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# Denis Diderot and the Postmodern Enlightenment

J.B. SHANK

POSTMODERN THINKERS are not fond of the eighteenth-century Enlightenment. Accused on the one hand of imposing “a totalizing universalism which effaces all difference”<sup>1</sup> and on the other of a rejection of universals in the name of an equally totalitarian “factual mentality,”<sup>2</sup> the Enlightenment has become the scapegoat for a whole range of contemporary writers with very different intellectual frustrations. For most contemporary cultural warriors, dualism is the enemy to be conquered, a dualism which is observed in the tendency to reduce the world into opposing categories such as subject and object, mind and body, man and nature (the gender bias here is crucial), human and animal, and fact and value—to name only a few of the most salient within contemporary intellectual discourse. Moreover, scanning this discourse, it would appear that these critics have succeeded in positioning the Enlightenment at the root of our current dualistic pathology. As the recent “Beyond Dualism” conference held at Stanford in 1995 affirmed, the call today is for a “post-enlightenment” thought capable of transcending the outmoded “absolutes” of Enlightenment rationality. Thus, the eighteenth-century Enlightenment stands accused today for the oppressive dualism that plagues us. As the great age when a supposedly “totalizing dualism” was established as the paradigm of modernity, this period in intellectual history, say most postmodern writers, must carry the blame for much that is wrong today.

For a student of the French Enlightenment, the irony of this contemporary struggle is that it appears largely misdirected. Devoid of nuance at best, and historically inaccurate at worst, the conception of “the Enlightenment” common in this contemporary critical discourse does not hold up well in the face of the writings themselves.<sup>3</sup> Rather than a bastion of absolutist and dogmatic think-

ing as postmodern critics would have it, the historical Enlightenment reflected in the European thought of the eighteenth century, by contrast, is characterized by a critical skepticism, an ironic detachment from dualistic rationalism, and a profound humility and “philosophical modesty” in the face of nature. This intellectual temperament, moreover, shares more similarities with the recent efforts to define “the postmodern mind” than it does with the totalizing dualism that is the enemy today.<sup>4</sup> Yet this more postmodern Enlightenment, the historical Enlightenment of France in the middle of the eighteenth century, for example, does not have a voice in contemporary intellectual discussion. As a result, I intend this essay as a critique of the “totalitarian” Enlightenment so in vogue today by considering the similarities between this other, historical Enlightenment and contemporary critiques of dualism. My focus will be on writings of one of the greatest thinkers of the period, Denis Diderot. As I will argue, far from a totalitarian universalist or a dogmatic instrumental empiricist, Diderot’s sensibilities are strikingly postmodern, especially in his vigorous efforts to transcend the opposition of mind and body, nature and man, and subject and object characteristic of dualistic rationalism. Hence, in showing Diderot’s efforts to move “beyond dualism,” I want to make a claim for him, and the French Enlightenment more generally, as an ancestor of much postmodern discourse.<sup>5</sup>

To bring a convenient economy to this essay, I want to draw on a model of modernity found in Stephen Toulmin’s recent book *Cosmopolis: The Hidden Agenda of Modernity*.<sup>6</sup> Toulmin is a representative postmodern critic of rationalism, and he is equally mainstream in his disparaging neglect of the complexities of Enlightenment thought. Thus while I find Toulmin’s book to be tremendously insightful, it provides a perfect frame through which to rehabilitate a writer like Diderot.

Toulmin’s thesis in *Cosmopolis* is both profound and elegantly simple. According to Toulmin, European thought underwent a profound “paradigmatic revolution” (to use Toulmin’s own Kuhnian language) during the middle of the seventeenth century shaped by, among other things, the horrors of the religious wars and the rapid social and economic transformations precipitated by the emergence of the European nation-state system. During this revolution, Renaissance “modernity”—embodied most completely for Toulmin in figures like Erasmus, Shakespeare and Montaigne—was replaced by a rationalist “modernity” exemplified in the writings of Descartes. Stated with characteristic clarity and simplicity, the shift which Toulmin sees can be characterized by the follow-

ing transformations: a change from the supremacy of oral knowledge to written, a shift from particularism to universalism, a shift from the local to the general, and a shift from the timely to the timeless.

