In selected texts by Diderot, including the *Encyclopédie* article “Cabinet d'histoire naturelle” (along with his comments in the article “Histoire naturelle”), the *Pensées sur l'interprétation de la nature* and the *Salon de 1767*, I examine the interplay between philosophical naturalism and the recognition of the irreducible nature of artifice, in order to arrive at a provisional definition of Diderot's vision of Nature as “une femme qui aime à se travestir.” How can a metaphysics in which the concept of Nature has a normative status, also ultimately consider it to be something necessarily artificial? Historically, the answer to this question involves the project of natural history. A present-day reconstruction would have to make sense of this project and relate it to the vision of Nature expressed in Diderot’s phrase. In addition, it would hopefully pinpoint the difference between this brand of Enlightenment naturalism and contemporary naturalism, and by extension, allow us to understand a bit more about what naturalism is in general.

Naturalism – the reduction or explanation of all phenomena to what philosophers used to call the “order of nature” – has enjoyed a rather vigorous existence as a philosophical current for forty-odd years, but it has come under some attack recently; the heroic era of Quine’s “naturalized epistemology” and Dennett’s transposition of this program to the cognitive arena has given way to an onslaught of ‘holisms’ and anti-naturalisms (to pick

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1 See De Caro & Macarthur, eds. (2004).
some names from a growing list: Putnam, Nagel, Taylor and Brandom). Similarly, on the Continent there has long been an emphasis on the ‘primacy of artifice’ and a concomitant denial of any access to something called ‘Nature’ other than as a fiction, whether from the phenomenological camp (which asserts an explicit anti-naturalism, if one recalls Husserl’s frequent comments that “we are fighting against naturalism”\(^2\)) or from the post-Structuralist one, doubtless indebted to Nietzsche’s virtuoso destruction of ‘Nature’ as a philosophical concept, in § 109 of the *Gay Science*, to which I’ll return in closing.\(^3\) And when the critics of naturalism try and provide a definition, they either say that the notion is vague and uninteresting (which makes short shrift of the extremely novel kinds of naturalistic programs found, e.g., in Spinoza and Dewey), or that it is limiting and reductive. My suggestion in what follows is that these critics – that is, anti-naturalists of various sorts – might be interested, or concerned, if they took a look at Diderot’s philosophy of nature, for they would find there an extremely coherent *reductio* of all phenomena to natural phenomena, of all causes to natural causes, *along with* a statement of the irreducible ‘artificiality’ or ‘fictionality’ of our constructs of Nature …

Naturalism was clearly perceived as subversive in the Enlightenment, and usually associated with other fearsome “isms” such as “Spinosisme,” “atheism,” “pantheism” and of course “materialism.” But wouldn’t the *apologistes*, the orthodox theologians crying out for the blood of the naturalists from Holland to Spain and England have been relieved to learn that the Nature of these “nouveaux philosophes,” the “esprits forts,” was in fact a fiction (albeit a powerful and subversive fiction)? One such *apologiste*, Laurent François, in his *Proofs*

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\(^2\) Or “against the naturalization of consciousness” (Husserl [1981], pp. 302, 310). Husserl’s target is sometimes the psychophysics of his time, sometimes eighteenth-century naturalism, sometimes Descartes, who “physicalized” the mind (?).

\(^3\) This recognition is present in Deleuze’s suggestive statement that his final project with Guattari will be “une nouvelle philosophie de la nature, au moment où toute différence s’estompe entre la nature et l’artifice” (Deleuze 1988, p. 25).
of the Religion of Christ against the Spinozists and the Deists, complains about how “these purported philosophers are always to be heard speaking of ‘the Whole’, ‘the Great Whole’, ‘natural necessity’, ‘Nature’ and ‘the order of Nature’.”

What nature is this? Which order of nature? Presumably something like d’Holbach’s insistence on an unbroken chain of causes, ultimately physical causes (since moral causes are only physical causes which we don’t know the true nature of), such that even “our souls [or minds-CW] are subject to the same physical laws as material bodies.” This physicalist reductionism is, in fact, exactly what Diderot will criticize, declaring “I am a man, I need causes which are proper to man,” thus disavowing his earlier position, and d’Holbach’s, that “there is only one kind of causes, . . . physical causes.” This does not prevent him, however, from maintaining a strong commitment to causality, the causal closure of the space-time world, and the determinism that ensues: “in science, as in Nature itself, everything holds together” (“dans la science, ainsi que dans la nature, tout tient”).

Roughly, then, the anti-naturalist wishes to show that there are things in the world – freedom, the soul, emotions, intentionality, qualia – which are not reducible to (ontologically) or explainable in terms of (methodologically) what the science of our time tells us about the natural world. Now, contemporary naturalism is more of a reconstructive program, precisely one which runs up against the mind or intentionality, whereas Enlightenment naturalism is an ontology – certainly in Meslier, La Mettrie, d’Holbach and Diderot half the time, when he’s more of a Leibnizian ontologist than a Lockean

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5 d’Holbach (1999), I.xi, p. 287.
methodologist – which focuses more on what we might call realism vs. instrumentalism, and asks, is our vision of nature a fiction?

