how do material things like atoms produce ephemeral things like thoughts? How could a physical entity like a brain be the locus of conscious experience, with its vivid, "what it is like" qualities of sensation, feel, and color? As David Chalmers put it in a much-cited essay of 1996: "It is widely agreed that experience arises from a physical basis, but we have no good explanation of why and how it so arises. Why should physical processing give rise to a rich inner life at all? It seems objectively unreasonable that it should, and yet it does."<sup>7</sup> Between matter and experience lies the wide explanatory gap that has much preoccupied the analytic philosophy of mind over the past decade and that was a serious concern for writers confronting the new materialism of the seventeenth century. This is how Creech asks the hard problem of Lucretius in the notes to his edition. How is it that "Animals, those things of sense, can spring from senseless seeds"? Is there really "no need of any Superior Principle to Matter, but a fit combination of Atoms can Think, Will, or Remember"?<sup>8</sup> The

similarity of Creech to Chalmers of course reveals the considerable difference between them. Creech imagines that his readers will find the notion that a fit combination of atoms can think to be absurd and sacrilegious. Chalmers imagines his readers pondering a deep mystery about mind and body, about the way in which matter is the seat of consciousness, and the physical world the cause of thinking, willing, and remembering. Even as they arrive at the hard problem from opposite sides, however, both exhibit certain awe around consciousness, one worth perhaps a second look.

The contemporary perspective of a David Chalmers, exemplary of a consensus view among philosophers as well I imagine as most readers of this book, is in most respects closer to Lucretius than it is to Creech. While it is unreasonable to expect that matter can think, obviously it does; therefore the hard problem is to figure out how this is so. Two possible solutions circulated in Creech's time. For Cartesians as well as Christians (like Creech), the answer to the hard problem lay in a dualism of substance. Our brains have a physical substance and our souls an immaterial substance. The soul can think because that is what it does. This solution is evidently unpalatable for Lucretius because it supposes that there is something other than atoms and void in the universe—a third category of immaterial substance that does all the thinking for us, in fact is "us" in the subjective sense of the term. Materialists following in the tradition of Lucretius had to come up with a way to resolve the hard problem while not departing from their basic monist commitments. Their response lay in expressions like "rise from." Consciousness on this account is a kind of secondary or emergent effect of the motion of atoms.<sup>9</sup> It is not precisely a quality of atoms themselves, since any one atom does not itself think, but it is not separate from atoms either. Consciousness is instead an accidental byproduct of the

collision of atoms into the forms of life that populate the earth. As philosophers would now say, it "supervenes on" one or another kind of atomic (or neural) foundation.<sup>10</sup>

The emergence thesis raises a number of concerns of its own, however. What is it in atoms that causes "fit combinations" to give rise to conscious thought? And, since the universe is composed of fundamentally the same stuff, how come some entities (people, horses, dogs) can think and others (tennis rackets, apples, rocks) cannot? As if these weren't enough, the puzzle of consciousness also includes another and nearly as hard problem. Even if Lucretius is right about matter having the capacity to think—about thoughts "rising from" the forms of life that atoms take—he has not begun to answer how thoughts can then have a causal role with respect to the matter from which they emerge. After all, if a thinking mind is going to rise from non-thinking, physical entities like atoms, that mind ought be able to have some effect on the physical world in which it is situated. Were this not so, our thoughts would be held prisoner to our minds, unable, for example, to lift our arms to scratch an itch or move our fingers to write a poem. Answering the question of how do things think thus only does half the job; the other problem turns out to be how does thinking redound on things. Let's begin with the question of emergence and then turn to the question of mental causation, though (again) I think we'll see that they are intertwined threads of a common concern.

Lucretius does have a clear reason on offer as to why there are such things as people and rocks in the first place. The physical structure of the world is consistent with the emergence of whole objects from constituent parts. The universe is composed of more than just atoms because atoms tend to collide, stick together, and make things: whence people, rocks, oceans, worms, spiral nebulae, and so on.

Now *Seeds* in downward motion must *decline*,  
 Tho *very little* from th' exactest line;  
 For did they still move *strait*, they needs must fall  
 Like drops of Rain dissolv'd and scatter'd all,  
 For ever tumbling thro the mighty space,  
 And never *joyn* to make one single mass. (i, 14)

The emergence of wholes from parts derives from the elementary law of space-time that atoms do not move in straight lines, the famous doctrine of the *clinamen*. The world on this view consists in very different composites—oceans and apples as the case may be—built from identical components. In making this argument, Lucretius holds fast to a theory that supports the real existence of complex physical entities, unlike for example his predecessor Democritus, who argued that atoms fell in parallel and therefore that anything larger than an atom was merely an illusion of faulty perception.<sup>11</sup> Complex objects are for Lucretius a fact of nature.

The same cannot be said about consciousness, or not exactly. While objects come into existence from the tendency of atoms to collide, there is nothing in the structure of the world as Lucretius describes it that causes "sensibles" to "rise from seeds void of sense." Rather, the world is logically consistent with the absence of consciousness, with there being no agency, no pain, hope, despair and the like. Assuming, as Lucretius seems to, that the existence of consciousness like that of complex objects is not an illusion, it follows that something happens in the course from part to whole that adds sentience to mix. To put it another way, Lucretius is on firm ground to assert that there are people as well as trees out there, but needs to come up with an argument about why there is so

much thought in world. As we have seen, "rise from" seems to suggest a logic of emergence, but not one that may be logically derived from the physical structure of the world.<sup>12</sup> This being the case, a description of the world that includes consciousness must bridge the gap between seeds without sense and entities with sense (the hard problem) or else fail to explain an important part of the natural order.

But what confirms, what prompts thee to believe,  
That things endow'd with sense can ne're derive  
Their Beings from insensibles, and live? (ii. 59).

The question is prompted by the system Lucretius describes. The wayward path of atoms in motion determines that they will collect into shapes not that these shapes will be conscious. The emergence of "sense" brings something into the world that does not necessarily follow from the laws of matter and motion, and since there is nothing other than matter and motion in the world Lucretius is in debt for an explanation of how this happens.