Explicitly drawing the connections between Renaissance “modernity” and contemporary “postmodernity,” Toulmin suggests that the patterns of thought that we today dichotomize as “modern” and “postmodern” are in fact two sides of a single historical process constitutive of the modern world itself. In this conceptualization, the development of the philosophical foundations of what we today call “modern thought,” embodied historically in the assertion of Cartesian rationalism in the seventeenth century as the dominant paradigm of thought, is explained in terms of an intellectual opposition between this new, emergent Cartesian philosophical outlook and an older, humanist notion of the modern with a very different philosophical character. Following this model into the present, Toulmin’s main argument is that this earlier, Renaissance idea of the modern—the modern exemplified in the writings of Shakespeare and Montaigne, for example, and characterized for Toulmin by a bias toward orality, particularism, localism, and temporality as opposed to the Cartesian bias toward the written, universal, general, and timeless—has much in common with contemporary postmodern thought. Thus, as Toulmin argues, since this Cartesian conception of the modern was first constituted in opposition to the more “postmodern” thought of the Renaissance humanists, contemporary thought has much to learn by framing the current debates between postmodernism and modern Cartesian rationalism in historical terms. In fact, although Toulmin does not make this point explicitly, *Cosmopolis* even points to a more general dialectical understanding of the Modern (necessarily expressed here with a capital ‘M’) with important implications for contemporary intellectual history. In this dialectic suggested by Toulmin’s work, the contemporary categories of “modern” and “postmodern” thought can be seen as the two aspects of a single dialectic of the “Modern”, a dialectic that we continue to live within today. Within this frame, the Cartesian-Humanist contestation of the seventeenth century and the modern-postmodern disputes of the twentieth are but two manifestations of a single historical process, a process at least as old as the thirteenth century and one best understood as an integrated whole with dual faces in constant interaction with one another. At the very least, the modern dialectic described by Toulmin provides a useful heuristic for understanding the history of Western thought. Viewed in terms of current intellectual discussion, however, it is also powerful for another reason. By connecting contemporary discourses with the history of intellectual critique, this model supports the contention, which Toulmin argues for throughout *Cosmopolis*, that an absence of historical

perspective is hindering contemporary intellectual work.

I find Toulmin's general philosophical and critical outlook to be lucid and compelling. I also find his particular reading of the relationship between the sixteenth and seventeenth centuries to be both historically accurate and philosophically profound in light of contemporary intellectual concerns. Unfortunately, like so many other contemporary writers, Toulmin's reading of the eighteenth century is far less nuanced. Insistent on seeing a monolithic rationalism reigning triumphant from the seventeenth century into the twentieth, Toulmin effaces the equally crucial reaction against seventeenth-century rationalism which characterized the century of the Enlightenment. As he writes, referring with the phrase "framework of ideas" to the Cartesian paradigm of thought described above:

After 1660, there developed an overall framework of ideas about humanity and nature, rational mind and causal matter, that gained the standing of "common sense": for the next 100, 150, or 200 years, the main timbers of this framework of beliefs were rarely called into question. They were spoken of as "allowed by all men" or "standing to reason," and they were seen as needing no further justification than that. Whatever shortcomings they may have today, from 1700 on they were taken to "go without saying": and in practice they often went unsaid. Between them they defined a system of ideas that we may refer to as the Modern world view, or the "framework of Modernity."<sup>7</sup>

This is not the place to indulge in an extended critique of Toulmin, but it is frustrating to see the author falling into the all-too-common trap of seeing a monolithic modern world view emerging with Cartesian rationalism only to come unglued in recent years. In this case, however, Toulmin's embrace of postmodern platitudes is especially maddening since his historical notion of a dialectic within modernity, illustrated in his analysis of the paradigm shift of the seventeenth century, is suggestive, in my opinion, of a possible broad re-reading of the relationship between today's categories of modern and postmodern. But I will leave my thoughts on this until the end. First, I want to show the inadequacies of Toulmin's characterization of the "Modern world view," and by extension the weakness inherent in a broad range of postmodern discourse which his view represents. I will point to these failures by showing how "un-modern" a prototypical Enlightenment thinker like Diderot looks in light of Toulmin's unitary "framework of Modernity."

Toulmin makes a convenient target here since he provides us with a very concise checklist of propositions which he believes characterize the unquestioned presuppositions of the modern world view. As we will see, in almost



every case Diderot holds a different view. The keystone of Toulmin's model is the Cartesian dualism between man and nature which, the author contends, remained an unexamined assumption of all acceptable thought from the end of the seventeenth century onward. Thus, in listing his "twelve dichotomies of modernity," Toulmin divides them into two groups of six, one group under the heading of "Nature" and another group under the heading of "Humanity."<sup>8</sup> We will have occasion to consider many of the specific dichotomies in relation to Diderot's thought shortly, but since this strict division between "nature" and "humanity" is itself anathema to Diderot's philosophical outlook, it is perhaps best to begin here.

It is not an exaggeration to say that the relationship between humankind and nature, or phrased more precisely the relationship between biological necessity and human freedom, constitutes one of the major preoccupations of Diderot's writing. This preoccupation manifests itself in a variety of ways. As Jacques Roger notes in his monumental synthetic history of biological thought in the seventeenth and eighteenth centuries: "Diderot is the eighteenth-century *philosophe* who attributed the greatest importance to biological problems."<sup>9</sup> Moreover, Diderot was something of a natural scientist himself, writing a number of theoretical treatises addressing problems in the life sciences. He was a particularly attentive student of biogenesis and reproduction, examining, along with his colleague Buffon, the characteristics of vital matter. His work as editor of the *Encyclopédie* also brought him into close contact with all the leading naturalists of the period, and he wrote a number of the salient articles in the life sciences himself. Yet Diderot's interest in humankind's relation to nature was not restricted to science. His erotic literature like *Les Bijoux Indiscrets* examines the importance of physical pleasure in human life, seeking always to show the "natural benevolence" of the passions and the tyranny that results from their repression. Similarly, in such political works as *Le Supplément au Voyage de Bougainville*, Diderot is at pains to show the socially beneficial results which follow from a freer definition of sexual propriety, results which derive from recognizing the biological character of human society.