My question is, what if naturalism were founded on such heuristic ‘constructs’ as a cabinet d’histoire naturelle? There is a kind of novelty here which is quite distinct from the emergentist insistence that ‘biological causes’ or even ‘psychological causes’ might be more complex than brute physical causes, and even self-affecting, in the sense of what eighteenth-century vitalists (whose influence on Diderot is well-documented) described as the “cercle d’action.” The latter idea is that in the “animal economy,” the constant “action and reaction” is too complex for mechanistic explanations, and the causal principle on which they rest, to be of much use. In the words of the vitalist physician Louis de La Caze (which may even have been written by his younger collaborator Bordeu, whose fictional analog plays a key role in D’Alembert’s Dream),

There is . . . a circle of action [cercle d’action] in which a vicissitude constantly generated by the chain of causes and effects, entails that within it at any moment, effects become causes and causes in turn become effects. . . . This chain is so impenetrable that one cannot determine its beginning or end. Consequently, it is most difficult to impose a plan on the animal economy, without running the risk of transgressing the laws of right method, with respect to this marvelous contrivance of action.8

Granted, if the kind of naturalism we are discussing here is also a materialism, it is noteworthy that it is not mechanistic and instead takes as its privileged explanatory target the realm of living entities – which is precisely what natural history does. This is an important topic that has only recently begun to receive the attention it deserves, both with studies of medical vitalism in the period and how it related to philosophical materialism.9 However, my present

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8 La Caze (1755), pp. 68-69. Unless otherwise noted, all translations are my own.
9 See Rey (2000) and Williams (1994, 2003); an exception to the quality of this scholarship is the surprisingly inaccurate and out-of-date analysis of “Materialism and vitalism” in Wellman (2003), an entry in a major reference work, the Oxford Companion to the History of Modern Science; see the criticisms in Kaitaro (2008). For vitalism in relation to materialism see Thomson (2001) and Wolfe, ed. (2008).
interest is with the role of a kind of artificialism within this naturalist project. What kind of a naturalistic ontology survives the recognition that our finite intellects might never be able to access ‘Nature’ itself? Indeed, Diderot contrasts “the infinite multitude of natural phenomena” with “the limitations of our understanding and the weakness of our organs” (“la multitude infinie des phénomènes de la nature” … “les bornes de notre entendement et la faiblesse de nos organes”). This is the sort of question I aim to answer in what follows.

Cabinets of curiosities, *Wunderkammern* or ‘natural history cabinets’ are fascinating enough objects in and of themselves, however much they are studied. I only mention them here inasmuch as, in the *Encyclopédie* article of that title, by Diderot, along with “Histoire naturelle” (large chunks of Buffon reworked by Diderot along with smaller chunks by Daubenton), “Méthode” and various reflections in the *Interprétation de la nature* and elsewhere, one hears statements such as this:

> The order of a *cabinet* cannot be that of nature; nature affects everywhere a sublime disorder. Whichever side we approach it from, we find masses [masses] which transport us with admiration, groups which call for our attention in the most surprising manner. But a *natural history cabinet* is made to teach us; there, we must find in detail and in order, that which the universe presents to us as one piece [en bloc].

A natural history cabinet is intended to be in the service of a naturalistic cause, yet from its inception it declares to us that its “order” is not the order of Nature. How could it be that a “cabinet d’histoire naturelle,” precisely as a cousin of the wonder-filled, monster-filled

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12 “L’ordre d’un *cabinet* ne peut être celui de la nature; la nature affecte partout un désordre sublime. De quelque côté que nous l’envisagions, ce sont des masses qui nous transportent d’admiration, des groupes qui se font valoir de la manière la plus surprenante. Mais un *cabinet d’histoire naturelle* est fait pour instruire; c’est là que nous devons trouver en détail et par ordre, ce que l’univers nous présente en bloc” (Diderot, art. “Cabinet d’Histoire Naturelle,” in Diderot (1975-), vol. VI, p. 240).
“cabinet of curiosities” or *Wunderkammer*, could actually convey a reductionist explanatory project of inscribing human life within the causal realm of Nature?

For one thing, as the *Encyclopédie* entry on method in the study of Nature explains, our understanding of Nature is dependent on the “method” with which we approach it, according to which we analyze it; since the objects studied by natural history are too great in number to be apprehended as such, the historian of nature – the biologist or materialist philosopher – must lay out “an order of relations [rapports] and analogies.” Of course, relying too much on method is the characteristic trait of “methodists” like Linnaeus, so decried by Buffon and Diderot on Lockean-nominalistic grounds. The article “Histoire Naturelle” further explains that it is impossible to visit each country, climb down into each mine, or up on every mountaintop, and sail on each sea: “Such obstacles would discourage the most enterprising ones among us, and would lead them to give up the study of natural history.” Luckily, “we have found a way to shorten and smooth the surface of the earth in favour of the naturalists; we have collected individuals of each species of animals and plants . . . in cabinets of natural history. We can see there a short version [un abrégé] of nature in its entirety.” Such techniques facilitate learning and instill in us “a new ardor for the *History of Nature*” (*ibid.*, 229b).