Lucretius will address this problem through a radical act of reduction, according to which mental states not only depend upon but may be exhaustively explained by physical correlates.<sup>13</sup> To get a sense of the challenge posed by this version of materialism we might return briefly to the language of contemporary analytic philosophy. Donald Davidson's famous essay on "Mental Events" (1970) begins with the very un-Lucretian assertion that "Mental events such as perceivings, rememberings, decisions, and actions resist capture in the nomological net of physical theory."<sup>14</sup> For Davidson, any strict identity between mental and physical types would put at risk the anomalous set of properties—of intention or rationality—that distinguish what it means to be a person. So

while some parts of the world admit of both physical and mental descriptions ("Jonathan Kramnick" for example), the characteristics that define the one ought not to be used to account for the other.<sup>15</sup> While it is a feature of physical reality "that physical change can be explained by laws that connect it with other changes and conditions physically described," it is a feature of mental life "that the attribution of mental phenomena must be responsible to the background of reasons, beliefs, and intentions of the individual."<sup>16</sup> Propositional attitude type verbs like believe and desire must track back to a person who is having them or else mentality simply dissolves into the rest of the world. Davidson wants to avoid a dualist account of substance, according to which, as we'll see, mental causation would be impossible. At the same time, he wants to provide a special place for the activity of the mind apart from the laws that govern matter. Mental events are physical events, on his account, yet a certain "nomological slack between the mental and the physical is essential as long as we conceive of man as a rational animal."<sup>17</sup> The anomaly of the mental is that it is physical yet not reducible to the laws of physics, traipsing back as it always does to some distinct, lawless domain of the person.<sup>18</sup>

Lucretius of course is after something quite different and is quite content not only to tether the mental to the physical but also as we will discuss below to explain and predict mental phenomena according to the laws of atomic motion. His answer to the hard problem is to follow the path of emergence over the explanatory gap to insentient matter, to run the sequence on reverse mode to its beginning in particular configurations of elementary particles. Once there, we can see what it is about the small bits of matter that causes sentience to emerge. It turns out "those Seeds, whence sensibles arise/ Must all have a convenient shape, and size,/ Position, motion, order" (ii.60). According to this

version of emergence, there is nothing in the actual seed that itself causes thought to happen. The great leap from insentience to sentience happens when seeds of a certain figure take on a certain pattern. Following consciousness on its reverse course to matter therefore must pay close attention to the forms that matter takes, not to anything that might be within these irreducible and thoughtless atoms. (Were atoms to think, they would just be smaller versions of people, endowed with a kind of immaterial substance, since after all no atom could fit within an atom.) The world on this view is full of consciousness yet thoughts are not tracked back to persons having them so much as to the shape, order and motion of seeds. So while the world abounds in propositional attitude type verbs it is plausibly empty of subjects whose experience these verbs describe. On the view of a philosopher like Davidson, the common-sense distinction between an experience and a subject of experience, a feeling and an individual having that feeling, must organize consciousness within the person, the only entity that can give consciousness "a coherent and plausible pattern."<sup>19</sup> On the view of the particular kind of materialism we've been looking at, thoughts all conceivably have themselves; beliefs have no believer, hopes no aspirant, and so on. The point of the comparison to Davidson is thus not to place Lucretius in a conversation across the centuries. It is to illustrate what was so special about his version of materialism for the seventeenth and eighteenth century: the simultaneous insistence on the mental and rejection of the human.

Consider for example how different the account of consciousness provided by Creech's *Nature of Things* is from that of its near contemporary Locke's *Essay Concerning Human Understanding* (1690). Consciousness is a category of extreme importance for Locke, describing as it does the ongoing, subjective character of a

person's identity.<sup>20</sup> There is "something that it is like" to be Jonathan (in Thomas Nagel's famous phrase) apart from his behavior and its accompanying neural processes.<sup>21</sup> For Locke as for Nagel, consciousness is inseparable from the self who is conscious; each defines the other in the endless loop that is human. To be a self is to be conscious, and to be conscious is to have a sense of self. "Consciousness," Locke writes, "always accompanies thinking, and 'tis that, that makes every one to be, what he calls self; and thereby distinguishes himself from all other thinking things, in this alone consists personal identity, i.e. the sameness of a rational Being."<sup>22</sup> States of consciousness in other words always track back to a person who is having them and to whom they belong. My sense that thoughts and feelings belong to me and that *I* have thoughts and feelings over time ensure for me a consistent sense of my own person. "It being the same consciousness that makes a man be himself to himself, personal identity depends on that only, for it is by the consciousness it has of its present thoughts and actions, that it is self to itself now, and so will be the same self, as far as the same consciousness can extend to actions past or actions to come."<sup>23</sup> Locke's argument here is importantly different from the tradition we've been discussing. While states of consciousness belong to a person whose identity they guarantee, these states also remain at a remove from the physical entity in which they are ostensibly located. "Self is that conscious thinking thing," Locke writes, and then immediately adds in parenthesis "whatever Substance, made up of whether Spiritual or Material, Simple or Compounded, it matters not."<sup>24</sup> This careful sidestepping of the nature of the thing that thinks thus remains agnostic on the hard problem. If we don't say that conscious states are material, we don't have to explain how

matter can think, and if we don't have to explain how matter can think, we have an easier time locating thoughts within a self.<sup>25</sup>

The difference is important. According to Lucretius, atoms exist before they take shape in any one person and last beyond their disassembling on a person's death. The "fit combination" that we know as a person is a more transient affair than the self made of "whatever substance" insofar as the atoms that make up one person have already belonged to another and are always ready (on death) to turn into a third. Seen in terms of this low-level description, "Death doth not destroy, but disunite/ The Seeds, and change their order, and their site:/ Then makes new combinations" (ii. 63). In contrast, the point of Locke's insistence upon a higher-level description is to make the self survive over time. "I that write this am the same my self now while I write (whether I consist of all the same Substance, material or immaterial, or no) that I was Yesterday" because I have a certain "Identity of consciousness" stretched over "remote existences."<sup>26</sup> Once again it is the parenthetical abeyance of whatever grounds or gives rise to consciousness that enables the self to stay the same and allows propositional attitude verbs to track back to a person not to a fit combination.