In all of these writings, Diderot struggles to break down the division between humankind as biological creature and humankind as independent rational agent. In fact, Diderot's eagerness to efface the distinction between the natural and the human has led many commentators to conclude that Diderot shared, along with such other notorious eighteenth-century materialists as Julien de la Mettrie and Baron D'Holbach, a full-blown materialist outlook by the end of his life.<sup>10</sup> I find Diderot's views in this regard more ambiguous, but even their ambiguity calls into question Toulmin's rigid dichotomization of the thought

from this period. Writing of the distinction between rational thought and matter, Toulmin states that: "After 1700, the idea that matter in a sufficiently complex organization, as in a computer, could perform intellectual procedures was unthinkable." He concedes that "a heretical minority (including John Locke) tried to keep the issue partly open," but concludes that "common sense" railed against rational matter.<sup>11</sup> Writing of de la Mettrie, for example, a thinker who espoused such heretical views, Toulmin calls him "a scandalous writer whose works were read at the time as deliberately outrageous paradoxes."<sup>12</sup> While Toulmin is right in seeing de la Mettrie as an extremist, he is wrong to conclude from this that "thinking matter" was inconceivable. As Diderot demonstrates, an entire generation of natural scientists not only took the problem very seriously, but developed a subtle philosophy attempting to connect humankind's biological character with its rational freedom.<sup>13</sup>

Diderot is most interesting and eloquent on this question in two short dialogues written in the 1770s, *Conversation Between D'Alembert and Diderot* and *D'Alembert's Dream*.<sup>14</sup> In *Conversation Between D'Alembert and Diderot*, D'Alembert opens the dialogue by pointing to the dilemmas inherent in atheistic materialism. As he states: "But other difficulties lie in wait for anyone who rejects (the Supreme Being), for after all, if this sensitivity that you substitute for him is a general and essential property of nature, then stone must feel." Diderot, undaunted, responds: "And why not?"<sup>15</sup> A philosophically nuanced argument for vital materialism ensues, developed in response to the counter-claims posed by D'Alembert. Summarizing his arguments throughout this exchange, Diderot concludes:

By refusing to entertain a simple hypothesis that explains everything—sensitivity as a property common to all matter or as a result of the organization of matter—you are flying in the face of common sense and plunging into a chasm of mysteries, contradictions and absurdities.<sup>16</sup>

For Diderot, then, vital materialism was not "unthinkable" and "contrary to common sense" as Toulmin would have it; rather, common sense itself demands that this simple hypothesis—that matter might be capable of thought—be maintained. In *D'Alembert's Dream*, arguments in favor of vital materialism are developed even more extensively, drawing on metaphors of a beehive, a spider's web, and a vibrating string in order to help illustrate the possibility that thinking matter might only be a more complex form of ordinary matter. The result is a powerful philosophical argument for the essential interrelationship between human thought and physical nature, an argument, which flies in the face of the

unspoken assumptions that Toulmin attributes to eighteenth-century thinkers.

In these two dialogues, Diderot is at one with more radical writers like de la Mettrie and D'Holbach in his advocacy of a pure materialism. As Toulmin rightly notes, however, this extreme materialism was a highly controversial, even heterodox position in the French Enlightenment. Diderot's other scientific colleagues, notably Buffon, the Director of the Royal *Jardin des Plantes*, would not have accepted such radical positions. Yet it would not have been the idea that humans and nature were inseparable that would have disturbed them. What ran against the grain of Enlightenment thought in the works of materialists like de la Mettrie and D'Holbach was their dogmatic arrogance in the face of nature's complexities. Their materialism, the *Encyclopédists* argued, was no less dogmatic than Descartes' dualism. Both failed to adopt the appropriate "philosophical modesty" necessary for a responsible scientific position.<sup>17</sup> The fact that Diderot's extreme materialism was contained in a dialogue, in fact, excuses it to some degree. As a dialogue, it has the quality of a "thought experiment," an exercise in hypothesizing that suggests only possibilities without demonstrating certainties. Such tentative speculation tinged with skepticism is characteristic of Diderot's philosophy, and we need to consider further his general views on science if we are to fully understand his opposition to the other "modern" dualisms which Toulmin asserts.