But, *artificialisme oblige*, none of this should be taken for the Life of Nature itself! Cabinets enable us to acquire the first rudiments of the science of natural history, but not to know the science itself, “because one cannot see there [sc. in the cabinets-CW] *living and acting Nature*” (*ibid.*, emphasis mine). “Animal corpses,” their “remains,” are but a “pallid

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13 “Méthode (division méthodique des différentes productions de la nature),” *Enc.* X, 458b-459b.
15 In § xlviii of the *Pensées sur l'interprétation de la nature*, Diderot describes the emphasis on method in natural history as a kind of rationalism which is blind to experience (1994, p. 586).
16 *Enc.*, VIII, 229a.
representation of living animals.” A cabinet is merely a ‘draft’ (une esquisse) of nature. Notice the quasi-valuative emphasis placed here on “living nature”; on the one hand, this is reminiscent of Diderot’s criticism of the usage of anatomical models (skeletons, corpses, etc.) in painting, but on the other hand, it is also a window onto his unique, ‘animated’ brand of naturalism. Whether as a philosopher of nature or an aesthetic theorist, Diderot doesn’t say ‘Ain’t it grand, what we can do with our imaginations!’ (a position akin to Gothic/Baroque sensibility) but rather ‘Ain’t the power of living nature grand, and beyond the reach of our intellects! (except for thought-experiments as found in Le Rêve de D’Alembert)!’. 

Diderot’s naturalism is unlike the various species of naturalisms found in the past century (Dewey, Quine, Dennett), which in this sense are closer to Spinoza’s naturalism, in that it does not proceed in a deflationary or reconstructive manner, most of the time (the hint at a ‘materialist theory of the self’ as derived from the central nervous system, in the Rêve, is perhaps an example of a reconstruction of a phenomenon such as intentionality on materialist grounds), but rather as an all-embracing metaphysics of living nature. The extent to which a materialism which emphasizes the uniqueness of organic beings (and thus the ‘laws’ specific to them; read ‘vitalism’) can also be a reductionist project (or not) has been the subject of some debate recently¹⁷; but notice that whether Diderot is a reductionist or a holist, he seems to insist on the qualitative difference between “living Nature” or “living animals” and “animal corpses” or “remains,” including those that are mounted in artificial settings, for gawkers or scientists.

¹⁷ Timo Kaitaro’s excellent (1997) book argues, as its title indicates, for a very non-reductionist Diderot. I hope to show differently; see my review of Kaitaro (Wolfe 2002) and my forthcoming paper on the possibility of reading a “materialist biology” in Diderot (Wolfe 2008).
However, I do not mean to diminish the status of artifice in this theory. It belongs right there in the middle of the relation between theory and experience, between “suppositions”/conjectures/hypotheses and brute empirie. Artifice, whether in the form of a stuffed freak animal or a Gedankenexperiment (the latter including the notion of species as a “vue de l’esprit”), is required for the ‘pursuit of science by other means’, mainly because of Nature’s infinity, which implies that any intellectual “grasping” (greifen) of its immensity would instantly be the death of any theoretical coherence. It is in this sense that Buffon can say that the “experimental part” of natural history grounds and confirms the “hypothetical part,” “all of which is tied to my overall system, and guided by a constant focus on the major objects of nature.” Diderot in turn stresses the role of artificial construction:

The observer is forced to move from one individual to another, but the historian of nature is obliged to embrace it in great masses [clusters, heaps]; he cuts these masses at points on the chain where the nuances strike him most strongly, and he is careful not to imagine that these divisions are the work of Nature.

But it’s not as if, maker’s knowledge-style, all we knew was what we constructed, so we could forget about Nature itself; Diderot actually suggests a more nuanced view in the “Prospectus” of the Encyclopédie, between

- orderly, rule-bound and uniform Nature – the Nature of bodies, whether celestial or animal;
- “disturbed” Nature, such as anatomical ‘monsters’;
- Nature which is “constrained and forced to serve various uses, as is the case with the arts.”

18 “le tout lié à mon système général, et dirigé par une vue constante vers les grands objets de la nature” (Buffon [1774], Partie expérimentale, p. 143).
19 “L’observateur est forcé de passer d’un individu à un autre: mais l'historien de la nature est contraint de l'embrasser par grandes masses; et ces masses il les coupe dans les endroits de la chaine où les nuances lui paraissent trancher le plus vivement; et il se garde bien d’imaginer que ces divisions soient l’ouvragé de la nature” (Diderot, art. “Animal,” Enc. I, 471b).
Both a stuffed freak animal in a ‘cabinet’ and a living anatomical anomaly extend the boundaries of our intellects; “if we were asked what point there is in the history of monstrous nature, we would reply: it enables us to move from prodigies and the ‘leaps’ in Nature, to the wonders of art; to disturb Nature even further, or to put it back on its rightful path.” Quite a far cry from the distinction between the natural and the artificial in valutative terms (as found, e.g. in the aesthetic theories criticized by Diderot, those of Batteux, or Dubos)!