When Locke's self dies it passes on to a reward or punishment in an afterlife. The *Essay* is somewhat unclear about how this happens—as Locke's more orthodox critics would point out—but even so the anticipation of divine justice is an essential component to its theory of agency.<sup>27</sup> The rational basis for all acts of the will ought to be the "prospect of the different State of perfect Happiness or Misery, that attends all Men after this Life, depending on their Behavior here."<sup>28</sup> In sharp contrast, *The Nature of Things* quite famously tells its readers not to fear death and to consider the effects of their actions

solely in terms of this world. The fit combination of particles that make up any one person lasts only for one life, and for this reason a person ought to take care of her pleasure while she can. The avowal that "Life's not given to possess but use" in this respect makes a simple point: (iii. 97). Any claim to ownership is the mistake of those who believe that the self persists into something that comes after life. Life cannot be possessed because atoms are always borrowed and then surrendered upon death. So it is best to make of life what one can.

Locke and Lucretius in different ways counsel that a certain care be taken. Locke suggests that we care for an identity that persists over time, one grounded in the sameness of conscious experience, the "what it is like" quality of being a person. "This every intelligent being, sensible of Happiness or Misery, must grant, that there is something that is *himself*, that he is concerned for, and would have happy; that this *self* has existed in a continued Duration more than one instant, and therefore 'tis possible may exist, as it has done, Months and Years to come, without any certain bounds to be set to its duration; and may be the same *self*, by the same consciousness, continued on for the future. And thus, by this consciousness, he finds himself to be the same self which did such or such an Action some Years since, by which he comes to happy or miserable now."<sup>29</sup> The recognition that there is something that I care for derives not from an awareness of the atoms that make me who I am but rather a sense of self quite distinct from them. The concern that one ought to have for oneself on this account is directed to the continuity of consciousness on which the subject of care, concern, and interest rests. It is precisely because I am something other than my body that I care for my state in the future. And because I will persist unto divine judgment, this care includes following an ethics of

rewards and punishments as laid down by scripture. Locke's understanding of care thus includes two elements of special importance for his particular historical moment: a holding on to the religious model of an afterlife of transcendent moral judgment and a making continuous of the person over time. I own up to my actions and will monitor my behavior in keeping with consequences here and hereafter; I also own myself and have rights that cannot be taken from me. Locke's theory of the self in this way is an important component of his particular and influential version of liberalism. "Every man has property in his own person," Locke declares in the *Second Treatise of Government* and sets about to establish his influential theory of private property, government by consent, and much of what we understand to be the modern order of society and politics.<sup>30</sup>

The version of care on offer in *The Nature of Things* is of a different variety. In keeping with the idea that there is no life for the person after death, that the only life after life belongs to the next fit combination to take shape from a person's atoms, the poem counsels happiness and freedom from pain. The poet will

... chase that dread of Hell, those idle fears  
 That spoil our lives with jealousies and cares,  
 Disturb our joys with dread of pains beneath  
 And Sully them with the black fear of Death. (iii.70)

Death is mere cessation and so cannot be experienced as pain, cannot be experienced as anything since it is the end of experience as such. The entire point of dwelling on death—on the absence of an afterlife—is in this respect to turn attention back to life, to keep life from being spoiled by fears of something that cannot exist. Whereas Locke counsels a care for the self that keeps in mind death, Lucretius mentions death only to

pay attention to life. The ethos is secular and practical. Life is not owned because it can never be lost. Life can only stop, and so the point is to use it properly while it is there. "Those that are in Being once, should strive,/ As long as pleasure will invite, to live" (v, 145). So much might be expected from a poet who has resolutely directed attention downward to the lower-level swarming of atoms. Care ought to be taken to live well because these atoms might at any moment break apart and make something else. But who exactly is it that should take care and strive given the transient, material nature of the self? The question repeats in its essential shape the hard problem of consciousness, this time turned more broadly to life. There ought to be care, the poem seems to suggest, in the same way that it suggests that there is experience and thought and feeling. Whether there is or ought to be anyone caring however is left quite open.

## **II. Mental Causation, Another Hard Problem**

The attention to life rather than death puts significant emphasis on agency. Once the emphasis is shifted from a future of reward and punishment to a limited experience of the present, a corresponding accent falls on this worldly practice and happiness. None of this disturbs the brackets around which the poem interestingly places the ostensible subject of action. In the same way that experience need not track back to a subject of experience, agency need not track back to agents. It is part of the counter-intuitive zest of the poem that it maintains a steadfast correlation between freedom on the one hand and materialism on the other, in such a fashion that agency tracks back to the physical world itself and not some private space of the mind. The double commitment to freedom and physics will ultimately mean that action begins in an externally conceived space of

atomic motion. It is imperative, however, that room is made for actions to happen or else living entities would not have any capacity for movement. And yet nothing we have seen so far in Lucretius entails that this is so. The claim that consciousness exists does not itself require that consciousness have causal powers. Indeed, the logic of emergence to which Lucretius seems wed makes mental causation difficult to imagine. The logical form of thoughts rising from seeds void of thought stitches the causal relation from the physical to the mental. Freedom of the sort the poem wants to celebrate would require the causal sequence to run in the opposite direction, from the mental to the physical. The account of consciousness emerging from atomic motion is thus logically compatible with consciousness having no causal power at all, with a version of epiphenomenalism that would have thoughts entirely unable to make things happen. So the hard problem in this case turns out to be how to throw causation in reverse and endow states like desire or belief or memory with the capacity to act on states empty of such attitudes.