As a theorist of science, Diderot is best understood if placed at the forefront of the new interest in the empirical fact, experiment, and inductive methods characteristic of the eighteenth century and often emphasized in histories of the French Enlightenment.<sup>18</sup> Diderot was one of the great advocates of empirical methods in the period. As he states: "facts are the true riches of the *philosophe*."<sup>19</sup> Yet to leave the story here would be to miss the higher stakes involved in Diderot's advocacy of empirical truth. Statements such as these also carried a potent polemical charge during the period in which they were written. Specifically, Diderot's scientific writings were engaged in an important scientific war being waged in the second third of the eighteenth century against the deductive Cartesian rationalism still dominant within the French scientific establishment (e.g. the academies and the universities). Diderot's call for a science rooted in empirical truth, therefore, was at the same time an attack on the prevailing scientific authorities of the time. On many occasions, the polemic inherent in Diderot's theory of science is made explicit. As he states:

One of the truths which has been declared during our times with the greatest courage and force....is that the mathematical world is an intellectual world where rigorous truths



lose their advantage when carried down to earth. One has concluded from this that experimental philosophy must rectify the calculations of geometry.<sup>20</sup>

Geometry here is a figure for the rationalism so despised by Diderot.<sup>21</sup> But read in light of its polemical intent, this statement also helps us to keep Diderot's appeal to empiricism in perspective. Diderot was far from a pure Baconian. Like Bacon, the great English critic of deductive philosophy, Diderot was emphatic in asserting the truth of the empirical fact over the falsity of abstract, deductive reasoning. Unlike Bacon, however, Diderot did not conceive of empiricism as the polar opposite of hypothetical or deductive thinking. Diderot's empiricism was far more reflective than Bacon's. In fact, Diderot's views on the relationship between experimental science and systematic reasoning are complicated and ambiguous. Diderot tries to position "true scientific method" somewhere between the pure induction of Bacon and the rational deduction of Descartes. As he writes:

Men have difficulty appreciating how severe the laws are for investigating truth, and how limited are our means. Everything reduces itself to returning the senses to reflection and reflection to the senses: to returning into one's self and going out again without pause.<sup>22</sup>

At the heart of this conception are three postulates worth emphasizing. First, scientific theories are imaginative human constructions since human reason is essentially impotent in the face of nature's complexity. As Diderot states the point: "Since the mind cannot comprehend everything, the imagination anticipates, the senses observe, and the memory retains."<sup>23</sup> Scientific theories under such a view are human creations which bring human understanding to a natural world not fully comprehensible in human terms. Moreover, as human creations, no theory, no matter how complete in its empirical base, can ever account for the phenomena of the world in a complete way. Thus, Baconian induction is a myth. Only through an interpretive act of the imagination can an order be found within the chaos of facts which are presented to the empirical observer. As Diderot states:

One of the principal differences between one who observes nature and one who interprets it is that the latter begins at the point where instruments and the senses have abandoned the former. He makes a conjecture from that which is about that which should be. He pulls abstract and general conclusions from the order of things, conclusions which carry all the evidence of empirical and particular truths.<sup>24</sup>

But since science is always an approximation and an interpretation of the natural order, science can never achieve Cartesian certainty. This is Diderot's second postulate, and the foundation of all of his hostility against the rationalist tradition then dominant in France. As he states:

When one compares the infinite multitude of natural phenomena with the limits of our understanding and the weakness of our organs, can one ever expect anything more than the slowness of our work, the long and frequent interruptions and the rarity of creative geniuses?...Experimental philosophy works over centuries and centuries, and the materials which it accumulates, arriving at conclusions by their quantity, will still be very far from an exact enumeration.<sup>25</sup>

Diderot understands that nature always escapes any explanation, and that no theory, no matter how extensive, can ever bridge the gap between theoretical approximation and the actual order of the natural world. As a result, neither deductive logic on the one hand nor inductive fact on the other is a sufficient basis for valid scientific theory. True science for Diderot, rare as it is, results when the mind of a genius combines both. As Diderot sums it up:

We have three principal methods: the observation of nature, reflection and experience. Observation collects facts, reflection combines them, experience verifies the result of the combination, and it is essential that observation be assiduous, that reflection be profound, and that experience be exact. One rarely sees these methods united, and as a result creative geniuses are rare.<sup>26</sup>

But there is still one further complication in Diderot's thought. This arises from Diderot's third and final postulate, his belief that nature is unstable and constantly changing. Contrary to Toulmin, who believes the proposition "Nature is governed by fixed laws set up at creation" to be an unquestioned presupposition of modern thought until the writings of Darwin, Diderot believes that nature is neither fixed nor stable. As he states: "It seems that nature is able to vary the same mechanism in infinitely different ways."<sup>27</sup> And as he adds elsewhere:

What we take for the history of nature is only the very incomplete history of an instant. I ask, therefore, have the minerals always been and will they always be as they are? Have the plants always been and will they always be as they are? And have the animals always been and will they always be as they are? After mediating in a profound

way on certain phenomena, a doubt arises which perhaps you will pardon: it is not that the world was created, but that world has been such and will be such.<sup>28</sup>

Statements such as these accord well with what Jacques Roger calls “Diderot’s vision of an eternal matter in perpetual motion.”<sup>29</sup> They also agree with Paul Vernière’s conclusion that “Diderot exhausted his entire life trying to reconcile a mechanistic determinism, appropriate to the realm of matter, with a doctrine of evolution which seems, in the world of life, to include an obscure finality.”<sup>30</sup> More importantly, however, they show the failure of Toulmin’s analysis. Toulmin’s assertion that “only in 1859 did Charles Darwin finally open a door out of natural history into the history of nature” simply does not stand up in the face of Diderot’s natural philosophy.<sup>31</sup> Furthermore, Toulmin’s claim that “within the Newtonian world view, the only ‘historical’ events affecting Nature comprised the initial creation, and a series of later cyclical processes” cannot be supported by Diderot’s philosophical writings. In short, in light of Toulmin’s “framework of Modernity,” Diderot’s natural philosophy is either an anachronism or a freak.