My claim is that the genre of ‘natural history’ enabled reductionist materialist thought to integrate the notion of artifice without dissolving Nature into a mere fiction. For this to take place, the notion of natural history itself has to undergo a materialist inféchissement. What did ‘natural history’ mean in the early modern era? In the carefully nominalist terms of current historiography of science, it was “a set of divergent traditions sharing a general subject matter (the living world) and a set of catholic (with a small ‘c’) naturalists.” But my concern is not with the sociology of its research traditions. In the Encyclopédie’s classification of the sciences, the “système figuré des connaissances humaines,” natural history belongs to “particular physics,” whereas “general physics” is identified (by D’Alembert) with the “metaphysics of bodies.” The curious thing about the notion of natural history from the start – it doesn’t require the adjustments of a Buffon or a Diderot – is the way it blends the descriptive and the prescriptive; as the Encyclopedia Britannica puts it in its first edition (1771), it is “that science which not only gives compleat descriptions of natural productions in general, but also teaches the method of arranging them.”

The problem with this definition is that it’s still too bland and consensual; it completely neglects the radical conceptual shift which takes place with this expression, as can be

seen also in its philosophical reappropriation, which we might divide into an initial, broad ‘naturalization’ and a later, more specifically materialist redefinition of natural history as a program.

First, figures like Hume, La Mettrie and d’Holbach naturalize domains such as religion, the soul, or the “human heart”; already Locke described the project of his Essay as a “History of the first beginnings of human knowledge,” and the “historical, plain method” announced at the beginning of the Essay (p. 44) is a way of naturalizing a theological topos, a theme we find again in D’Alembert’s “Discours Préaliminaire,” where he speaks of the need for a “genealogy” of our knowledge, something we can undertake by “moving back to the origin and generation of our ideas” (p. i).

Second, there is the later creation of a conceptual ‘bridge’ between materialist philosophy and the life sciences, especially natural history, which is both a kind of proto-biology and at the same time quite distinct from it, especially since it contains a polemical element which will be eliminated once it becomes ‘biology’: something non-mathematizable. This insistence on the new ‘continent’ of life science – including medicine, physiology, elements of chemistry and the study of generation – as distinct from the mathematical and mechanistic trends of the Scientific Revolution, begins with Buffon’s assertion that “mathematical truths are merely mental abstractions, which lack anything real” (“les vérités mathématiques ne sont que des abstractions de l’esprit qui n’ont rien de réel”), and is stated

25 Locke (1975), II.xi.15.
26 See the important work by Salomon-Bayet (1978), e.g. p. 145. Closely related semantic/conceptual shifts occur with the terms organisation and économie animale. See Motoichi Terada’s unpublished (2003) paper and Balan (1975).
27 “De la manière d’étudier l’Histoire Naturelle,” in Buffon (1749), p. 53. Of course, Buffon was also the author of works on mathematics, and a translator of Newton as well as Stephen Hale’s Vegetable Staticks. But he remained convinced that the newly emerging cluster of disciplines called ‘natural history’ would go nowhere if it was treated in strictly post-Galilean, Accademia dell Cimento-style...
more fully in section 4 of Diderot’s key methodological work *Pensées sur l'interprétation de la nature* (1753/1754):

We are on the verge of a great revolution in the sciences. Given the taste people seem to have for morals, *belles-lettres*, the history of nature and experimental physics, I dare say that before a hundred years, there will not be more than three great geometers remaining in Europe. The science will stop short where the Bernoullis, the Eulers, the Maupertuis, the Clairaut, the Fontaines and the D’Alemberts will have left it. . . . We will not go beyond.  

One hears the same emphasis in the *Encyclopédie*: “People’s minds are drawn in a general movement towards natural history, anatomy, chemistry, and experimental physics.” It is noteworthy in this regard that there is no article on Galileo in the original edition of the *Encyclopédie* (whereas Galileo features prominently, e.g. in Brucker’s *Historia critica philosophiae*, which is a major source of the *Encyclopédie*). But to return to Buffon and Diderot’s shared claim, let us distinguish between two distinct points within it:

- the negative claim that mathematical entities are just abstractions and have nothing to do with physical truth (which is an inversion of the relation between mathematics and natural history that was characteristic of the seventeenth century),

and

mechanistic fashion. After all, Buffon was also the theorist of ‘organic molecules’, which were a kind of vital *minima*, non-reducible to inorganic entities. (One could complicate matters similarly by pointing out that Diderot named an essay he had written on probabilities as his favourite amongst his writings, along with *D’Alembert’s Dream*).