This is the problem Lucretius confronts when he moves to explain "why men can move, can run/ When er'e they please, what force the members on" (iv, 12). The question poses a nearly perfect instance of mental to physical causation since it is after all the pleasing that initiates the running and not the other way around. What is it then that allows an event described in a mental vocabulary to push downward as it were on an event described in a physical vocabulary? Once more, the capacity to have one's pleasings cause one's runnings is not entailed by the capacity for "sensibles" to "rise from seeds void of sense." For thoughts to cause actions, sensibles must turn their course and effect something on seeds void of sense; that is, a certain set of beliefs or desires must be able to bring about a corollary set of motions or acts. My wanting to type a sentence of

this chapter must be able to cause my fingers to move across the keyboard. Only if this is so, may we then conclude that consciousness has a real set of causal powers and is not an epiphenomenon or shadow of an atomic substrate. In the case Lucretius has provided, the set of mental terms that fall under the attitude of pleasing (wanting, desiring, intending, and the like) yield a standard set of responses (feet on the ground, pushed forward, lifted up, on the ground again) that fulfill the physical event of running. The fulfillment in turn is backed by a law-like regularity of connection between the two, which then form a nomological set. One can never want to run and end up singing.

The solution to the problem of mental causation on offer is to insist on the closeness of this connection, so much so that the mental event begins to seem indistinguishable from the physical event it causes. If pleasing is able to cause running, then it is no less part of the world and, as will become of tremendous importance, may be explained by the very same laws. Having committed himself to a monism of substance, Lucretius does not strain to discover the clue to mental causation in the identity of thinking with atomic motion:

First then, the subtle Forms, extreamly thin,  
 Pass thro' the Limbs, and strike the Mind within:  
 That makes the Will, for none pretends to doe,  
 None strives to act but what the Mind doth know.  
 Now what the Mind perceives, it only sees  
 By thin, and very subtle Images:  
 So when the active Mind designs to move  
 From place to place, it gives the Soul a shove:

The soul spreads o're the limbs, ('tis quickly done,  
or soul and mind are joyn'd, and make up one).

That strikes the limbs: so all is carried on. (iv, 128).

The important thing to notice about these lines is the thin distinction between "subtle forms" and "active Mind." One flies from external objects and the other initiates behavior, but both are physical entities. This means that the same laws of causation inhere for each. Just as atoms cause things to happen in virtue of their motion through space, so thoughts cause things to happen in virtue of their "shoving" and "spreading" over the body. The puzzle is ostensibly solved. Mental to physical causation occurs in this world because, strictly speaking, mental events are identical to physical events.

Speaking strictly does not mean that pleasing is the same as running (or hoping the same as flying as the case may be). It means rather that the lines of causation between the two are as strict as between the fall of a foot and the spring off the ground. Every mental event that is causally tied to a physical event is in virtue of this connection a physical event. Shove one thought against another and your leg might move; rub an arm against a post and you'll feel something. This putative solution to the problem of mental causation, however, introduces one final and potentially dire set of concerns. If nothing "resists capture," as Davidson put it, by the realm of the physical, then *all* mental events are caused.<sup>31</sup> Thoughts and the actions they produce are not categorically distinct but rather one continuous process of doing. Thinking is itself a kind of action and action a kind of thought, each the echo of the other in a world made only of atoms. What *The Nature of Things* offered to its modern readers was in this respect a radical form of externalism, according to which the content of any one mental state is potentially

indistinct from the world in which it is situated. As compatible as the poem was with the period's interest in science and epistemology, therefore, its account of mind was in some tension with the period's simultaneous commitment to interiority, deliberation, and autonomy.<sup>32</sup> For many, the commitment to external sources of action courted determinism. Once the mental is made identical to the physical it is hard to know where one cause starts and another ends, or (and this was the rub) when a person is responsible for his or her actions and when actions happen for reasons outside a person's control. Creech makes this point with considerable unease in the notes. "The *Liberty* of the Will," he argues, "is a power to choose, or refuse any thing after the Understanding hath consider'd it, and propos'd it as good or bad."<sup>33</sup> On this basis rests not only our sense of self and individuality but also all institutions of state and society. That "such a power belongs to every Man is evident from the general consent of Mankind, for every man finds such a *power* in himself and thence proceeds that agreement; tis the foundation of all *Laws*, of all *rewards*, and *punishments*" (19). There has to be a real difference between thought and the world that lies external to thought, or else we have no way of choosing our actions in such a way that we would leave us accountable for them. Materialism in Creech's view violates our intuitive sense of agency—that I am responsible for what I say and do—and all systems of human morality alike. His response is not to defend the poem he has translated so much as to make it clear that he, for one, does not believe a word of its philosophy; "those who imagine the Soul material" tend to conclude "all her actions *necessary*" because "matter once moved will still keep the same motion, and the same *determination* which it receiv'd, which must needs destroy all *Liberty* and evidently proves the *Epicurean Hypothesis* to be inconsistent with it" (20). For humans to have free

will, thoughts must originate inside of us, not in some external or physical source. Since Lucretius appears to think something else, Creech concludes, his "Epicurian principles are pernicious to society" (43).

The worry about determinism however reads against the grain of the poem Creech translates, or rather, selects one form of freedom against another. While those who imagine the soul material may tend to view all her actions necessary, *The Nature of Things* never departs from its commitment to the idea of free will. It is in this respect quite unlike the rival versions of materialism in play during the seventeenth and eighteenth century, including the compatibilism of Hobbes, who joins necessity to freedom (as will Hume and most of contemporary philosophy) and the fatalism of the Stoics, who, in denying the category of void, strung all action in a single web of determinacy.<sup>34</sup> The source of free will according to *The Nature of Things* lies in the identity of the mental and physical Creech finds so troubling. It turns out to be a good thing that mind and matter follow the same laws of causation, since the aleatory swerve atoms take on their declining path means there is no predictable direction to their movement. The tight connection between the physical and the mental being what it is, the crooked path of the one is the freedom of the other. While it is true that all mental events are caused, in other words, there is no way to extrapolate an effect from its cause when all motion is capricious. It is accordingly a matter of nomological certainty that the arbitrariness of the atom ensures the freedom of the will:

... did all things move in a direct line,  
 And still one motion to another joyn  
 In certain order, and no seeds decline,

And make a motion fit to dissipate,  
 The well wrought Chain of Causes, and strong fate;  
 Whence comes that freedom living creatures find?  
 Whence comes the Will so free, so unconfin'd,  
 Above the power of Fate, by which we go  
 When e're we please, and what we will do? (ii. p. 42)

The version of free will on offer in these lines is quite distinct from what Creech reminds his reader of in the notes. For the will to be free, according to Creech, agents and their choices must be prior to and separate from their actions. Agents come to have desires and beliefs before they act or else the results of their actions cannot be pinned on them. The freedom of the will we see above does not require this sort of temporal bracketing, or indeed any sort of separation of agents from the actions they take. We are invited once again to imagine a world in which actions happen absent of agents to whom such actions would be attached. The question after all is whence comes the will so free? Not, how are we free to make decisions for which we are responsible? Well, the answer seems to be, the will acts *like* the happy atom, swerving from whatever course might have been expected were we to extrapolate from its past motion, and is *identical* to the aggregate of such atoms and so free from the "well-wrought chain of causes." The "little declination" breaks through "strong necessity" and overcomes "fates rigid laws" (ii. p. 43). That's all.