But how common were Diderot’s evolutionist views? In this regard, Diderot had the full weight of the natural scientific community behind him. As Roger notes, much of Diderot’s own thought derived from his reading of Buffon’s *L’Histoire Naturelle*. In fact, Roger argues that Diderot’s *transformisme* was more modest than Buffon’s.<sup>32</sup> Other scientific thinkers like Maupertuis were equally comfortable with a notion of the mutability of the natural world. More importantly, however, all of these thinkers shared Diderot’s profound respect for the complexity of nature and his humility in estimating the human capacity to uncover its mysteries. In this shared “philosophical modesty,” these French thinkers also could include the likes of David Hume among their colleagues. For all these thinkers, human reason was not master over nature as Horkheimer and Adorno would have it; rather reason was a part of man’s nature, susceptible to manipulation by physical necessity and of limited potency in unraveling the codes of the universe.

With this understanding of Diderot’s philosophical and scientific views, views which we have seen were shared by more than a “heterodox minority,” it is now possible to complete our discussion of the fallacies inherent in Toulmin’s “twelve dichotomies of modernity” in relation the eighteenth-century Enlightenment. Several have been refuted already. On the side of “Nature,” we have already seen that Diderot does not accept that “Nature is governed by fixed laws set up at creation.” We have also seen that he does not accept that “the basic structure of Nature was set up only a few thousand years ago.” As he explicitly

states: “millions of years have passed between each of these natural developments, and there are perhaps more changes to undergo and more developments to make of which we are unaware.”<sup>33</sup> Similarly, we have seen that Diderot does not accept either the proposition that “objects of physical nature are composed of inert matter” or the proposition that “physical objects and processes do not think.” In both cases, Diderot holds out the possibility that matter and thought, mind and body, may be the result of different organizations of the same vital substance.

On the side of “Humanity,” we have also refuted other timbers of Toulmin’s modern framework of ideas in the case of Diderot. First, while Diderot would agree that “the ‘human’ thing about humanity is its capacity for rational thought,” he would not agree with Toulmin’s second proposition that “rationality and causality follow different rules.” Imbedded in this distinction is the very mind/body, nature/reason dualism which Diderot rejects. As we have seen, much of Diderot’s philosophical work is concerned with exploring the causal mechanisms of thought. Similarly, while Diderot would certainly agree that “a causal science of psychology is impossible,” it would not, as Toulmin claims, derive from Diderot’s belief that “thought and action do not take place causally.” Rather, Diderot’s “philosophical modesty” in the face of a complex and changing human nature would cause him to doubt the idea that human thought or action could ever be reduced to predictive laws. Finally, we have also seen that Diderot does not accept the supremacy of reason over passion since both are equal manifestations in his mind of humankind’s physical nature. Therefore, he would certainly disagree with the proposition that “reason is to be trusted while the emotions are to be distrusted and restrained.” In fact a great deal of Diderot’s writing argues against this very premise. As he writes:

People constantly declaim against the passions. They impute to them all the miseries of man, and forget that they are also the source of all pleasures...It is only the passions, and the grand passions at that, which can raise the soul to great things. Without them, the sublime will disappear both in morals and in deeds. The fine arts will return to their infancy and virtue will become minuscule.<sup>34</sup>

And as he adds elsewhere: “It is the height of folly to attempt to destroy the passions. What a beautiful project for the devotee to torment himself like a madman trying to desire nothing, to love nothing, and to feel nothing, only to finish by becoming a true monster if he succeeds!”<sup>35</sup> For Diderot, the passions and reason are equally natural, and they therefore must be equally harmonized.



Toulmin's hierarchy of reason over passion, as a result, does not accurately characterize his thought.

One last aspect of Toulmin's framework of modernity remains to be considered—its political dimension. On the side of "Nature," Toulmin cites two propositions as characteristic of the modern view that contain clear political resonances. The first is that "God combined natural objects into stable and hierarchical systems" and the second is the proposition that "motion in nature flows downward from the higher to the lower (just like action in society)." Similarly, under the rubric of "Humanity," Toulmin claims that it goes unquestioned in modern thought that "human beings can establish stable systems of society, like the physical systems in nature." Diderot's thought calls all three of these propositions into question. First, there is no hierarchy implicit in Diderot's materialism. In fact, its very subversiveness is contained in its democratic tendencies. We have noted that materialism such as Diderot's was a radical stance in the eighteenth century, and the political and social implications of this philosophy go a long way toward explaining its dangerous charge. Yet materialism of this sort was never absent from modern intellectual discourse from the time of Diderot.<sup>36</sup> For example, much of the recent scholarship on Darwin has pointed to his own struggles, as a member of the Oxbridge establishment, against the leveling implications of this evolutionary materialism.<sup>37</sup> To call it "heterodox thought" is true in a sense, but it fails to do justice to the importance it played in shaping modernity. Diderot's materialism countered the prevailing "hierarchical modernity," and as a result his thought must be seen as part of the inherent democratic current imbedded in modern thought from its inception.