29 Art. “Encyclopédie,” in Diderot (1994), p. 372 (1755-), vol. VII, p. 185. Similar passages can be found in his letter to Voltaire of February 19th, 1758, and in Grimm’s *Correspondance littéraire*, June 1st 1765, vol. IV, 1, p. 649. Diderot’s defense of Buffon against the bishop of Auxerre in the *Suite de l’apologie de l’abbé de Prades* similarly opposes the study of Nature to mathematical abstractions (see Diderot [1994], p. 529f.). — A further question might be how all of this squares with Kuhn’s discussion of the difference between mathematical and experimental traditions.


31 These are almost Buffon’s words, but see the helpful commentary in Sloan (1995), p. 129.
the positive, or at least programmatic claim that the experimental world of natural history, anatomy, chemistry, etc. is where the future lies – not just for ‘science’ but for philosophy, precisely understood in naturalistic terms.

It is in this sense that Georges Gusdorf, in his enormous study of the emergence of the human sciences, could say that “materialist philosophy may be considered as an attempt to deepen the project and the data of natural history”32: in this reconstructive, deflationary sense (I take a phenomenon called ‘soul’ and seek to integrate it into what natural history tells me about animals, plants, generation, states of coma, etc., and what is left after this integration is a concept of soul I can work with). In another example, the little-known work by Maupertuis’ brother, Moreau de Saint-Elier, entitled Traité de la communication des maladies et des passions, avec un essai pour servir à l’histoire naturelle de l’homme (1738), explicitly links the project of “natural history” with the materialist project of explaining the workings of the soul in purely natural, and a fortiori, physiological terms.

Indeed, there is some historical evidence for considering cabinets d’histoire naturelle and the overall project of natural history as being synonymous with materialist philosophy. They were attacked by the enemies of the philosophes, such as Nicolas Linguet, author of the pamphlet Le Fanatisme des Philosophes (1764), who in a later text regretted that “a taste for natural history has become quite common. Rich countries are filled with cabinets. . . . Look at this spectacle of Nature dead and dissected . . .”33

Natural history occupies the conceptual space which will be that of biology, and it must be understood that this was a wholly polemical project in the mid-eighteenth century.

Consider Diderot’s two strategically located statements of epigenesis; the first, in his

32 Gusdorf (1972), p. 320.
‘experimental novel’ D’Alembert’s Dream (Le Rêve de D’Alembert), with the “voyez-vous cet œuf ?” passage which serves as the epigraph to François Jacob’s La logique du vivant:

Do you see this egg? It is with this [egg] that we overturn all schools of theology and all the temples of the world. What is this egg? An unsensing mass prior to the introduction of the seed [germe]; and after the seed has been introduced, what is it then? An unsensing mass, for the seed itself is merely an inert, crude fluid. How will this mass move to another [level of] organization, to sensitivity and life? By means of heat. What will heat produce therein? Movement.34

or the definition of “modern Spinosists” in the Encyclopédie which, idiosyncratically enough, makes them theorists of the then-brand new doctrine of biological epigenesis:

SPINOSIST: follower of the philosophy of Sp inosa. One must not confuse the ancient Spinosists with the modern Spinosists. The general principle of the latter is that matter is sensitive; they demonstrate this by the development of the egg, an inert body which by the sole means [instrument] of graduated heat moves to the state of a sensing, living being, and by the growth of any animal which in its inception [principe] is merely a point, and through the nutritive assimilation of plants and – in one word – of all substances that serve the purpose of nutrition, becomes a great sensing and living body in a greater [expanse of] space. From this they conclude that only matter exists, and that it is sufficient to explain everything. For the rest, they follow ancient Spinozism in all of its consequences.35


35 “SPINOSISTE, s. m. (Gram.) sectateur de la philosophie de Sp inosa. Il ne faut pas confondre les Spinosistes anciens avec les Spinosistes modernes. Le principe général de ceux-ci, c’est que la matière est sensible, ce qu’ils démontrent par le développement de l’œuf, corps inerte, qui par le seul instrument de la chaleur graduée passe à l’état d’être sentant & vivant, & par l’accroissement de tout animal qui dans son principe n’est qu’un point, & qui par l’assimilation nutritive des plantes, en un mot, de toutes les substances qui servent à la nutrition, devient un grand corps sentant & vivant dans un grand espace. De-là ils concluent qu’il n’y a que de la matière, & qu’elle suffit pour tout expliquer ; du reste ils suivent l’ancien spinozisme dans toutes ses conséquences” (Diderot, s.v. “Spinosis tes,” Encyclopédie XV, 474 / Diderot (1994), p. 484). This brief article is the basis for Paul Vernière’s giant – and fanciful – category of ‘neo-Spinozism’, which he applied to eighteenth-century radical thought approximately half a century before Jonathan Israel (2001). For one of the few useful analyses of Diderot’s biologically motivated ‘reinvention’ of Spinozism, see Métraux (1994).
These passages have very different tones, as befits their different contexts: in the first, Diderot can boldly state that a biological ‘fact’ will overturn all faculties of theology, because the novel was not intended for publication, and indeed only entered the public realm in the nineteenth century; in the second, which occurs in the *Encyclopédie*, he has to be somewhat more discreet. Regardless, in both cases he is making an unusual claim that certain facts about generation (what we would call developmental biology) radically modify the philosophical landscape. In the second quotation, he is saying that to be a Spinozist in the mid-eighteenth century is essentially to hold a particular biological theory to be true! Notice the redefinition of matter as something either essentially or at least potentially sensitive (Diderot wavers on this point), but definitely not inert: another nail in the coffin of mechanism, which would have surprised Spinoza, who was no anti-mechanist.