The will falls under the same laws of motion as the individual atom and so no action that it causes can ever be said to be internal to it. The effects of the will may only be explained by the course of its free motion, in the same manner in which one would

trace any physical cause to its accidental effect. The overall pattern of free agency thus comes to seem like a ripple on the surface of a lake:

For sure the Will first moves, and thence,  
 The motions spread to the Circumference,  
 And vigorous action thro' the Limbs dispense.  
 For look, and see, when first the Barrier's down,  
 The Horse tho eager, cannot start so soon  
 As his own Mind requires, because the force,  
 And subtle matter that maintain the Course,  
 Must be stir'd thro the Limbs, then fitly joyn'd,  
 Obey the eager motions of his *Mind*;  
 Which proves these *Motions* rise within the Heart. (ii. p. 43)

The pause before the horse's actions is not deliberation or forethought. It is rather the amount of time it takes for the atoms of the mind to move to the limbs. This movement is free because the entire course—from the beginning of the thought to its terminus—is subject to the arbitrary swerve of the atom. As are all things made of matter. Since the mind is merely a different arrangement of the same kind of stuff as the limbs (and *inter alia* blueberries and doorknobs), the causal sequence at issue is one single motion covered by the way in which particles swerve, collide, and swerve again. Freedom in this respect is not so much a condition of the agent as a quality inherent in the world. Were there no void, atoms would not be able to move and nothing would be capable of action.<sup>35</sup> Were there no swerve, no forms of life would emerge out of collisions.<sup>36</sup> Since there is

swerve, we know that the will is free. Once again, the freedom of the will does not mean that any one person is free. It does not mean that there are persons at all.

### III. Varieties of a Secular Ethos

I'll spend the rest of this chapter on the question of whether there is anyone who is free or whether there is only freedom, a version of the care/ subject of care, experience/ subject of experience questions we saw earlier. These questions seem to me to explore some of the interesting difficulties faced by the period's attempt to describe mind, agency, and ethos in purely physical terms. To illustrate this I'll look at two translations of Lucretius and one of Seneca, one by Creech and two by Rochester. The Lucretius translations are from book two of *The Nature of Things* and concern the serene distance of the gods from the activity of mortals. Here is Creech:

For every Deity must live in peace,  
 In undistrurb'd and everlasting ease,  
 Not care for us, from fears and dangers free,  
 Sufficient to His own felicity,  
 Nought here below, nought in our power He needs,  
 Nere smiles at good, nere frowns at wicked deeds. (ii. 53)

These lines remain within the presiding image of the gods offered by Creech's edition. The gods do not judge our behavior, for to do so would involve them in the give and take of human affairs, with their attendant sufferings, malaise, fears, and the like. The point is to offer the gods as a model for a life that is not preoccupied with such things, to suggest how the sufficiency of deities might be an example of life-practice for those of us who

are going to die. The unconcern of the gods in these lines thus serves two purposes: an alleviation of any fear that our souls await divine judgment, and the elaboration of an ethos suitable to mortals. Both purposes are worked out through the image of the mental state of the gods; their thoughts, their unconcern, their serenity are what these lines are interested in evoking, so that care may be taken without the fear of punishment.

Rochester's version is interestingly different from Creech's on these issues, in a way that brings to light some of the hard problems we've been tracing:

The *Gods*, by right of Nature, must possess  
 An Everlasting Age, of Perfect Peace:  
 Far off remov'd from us, and our Affairs:  
 Neither approach'd by *Dangers*, or by *Cares*:  
 Rich in themselves, to whom we cannot add:  
 Not Pleased by *Good Deeds*; nor provok'd by *Bad*.<sup>37</sup>

The first thing one might notice about these lines is that Rochester attempts to turn from the image of the gods to their terrestrial counterparts. The lines remain with divine serenity, of course, but, as much as they can, they endeavor also to look down at the lives of those for whom the gods have no care. Compare the third line to Creech's version; the mental state of "not caring" has been replaced by the spatial relation of being "far off remov'd." The one points to *their* serenity, the other to *our* not being watched. A similar readjustment downward occurs in the fifth line, where Rochester interlards a moment of uncertain agency: the fitful attempt to add to the pleasure or anger of the gods by behaving in such a way that might occupy their concerns. What these instances of looking down—or turning away or interspersing the mortal within the immortal—show, I

think, is something like an attempt to imagine action freed from the fear of death yet unattached to human agents. The image with which we are left is of the failure of actions to provoke or to please an audience, the only predicate that belongs to mortals in the six lines— "we cannot add" —suggesting a certain futility to action when it is an agent's proprietary domain.