Similarly, Diderot's evolutionary ideas also contained potentially revolutionary connotations in their challenge to the idea of a stable nature. Belief in the stability and regularity of nature reinforced political ideologies defending the status quo. Diderot's *transformisme*, as a result, questioned political orthodoxy. Yet here the important role which such ideas played within the mainstream science of the period must be remembered. Buffon, an official of the French monarchy, held similar views. His evolutionary ideas did not worry royal officials sufficiently to put his job in jeopardy. Furthermore, the *transformisme* which was taught was often compatible with traditional institutions. Most often it amounted to nothing more than assertions that taxonomies are arbitrary and that nature is too complex to classify in a complete way. In the end, therefore, Diderot's evolutionary ideas could easily be reconciled with more traditional politics when the need arose.

More to the point of this essay, however, this political ambiguity only reinforces the conviction that Toulmin's assumptions here, as elsewhere, are overly



reductive. Toulmin's framework of modernity is a very poor map by which to chart Diderot's sophisticated Enlightenment philosophy. Generalizing from this particular case, it seems that the map fails largely because it assumes a rigid acceptance of Cartesian dualism throughout this period when the historical story is far more complicated. And this is not merely a problem with Toulmin and his book. The blind spots which lead to Toulmin's failures, unfortunately, are representative of a much broader problem, the overly narrow, ahistorical character of much contemporary discourse on these questions. Toulmin's monolithic understanding of the "Modern" is utterly typical, and while his schematic rendering makes for an easy target, it is a target that could also be found in any number of other recent works on the crisis of modern rationalism. But the point of this paper is not to accuse Toulmin of writing a simplistic book. In fact, as I have mentioned on several occasions already, I find Toulmin's general thesis and his specific analysis of other periods quite profound. Yet the very incisiveness of *Cosmopolis* makes the book's failures in regard to the eighteenth century all the more glaring. Toulmin should have known better. A book so suggestive of what could be done to re-write the intellectual history of the eighteenth century in light of postmodern concerns should not have collapsed into such hackneyed platitudes.

But if Toulmin's book is so suggestive, what is the better reading to which his work points? The answer derives from the similarities which exist between Diderot's Enlightenment philosophy and the parallel intellectual outlook of Renaissance "modernism" and contemporary "postmodernism" illuminated by Toulmin. In defining "Renaissance modernity," the precursor to seventeenth-century "rationalist modernity," Toulmin stressed the emphasis on rhetoric over dialectic,<sup>38</sup> particularity over universality, timeliness over timelessness, locality over generality, embodiment over abstraction, and subjectivity over objectivity as characteristic of this pre-Cartesian modernity. Noting that the rationalist modernity imposed itself in reaction to this earlier system of ideas, he suggests that postmodernity has much to learn from the historical changes which led to the birth of the rationalism it so despises. Yet looking at this list of "Renaissance humanist" attributes, I am struck by the degree to which they characterize Diderot's thought as well. More importantly, this similarity suggests that the dialectic which Toulmin sees in the move from the sixteenth to the seventeenth centuries may also play out in reverse in the change from the seventeenth to the eighteenth. Carrying this model further, it is not hard to see other strands of Enlightenment thought—namely those embodied in later figures like Laplace, Kant, and Bentham—as marking a reaction against the more rhetorical, ironic, anti-universalist and subjectivist Enlightenment which Diderot

represents. Moving still further, Romanticism, nineteenth-century positivism, fin-de-siècle subjectivism, and early twentieth century scientism could also be seen as later movements of this dialectic. Adding the fact that the various time schemes embodied in this dialectic can themselves be variable and particular, and that a “postmodern” swing in one time or place could coexist alongside a more “modern” swing in another, this model for understanding the problem of modernity becomes more interesting still.<sup>39</sup> Allowing for other complexities as well, like the possibility for certain non-dialectical, developmental processes (technology, economic change, historical understanding) to coexist and influence the dialectic itself, the model becomes even more convincing. The result, in my opinion, is a far more nuanced approach to the relationship between contemporary thought and its antecedents.