Now, all of this is part and parcel of natural history understood as a materialist program. (Diderot’s late, unfinished work *Éléments de physiologie*, which would have been the culminating statement of his biologically grounded materialism, simply bears the title of Albrecht von Haller’s monumental work; according to his friend and biographer Naigeon, the work, if completed, would have been entitled *Histoire naturelle et expérimentale de l’homme.*

But at the same time, the ontology of Nature here is anything but monolithic; a contemporary naturalist would say its ontology is always provisional; in a very “French” twist on the scientific ebullience of the Enlightenment, Diderot says that Nature is “une femme qui aime à se travestir”; not a transvestite, but a woman concealed underneath an infinite

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36 On the decline of the mechanistic paradigm and the rejection of the inertness of matter, see Fox (1987).
38 *Interprétation de la nature*, § xii, in Diderot (1994), p. 565. This is a modern twist on Heraclitus’ *phusis kruptesthai philei* or “Nature likes to hide” (fr. 208).
number of ‘travesties’. Natural forms are nothing but “masks.” As defined canonically in
*D’Alembert’s Dream*, Nature is (a) fundamentally heterogeneous (that is, the atoms which
compose the natural world exist in a state of heterogeneity and agitation) and (b) never
entirely “specific” (*précis*), like Father Castel’s ribbon. It is in this rather sober sense that
Diderot denies the foundational distinction between Nature and artifice. How could one
recognize Nature underneath all its *travestissements*, after all? (Both in the sense of ‘travesties’
and of perpetual “vicissitudes.”)

The vastness of nature and the ensuing inevitability of our heuristic constructs –
travesties/*travestissements* both – does not prevent the materialist philosopher from
maintaining a strong notion of causality, along with the scientific project which follows from
it; but

The universe only presents to us particular beings, infinite in number, with hardly
any fixed or determinate division. None can be termed the first or the last;
everything is linked therein, and follows what came before by imperceptible nuances.
In this immense uniformity of objects, if some appear which, like the tips of rocks,
seem to pierce through the surface and dominate it, they only owe this prerogative to
particular systems, vague conventions, and foreign events – and not to the physical
arrangement of beings and the intention of Nature.

There is no place for the human observer in this desolate landscape. As observed a few
paragraphs later in the same text, the only thing that makes the existence of the spectacle of
Nature interesting is the human presence itself.

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41 “L’univers ne nous offre que des êtres particuliers, infinis en nombre, et sans presque aucune
division fixe et déterminée ; il n’y en a aucun qu’on puisse appeler ou le premier ou le dernier ; tout
s’y enchaîne et s’y succède par des nuances insensibles ; et à travers cette uniformité immense
d’objets, s’il en parait quelques-uns qui, comme des pointes de rochers, semblent percer la surface et
la dominer, ils ne doivent cette prérogative qu’à des systèmes particuliers, qu’à des conventions
vagues, qu’à certains événements vagues, qu’à certains événements étrangers, et non à l’arrangement
physique des êtres et à l’intention de la nature” (Diderot, art. “Encyclopédie,” Enc. V, 641b / Diderot
(1975-), vol. VII, pp. 210-211, with a referral back to the “Prospectus”). A similar comment is in his
One consideration above all must not be lost sight of, and that is that if man or the thinking, contemplating being is banished from the surface of the earth, this moving and sublime spectacle of nature becomes nothing but a sad and mute scene. . . . Everything changes into a vast solitude where unobserved phenomena occur in a manner dark and mute.42

Instead of losing himself in reveries about the poetics of ruins and our transitory existence on the face of the earth, however, Diderot instantly asserts the pragmatic, ‘constructivist’ and artificialist conclusion: since “It is the presence of man that makes the existence of beings interesting,” “Why not make man the center of our work?” (“Pourquoi n’introduirons-nous pas l’homme dans notre ouvrage?”), in other terms, why not create cabinets d’histoire naturelle?