Rochester's translation limns a broken arc. Actions become fruitless when they are traced back to human agents and not the parts out of which such agents are composed. This perspective is in keeping with what we might describe as Rochester's larger project. Perhaps no poet of the period is more committed to Lucretian externalism, to the idea that thought and feeling and will exist outside what is conventionally held to be the mind. Rochesterian erotics in this respect are about staging what might happen if we no longer consider desire as something that originates *within* agents and begin to consider it as something that emerges from matter with no insides at all. Agency seen from this perspective is something that is inherent in the world, not a special power of man. The erotic poems merely translate one form of materialism to another, as the world from which agency arises in the first has the quality of society and in the second the quality of atoms. In either case, materialism does not merely deny spirit and the afterlife, it also denies the human person as the locus of meaning. We might recall in this context that the danger of locating desire or intention in external matter, according after a fashion to Creech and Davidson, is that taking the person out of the equation removes an anchor of coherence. While particles in motion obey only the laws of physics, propositional attitudes obey the vicissitudes of psychology, a wanting of this or that thing whose logic structures the otherwise random distribution of mental stuff. "Global confusion, like

universal mistake," writes Davidson, "is unthinkable, not because the imagination boggles, but because too much confusion leaves nothing to be confused about and massive error erodes the background of true belief against which alone failure can be construed."<sup>38</sup> It should surprise no one that this is not the view sustained by many of Rochester's poems, which seem in contrast content to relinquish the background of true belief in order to experiment with a world in which there are no persons to whom attitudes may be assigned. The chaos described in a poem like *A Ramble in St. James's Park*, in which everyone has sex with everyone else yet "neither *Head* nor *Tail* persuade" (100), thus derives from the assignment of persuasion, and so too of coherence, solely to external forms like parks, roads, and poems.<sup>39</sup>

Davidson's point is not, as he calls it, "mere charity." If one must come up with a framework to assign beliefs and intentions, a person having them is surely a logical contender. To "fail to discover a coherent and plausible pattern in the attitudes and actions of others" is not only to "forego the chance of treating them as persons," it is also to forego the chance to find a coherent and plausible pattern in nature.<sup>40</sup> As we have seen, the choice to find the pattern of action in atomic motion provided for Lucretius an argument for free will. The pattern of action Rochester tends to adopt is notably different, preferring instead a certain binding of the will within an overall sense of determinacy and fate. These commitments may be clarified some by turning to another of his translations from classical materialism. This is not from Lucretius but from the chorus of Seneca's tragedy *The Troades*, that is, from the rival system of thought found in the Stoics.

After Death nothing is, and nothing Death,

The utmost limit of a Gasp of Breath.

Let the ambitious Zealot lay aside  
 His hopes of Heaven; whose Faith is but his Pride.  
 Let slavish Souls lay by their Fear,  
 Nor be concern'd which way, nor where,  
 After this Life they shall be hurl'd;  
 Dead we become the Lumber of the World:  
 And to that Mass of Matter shall be swept,  
 Where things destroy'd, with things unborn are kept.  
 Devouring Time swallows us whole;  
 Impartial Death confounds Body and Soul.  
 For Hell and the foul Fiend that rules  
 God's everlasting fiery Jayls,  
 (Devis'd by Rogues, dreaded by Fools)  
 With his grim grisly Dog that keeps the Door,  
 Are senseless Stories, idle Tales,  
 Dreams, Whimsies, and no more. (1-18)

The poem forms a counterpart to what Rochester wants to derive from the distance of the gods; where the Lucretius translation endeavors to look at agency in the absence of divine attention, this looks at the inevitable turning of life into death and death into life, precisely once again to rid us of any faith we might have in the persistence of the soul in an afterlife. The only eternity promised by the poem is the matter from which life emerges and to which death turns. It is of real interest then that nothing like "Dead we become the Lumber of the world:/ And to that Mass of Matter shall be swept/ Where

things destroy'd, with things unborn are kept" is in the original.<sup>41</sup> The lines at once insist upon the materiality of all life forms and emphasize the near proximity and always tilting of life to the death that "swallows us whole." Matter is not so much the potential for sentience, should it happen to cohere in the forms that give rise to consciousness; it is instead the always-present specter of insentience, the lumber of the world from which all future things are made. The poem comes to indivisible, lifeless matter by a sort of logic of emotive subtraction. The lines ask readers to stop feeling one or the other passion generated by a belief in an afterlife. Hope, faith, pride, concern and fear drain out of the emotional carapace until all that is left is a lumber defined by a want of thought. In keeping with Lucretius, Rochester follows the trail of matter past the person to smaller particles. His model of emergence though seems insistent on watching emergent properties decompose to their constituent parts. So much so that one begins to sense that all complex entities are ready at all times to return to their smaller units, that people or apples or pieces of string need only a nudge to become planks of lumber once again.

The Seneca translation might provide some indication of why Rochester seems so opposed to the principle of free will Lucretius argues is inherent in matter. For Rochester the traipsing of all actions and attitudes back to matter opens the door to a certain Stoicism: a quarrel with free will and embrace of necessity, a rejection of the category of void, and a hostility to the passions. So we may at least speculate on the basis of the selection and manner of translation. What seems particularly interesting when placed in comparison to Lucretius (his own and Creech's) is that this lesson is also drawn from the insistently low-level analysis. Free will and determinism are conclusions made from rival conceptions of matter, not qualities inherent in people. Against Locke and the

theologians, God and liberalism, each turns to the deathless, indissoluble stuff from which thought and life emerge, as if turning to the entities in which thought and life might be housed would pose questions intolerably difficult or obscure or meaningless.

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<sup>1</sup> John Evelyn translated book one of the poem in 1656 along with a prefatory essay. Lucy Hutchinson's translation of the entire poem—circulated among an unknown number of associates—was completed at some point in the 1640s or 50s but not published until 1996 [See *Lucy Hutchinson's translation of Lucretius*, *De rerum natura*, ed. Hugh De Quehen (Ann Arbor: University of Michigan Press, 1996)]. Rochester's translations of bits of the poem were done at some point in the 1670s, though the exact date like that of all of his works is unknown. Interestingly, his translation of the opening lines is one of the few poems to survive in his holograph. Creech's translation was a major success and the third edition of 1683 was prefaced with thirteen commendatory poems, by Aphra Behn, Thomas Otway, John Evelyn and others. On Hutchinson's translation, see Jonathan Goldgerg, "Lucy Hutchinson's Writing Matter," *ELH* 73:1 (Spring 2006) 275-301. On Aphra Behn's interest in Lucretius and relation to Creech, see Alvin Snider, "Atoms and Seeds: Aphra Behn's *Lucretius*," *Clio* 33: 1 (Fall 2003) 1-24. For a discussion of the larger Epicurean revival of which Lucretius translations were a part see Thomas Mayo, *Epicurus in England 1650-1725* (Dallas: Southwest Press, 1934) and Richard Kroll, *The Material Word: Literature Culture in the Restoration and Early Eighteenth Century* (Baltimore: The Johns Hopkins University Press, 1991). Kroll's book updates Mayo's in a number of respects, in particular, in widening the perspective beyond royalism and libertinism. Valuable as these historical studies have been, however, I want to make it clear that the present chapter is not about the culture of Epicureanism or the wider circulation of Lucretian ideas. It is rather about a specific series of problems in the seventeenth-century metaphysics of consciousness and mental causation. I ask in advance for readers to forgive what may seem to be a certain lack of historical breadth or contextual flavor.