To sum up, what I am suggesting is that Toulmin points to a “dialectic of the Modern,” born *in toto* with modernity itself and which continues today.<sup>40</sup> The advantage of such a dialectical view is that it allows us to see the similarities between Enlightenment critique and our own critical spirit. Rather than compelling us to move “beyond the Enlightenment” as so many are wont to do today, a dialectical view of modernity asks us to go back to the Enlightenment and other periods as well and to understand their problems as aspects of our own. Most important, it pushes us away from the abstract theorizing so criticized yet so indulged in by contemporary writers, and into reflection, dialogue, and integration; in other words, into humanistic inquiry in the best sense of the term. Not surprisingly, two works as different as Jean-François Lyotard’s *The Postmodern Condition* and Horkheimer and Adorno’s *Dialectic of the Enlightenment* each in their own way argue for a very similar view. For Lyotard, it is crucial that one see modernism and postmodernism as two sides of the same thing. For Horkheimer and Adorno, the totalitarian implications of the Enlightenment arise from a failure to balance reflective theory with the factual mentality. Taken together, both views suggest that we treat modern thought in dialectical terms. Following Toulmin, this essay has suggested that these dialectics have an historical dimension as well. Viewed in light of history, a study of Diderot’s Enlightenment thought shows us that contemporary thought does not need to move beyond the Enlightenment. Instead, we need to return to the Enlightenment itself in order to understand the dialectic of thought that is embodied in this period as in our own.<sup>41</sup>

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#### NOTES

1. This quote is drawn from Erica Harth, *Cartesian Women: Versions and Subversions of*

- Rational Discourse in the Old Regime* (Ithaca, 1992). Harth draws on contemporary feminist theory and writings on the relationship between gender, science and rationality to construct her view of the Enlightenment. Her failures in this regard are exemplary of this literature as a whole.
2. Max Horkheimer and Theodor Adorno, "The Concept of the Enlightenment," Chap. 1 in *Dialectic of Enlightenment*, trans. John Cumming (New York, 1982). It is probably misleading, however, to call writers like Horkheimer and Adorno "postmodern" as I appear to do here. Writing in the late 1940s within a German intellectual culture still rooted in the traditional discourses of metaphysics, Adorno, Horkheimer and their Frankfurt School contemporaries are much better labeled as "the last Modernists," a characterization I borrow from my colleague Eric Oberle who is working on a dissertation on Adorno. Nevertheless, it is not inaccurate to see *Dialectic of Enlightenment* and other works by Frankfurt School writers, notably those by Walter Benjamin, as an inspiration for many of the contemporary postmodern critiques of Enlightenment. For example, the identification of Enlightenment modernity with a "factual mentality" hostile to abstraction is central to the neo-Marxist criticism of Terry Eagleton. Cf. *The Function of Criticism* (London, 1984) and *Ideology of the Aesthetic* (Cambridge, MA, 1990). On a very different front, "communitarian" philosophers such as Alasdair MacIntyre and Charles Taylor base much of their critique of modern moral philosophy on what they claim is this philosophy's excessive attachment to Enlightenment categories of reasoning. In defining the Enlightenment legacies in modern moral philosophy, for instance, they focus on the bias toward instrumental reason enshrined by eighteenth-century thinkers, offering in the process a conception of the Enlightenment very similar to that of Horkheimer and Adorno. Cf. Alasdair MacIntyre, *Whose Justice? Whose Rationality?* (Notre Dame, 1988) and *Three Rival Visions of Moral Enquiry: Encyclopedia, Genealogy, and Tradition* (Notre Dame, 1990), and Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Harvard, 1989). Of course, this is not to say that *Dialectic of Enlightenment* is the first postmodern critique of Enlightenment. Rather, it is merely to point out that the critique of Enlightenment put forward in this work remains a central strand in much postmodern critique. It is to the characterization of the Enlightenment found in their work rather than the work itself that I will be referring when I invoke the legacy of Horkheimer and Adorno.
  3. I find the critique spawned by Horkheimer and Adorno's work to be characteristic of the former and the work exemplified by Harth to be characteristic of the latter.
  4. David Harvey, *The Condition of Postmodernity* (Oxford, 1990); Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (Minneapolis, 1984).
  5. At a session of the Stanford University Seminar on Enlightenment and Revolution in the winter of 1995, Peter Reill argued a very similar point with reference to Enlightenment thought in Germany. Diderot is perhaps the most glaring example in France of the intellectual tradition of interest to Reill (see n. 13 below), and I find my own views to be very close to his on these questions.
  6. Stephen Toulmin, *Cosmopolis: The Hidden Agenda of Modernity* (Chicago, 1990).
  7. Toulmin, *Cosmopolis*, pp. 107-8. His argument is that once established, the Carte-