Naturalism here opens onto pragmatism and instrumentalism: a cabinet is an explicit case of the methodology Diderot describes as “joining the combinations of art to those of nature.”43

Diderot’s naturalism is not only unique because it loads the concept of Nature with many animate properties, sensitivity above all, or because of its pragmatic, instrumentalist dimension; it also is unusually ‘vaccinated’ against positivism of the sort Nietzsche warned against rather trenchantly:

Let us be on our guard. Let us be on our guard against thinking that the world is a living being. Where could it extend itself? What could it nourish itself with? How could it grow and increase? We know tolerably well what the organic is; and we are to reinterpret the emphatically derivative, tardy, rare and accidental, which we only perceive on the crust of the earth, into the essential, universal and eternal, as those do who call the universe an organism? That disgusts me. Let us now be on our guard against believing that the universe is a machine; it is assuredly not constructed with a view to one end; we invest it with far too high an honor with the word “machine.” Let us be on our guard against supposing that anything so methodical as the cyclic motions of our neighboring stars obtains generally and throughout the universe; indeed a glance at the Milky Way induces doubt as to whether there are not many cruder and more contradictory motions there, and even stars with continuous,

42 “Une considération surtout qu’il ne faut pas perdre de vue, c’est que si on bannit l’homme ou l’être pensant et contemplateur de dessus la surface de la terre, ce spectacle pathétique et sublime de la nature n’est plus qu’une scène triste et muette. […] Tout se change en une vaste solitude où les phénomènes inobservés se passent d’une manière obscure et sourde” (Diderot, art. “Encyclopédie,” Enc. V, 641e; Diderot (1975-), vol. VII, p. 212; trans. Philip Stewart (modified), in Encyclopedia of Diderot and D’Alembert, collaborative translation project (http://www.hti.umich.edu/d/did/)).

rectilinearly gravitating orbits, and the like. The astral arrangement in which we live is an exception; this arrangement, and the relatively long durability which is determined by it, has again made possible the exception of exceptions, the formation of organic life. The general character of the world, on the other hand, is to all eternity chaos; not by the absence of necessity, but in the sense of the absence of order, structure, form, beauty, wisdom, and whatever else our aesthetic humanities are called. Judged by our reason, the unlucky casts are far oftenest the rule, the exceptions are not the secret purpose; and the whole musical box repeats eternally its air, which can never be called a melody — and finally the very expression, “unlucky cast” is already an anthropomorphizing which involves blame. But how could we presume to blame or praise the universe? Let us be on our guard against ascribing to it heartlessness and unreason, or their opposites; it is neither perfect, nor beautiful, nor noble; nor does it seek to be anything of the kind, it does not at all attempt to imitate man! It is altogether unaffected by our aesthetic and moral judgments! Neither has it any self-preservation instinct, nor instinct at all; it also knows no law. Let us be on our guard against saying that there are laws in nature. There are only necessities: there is no one who commands, no one who obeys, no one who transgresses. When you know that there is no design, you know also that there is no chance: for it is only where there is a world of design that the word “chance” has a meaning. . . . When will all these shadows of God cease to obscure us? When shall we have nature entirely undeified? When shall we be permitted to naturalize ourselves by means of the pure, newly discovered, newly redeemed nature?  

Diderot is vaccinated against the hope that we’ll truly come to ‘know’ Nature, from his early warnings against physico-theology or the argument from design, put forth by the blind mathematician Saunderson in the Letter on the Blind, to his critique of anthropomorphism in the Salon de 1767:

We are in nature. Sometimes we feel right there [good, happy, comfortable], sometimes not. And do believe that those who praise nature in the spring for having carpeted the earth in green, a friendly color to our eyes, are just presumptuous wise-asses who forget that this nature whose goodness they wish to find everywhere, in everything, in winter lays across our countrysides a great white blanket which wounds our eyes, makes us dizzy and threatens us with dying, frozen. Nature is good and beautiful when it favours us. It is ugly and evil when it afflicts us. It often owes a part of its charms to our own efforts.  

44 Nietzsche (1974), § 109. The Spinozist overtones here of the critique of anthropomorphism, are deliberate.
45 “Nous sommes dans la nature. Nous y sommes tantôt bien, tantôt mal. Et croyez que ceux qui louent la nature d’avoir au printemps tapissé la terre de vert, couleur amie de nos yeux, sont des impertinents qui oublient que cette nature dont ils veulent retrouver en tout et partout la bienfaisance, étend en hiver sur nos campagnes une grande couverture blanche qui blesse nos yeux, nous fait tourner la tête et nous expose à mourir glacés. La nature est bonne et belle quand elle nous favorise. Elle est laide et méchante, quand elle nous afflige. C’est à nos efforts mêmes qu’elle
Interestingly enough, in historical terms, it seems, as Gerhardt Stenger has pointed out, that this caution on Diderot’s part is partially due to his encounters with Abbé Galiani, as the following passage from Galiani shows:

And we, who are we? Insects, atoms, nothing. Let’s compare ourselves [to nature]. To be sure, nature faithfully returns to the laws its author gave it, in order to last an indefinite time. To be sure, it restores all things to a balance, but we don’t have time to await this return or this balance. We are too small; time, space and motion are nothing to it; we cannot wait. Let us not, then, make a pact [alliance] with nature; it would be too disproportionate. Our task down here is to fight it. Look around. See the cultivated fields, the foreign plants introduced into our climes, the ships, the cars, the tamed animals, houses, streets, ports, dikes and pavements. Here are the entrenchments in which we fight; all the pleasures of our lives, indeed, nearly existence itself, are the price of victory. With our few skills and the wit that God gave us, we are battling nature and we often manage to conquer and master it, by using its strength against itself. A singular combat, which shows man the image of his creator.46