<sup>2</sup> I'll use the terms atom, seed, and particle interchangeably in this chapter. In the Latin original, Lucretius is similarly varied, changing the Greek "atom" into, among others, "materia," "semina," and "corporia." Creech typically prefers "seed." In contemporary physics atoms are not the same as particles. Rather, they are made from them (protons, quarks, electrons, etc.). For Lucretius atoms by definition cannot be divided.

<sup>3</sup> Thomas Creech, *T. LUCRETIUS CARUS, The Epicurean Philosopher, His Six Books, De Rerum Natura, Done into English Verse* (London, 1682) p. 9. Further references to Creech are to this edition and referenced to volume and page (since Creech didn't include line number). Since my interests are with "Lucretius" in the seventeenth and eighteenth century more than Lucretius as such, my references to the poem will be to this edition. It thus follows that this chapter is not about the Roman poet or the Latin poem. It is about the meaning of the poem that went by the name of the *Nature of Things* in the seventeenth and eighteenth century and in particular the model of consciousness and mental causation that it offered. (Creech's notes and commentary will thus be of particular interest because they articulate on ongoing resistance to this model.) Were it

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not so ungainly, it might make sense to place the name Lucretius in quotation marks throughout this chapter. The reader is invited to imagine such marks are in place. In other words, I treat Creech's translation as if it were a seventeenth-century poem, which of course it is.

<sup>4</sup> Death does not destroy but disunite  
 The Seeds, and change their order, and their site:  
 Then makes new combinations, whence arise  
 In bodies all those great varieties;  
 Their change in colour, shape, and frame; and thence  
 Some for a while *enjoy*, then *lose* their sense. (ii, 64).

<sup>5</sup> And thus for some the project of reviving Epicurus and Lucretius was to struggle to make them compatible with Christianity, as in for example Walter Charleton's *Epicurus's Morals* (1656).

<sup>6</sup> The phrase is David Chalmers, though it now has wide currency in the field. See his "Facing up to the Hard Problem of Consciousness," in *The Journal of Consciousness Studies* (1995) v. 2, n. 3, p. 200-219 and the book length expansion, *The Conscious Mind: In Search of a Fundamental Theory* (Oxford: OUP, 1996). For an invaluable historical discussion of these concerns, see John Yolton, *Thinking Matter: Materialism in Eighteenth-Century Britain* (Minneapolis: University of Minnesota Press, 1982).

<sup>7</sup> Chalmers, "Facing up to the Hard Problem of Consciousness," p. 201. In addition to Chalmers, the recent work of Galen Strawson is also of interest to the present chapter. Strawson has argued against the kind of emergence one finds in Lucretius and in favor of a contrasting model of panpsychism. Whereas Lucretius argues that consciousness emerges from atoms that are not conscious, Strawson argues that this is impossible and so therefore elementary particles must, in some sense, be conscious. See his *Consciousness and its Place in Nature* (Exeter: Imprint Academic, 2006) a book that contains responses from over a dozen philosophers.

<sup>8</sup> Creech's notes are at the end of the poem, and are separately paginated. The quotation in this case appears on page 22, hereafter in parenthesis.

<sup>9</sup> Secondary effect is not the same thing as epiphenomenon. Mental states for Lucretius are not epiphenomena because they can have a causal role with respect to physical states. So much is required by Lucretius's commitment to free will, as we shall see. The point is that there is a strong correlation between the atomic and the mental.

<sup>10</sup> For a recent discussion of supervenience, consciousness, and mental causation, see Jaegwan Kim, *Physicalism, or Something Near Enough* (Princeton: Princeton University Press, 2005).

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<sup>11</sup> Lucretius follows the Epicurian criticism of Democritus, who argued that atoms move in straight lines and that all wholes were merely illusions of our faulty perception. In the extreme, the argument entails that composite objects (like people) don't really exist. In the current philosophical scene, this position is known as mereological nihilism and can be found, for example, in the work of Peter Unger. See his "I do not Exist", in *Perception and Identity*, G. F. MacDonald (ed.), (London: Macmillan, 1979).

<sup>12</sup> Lucretius is adamant that seeds do not think, which makes him an emergentist but not a panpsychist. Consciousness emerges from wholes whose parts are not conscious:

If all the seeds have sense, that sense must be  
Of one single member, or of all,  
And so be like a perfect Animal.  
But now the parts, in a divided state,  
Enjoy no sense; the hand, if separate,  
Can feel no more, nor any member live  
Divided from the body, nor perceive. (ii. 90).

The classic statement of emergence is C.D. Broad, *The Mind and its Place in Nature* (London: RKP, 1925). On emergentism especially in the nineteenth and twentieth century see Brian McLaughlin, "The Rise and Fall of British Emergentism," in Angsgar Beckermann et. al eds. *Emergence or Reduction? Essays on the Possibility of Non-Reductive Physicalism* (New York: W. de Gruyter, 1992) pp. 49-93

<sup>13</sup> A point of clarification: exhaustively explained is not the same as entailed. Within the system we're looking at here, all features of consciousness may be "exhaustively explained" by atomic motion, yet the latter does not necessitate consciousness. All that atomic motion necessitates is the creation of larger wholes out of smaller parts. That's because atoms don't move in a straight line.