- sian paradigm replaced the older, Renaissance paradigm in a complete way and remained the unchallenged "paradigm of common sense and reason" until the twentieth century. It is this thesis that this essay seeks to refute. The more precise definition which Toulmin gives for his "framework of Modernity" will be discussed below. See p. 11.
8. The complete list of the twelve dichotomies of modernity is found in Toulmin, *Cosmopolis*, 109-10.
  9. Jacques Roger, *Les sciences de la vie dans la pensée française du XVIIIe siècle* (Paris, 1964), 585. My discussion of Diderot's theories of natural science owes a great deal to this work, esp. Part III.
  10. Roger, for example, sees a progression from deism to atheistic materialism in Diderot's thought.
  11. Toulmin, *Cosmopolis*, 112.
  12. Toulmin, *Cosmopolis*, 122.
  13. Other figures that might be included in this tradition include the French scientist Maupertuis and the early chemists like Boerhaave (LaMettrie's teacher) and Stahl. Peter Reill is currently working on the history of this scientific culture in eighteenth-century Germany, labeling the discourse "enlightened vitalism." See Peter Hanns Reill, "Science and the Construction of the Cultural Sciences in Late Enlightenment Germany: The Case of Wilhelm von Humboldt," *History and Theory* 33:3 (1994). Margaret Jacob has also done a great deal of work on what she calls the "radical naturalists," focusing on individuals like John Toland and the connection between this intellectual tradition and radical politics in the period. See *The Radical Enlightenment: Pantheists, Freemasons and Republicans* (London, 1981). For France, however, the best work on the "vitalist" discourse remains Roger's history of the life sciences.
  14. Denis Diderot, *Rameau's Nephew/D'Alembert's Dream*, trans. Leonard Tancock (London, 1988).
  15. Diderot, *Rameau's Nephew/D'Alembert's Dream*, 149.
  16. Diderot, *Rameau's Nephew/D'Alembert's Dream*, 159.
  17. This phrase was first made famous by Ernst Cassirer in his famous work *The Philosophy of the Enlightenment*, trans. Fritz C.A. Koelln and James P. Pettegrove (Princeton, 1951).
  18. As noted earlier, Horkheimer and Adorno make this "obsession with facts" the defining feature of the Enlightenment. For them, Francis Bacon, the great critic of deductive rationalism and champion of inductive reason, was the intellectual icon of the period. Other intellectual histories of the period which give primacy to the rise of the empirical sciences in their characterization of the thought of the period include Ernst Cassirer, *The Philosophy of the Enlightenment* and Peter Gay *The Enlightenment: An Interpretation*, 2 vols. (New York, 1966-1969). For an important analysis of the limits of this empirical strand even within Enlightenment scientific thought, see Thomas L. Hankins *Jean D'Alembert: Science and the Enlightenment* (Oxford, 1970). See esp. chapter 3, which analyzes the intellectual opposition between Diderot and D'Alembert and provides an especially interesting viewpoint on the analysis of Diderot's thought offered here.



19. Denis Diderot, *De L'Interpretation de la Nature*, in ed. Paul Vernière *Oeuvres Philosophiques de Diderot* (Paris, 1964), 191. All references are to this edition. Translations from the French are my own.
20. Diderot, *De L'Interpretation de la Nature*, 178.
21. Interestingly, in light of their collaboration on the *Encyclopédie*, geometric reasoning of this sort was championed by D'Alembert. For a compelling analysis of this tension see Hankins, chap. 3.
22. Diderot, *De L'Interpretation de la Nature*, 185.
23. Diderot, *De L'Interpretation de la Nature*, 232.
24. Diderot, *De L'Interpretation de la Nature*, 235
25. Diderot, *De L'Interpretation de la Nature*, 182.
26. Diderot, *De L'Interpretation de la Nature*, 189.
27. Diderot, *De L'Interpretation de la Nature*, 185.
28. Diderot, *De L'Interpretation de la Nature*, 241.
29. Roger, 611.
30. Diderot, *De L'Interpretation de la Nature*, 240, n. 1.
31. Toulmin, *Cosmopolis*, 110. The statement is also contradicted by the work other eighteenth-century thinkers like Maupertuis, Buffon and the other natural philosophers who argued for the thesis of *transformisme* in the eighteenth century. On the role of *transformisme* in the biological thought of the period, see Roger, *passim*.
32. Roger, *Les sciences de la vie*, 611.
33. Diderot, *De L'Interpretation de la Nature*, 241.
34. Denis Diderot, *Pensée Philosophiques*, in ed. Vernière, 9-10. All references are to this edition. Translations from the French are my own.
35. Diderot, *Pensée Philosophiques*, 11.
36. On the persistence of vital materialism throughout the late seventeenth and early eighteenth centuries, the period where Toulmin's "framework of Modernity" is alleged to become hegemonic, see J.S. Spink, *French Free-Thought from Gassendi to Voltaire* (London, 1960) and Jean Ehrard, *L'Idée de nature en France dans la première moitié du dix-huitième siècle*, 2 vols. (Paris, 1963), esp. vol. 1, chaps. 1-2.
37. Adrian Desmond and James Moore, *Darwin: Life of a Tormented Evolutionist* (New York, 1992).
38. Used here in the Greek sense of the quest for certain knowledge.
39. In his recent work, the noted German intellectual historian Reinhart Koselleck has emphasized the importance of using multiple, simultaneous time-frames in the study of history. I am following him here.
40. Interestingly, Lyotard also speaks of the necessary simultaneity of "modern" and "postmodern" in *The Postmodern Condition*. I am grateful to Richard Schoch for this insight.
41. Other contemporary writers whose stress on historical modes thinking I admire in this regard include Michel Foucault, Jurgen Habermas, J.G.A. Pocock, and Charles Taylor.