For Galiani, the Lockean imperative to cultivate Nature leads to agriculture; for Diderot, it leads to philosophy, the production of encyclopedias … or cabinets of natural history. We might recognize a Baconian trend here, but the ‘fictional’ dimension of cabinets seems fairly
far removed from inductivism. Nor would Bacon have approved of the anti-mathematical impulse in Diderot and Buffon. \(^47\)

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Instead of insisting on multiplicity or the cult of ruins, Diderot’s response to this challenge of the unknowability of Nature is to some extent a pragmatic instrumentalist one: Nature cannot be known as such, in its magnitude; we construct encyclopedias as provisional systems of human knowledge, and amusing, kitschy fictional structures with and through which we can know Nature, in a sort of *verum ipsum factum*; the limit of all this complexity is in fact utility: “*l’utile circonscrit tout.*” \(^48\) Our relation to nature is an interplay between such constructs or thought-experiments on the one hand, and the constant reminder of living nature’s magnitude on the other hand. The sense that we live in a universe of relations of infinite complexity, to be grasped by our *perception des rapports* and to be ‘reconstructed’ both pragmatically – the ‘cabinet’ – and epistemologically – the programmatic dimensions of the article “Encyclopédie” – is inseparably a materialist sense, we might say of Spinozist provenance, and an aesthetic sense, derived from the ‘practice’ of the *Salons*. \(^49\) And Nature itself behaves no differently than the technologist: “the bird of prey extends or shortens its gaze, like the astronomer extends or shortens her telescope’s focus.” \(^50\) The vitalist elements here do not in the end prevail in any strong sense, since Diderot admits that, just as the physico-mathematical sciences gave way to the ‘life sciences’, some day, “in several centuries,

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\(^{49}\) This last aspect has been stressed by Jacques Proust in many writings, and more recently by Stenger (1994).

\(^{50}\) *Éléments de physiologie*, in Diderot (1994), p. 1276.
utility will limit what we do in experimental physics.”\textsuperscript{51} As such, the “naturalisme de cabinet” (literally, a ‘closet naturalism’) we’ve seen here needs to be distinguished from a few classic positions or critiques in intellectual history:

(i) It has nothing to do with any project of naturalizing the social world. Neither agency, nor the human capacity to make representations and live in a symbolic realm, are denied, on the contrary. This is Diderot’s critique of Helvétius.

(ii) The “cabinets” do not function, in any relevant way, as a rationalization of nature, over and against the full-blown, raw, unimpeded “étrangeté animale” of the Renaissance.\textsuperscript{52} In my view, the notion of “cabinet” and of \textit{histoire naturelle} as a whole, at least in the materialist version examined here, is if anything \textit{anti-mathematical}, opposing the world of Nature and experience to the world of mathematical abstractions, whereas for Foucault it is a new form of \textit{mathesis universalis}, with the \textit{cabinets} presenting different surfaces, structures, planes, solids … \textsuperscript{53} Similarly, inasmuch as the emphasis on living, biological nature gives this naturalism its anti-mathematical flavour, it is much less susceptible to the charges of rationalism associated with the ‘dialectic of Enlightenment’, which Foucault merely updates from the Frankfurt School, and which can be found in modified versions throughout influential Anglophone studies of the Enlightenment (e.g. Peter Gay’s or Lester Crocker’s).

(iii) As far as contemporary debates on the status of naturalism are concerned, it seems that neither Husserl’s nor Putnam’s critiques could successfully target Diderot, who formulated his own arguments against the denial that we are ‘parts of Nature’ in his critique of Hemsterhuis. Given the artificialist dimension I’ve pointed to, along with features such as

\textsuperscript{52} As argued by Foucault (1966), p. 143.
\textsuperscript{53} \textit{Ibid.}, p. 149.
the distinction between the observer and the interpreter of nature, we are not in the territory of sheer Baconian empiricism any longer.  

In the end I have not shed much light on the nature of naturalism itself (the question of whether it’s more of an epistemology or an ontology is significant; perhaps it could also be considered as an attitude towards the practice of philosophy), but have instead focused on what I’ve claimed to be unique or at least unusual in Diderot’s “naturalisme de cabinet.” Due perhaps to his recognition of an irreducible complexity in Nature which does not allow it to be rationalized as some philosophers of science might like, and his ensuing emphasis on utility and instrumentalism as the guidelines in reflecting on Nature, and regardless of his occasional forays into aesthetic anti-naturalism, Diderot does in the end declare that “Nature speaks louder than philosophy.”

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I.


55 “La nature parle plus haut que la philosophie” (in Raynal [1780], XI, 24).


II.

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