<sup>14</sup> Within contemporary analytic philosophy, Davidson's essay on "Mental Events" (1970) is the canonical attempt to distinguish the realm of the mental from the physical in term of causality; the essay is reprinted in *Essays on Actions and Events* (Oxford: OUP, 2001) pp. 207-227. Davidson is not a dualist. The mental is identical with the physical yet falls under a set of anomalous laws, hence his famous "anomalous monism." In other words, the laws of physics that cover elementary particles do not cover the mind. In this, Davidson is in sharp contrast to Lucretius, as I discuss below.

<sup>15</sup> I want to thank Dan Kelly for helping me to puzzle through this point.

<sup>16</sup> Davidson, p. 222.

<sup>17</sup> Davidson, p. 223

<sup>18</sup> Davidson treats this less as a psychological matter of privacy and individuality, than as an issue of syntax (p. 223). There must be a subject of propositional attitude verbs.

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<sup>19</sup> Davidson, p. 221.

<sup>20</sup> The OED records the first usage of the expansive sense of consciousness—"The totality of the impressions, thoughts, and feelings, which make up a person's conscious being"—in Locke's *Essay*.

<sup>21</sup> Thomas Nagel, "What Is It Like to Be a Bat," *The Philosophical Review*, Vol. 83, No. 4. (Oct., 1974) pp. 435-450. The important sentences for our current purposes appear near the beginning: " But no matter how the form may vary, the fact that an organism has conscious experience at all means, basically, that there is something it is like to be that organism. There may be further implications about the form of the experience; there may even (though I doubt it) be implications about the behavior of the organism. But fundamentally an organism has conscious mental states if and only if there is something that it is to be that organism—something it is like for the organism.

We may call this the subjective character of experience. It is not captured by any of the familiar, recently devised reductive analyses of the mental, for all of them are logically compatible with its absence" (434). For Nagel as for Chalmers, it is the plausible absence of consciousness from the physical domain that means that it is something that has to be explained. My point here is that Nagel and Chalmers are closer to Locke than they are to Lucretius and that the radicalism of reviving the latter lay in the low-level correlation of consciousness with atomic motion.

<sup>22</sup> John Locke, *An Essay Concerning Human Understanding* (1690) ed. Peter Nidditch, (Oxford: Oxford University Press, 1975) p. 335.

<sup>23</sup> Locke, *Essay*, 336.

<sup>24</sup> Locke, *Essay*, 341.

<sup>25</sup> Much later on in the *Essay* (IV. x. 10) Locke clarifies his position on the hard problem, slightly, by distinguishing between "purely material beings" like beard clippings and toe nails and the "Sensible, perceiving Beings, such as we find ourselves to be." On its own, matter and motion "could never produce thoughts" (623).

<sup>26</sup> Locke, *Essay*, p. 341, 344.

<sup>27</sup> The most important example would be Edward Stillingfleet with whom Locke carried on a debate across the 1690s. See Stillingfleet's *The Bishop of Worcester's answer to Mr. Locke's letter, concerning some passages relating to his Essay of humane understanding...* (London, 1697) and *The Bishop of Worcester's answer to Mr. Locke's second letter ...* (London, 1698).

<sup>28</sup> Locke, *Essay*, p. 274. This comes near the end of the long account of agency given in II.xxi, a chapter that Locke spent the better part of his career revising. For more on this argument, see my "Locke's Desire," *Yale Journal of Criticism* (Fall 1999).

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<sup>29</sup> *Essay*, p. 345.

<sup>30</sup> Locke, *Second Treatise of Government* (1690), C.B. Macpherson ed. (Indianapolis: Hackett, 1980) p. 10.

<sup>31</sup> Davidson, p. 207.

<sup>32</sup> For an influential account of seventeenth-century philosophy that stresses this commitment, see Charles Taylor: *The Sources of the Self: The Making of Modern Identity* (Cambridge: Harvard University Press, 1991), especially the two chapters on Descartes and Locke, pp. 143-176.

<sup>33</sup> Creech's notes are at the end of the volume, though the pagination starts again. The selection here is from page 19. Further citations are in parenthesis.

<sup>34</sup> To reiterate the argument from the last chapter: Hobbes and especially Hume are among the first compatibilists—a tremendously influential position on the metaphysics of action. They both argue that freedom (though not free will) is compatible with necessity. Hobbes put this position first in a series of debates with Bishop Bramhall, and Hume in both the *Treatise on Human Nature* and the *Enquiry Concerning Human Understanding*. For Hobbes, see *The Questions concerning Liberty, Necessity, and Chance ...* (1656) and *Of Libertie and Necessitie a treatise ...* (1654). For Hume, see the *Treatise* (1739), book 2, part 3, chapters 1-2, and *Enquiry* (1748), Section 8, part 1-2.

<sup>35</sup> A Void is space intangible: Thus prov'd.  
 For were there none no Body could be mov'd,  
 Because where e're the brisker motion goes,  
 It must meet with stops, still meet with foes,  
 Tis natural to Bodies to oppose.  
 So that to move would be in vain to try,  
 But all would fixt, stubborn, and moveless lie,  
 Because no yielding Body could be found  
 Which first should move, and give the other ground. (i. 12-13)

<sup>36</sup> Now *Seeds* in downward motion must *decline*,  
 Tho *very little* from th' exacstest line;  
 For did they still move *strait*, they needs must fall  
 Like drops of Rain dissolv'd and scatter'd all,  
 For ever tumbling thro the mighty space,  
 And never *joyn* to make one single mass. (i. 41)

<sup>37</sup> Rochester, "De Rerum Natura" lines 1-6 in Harold Love ed. *The Works of John Wilmot, Earl of Rochester* (Oxford: Clarendon, 1999). All further citations are to this edition and noted in parenthesis.

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<sup>38</sup> Davidson, p. 221.

<sup>39</sup> I develop this argument at greater length in "Rochester and the History of Sexuality," *ELH* 69 (2002): 277-301.

<sup>40</sup> Davidson, pp. 221-222.

<sup>41</sup> See *Troades*, lines 398-408 in Frank Justus Miller ed. *Seneca VIII: Tragedies* (Cambridge: Harvard University Press, 1968).